# MOVE-STEP STRUCTURE AND PHRASE FRAMES OF ENGLISH RESEARCH ARTICLES IN DENTISTRY: A CONTRASTIVE ANALYSIS BETWEEN ORAL AND MAXILLOFACIAL SURGERY AND ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS SUB-DISCIPLINES

NGUYEN HUU CHANH

มหาวิทยาลัยเทคโนโลยีสุรนารี

A Thesis Submitted in Partial Fulfillment of the Requirements for the
Degree of Doctor of Philosophy in English Language Studies
Suranaree University of Technology
Academic Year 2025

# โครงสร้างอัตถภาคและอัตถภาคย่อยและกรอบวลีของบทความวิจัยภาษาอังกฤษสาขาวิชาทันตแพทยศาสตร์: การวิเคราะห์เปรียบเทียบระหว่างสาขาวิชาศัลยศาสตร์ช่องปากและแม็กซิโลเฟเชียลกับทันตกรรมจัดฟัน

นายเหงียน หู จั๋น

มหาวิทยาลัยเทคโนโลยีสุรนารี

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาปรัชญาดุษฎีบัณฑิต
สาขาวิชาภาษาอังกฤษศึกษา
มหาวิทยาลัยเทคโนโลยีสุรนารี
ปีการศึกษา 2568

# MOVE-STEP STRUCTURE AND PHRASE FRAMES OF ENGLISH RESEARCH ARTICLES IN DENTISTRY: A CONTRASTIVE ANALYSIS BETWEEN ORAL AND MAXILLOFACIAL SURGERY AND ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS SUB-DISCIPLINES

Suranaree University of Technology has approved this thesis submitted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

Thesis Examining Committee

(Assoc. Prof. Dr. Kornwipa Poonpon)
Chairperson

(Assoc. Prof. Dr. Issra Pramoolsook)
Member (Thesis Advisor)

(Asst. Prof. Dr. Kriangkrai Vathanalaoha))
Member

(Asst. Prof. Dr. Arnon Chaisuriya)
Member

(Dr. Sirinthorn Seepho)
Member

(Assoc. Prof. Dr. Yupaporn Ruksakulpiwat)
Acting Vice Rector for Academic Affairs
and Quality Assurance

(Assoc. Prof. Dr. Anchalee Wannaruk)
Dean of Institute of Social Technology

มหาวิทยาลัยเทคโนโลยีสุรนารี

เหงียน หู จั่น: โครงสร้างอัตถภาคและอัตถภาคย่อยและกรอบวลีของบทความวิจัยภาษาอังกฤษสาขาวิชาทันตแพทยศาสตร์: การวิเคราะห์เปรียบเทียบระหว่างสาขาวิชาศัลยศาสตร์ช่องปากและแม็กซิโลเฟเชียลกับทันตกรรมจัดฟัน (MOVE-STEP STRUCTURE AND PHRASE FRAMES OF ENGLISH RESEARCH ARTICLES IN DENTISTRY: A CONTRASTIVE ANALYSIS BETWEEN ORAL AND MAXILLOFACIAL SURGERY AND ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS SUB-DISCIPLINES) อาจารย์ที่ปรึกษา: รองศาสตราจารย์ ดร. อิศรา ประมูลศุข, 413 หน้า

คำสำคัญ: โครงสร้างลำอัตถภาคและอัตถภาคย่อย/ กรอบวลี/ บทความวิจัย/ ศัลยศาสตร์ช่องปากและแม็กซิโลเฟเชียล/ ทันตกรรมจัดฟัน/ ทันตกรรม

การศึกษาภาษาอังกฤษเพื่อวัตถุประสงค์ทางทันตกรรม (English for Dentistry Purposes) ได้รับความสนใจเพิ่มขึ้นเรื่อยมา เนื่องจากมุ่งสำรวจรูปแบบการใช้ภาษาของนักวิชาชีพด้านสุขภาพในการเขียนงานวิจัย ทั้งนี้ “ทันตกรรม” เป็นสาขาวิชาหลักในกลุ่มวิทยาศาสตร์สุขภาพ จึงทำให้ในช่วงไม่กี่ปีที่ผ่านมา มีจำนวนผลงานตีพิมพ์ด้านทันตกรรมเพิ่มขึ้นอย่างต่อเนื่องในฐานข้อมูล Scopus และ Web of Science ผลการวิจัยเชิงประจักษ์และองค์ความรู้ทางทันตกรรมถูกเผยแพร่อย่างกว้างขวางผ่านบทความวิจัย (Research Articles: RAs) ซึ่งเป็นประเภทงานเขียนที่นักวิจัยด้านประเภทงานเขียน (Genre Researchers) ให้ความสนใจมากที่สุด

อย่างไรก็ตาม ยังมีงานวิจัยจำนวนจำกัดที่ศึกษาบทความวิจัยในสาขาทันตกรรมในแง่โครงสร้างองค์ประกอบตามแนวทางการวิเคราะห์ประเภทงานเขียน (Genre Approach) โดยเฉพาะแม้ว่ามีงานศึกษาจำนวนมากในสาขาอื่นที่สำรวจโครงสร้างของ อัตถภาค “Move” และอัตถภาคย่อย “Step” ของบทความวิจัยในแต่ละส่วน แต่มีเพียงไม่กี่งานที่ศึกษาในสาขาทันตกรรมเท่านั้น นอกจากนี้ งานวิจัยที่ผ่านมายังได้ศึกษากรอบวลี (Phrase Frames) ของบทความวิจัยในบางสาขา แต่ยังไม่มีการศึกษาเกี่ยวกับกรอบวลีของบทความวิจัยภาษาอังกฤษทั้งฉบับในสาขาทันตกรรม อีกทั้งยังไม่พบงานวิจัยใดที่ทำการวิเคราะห์เชิงเปรียบเทียบระหว่างโครงสร้าง Move-Step และกรอบวลีของบทความวิจัยภาษาอังกฤษทั้งฉบับในสาขานี้ ช่องว่างทางการวิจัยทั้งสามประการนี้ส่งผลให้ขาดทรัพยากรที่เป็นประโยชน์ในการสนับสนุนผู้เขียนบทความทันตแพทย์ (DDS authors) สำหรับการจัดทำต้นฉบับเพื่อตีพิมพ์ในวารสารนานาชาติ

เพื่อเติมเต็มช่องว่างการวิจัยดังกล่าว งานวิจัยนี้ได้รวบรวมบทความวิจัยฉบับเต็มจำนวน 60 บทความ จากสาขาศัลยกรรมช่องปากและแม็กซิโลเฟเชียล (Oral and Maxillofacial Surgery: OMS) และสาขาทันตกรรมจัดฟัน (Orthodontics and Dentofacial Orthopedics: ODO) ที่ตีพิมพ์ระหว่างปี 2021–2023 จากวารสารชั้นนำ 6 ฉบับที่อยู่ในกลุ่ม Scopus Q1 เพื่อสร้างคลังข้อมูล (Corpus) สำหรับการศึกษา

โครงสร้าง Move-Step ถูกวิเคราะห์ตามกรอบแนวคิดของ Kanoksilapatham (2005) สำหรับบทนำและบทอภิปรายผลNwogu (1997) สำหรับบทวิธีการวิจัย Davis (2020) สำหรับบท

ผลการวิจัย และ Yang & Allison (2003) สำหรับบทสรุป ส่วนกรอบวลีถูกจำแนกตามแนวคิดของ Gray & Biber (2013) ด้านโครงสร้าง และ Simpson-Vlach & Ellis (2010) ด้านหน้าที่ทางภาษา

ผลการวิจัยชี้ให้เห็นถึงความแตกต่างที่มีนัยสำคัญทางโครงสร้างของ Moves, Steps และกรอบวลีในบทความวิจัยภาษาอังกฤษระหว่างสองสาขาย่อยของทันตกรรม โดยพบว่าในภาพรวมมีทั้งหมด 14 Moves และ 37 Steps ปรากฏในสาขาทันตกรรม ทั้งนี้ จำนวน Moves มีเท่ากัน แต่ OMS มี 36 Steps ขณะที่ ODO มี 35 Steps

ในส่วนของกรอบวลี พบกรอบวลีจำนวน 228 รูปแบบ ปรากฏ 1,266 ครั้งใน OMS และ 1,489 ครั้งใน ODO การวิเคราะห์เชิงเปรียบเทียบแสดงให้เห็นทั้งความคล้ายคลึงและความแตกต่าง โดยมี 5 Moves และ 2 Steps ที่เหมือนกัน และมี 3 Moves กับ 6 Steps ที่แตกต่างกันระหว่างสองสาขาย่อย นอกจากนี้ ยังพบกรอบวลีที่เหมือนกันจำนวน 157 รูปแบบ ในขณะที่ OMS มีกรอบวลีเฉพาะของตน 1,022 รูปแบบ และ ODO มี 1,359 รูปแบบ

ผลการวิจัยนี้สามารถนำไปใช้เพื่อเสนอแนวทางเชิงทฤษฎีและเชิงการสอนสำหรับการเขียนบทความวิจัยภาษาอังกฤษในสาขา OMS และ ODO ได้อย่างมีประสิทธิภาพ

มหาวิทยาลัยเทคโนโลยีสุรนารี

สาขาวิชาภาษาต่างประเทศ ลายมือชื่อนักศึกษา _____

ปีการศึกษา 2568 ลายมือชื่ออาจารย์ที่ปรึกษา I Pramoolsook

NGUYEN HUU CHANH: MOVE-STEP STRUCTURE AND PHRASE FRAMES OF ENGLISH RESEARCH ARTICLES IN DENTISTRY: A CONTRASTIVE ANALYSIS BETWEEN ORAL AND MAXILLOFACIAL SURGERY AND ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS SUB-DISCIPLINES. THESIS ADVISOR: ASSOC. PROF. ISSRA PRAMOOLSOOK, Ph.D., 413 PP.

Key words: move-step structure/ phrase frames/ RAs/ Oral and Maxillofacial Surgery/ Orthodontics and Dentofacial Orthopedics/ Dentistry

Studies on English for Dentistry Purposes have been an emerging interest to explore the language use in research writing of healthcare professionals since Dentistry is a major discipline in the group of Health Sciences. Hence, recent years have witnessed the increasing number of Dentistry publications in Scopus and Web of Science records. Empirical research findings and Dentistry knowledge are widely disseminated through research articles (RAs), a genre that attracted the most attention among genre researchers. However, lack of studies is about the RAs in Dentistry in the structural composition from genre approaches. To be more specific, while many previously published studies investigated the structure of moves and their subsequent steps of RA sections in various fields, there are only a few studies in the field of Dentistry. Besides, prior research has been conducted on the phrase frames of research articles in some fields, but phrase frames in the whole English RA in Dentistry have received scant attention. Furthermore, no previous studies have explored the contrastive analysis of move-step structure and phrase frames of the whole English RA sections in the field. These 3 reasons cause the lack of useful resources to support DDS authors in writing manuscripts for international publications.

To address the 3 research gaps above, 60 full-length RAs from Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO), published from 2021 to 2023, were drawn from 6 prestigious journals indexed in Scopus Q1 to constitute the corpus of the current study. The move-step structure was analyzed based on the frameworks of Kanoksilapatham (2005) for the Introduction and the Discussion sections, Nwogu (1997) for the Methods sections, Davis (2020) for the Results sections, and Yang and Allison (2003) for the Conclusion sections. The phrase frames were categorized based on the frameworks of Gray and Biber (2013) for structural analysis as well as Simpson-Vlach and Ellis (2010) for functional analysis. The study showed significant findings in the moves, steps, and their structure as well as phrase frames of the English RA sections between the two sub-disciplines of Dentistry.

In terms of moves, steps, and their structure, there were 14 moves and 37 steps that appeared in the field of Dentistry. Notably, the number of moves was the same, but there were only 36 steps in OMS and 35 steps in ODO. In terms of phrase frames in the structural and functional categories, 228 phrase frames were identified in 1266 occurrences in OMS and 1489 occurrences in ODO. In terms of contrastive analysis, both similarities and differences were found in the moves, steps, and their structure as well as phrase frame usage between the two sub-disciplines. Five moves and 2 steps were similar while 3 moves and 6 steps were different between the two sub-disciplines. Besides, 157 phrase frames were found similarly whereas 1022 phrase frames in OMS and 1359 phrase frames in ODO were identified differently between the two sub-disciplines. The findings can be used to propose theoretical and pedagogical implications on writing the OMS and ODO English RAs.

มหาวิทยาลัยเทคโนโลยีสุรนารี

School of Foreign Languages
Academic Year 2025

Student's Signature _____
Advisor's Signature _____

# ACKNOWLEDGEMENTS

My study time will come to an end soon after more than 3 years at SUT. Looking back the past, I met a lot of people who were always willing to give their hands to help me in every single pace of the journey. With all of my sincerity, I would be grateful to all of their valuable advice, assistance, and kindness since the study would not have been significantly achieved without them.

First of all, my eternal heartfelt gratitude goes to Assoc. Prof. Dr. Issra Pramoosook, my supervisor, who is always supportive to give me insightful guidance and valuable feedback before and during conducting my dissertation. His mentorship has been instrumental not only to the completion of this dissertation but also to my overall academic and professional development. I have come to embody three key characteristics: inherited, well-rounded, and matured. From him, I am inherited his knowledge, ethical principles, or academic standards, which forms the foundation of my career professional growth. From him, I am inspired to become a well-rounded researcher, integrating academic rigor with broader personal and professional competencies. Most significantly, from him, I am matured, both intellectually and personally, through critical reflection, resilience, and continuous learning. If I were born again, I would still want to be your advisee.

Initially, I had limited knowledge of this research topic, but, through his guidance, my interest in analyzing the move-step structure and phrase frames has significantly deepened. His guidance, encouragement, and insightful feedback have been instrumental in shaping my research and personal growth. He always made time to discuss my ideas and challenges, helping me navigate the complexities of academia with confidence. That is why I choose him to be my supervisor when I haven't arrived at SUT. To me, he is deserved to be an advisor, a mentor, and a guiding light that becomes a role model in this journey. I consider myself fortunate to have tutorials with him at the very first stage of my Ph.D. journey, as it provided me with a broad understanding of how to approach the writing of a high-quality dissertation. Moreover, the opportunities for current and future collaborations and network enrich my experience immeasurably. Attending conferences in Bangkok and Chiang Mai (Thailand) as well as Manila (Philippines) and engaging with other senior scholars under his supervision have broadened my perspective and opened doors I haven't imagined. His influence has not only shaped my academic work but also my personal development,

and I am incredibly grateful for the skills I've gained under his guidance. As I move forward in my career, I hope to embody the same spirit of mentorship he has shown me, paying it forward to my future students.

Secondly, I would like to extend my sincere thanks to all committee members, Assoc. Prof. Dr. Kornwipa Poonpon, Asst. Prof. Dr. Kriangkrai Vathanalaoha, Dr. Sirinthorn Seepho, Asst. Prof. Dr. Arnon Chaisuriya, for being with me on my proposal and viva defense to give the valuable comments and recommendations for a better dissertation.

Thirdly, I would like to express my heartfelt thanks to all the professors at the School of Foreign Languages for their support and kindness. They have consistently assisted me in both academic and personal matters. Each of them serves as an inspiration, and I consider myself fortunate to have chosen SUT as my academic destination.

Fourthly, I would like to express my sincere gratitude to Assoc. Prof. Dr. Vu Hai Quan, President of Viet Nam National University, Ho Chi Minh City, for endorsing the necessary permissions and enabling me to embark on this unique and transformative journey at Suranaree University of Technology, Thailand. Moreover, I am sincerely thankful to Assoc. Prof. Dr. Pham Anh Vu Thuy and Dr. Nguyen Van Minh, whose lifestyles and sources of inspiration have greatly enriched my learning and guided me throughout my remarkable academic journey in Thailand. Furthermore, I am deeply touched and grateful to my informants for their kindness and support in facilitating my further academic pursuits at SUT. Their contributions have been an invaluable part of my journey.

Fifthly, I would like to say thank you to all of my friends who share with me all joys and sorrows during the time I stay in SUT. Stories and discussion from them would make my life more significant and beautiful here. It is my destiny to be here, to make friends, and to grow together in the SUT professional and academic discourse community. Their constant kindness and unwavering encouragement motivate me to work hard every day.

Last but not least, I am particularly grateful to my parents, sister and brother, who always support me unconditionally in this journey. They give me a lot of necessary properties for my overseas study. I love all of them so much.

Nguyen Huu Chanh

# TABLE OF CONTENTS


Page

ABSTRACT (THAI) ..... I
ABSTRACT (ENGLISH) ..... III
ACKNOWLEDGEMENTS ..... V
TABLE OF CONTENTS ..... VII
LIST OF TABLES ..... XIV
LIST OF FIGURES ..... XXIII
LIST OF ABBREVIATIONS ..... XXV
**CHAPTER**
**1. INTRODUCTION ..... 1**
1.1 Research Background ..... 1
1.1.1 English as a Foreign Language Teaching and Learning ..... 1
1.1.2 Health Sciences and Dentistry ..... 3
1.2 Statements of Problems ..... 6
1.2.1 Challenges in Writing English Research Articles for International Publication ..... 6
1.2.2 Challenges in International Publication in Dentistry ..... 9
1.2.3 National Requirements of Research and Publication ..... 11
1.3 Rationale of the Study ..... 13
1.3.1 Theoretical Gaps ..... 13
1.3.2 Pedagogical Gaps ..... 15
1.3.3 Contextual Gaps ..... 16
1.4 Research Purposes ..... 17
1.5 Research Questions ..... 18
1.6 Significance of the Study ..... 19
1.6.1 Theoretical Significance ..... 19
1.6.2 Pedagogical Significance ..... 20
1.7 Scope of the Study ..... 21
1.8 Definitions of Key Terms ..... 23
1.9 Chapter Summary ..... 25
**2. LITERATURE REVIEW ..... 26**
2.1 Genre and Genre Studies ..... 26
2.1.1 Definitions of Genre ..... 26
2.1.2 Genre Studies and the English for Specific Purposes Tradition ..... 28
2.2 Research Article as a Genre ..... 31
2.2.1 Previous Studies on the Whole Research Article ..... 33
2.2.2 Previous Studies on Individual Section of Research Article ..... 37

# TABLE OF CONTENTS

**Page**


2.2.2.1 The Introduction Section ..... 37
2.2.2.2 The Methods Section ..... 39
2.2.2.3 The Results Section ..... 40
2.2.2.4 The Discussion Section ..... 41
2.2.2.5 The Conclusion Section ..... 43
2.3 English for Dentistry Purposes and Dentistry Discourse ..... 44
2.3.1 English for Dentistry Purposes (EDP) ..... 44
2.3.2 Dentistry Discourse ..... 46
2.3.3 Original Research Articles in Dentistry ..... 48
2.4 Phrase Frames ..... 52
2.4.1 Previous Studies in Phrase Frames in the Whole Research Articles ..... 57
2.4.2 Previous Studies in Phrase Frames in Individual Sections of Research Article ..... 58
2.4.2.1 The Introduction Section ..... 59
2.4.2.2 The Discussion Section ..... 60
2.5 Contrastive Rhetoric ..... 61
2.6 Research Gaps ..... 68
2.7 Chapter Summary ..... 71
**3. RESEARCH METHODOLOGY ..... 72**
3.1 Research Design ..... 72
3.2 Corpus Compilation ..... 75
3.2.1 Corpus Size ..... 75
3.2.2 Selection of Journals and Research Articles ..... 77
3.2.3 Corpus Management ..... 83
3.3. Analysis of Move-step Structure ..... 85
3.3.1 Selection of Framework of Move-step Structure ..... 85
3.3.2 Identification of Moves and Steps ..... 89
3.4.2.1 Inter-rater Reliability (IRR) ..... 90
3.4.2.2 Inter-rater Agreement (IRA) ..... 93
3.3.3 Procedure of Analyzing Move-step Structure ..... 94
3.3.4 Determination of the Status of Moves and Steps ..... 99
3.4.5 The Interater-agreement of moves, steps and their structure in the RA sections between the two sub-disciplines ..... 100
3.4 Analysis of Phrase Frames ..... 102
3.4.1 Selection of Framework of Phrase Frames ..... 102
3.4.2 Identification and Procedure of Extracting Phrase Frames ..... 103
3.5.2.1 Automatic Extraction ..... 103
3.5.2.2 Manual Extraction ..... 105

# TABLE OF CONTENTS

Page

3.5.2.3 Structural and Functional Analysis ..... 105
3.5.2.4 Rater Assessment ..... 108
3.4.3 Determination of the Status of Phrase Frames ..... 109
3.5 Contrastive Analysis between the Two Sub-disciplines ..... 111
3.6 Chapter Summary ..... 112
**4. RESULTS AND DISCUSSION OF MOVES, STEPS, AND THEIR STRUCTURE IN THE RA SECTIONS ..... 113**
4.1 Moves and Steps of the Introduction Section ..... 113
4.1.1 Results of Frequency, Status and Move Cycles of Moves and Steps in the English Dentistry RA Introduction Sections in Two Sub-Disciplines ..... 113
4.1.2 Discussion of Moves and Steps in the Introduction Section ..... 116
4.2 Moves and Steps of the Methods Section ..... 124
4.2.1 Results of Frequency, Status and Move Cycles of Moves and Steps in the English Dentistry RA Methods Section in Two Sub-disciplines ..... 124
4.2.2 Discussion of Moves and Steps in the Methods Section ..... 127
4.3 Moves and Steps of the Results Section ..... 135
4.3.1 Results of Frequency, Status and Move Cycles of Moves and Steps for the RA Results Section in the two Sub-disciplines of Dentistry ..... 135
4.3.2 Discussion of Moves and Steps in the Results Section ..... 137
4.4 Moves and Steps of the Discussion Section ..... 145
4.4.1 Results of Frequency, Status, and Move Cycles for the English Dentistry RA Discussion Section in the Two Sub-disciplines ..... 146
4.4.2 Discussion of Moves and Steps in the English Dentistry RA Discussion Section ..... 148
4.5 Moves and Steps of the Conclusion Section ..... 157
4.6 Chapter Summary ..... 158
**5. RESULTS AND DISCUSSION OF PHRASE FRAMES IN THE RA SECTIONS ..... 159**
5.1 Phrase Frames of the RA Introduction Sections ..... 159
5.1.1 Results and Discussion of Phrase Frames from the Analysis of Structural Category in the RA Introduction Section ..... 159
5.1.1.1 Verb-based Phrase Frames ..... 160
5.1.1.2 Other-content-word Phrase Frames ..... 161
5.1.1.3 Function-word Phrase Frames ..... 164
5.1.2 Results and Discussion of Phrase Frames from the Analysis of Functional Category in the RA Introduction Section ..... 166
5.1.2.1 Referential Phrase Frames ..... 166
5.1.2.2 Stance Phrase Frames ..... 172

# TABLE OF CONTENTS

Page

5.1.2.3 Discourse Organizing Phrase Frames ..... 175
5.2 Phrase Frames of the Methods Section ..... 178
5.2.1 Results and Discussion from the Analysis of Structural Categories .... 178
5.2.1.1 Verb-based Phrase Frames ..... 179
5.2.1.2 Other-content-word Phrase Frames ..... 182
5.2.1.3 Function-word Phrase Frames ..... 186
5.2.2 Results and Discussion from the Analysis of Functional Categories... 189
5.2.2.1 Referential Phrase Frames ..... 190
5.3.1.1 Specification of Attributes ..... 190
5.3.1.2 Identification and Focus ..... 192
5.3.1.3 Contrast and Comparison ..... 194
5.3.1.4 Deictics and Locatives ..... 195
5.2.2.2 Stance Phrase Frames ..... 199
5.2.2.3 Discourse Organizing Phrase Frames ..... 201
5.3.3.1 Metadiscourse and Textual Reference ..... 202
5.3.3.2 Topic Elaboration ..... 203
5.3.3.3 Discourse Markers ..... 205
5.3 Phrase Frames of the Results Section ..... 207
5.3.1 Results and Discussion of Phrase Frames in the English Dentistry RA Results Sections from the Analysis of Structural Categories ..... 207
5.3.1.1 Verb-based Phrase Frames ..... 208
5.3.1.2 Other-content-word Phrase Frames ..... 211
5.3.1.3 Function-word Phrase Frames ..... 216
5.3.2 Results and Discussion from the Analysis of Functional Categories... 218
5.3.2.1 Referential Phrase Frames ..... 219
5.3.1.1 Specification of Attributes ..... 219
5.3.1.2 Identification and Focus ..... 221
5.3.1.3 Contrast and Comparison ..... 223
5.3.1.4 Deictics and Locatives ..... 226
5.3.2.2 Stance Phrase Frames ..... 229
5.3.2.1 Hedges ..... 230
5.3.2.2 Epistemic ..... 231
5.3.2.3 Discourse Organizing Phrase Frames ..... 233
5.3.3.1 Metadiscourse and Textual Reference ..... 233
5.3.3.2 Topic Elaboration ..... 235
5.3.3.3 Discourse Markers ..... 236
5.4 Phrase Frames of the Discussion Section ..... 238

# TABLE OF CONTENTS

**Page**

5.4.1 Results and Discussion of Phrase Frames from the Analysis of Structural Categories ..... 238
5.4.1.1 Verb-based Phrase Frames ..... 239
5.4.1.2 Other-content-word Phrase Frames ..... 243
5.4.1.3 Function-word Phrase Frames ..... 249
5.4.2 Results and Discussion from the Analysis of Functional Categories ..... 252
5.4.2.1 Referential Phrase Frames ..... 253
5.3.1.1 Specification of Attributes ..... 253
5.3.1.2 Identification and Focus ..... 255
5.3.1.3 Contrast and Comparison ..... 257
5.3.1.4 Deictics and Locatives ..... 260
5.4.2.2 Stance Phrase Frames ..... 265
5.3.2.1 Hedges ..... 265
5.3.2.2 Epistemic ..... 267
5.4.2.3 Discourse Organizing Phrase Frames ..... 269
5.3.3.3 Discourse Markers ..... 271
5.5 Phrase Frames of the Conclusion Section ..... 273
5.5.1 Results and Discussion of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Structural Categories ..... 273
5.5.1.1 Verb-based Phrase Frames ..... 274
5.5.1.2 Other-content-word Phrase Frames ..... 276
5.5.1.3 Function-word Phrase Frames ..... 279
5.5.2 Results and Discussion of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Functional Categories ..... 280
5.5.2.1 Referential Phrase Frames ..... 281
5.3.1.1 Specification of Attributes ..... 282
5.3.1.2 Identification and Focus ..... 283
5.3.1.3 Contrast and Comparison ..... 284
5.3.1.4 Deictics and Locatives ..... 286
5.5.2.2 Stance Phrase Frames ..... 288
5.5.2.3 Discourse Organizing Phrase Frames ..... 290
5.5.2.3.1 Topic Elaboration ..... 291
5.5.2.3.2 Discourse Markers ..... 292
5.6 Chapter Summary ..... 294
**6. RESULTS AND DISCUSSION OF A CONTRASTIVE ANALYSIS OF MOVE-STEP STRUCTURE AND PHRASE FRAMES FOR THE DENTISTRY RA SECTIONS .... 295**
6.1 An Overview of Similarities and Differences of Move-step Structure and Phrase Frames between the Two Sub-disciplines ..... 295

# TABLE OF CONTENTS

**Page**

6.2 Similarities of Move-step Structure between the two Sub-disciplines of Dentistry ..... 297
6.3 Differences of Move-step Structure between the Two Sub-disciplines of Dentistry ..... 300
6.4 Similarities of Phrase Frames between the Two Sub-disciplines of Dentistry ..... 302
6.4.1 Results and Discussion in the RA Introduction Section ..... 302
6.4.2 Results and Discussion in the Methods Section ..... 303
6.4.3 Results and Discussion in the Results Section ..... 304
6.4.4 Results and Discussion in the Discussion Section ..... 306
6.4.5 Results and Discussion in the Conclusion Section ..... 308
6.5 Differences of Phrase Frames between The Two Sub-disciplines of Dentistry ..... 309
6.5.1 Results and Discussion in the Introduction section ..... 309
6.4.1.1 Oral and Maxillofacial Surgery ..... 309
6.4.1.2 Orthodontics and Dentofacial Orthopedics ..... 311
6.5.2. Results and Discussion in the Methods section ..... 314
6.5.2.1 Oral and Maxillofacial Surgery ..... 314
6.4.2.2 Orthodontics and Dentofacial Orthopedics ..... 316
6.5.3 Results and Discussion in the Results section ..... 319
6.4.3.1 Oral and Maxillofacial Surgery ..... 319
6.4.3.2 Orthodontics and Dentofacial Orthopedics ..... 323
6.5.4 Results and Discussion in the Discussion section ..... 327
6.4.4.1 Oral and Maxillofacial Surgery ..... 327
6.4.4.2 Orthodontics and Dentofacial Orthopedics ..... 332
6.5.5 Results and Discussion in the Conclusion section ..... 336
6.5.5.1 Oral and Maxillofacial Surgery ..... 336
6.5.5.2 Orthodontics and Dentofacial Orthopedics ..... 337
6.6 Chapter Summary ..... 339
**7. CONCLUSION ..... 341**
7.1 Major Findings ..... 341
7.1.1 Moves, Steps and Their Structure of the Whole English RA Sections in the Two Sub-disciplines of Dentistry ..... 342
7.1.2 Phrase Frames of the Whole English RA Sections in the Two Sub-disciplines of Dentistry ..... 343
7.1.3 A Contrastive Analysis of Moves and Steps and Phrase Frame of the Whole English RA Sections in the Two Sub-disciplines of Dentistry ..... 344
7.2 Implications of the Current Study ..... 346

# TABLE OF CONTENTS

**Page**

7..2.1 Theoretical Implications ..... 346
7.2.2 Pedagogical Implications ..... 347
7.3 Limitations and Recommendations of Future Research ..... 349
7.4 Concluding Remarks ..... 350
**APPENDIX** .....
APPENDIX A Proposed Framework of Moves and Steps in the Whole English RAs in OMS ..... 372
APPENDIX B Proposed Framework of Moves and Steps in the Whole English RAs in ODO ..... 373
APPENDIX C Mapping Phrase Frames to Move-step Structure in the RA Introduction Sections in the Two Sub-disciplines of Dentistry ..... 374
APPENDIX D Mapping Phrase Frames to Move-step Structure in the RA Methods of the Two Sub-disciplines of Dentistry ..... 378
APPENDIX E Mapping Phrase Frames to Move-step Structure in the RA Results of the Two Sub-disciplines of Dentistry ..... 385
APPENDIX F Mapping Phrase Frames to Move-step Structure in the RA Discussions of the Two Sub-disciplines of Dentistry ..... 395
APPENDIX G Mapping Phrase Frames to Move-step Structure in the RA Conclusion of the Two Sub-disciplines of Dentistry ..... 411
**CURRICULUM VITAE** ..... **413**

มหาวิทยาลัยเทคโนโลยีสุรนารี

# LIST OF TABLES

**Table** **Page**

1.1 A Summary of Top 10% Scopus Q1 Journals in Dentistry (August 2024).....22
2.1 A Summary of Move-step Structure in Medical Research Articles by Nwogu (1997)....33
2.2 A Summary of Move-step Structure in Biochemistry Research Articles by Kanoksilapatham (2005).....34
2.3 A Summary of Move-step Structure in Medical Research Articles by Davis (2020).....35
3.1 A Summary of Research Articles Analyzing a Single Discipline.....76
3.2 Number of Research Articles Analyzing Two Sub-disciplines within a Single Discipline.....76
3.3 A Summary of Research Articles Analyzing PFs within a Single Discipline.....77
3.4 Description of the Chosen Journals in the Two Sub-disciplines of Dentistry.....81
3.5 The Sections of the 60 RAs in the Two Sub-disciplines.....82
3.6 Journals and RAs in Oral and Maxillofacial Surgery (OMS).....84
3.7 Journals and RAs in Orthodontics and Dentofacial Orthopedics (ODO).....84
3.8 The Framework Used for Analyzing a Full-length Research Article.....88
3.9 An Example of Move Analysis in the Current Study.....89
3.10 A Summary of Number of Coding Agreement between Coders.....96
3.11 The Revised Frameworks after Analyzing 6 Research Articles between Two Sub-disciplines.....98
3.12 The Inter-Rater Agreement of Moves and Steps in the English Dentistry RA Introduction Section.....100
3.13 The Inter-Rater Agreement of Moves and Steps in the English Dentistry RA Methods Section.....101
3.14 The Inter-Rater Agreement of Moves and Steps for the RA Results Section.....101
3.15 The Inter-Rater Agreement of Moves and Steps for the English Dentistry RA Discussion Section.....102
3.16 An Example of Frequency of Phrase Frames in the Structural Category.....105
3.17 An Example of Number of Fillers in the Structural Category.....106
3.18 An Example of Frequency of Phrase Frames in the Functional Category.....106
3.19 An Example of Numbers of Fillers in the Functional Category.....107
3.20 An Example of an Exception of Phrase Frames in the Current Study in Verb-based Phrase Frames.....107
3.21 An Example of an Exception of Phrase Frames in the Current Study in Other-content-word Phrase Frames.....108
3.22 A Summary of 4-likert Scale in the Current Study (Lu et al., 2018, pp.80-81).....109
3.23 An Example of Phrase Frames in the RA Introduction Section in the Current Study.....110

# LIST OF TABLES (Cont.)

**Table** **Page**

4.1 The Initial Version of Move-Step Structure for English Dentistry RA Introduction Section ..... 113
4.2 The Number and Frequency of RAs in Moves or Steps for the English Dentistry RA Introduction Section in the Two Sub-disciplines ..... 114
4.3 The Status of Moves and Steps in the Introduction Section between the Two Sub-disciplines ..... 115
4.4 A Summary of Move Cycles in the English Dentistry RA Introduction Section in the Two Sub-disciplines ..... 116
4.5 The Proposed Analysis Framework of Move-Step Structure for English Dentistry RA Methods Section (adapted from Nwogu, 1997) ..... 124
4.6 The Number and Frequency of Moves and Steps in the Two Sub-disciplines ..... 124
4.7 The Status of Moves and Steps in the Methods Section between the Two Sub-disciplines ..... 126
4.8 Summary of Move Cycles in the English Dentistry RA Methods Section in the Two Sub-disciplines ..... 126
4.9 The Proposed Analysis Framework of Move-Step Structure for English Dentistry RA Results Section (adapted from Davis, 2020) ..... 135
4.10 The Number and Frequency of Moves or Steps from the Dentistry RA Results Section in the Two Sub-disciplines ..... 136
4.11 The Status of Moves and Steps in the Results Section between the Two Sub-disciplines ..... 136
4.12 A Summary of Move Cycles for the Dentistry RA Results Section in the Two Sub-disciplines ..... 137
4.13 The Proposed Analysis Framework of Move-Step Structure for English Dentistry RA Discussion Sections (adapted from Kanoksilapatham, 2005) ..... 145
4.14 The Number and Frequency of Moves or Steps from the English Dentistry RA Discussion Section in the Two Sub-disciplines ..... 146
4.15 The Status of Moves and Steps in the Discussion Section between the Two Sub-disciplines ..... 147
4.16 Summary of Move Cycles for the Dentistry RA Discussion Section in the Two Sub-disciplines ..... 148
5.1 A Summary of Phrase Frames in Verb-based Phrase Frames in the RA Introduction Section ..... 160
5.2 A Summary of Fillers in Verb-based Phrase Frames in the Two Sub-disciplines ..... 160
5.3 A Summary of Phrase Frames in Other-content-word Phrase Frames in the Two Sub-disciplines ..... 162

# LIST OF TABLES (Cont.)

**Table** **Page**

5.4 A Summary of Number of Fillers in Other-content-word Phrase Frames in the Two Sub-disciplines ..... 163
5.5 A Summary of Phrase Frames in Function-word Phrase Frames in the Two Sub-disciplines ..... 165
5.6 A Summary of Number of Fillers in Function-word Phrase Frames in the Two Sub-disciplines ..... 165
5.7 A Summary of Different Types of Phrase Frames in the Functional Category ..... 166
5.8 A Summary of Frequency of Phrase Frames in Specification of Attributes in the Two Sub-disciplines ..... 167
5.9 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines ..... 167
5.10 A Summary of Frequency of Phrase Frames in Identification and Focus in the Two Sub-disciplines ..... 168
5.11 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines ..... 168
5.12 A Summary of Frequency of Phrase Frames in Contrast and Comparison in the Two Sub-disciplines ..... 169
5.13 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines ..... 170
5.14 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines ..... 171
5.15 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines ..... 171
5.16 A Summary of Different Types of Stance Phrase Frames ..... 173
5.17 A Summary of Frequency of Phrase Frames in Hedges in the Two Sub-disciplines ..... 173
5.18 A Summary of Number of Fillers in Hedges in the Two Sub-disciplines ..... 173
5.19 A Summary of Frequency of Phrase Frames in Epistemic in the Two Sub-disciplines ..... 174
5.20 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines ..... 174
5.21 A Summary of Different Types of Phrase Frames in Discourse Organizing Type ..... 175
5.21 A Summary of Frequency of Phrase Frames in Topic Elaboration in Two Sub-disciplines ..... 176
5.22 A Summary of Number of Fillers in Topic Elaboration in the Two Sub-disciplines ..... 176
5.23 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines ..... 177

# LIST OF TABLES (Cont.)

**Table** **Page**

5.24 A Summary of Number of Fillers in Discourse Markers in the Two Sub-disciplines ..... 177
5.25 The Inter-Rater Agreement of Phrase Frames in the English Dentistry RA Methods Section from in the Structural Categories ..... 178
5.26 A Summary of Phrase Frames in the Verb-based Category in the Two Sub-disciplines ..... 180
5.27 A Summary of Fillers of Phrase Frames in the Verb-based Category in the Two Sub-disciplines ..... 180
5.28 A Summary of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines ..... 182
5.29 A Summary of Number of Fillers of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines ..... 184
5.30 A Summary of Phrase Frames in the Function-word Category in the Two Sub-disciplines ..... 187
5.31 A Summary of Number of Fillers of Phrase Frames in the Function-word Category in the Two Sub-disciplines ..... 188
5.32 The Inter-Rater Agreement of Phrase Frames in the Functional Categories ..... 189
5.33 A Summary of Different Types of Phrase Frames in the Structural Category ..... 190
5.34 A Summary of Frequency of Phrase frames in Specification of Attributes in the Two Sub-disciplines ..... 191
5.35 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines ..... 191
5.36 Summary of Frequency of Phrase Frames in Identification and Focus in the Two Sub-disciplines ..... 193
5.37 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines ..... 193
5.38 A Summary of Frequency of Phrase Frames in Contrast and Comparison in the Two Sub-disciplines ..... 194
5.39 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines ..... 195
5.40 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines ..... 196
5.41 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines ..... 197
5.42 A Summary of Frequency of Phrase Frames in Epistemic in the Two Sub-disciplines ..... 200
5.43 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines ..... 200

# LIST OF TABLES (Cont.)

**Table** **Page**

5.44 A Summary of Different Types of Phrase Frames in the Discourse Organizing Phrase Frames ..... 202
5.45 A Summary of Frequency of Phrase Frames in Metadiscourse and Textual reference in the Two Sub-disciplines ..... 202
5.46 A Summary of Number of Fillers in Metadiscourse and Textual Reference in the Two Sub-disciplines ..... 203
5.47 A Summary of Frequency of Phrase Frames in Topic Elaboration in the Two Sub-disciplines ..... 204
5.48 A Summary of Number of Fillers in Topic Elaboration in the Two Sub-disciplines ..... 204
5.49 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines ..... 205
5.50 A Summary of Number of Fillers in Discourse Markers in the Two Sub-disciplines ..... 206
5.51 The Inter-Rater Agreement of Phrase Frames in the English Dentistry RA Results Section in the Structural Categories ..... 207
5.52 A Summary of Phrase Frames in the Verb-based Category in the Two Sub-disciplines ..... 208
5.53 A Summary of Fillers of Phrase Frames in the Verb-based Category in the Two Sub-disciplines ..... 209
5.54 A Summary of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines ..... 211
5.55 A Summary of Number of Fillers of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines ..... 213
5.56 A Summary of Phrase Frames in the Function-word Category in the Two Sub-disciplines ..... 216
5.57 A Summary of Number of Fillers of Phrase Frames in the Function-word Category in the Two Sub-disciplines ..... 217
5.58 The Inter-Rater Agreement of Phrase Frames in the Functional Categories ..... 218
5.59 A Summary of Different types of Phrase Frames in the Structural Category ..... 219
5.60 A Summary of Frequency of Phrase Frames in Specification of Attributes in the Two Sub-disciplines ..... 220
5.61 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines ..... 221
5.62 A Summary of Frequency of Phrase Frames in Identification and Focus in the Two Sub-disciplines ..... 222
5.63 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines ..... 222

# LIST OF TABLES (Cont.)

**Table** **Page**

5.64 A Summary of Frequency of Phrase Frames in Contrast and Comparison in the Two Sub-disciplines ..... 223
5.65 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines ..... 225
5.66 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines ..... 226
5.67 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines ..... 228
5.68 A Summary of Different Types of Phrase Frames in the Stance Phrase Frames ..... 230
5.69 A Summary of Frequency of Phrase Frames in Hedges in the Two Sub-disciplines ..... 230
5.70 A Summary of Number of Fillers in Hedges in the Two Sub-disciplines ..... 230
5.71 A Summary of Frequency of Phrase Frames in Epistemic in the Two Sub-disciplines ..... 231
5.72 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines ..... 232
5.73 A Summary of Different Types of Phrase Frames in the Discourse Organizing Phrase Frames ..... 233
5.74 A Summary of Frequency of Phrase Frames in Metadiscourse and Textual Reference in the Two Sub-disciplines ..... 234
5.75 A Summary of Number of Fillers in Metadiscourse and Textual Reference in the Two Sub-disciplines ..... 234
5.76 A Summary of Frequency of Phrase Frames in Topic Elaboration in the Two Sub-disciplines ..... 235
5.77 A Summary of Number of Fillers in Topic Elaboration in the Two Sub-disciplines ..... 236
5.78 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines ..... 237
5.79 A Summary of Number of Fillers in Discourse Markers in the Two Sub-disciplines 237
5.80 The Inter-Rater Agreement of Phrase Frames in the Dentistry English RA Discussion section in the Structural Categories ..... 238
5.81 A Summary of Phrase Frames in the Verb-based Category in the Two Sub-disciplines ..... 239
5.82 A Summary of Fillers of Phrase Frames in the Verb-based Category in the Two Sub-disciplines ..... 241
5.83 A Summary of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines ..... 243
5.84 A Summary of Number of Fillers of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines ..... 246

# LIST OF TABLES (Cont.)

**Table** **Page**

5.85 A Summary of Phrase Frames in the Function-word Category in the Two Sub-disciplines ..... 250
5.86 A Summary of Number of Fillers of Phrase Frames in the Function-word Category in the Two Sub-disciplines ..... 251
5.87 The Inter-Rater Agreement of Phrase Frames in the Functional Categories ..... 252
5.88 A Summary of Different Types of Phrase Frames in the Structural Category ..... 253
5.89 A Summary of Frequency of Phrase Frames in Specification of Attributes in the Two Sub-disciplines ..... 254
5.90 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines ..... 254
5.91 A Summary of Frequency of Phrase Frames in Identification and Focus in the Two Sub-disciplines ..... 256
5.92 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines ..... 256
5.93 A Summary of Frequency of Phrase Frames in Contrast and Comparison in the Two Sub-disciplines ..... 257
5.94 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines ..... 259
5.95 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines ..... 261
5.96 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines ..... 262
5.97 A Summary of Different Types of Phrase Frames in the Stance Phrase Frames ..... 265
5.98 A Summary of Frequency of Phrase frames in Hedges in the Two Sub-disciplines ..... 266
5.99 A Summary of Number of Fillers in Hedges in the Two Sub-disciplines ..... 266
5.100 A Summary of Frequency of Phrase Frames in Epistemic in the Two Sub-disciplines ..... 267
5.101 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines ..... 268
5.102 A Summary of Different Types of Phrase Frames in the Discourse Organizing Phrase Frames ..... 269
5.103 A Summary of Frequency of Phrase Frames in Topic elaboration in the Two Sub-disciplines ..... 270
5.104 A Summary of Number of Fillers in Topic elaboration in the Two Sub-disciplines ..... 271
5.105 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines ..... 272

# LIST OF TABLES (Cont.)

**Table** **Page**

5.106 A Summary of Number of Fillers in Discourse markers in the Two Sub-disciplines ..... 272
5.107 The Inter-Rater Agreement of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Structural Categories ..... 274
5.108 A Summary of Phrase frames in the Verb-based Category in the Two Sub-disciplines ..... 275
5.109 A Summary of Fillers of Phrase Frames in the Verb-based Category in the Two Sub-disciplines ..... 275
5.110 A Summary of Phrase frames in the Other-content-word Category in the Two Sub-disciplines ..... 276
5.111 A Summary of Number of Fillers of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines ..... 277
5.112 A Summary of Phrase frames in the Function-word Category in the Two Sub-disciplines ..... 279
5.113 A Summary of Number of Fillers of Phrase Frames in the Function-word Category in the Two Sub-disciplines ..... 280
5.114 The Inter-Rater Agreement of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Functional Categories ..... 281
5.115 A Summary of Different types of Phrase Frames in the Structural Category ..... 282
5.116 A Summary of Frequency of Phrase frames in Specification of Attributes in the Two Sub-disciplines ..... 282
5.117 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines ..... 283
5.118 A Summary of Frequency of Phrase frames in Identification and Focus in the Two Sub-disciplines ..... 284
5.119 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines ..... 284
5.120 A Summary of Frequency of Phrase frames in Contrast and Comparison in the Two Sub-disciplines ..... 285
5.121 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines ..... 286
5.122 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines ..... 287
5.123 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines ..... 287
5.124 A Summary of Different Types of Phrase Frames in the Stance Phrase Frames ..... 289
5.125 A Summary of Frequency of Phrase frames in Epistemic in the Two Sub-disciplines ..... 289

# LIST OF TABLES (Cont.)

**Table** **Page**

5.126 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines ..... 290
5.127 A Summary of Different Types of Phrase Frames in the Discourse Organizing Phrase Frames ..... 291
5.128 A Summary of Frequency of Phrase frames in Topic elaboration in the Two Sub-disciplines ..... 291
5.129 A Summary of Number of Fillers in Topic elaboration in the Two Sub-disciplines ..... 292
5.130 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines ..... 293
5.131 A Summary of Number of Fillers in Discourse markers in the Two Sub-disciplines ..... 293
6.1 Below Presents Similarities and Differences of Move-step Structure between the Two Sub-disciplines in the Current Study ..... 295
6.2 A Summary of Similar Phrase Frames in the Introduction Section between the Two Sub-disciplines ..... 302
6.3 A Summary of Similar Phrase Frames in the Methods Section between the Two Sub-disciplines ..... 303
6.4 A Summary of Similar Phrase Frames in the Results Section between the Two Sub-disciplines ..... 305
6.5 A Summary of Similar Phrase Frames in the Discussion Section between the Two Sub-disciplines ..... 307
6.6 A Summary of Phrase Frames in the English OMS Introduction Section ..... 309
6.7 A Summary of Phrase Frames in the English ODO Introduction Section ..... 311
6.8 A Summary of Phrase Frames in the English OMS Methods Section ..... 314
6.9 A Summary of Phrase Frames in the English ODO Methods Section ..... 316
6.10 A Summary of Phrase Frames in the English OMS Results Section ..... 319
6.11 A Summary of Phrase Frames in the English ODO Results Section ..... 323
6.12 A Summary of Phrase Frames in the English OMS Discussion Section ..... 327
6.13 A Summary of Phrase Frames in the English ODO Discussion Section ..... 332
6.14 A Summary of Phrase Frames in the English OMS Conclusion Section ..... 336
6.15 A Summary of Phrase Frames in the English ODO Conclusion Section ..... 337
7.1 The Proposed Framework of RA Sections in the Two Sub-disciplines of Dentistry ..... 342
7.2 Phrase Frames Types in the Structural and Functional Categories ..... 344
7.3 Findings on a Contrastive Analysis of Moves and Steps and Phrase Frame of the Whole English RA Sections in the Two Sub-disciplines of Dentistry .. 345

# LIST OF FIGURES

**Figure** **Page**

1.1 A Summary of Classification of English as a Foreign Language Teaching and Learning ..... 3
2.1 A Summary of Analysis of Macrostructure and Microstructure of the Current Study ..... 30
2.2 A Summary of Previous Studies in the Whole RA and Individual Sections of RA ..... 32
2.3 The Structural Analysis of Phrase Frames by Gray and Biber (2013, p.122) ..... 53
2.4 The Functional Analysis of Phrase Frames by Hyland (2008, p.13-19) ..... 54
2.5 The Functional Analysis of Phrase Frames by Simpson-Vlach and Ellis (2010, p.498-502) ..... 56
2.6 A Summary of Previous Studies in Phrase Frames in RA Sections ..... 57
2.7 The Conceptual Framework of the Analysis of Move-step Structure and Phrase Frames between the two sub-disciplines ..... 70
3.1 Research Design Flowchart of the Present Study ..... 74
3.2 The Screenshot of ClinicalKey to Access the Research Articles in Science Direct ..... 78
3.3 The Screenshot of the EBSCOhost Registered by the Researcher's University ..... 79
3.4 A Summary of Procedure to Select Journals in the Current Study ..... 80
3.5 A Summary of Procedure to Select RAs in the Current Study ..... 82
3.6 A Summary of Procedure to Generate the List of Phrase Frames by Lu et al. (2018) ..... 103
5.1 Distribution of Phrase Frames in the Structural Categories in the English Dentistry RA Introdu ction Sections ..... 159
5.2 Distribution of Phrase Frames in the Functional Categories in the English Dentistry RA Methods Sections ..... 166
5.3 Distribution of Phrase Frames in the Structural Categories in the English Dentistry RA Methods Sections ..... 179
5.4 Distribution of Phrase Frames in the Functional Categories in the English Dentistry RA Methods Sections ..... 189
5.5 Distribution of Phrase Frames in the English Dentistry RA Results Sections from the Structural Categories ..... 207
5.6 Distribution of Phrase Frames in the Functional Categories in the English Dentistry RA Results Sections ..... 219

# LIST OF FIGURES (Cont.)

**Figure** **Page**

5.7 Distribution of Phrase Frames in the Structural Categories in the English Dentistry RA Discussion Sections ..... 239
5.8 Distribution of Phrase Frames in the Functional Categories in the English Dentistry RA Discussion Sections ..... 252
5.9 Distribution of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Structural Categories ..... 274
5.10 Distribution of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Functional Categories ..... 281

มหาวิทยาลัยเทคโนโลยีสุรนารี

# LIST OF ABBREVIATIONS

| | |
|---|---|
| AJODO | American Journal of Orthodontics and Dentofacial Orthopedics |
| A&HCI | Arts & Humanities Citation Index |
| EAP | English for Academic Purposes |
| EJO | European Journal of Orthodontics |
| ECFMG | Educational Commission for Foreign Medical Graduates |
| EDP | English for Dentistry Purposes |
| EOP | English for Occupational Purposes |
| EPP | English for Professional Purposes |
| ERPP | English for Research Publication Purposes |
| ESP | English for Specific Purposes |
| ESCI | Emerging Sources Citation Index |
| EVP | English for Vocational Purposes |
| IJOMI | International Journal of Oral and Maxillofacial Implants |
| IJOMS | International Journal of Oral and Maxillofacial Surgery |
| JCMS | Journal of Cranio-Maxillofacial Surgery |
| OMS | Oral and Maxillofacial Surgery |
| ODO | Orthodontics and Dentofacial Orthopedics |
| PFs | Phrase frames |
| PO | Progress in Orthodontics |
| RA | Research Article |
| SCIE | Science Citation Index Expanded |

มหาวิทยาลัยเทคโนโลยีสุรนารี

# CHAPTER 1
# INTRODUCTION

As the first chapter of the dissertation, it provides an introduction of the current research on genre-based analysis of the moves, steps, and their structure and corresponding phrase frames of English research articles as well as a sub-disciplinary contrastive analysis between Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics of Dentistry. It consists of seven sections. The first section explores the context of English for international publication, the group of Health Sciences, and the field of Dentistry. The second section presents the challenges in writing English research articles for international publication, the challenges in international publications in Dentistry, and the needs analysis. The third section describes the rationale of the current research based on the move-step structure and phrase frames. The fourth and the fifth sections present the research purposes and research questions, respectively. The theoretical and pedagogical implications of the study are presented in the sixth section while the scope and limitation of the current study are in the seventh section. What concludes this chapter is the working definitions of key terms in the present study.

## 1.1 Research Background

### 1.1.1 English as a Foreign Language Teaching and Learning

Among a great number of official languages spoken with their local variations, English has become an international language in different parts of the world (Phoocharoensil, 2012; Ilyosovna, 2020). Besides, the trend of English for Research Publication Purposes (ERPP) has been predominant in the context of teaching and learning practice, international conferences, and other academic events with an increasing number of publishing houses and scholars around the world (Lillis & Curry, 2010). According to Flowerdew (2012), there are three major elements that lead to the English publishing matter, i.e., the increasing growth of higher institutions, the internationalization of research, and the dominant role of English language in scientific research dissertations.

According to Hutchinson and Waters (1987), the study of English teaching and learning practice includes English for General Purposes (EGP) and English for

Specific Purposes (ESP). In ESP, there are two main branches; i.e., English for Academic Purposes (EAP) and English for Occupational Purposes (EOP).

Firstly, Flowerdew and Peacock (2001) define EAP as the concentration on teaching English to students and researchers in academic circumstances. There are two large domains, i.e., needs analysis and materials development, in the concentration on EAP (Hamp-Lyons, 2011). Needs analysis consists of the curriculum design, textbook development, learning outcomes and students' achievement (Munby, 1978; Bridgeman & Carlson, 1983). Materials development includes the study and practice of developing materials about study skills to increase students' language proficiency and cultural knowledge (Cooley & Lewkowitz, 2003; Hamp-Lyons, 2011).

Secondly, Koester (2012) defines EOP as a specialized branch of English language learning that focuses on developing the language skills needed for specific job roles or industries. According to Dudley-Evans and St John (1998), the study of EOP can be classified into English for Professional Purposes (EPP) and English for Vocational Purposes (EVP). In EPP, the study of English in the disciplines of Health Sciences has become throwing rapidly in the past two decades, which assists non-native healthcare professionals to improve English language skills and healthcare communication between doctors and patients (Ferguson, 2011; Otngam & Jeanjaroonsri, 2022). This literature is based on three methodologies, i.e., conversation analysis, micro-ethnography, interactional sociolinguistics, to enhance the in-depth knowledge in healthcare communication and clinical practice. Especially, the study of English for Dentistry Purposes (EDP) has become well-noticed to enhance English language teaching and learning in the field of Dentistry (Lasekan et al., 2022; Khazaie & Derakhshan, 2024).

Figure 1.1 illustrates a classification of English as a foreign language teaching and learning based on the studies of Hutchinson and Waters (1987), and Dudley-Evans and St John (1998). In this figure, a new term *English for Dentistry Purposes* (EDP) is presented, which is reported by Lasekan et al. (2022) to show the need for English for Dentistry courses in a Chilean university context and later used by Khazaie and Derakhshan (2024) in their studies about the importance of English for Dentistry in Arab, Pakistani, Indian, and Iranian university students.

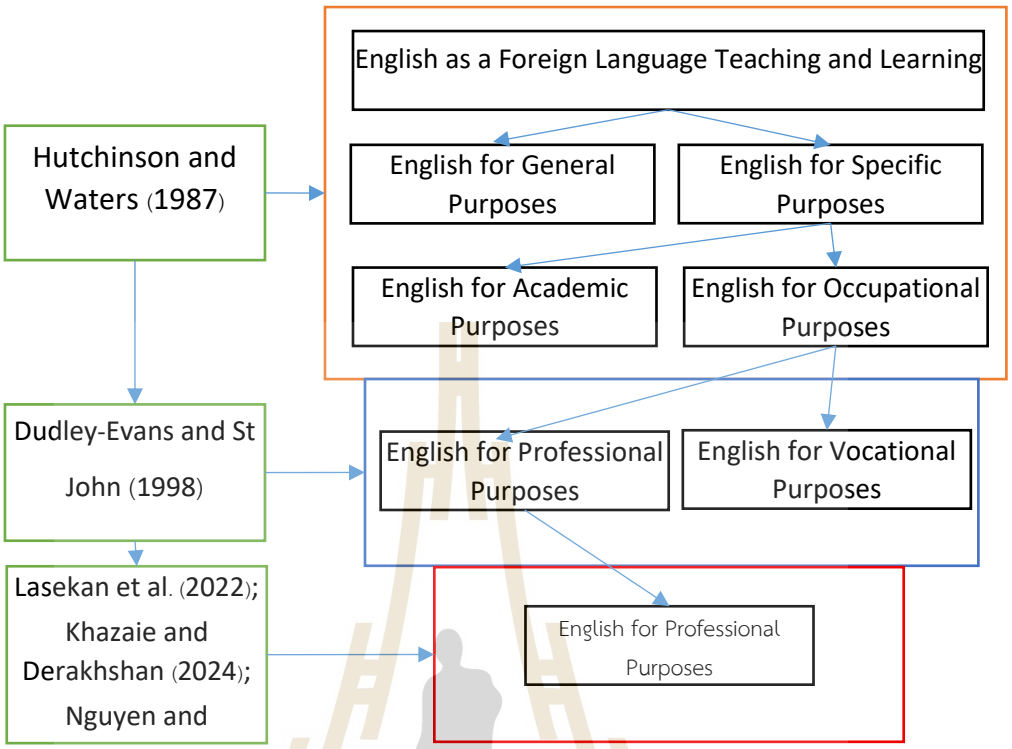



**Figure 1.1 A Summary of Classification of English as a Foreign Language Teaching and Learning**

More details about English for Dentistry Purposes will be reported in 2.3 English for Dentistry Purposes and Dentistry Discourse of Chapter 2.

### 1.1.2 Health Sciences and Dentistry

Health Sciences have been extremely important in the development of a country. According to Nguyen (2022), compared to the other countries with the same GDP, the index of Viet Nam health enhancement has been improved in the average age of Vietnamese people (from 53.5 in 1957 to 73.7 in 2021). Besides, the index of healthcare coverage has obtained 70/100, higher than the average of ASEAN countries (61 points) and the whole world (67 points). During the COVID-19 pandemic, a lot of efforts have been made to enhance the health standards of human beings. Therefore, the development of Health Sciences functions as a fundamental foundation of Viet Nam.

In Health Sciences, Vietnamese students are required to choose one of the two pathways from two Ministries to pursue their education after high school, and it takes students from 6 to 9 years to finish their study. Ministry of Education and Training (MOET) offers the bachelor's degree of Doctor in Medicine, Dental Surgery, and Traditional Medicine, as well as the degree of Pharmacist in Pharmacy for

undergraduate students. After receiving this degree, students can apply for a U.S residence program approved and recognized by Educational Commission for Foreign Medical Graduates (ECFMG) and the U.S Department of Education. Besides, Ministry of Health (MOH) also offers the postgraduate degree of residency, first-degree specialties and second-degree specialties for students who major in Medicine, Dental Dentistry, Traditional Medicine, and Pharmacy. After completing their undergraduate programs, graduates in these majors are offered two pathways.

In terms of the degree issued by MOET, there are some postgraduate courses in each discipline, e.g., Periodontics, Prosthodontics... in Dentistry. After completing the required courses, students are awarded the degree of Master of Science and Doctor of Philosophy in each specialization of a discipline. First-degree specialists can study some more required courses to get a degree of Master of Science and second-degree specialists can study more courses to obtain a degree of Doctor of Philosophy.

In terms of the degree issued by MOH, students with a high academic achievement are qualified to study the residency program since it offers to the limited number of outstanding students to study for 2-3 years. Besides, students can study the first-degree specialties and work in different departments in the local and national hospitals. Moreover, students can also study the second-degree specialties that are available for those who have already finished the first-degree specialties. First-degree and second-degree specialists can serve as visiting instructors to teach students in the preclinical and clinical courses.

Taken together, these two pathways, recognized by MOET and MOH, are nationally licensed in some registered and qualified higher institutions across the country. Additionally, there are some other CME courses, which become the preliminary criteria for doctors, pharmacists and students. They are also required to have another 18-month internship before their professional careers.

Dentistry has been one of the major disciplines in the group of Health Sciences besides Medicine, Pharmacy, Traditional Medicine, Nursing, Public Health, and others (Smesny et al., 2007; Frodeman et al., 2017; Chaudron et al., 2021; Hosek, et al., 2022; Piano et al., 2023). From the very early time, Medicine and Dentistry are combined for medical diagnosis, examination and treatment (Hussain & Khan, 2014). Hippocrates is recognized as the Father of Medicine since he has significantly contributed to the primitive knowledge about disease treatment while Hesy-Ra is the Father of Dentistry, the very first physician who dealt with teeth examination and treatment. The first case of dental diseases appears in the Sumerian text which is

called “tooth worm” or “tooth decay”. According to the Dentist Act (1948) by Dental Council of India, Dentistry is defined as follows:

> 1. The performance of any operation on and the treatment on any disease, deficiency or lesion of the human teeth or jaws and the performance of radiography or in connection with human teeth or jaws or the oral cavity;
> 2. The giving of any anesthetic in connection with any such operation or treatment;
> 3. The mechanical construction or the renewal of artificial dentures, or restorative dental appliances;
> 4. The performance of any operation on, or the giving of any treatment, advice or attendance to any person preparatory to or for the purpose of, or in connection with the fitting, inserting, fixing, constructing, repairing or renewing of artificial dentures or restoratives dental appliances and the performance of any such operation and the giving of any such treatment, advice or attendance, as is usually performed or given by dentists.
>
> (p.6)

According to Hussain and Khan (2014), there are some major milestones during the development of Dentistry. In the period of antiquity, dental diseases and jaws were examined and treated without any services by doctors of dental surgery (DDS). In the Egyptian period, phostophori, or sacerdotal caste was the main physician who examined and treated Medicine and Dentistry-related symptoms. In the ancient Chinese period, ya-tongy was utilized to refer to the origins of tooth decay. The dental practitioners used aromatic powdered leaves to examine and treat the patients. In the Greek, Romans and Etruscans period, Esculapius was the first dental physician to invent the purgatives and teeth extraction. After this period, Dentistry was transformed into a new chapter in the Middle Ages and it was Abu Bekr Zacarjaer Rhazi who voiced his idea about teeth treatment and examination. In the $13^{th}$-$15^{th}$ century, a group of barbers was assigned to perform dental treatment and examination after the edicts by the King in France. In the $16^{th}$-$18^{th}$ century, Dentistry was widely recognized with other disciplines in hard and soft sciences and a lot of great achievements were witnessed in this period.

The discipline of Dentistry possesses some differences from Medicine or other disciplines in the group of Health Sciences since Dentistry deals with a different concentration with a long historical development (Chaudron et al., 2021; Piano et al., 2023). According to the U.S National Commission on Recognition of Dental Specialties and Certifying Boards - NCRDSCB (2018), Dentistry consists of 12 specialties, i.e., Dental Anesthesiology, Dental Public Health, Endodontics, Oral and Maxillofacial Pathology, Oral and Maxillofacial Radiology, Oral and Maxillofacial Surgery, Oral Medicine,

Orofacial Pain, Orthodontics and Dentofacial Orthopedics, Pediatric Dentistry, Periodontics, and Prosthodontics

In the next section, the challenges in writing English research articles for international publication, the challenges in international publications in Dentistry, and the needs analysis will be presented.

## 1.2 Statements of Problems

### 1.2.1 Challenges in Writing English Research Articles for International Publication

There are three important reasons for authors to make a lot of effort to write manuscripts in English for international publishers (Myers, 1990). Firstly, research articles in English have been persuasive evidence to make their claims more important and popular in that discourse community. Once their RAs are accepted by the scholars and researchers for publishing, the authors' reputations are getting recognized nationwide and worldwide. Secondly, the research articles in English are also utilized for research funding in the universities or any other international organizations. Finally, despite the various findings from scientific research, English, the lingua franca of scholarly communication, has been stable and predominant as the publishing language (Liu et al., 2018; Aksnes & Sivertsen, 2019; Liu et al., 2020; Lopez-Belmonte, 2023).

In the literature, Scopus and Web of Science are two of the most widely recognized databases in the academic and research communities. Both platforms provide comprehensive coverage of scholarly literature across various disciplines, allowing researchers to track citations, analyze trends, and discover relevant publications. Scopus, known for its user-friendly interface and broad scope, includes millions of articles from diverse fields, while Web of Science is esteemed for its rigorous indexing and impact factor metrics. Together, these databases serve as invaluable tools for academics, enabling them to evaluate research performance and stay updated with the latest developments in their fields.

In terms of the database of Web of Science operated by Clarivate Analytics, a study by Liu et al. (2020) investigates the publishing language in 17.8 million records within the database of Science Citation Index Expanded (SCIE) from 2009-2018 and in 1.2 million records within SSCI database from 2015-2018 and shows that that over 95% of articles utilize English as the universal language for publication. For the funding reporting rates in the given years of the two databases, the results also report nearly 100% of articles receiving the funding are also in English. The data from the Arts & Humanities Citation Index (A&HCI) in 2017-2018 with more than 233000 records from

ESCI in 2015-2018 with more than 1.2 million records present just approximately 76% of articles are in English and 97% of articles received funding in records of the Emerging Sources Citation Index (ESCI). Hence, English research articles are undoubtedly crucial to deepen professional knowledge and serve as convincing evidence to show author's ability for further academic success.

However, writing RAs for international publication is challenging for authors, especially for non-native speakers. It is well-acknowledged that non-native English-speaking authors confront with the problems of writing for publication since writing proficiency has been one of the requirements to determine the acceptance of a manuscript in a journal and, furthermore, the success of a scholar in the academic community (Flowerdew, 1999a; Flowerdew, 1999b; Flowerdew, 2000; Uzuner, 2008; Flowerdew & Li, 2009; Huang; 2010; Jaroongkhongdach et al., 2012; Luo & Hyland, 2016; Chien, 2019). To be more specific, taking a scenario of Viet Nam as an example, the publications by Vietnamese authors or contributors have been increasing over the years. However, the number of English RAs has been still limited since the major problems are from the English academic writing ability, including the insufficient supporting ideas, confusing cohesion and coherence to address the main points, and mistakes in structures and word choice. Vietnamese authors are inadequate with the language writing competence when they write RAs for publications.

In academic writing, textual organization, the main concentration of the present study, has been identified as one of the ten areas as problems for non-native authors in writing for international publication, which is caused by the shortage of specialized knowledge about the conventional structures of research articles (Flowerdew, 1999a; Willey & Tanimoto, 2015; Luo & Hyland, 2016). A solution by Flowerdew (1999a) is to utilize the implicit knowledge of "move" structure in the key parts in a research article. In another study by Flowerdew (1999b), eight types of difficulties are addressed in writing for international publication. The results from this study also reports that the Introduction, Literature Review, Discussion, Conclusion sections are the four difficult parts to write because their styles of writing should be persuasive that the individual voice of authors need to address carefully. The authors must persuade the audience how significant the studies and the arguments currently discussed are. The Methodology and Results are less difficult than the other parts of the research articles since they just require conventionalized and formulaic style of writing. Therefore, a certain level of generic ability and discoursal knowledge should be achieved to get the RAs accepted in the discourse community. Conventional rhetorical structures in the specialized discipline are also important compared to the

other factors, including lexical, syntactical, and grammar knowledge (Swales, 2004). Language criteria have also been another factor in writing scholarly articles since the adequate knowledge of rhetorical structures is crucial in order to disseminate the disciplinary knowledge through research articles, which is the target genre of the present study.

As non-native authors, they deal with more difficult problems to write a manuscript in English such as the rhetorical structure and linguistic features that are suitable to report discipline-specific content. Take doctors who work as instructors in the researcher's university as an example. On the one hand, it takes them from 6 to 9 years in the university to obtain preliminary knowledge, the other two or three years to study one specialization, 18 months to practice, and some CME courses to deepen their understanding in a sub-discipline (Montegut et al., 2007; Hoat et al., 2007; Takashima et al., 2017; Giang et al., 2022). Hence, they are qualified with professional knowledge and experienced enough for medical diagnosis, examination and treatment. On the other hand, a study by Raffing et al. (2021) on the difficulties of doctors when writing a manuscript for international publication highlights some emerging causes, including inadequate research training, shortage of time of writing and submission, insufficient capacity of English language proficiency, and barriers to start writing. Similar findings are also reported in the studies of Sprague et al. (2003), Pololi et al. (2004), Nasef et al. (2011), Baufreton et al. (2012), Binderup et al. (2012), and Duracinsky et al. (2017). Especially, these studies show that lack of available resources in the rhetorical structure in the discourse community and the discipline variation has been identified as one of the substantial reasons that make doctors difficult to write English manuscripts for publications (Shah et al., 2009).

In addition, examining the phrase frames beside the move analysis is also important to improve the academic writing for publications. For example, scholars can use the phrase frame *literature on the * of* with its fillers, e.g., *measurement, value, effect, rise, working*, to write manuscripts in social science disciplines (Lu et al., 2021a). Previous studies also mention some scholars on the investigation about phrase frames. Sinclair (1991, p.100) mentions about the Idiom Principle to refer the *language as phraseology* and "a language user has available to him or her a large number of semi-preconstructed phrases that constitute single choices, even though they might appear to be analyzable into segments". Indeed, language as phraseology, specifically a phrase frame, has been widely recognized with an increasing number of publications for over two decades (Hunston, 2002). As such, the fundamental units of meaning are considered as phrases (Lu et al., 2020). Back to history, a need of teaching

conventionalized sequences is primarily recognized from 1930s. In corpus linguistics, the formulaic sequences are essential in storing, processing, acquiring and utilizing language (Hunston, 2002). It is also well-acknowledged that the categories of multi-word phrases appear in particular categories of language modalities, registers and genres (Hyland, 2008, Simpson-Vlach & Ellis, 2010). Besides, Simpson-Vlach and Ellis (2010) carry out a study on academic formulas list which differentiates the academic spoken and written language. This list is also categorized based on the important pragmatic function in EAP instructions. The results show that the phrase frames are much utilized, which contrasts to Hyland (2008)'s claims about not having many phrase frames in academic writing and, furthermore, contribute to the discipline-specific pedagogical approach. Moreover, Martinez and Schmitt (2012) conduct a study on phrase frames in Applied Linguistics and find a list of 505 phrase frames that are useful resources for teaching, learning and research. Therefore, the current study is designed to explore the phrase frames in different RA sections and the sub-disciplinary contrastive variations between two sub-disciplines of Dentistry, i.e., Oral and Maxillofacial Surgery and Oral and Maxillofacial Surgery.

**1.2.2 Challenges in International Publication in Dentistry**

Research articles have been recognized as a communication form and an important channel for constructing authors' identity in the discourse community. The research articles in each discipline have their own move-step features and phrase frames, so it is important to examine conventional structures in each research article section in order to arrive at the target framework. Hence, there is obviously a need for investigating move-step structure and phrase frames.

Previous studies show the scant research on move-step structures in the research articles in the discipline of Dentistry. As the distinctive characteristics of each discipline, scholars have conducted some studies about move-step structure and phrase frames to realize the disciplinary features. For example, Alsyousef (2021) carries out a move analysis in RA Abstracts in Dentistry to investigate the disciplinary similarities and differences within 8 sub-disciplines of Dentistry, i.e., Oral Sciences, Periodontics, Restorative Dentistry, Endodontics, Operative Dentistry, Prosthodontics, Oral and Maxillofacial Surgery, and Orthodontics. The results show the conventional and optional moves and steps in each sub-discipline of Dentistry that novice DDS authors can utilize to compose their RA Abstracts for international publications in prestigious journals. Basturkmen's (2012) investigation on the move analysis of RA Discussion sections in Dentistry finds the typical moves, steps, and their structure that serve as useful resources in disciplinary research writing. Vathanalaoha and

Tangkiengsirisin (2018a) explores the move-step structure of RA Abstracts in Thai and international journals. A total of 120 Abstracts are compiled from the high-impacted journals based on the framework of Kanoksilapatham (2013). The results showed that Move B was not found in the Thai RA Abstracts while the other moves were comparatively similar. Besides, there was a high occurrence of B-P-M-R-D in international journals while the P-M-R-D structure was popular in Thai journals. The study provides an insight for understanding the structure of RA Abstracts in Dentistry and a useful resource to research writing practice. However, the rhetorical structure in the whole RA sections of Dentistry and its sub-disciplinary variations have not been investigated by any previous studies.

In addition, previous studies also identify a number of common phrase frames in different RA sections in different disciplines. Cunningham (2017) investigates phrase frames in RA Abstracts in Mathematics and finds a list of 180 phrase frames based on the frequency per million words and the sMAPE. This study provides key phrase frames for mathematical RA writing and for understanding the disciplinary texts. Golparvar and Barabadi (2020) carry out a study on phrase frames in the whole RAs in Education and find a list of 58 four-word and 40 five-word frames utilized in the field. The study provides an insight to the existing literature and contributes to the teaching purposes. Lu et al. (2018) explore the phrase frames in the whole RAs in 6 disciplines, i.e., Anthropology, Sociology, Psychology, Economics, Applied Linguistics, and Political Science. The results show the five- and six-word phrase frames in the structural and functional categories. This study helps students and instructors to improve their academic writing and also serves as a useful resource for teaching and learning purposes. The studies of Lu et al. (2021a) with 5 disciplines and Lu et al. (2021b) with 6 disciplines are conducted to investigate the rhetorical structure and phrase frames in the RA Introductions. The results show 3 types of phrase frames, i.e., specialized, semi-specialized, and non-specialized, which show significant contributions to the teaching and learning practice in academic contexts. However, little is known about the rhetorical structure and phrase frames in the Health Sciences, especially in the field of Dentistry, which is the major focus of the current study.

There are 3 research gaps which lead to the decision to conduct the current study. In terms of the investigation of move-step structure, previous studies have been conducted on the whole RA and different RA sections (Yang & Allison, 2003; Kanoksilapatham, 2005; Lim, 2006; Basturkmen, 2012; Gao & Pramoolsook, 2023). However, in the field of Dentistry, only one study examines move-step structure of the RA Discussion section and no study identifies move-step structure on the whole RA in

Dentistry, which illustrates scant attention on this underexplored discipline. With reference to the exploration of phrase frames, previous studies have investigated in the RA Introduction and Discussion sections (Cunningham, 2017; Lu et al. (2018, 2021a, 2021b; Golparvar and Barabadi, 2020; Wu et al., 2024). However, only RA Abstract, Introduction, and Discussion sections have been investigated, and phrase frames in the whole RA sections are understudied. Besides, Dentistry has not been a subject of investigation. Therefore, these previous studies show that, among the research on phrase frames, the majority have concentrated on phrase frames in RA Introduction and Discussion sections, with none on phrase frames throughout the whole research article. In addition, previous studies have investigated move-step structure of specific research article sections in the two sub-disciplines within a single discipline (Samraj, 2005; Ozturk, 2007; Shooshtari & Jalilifar, 2012; Li & Pramoolsook, 2015; Pramoolsook et al., 2015). However, the investigation of sub-disciplinary variations in move-step structure and phrase frames of the whole research articles between the two sub-disciplines of Dentistry is still not found in the existing literature.

To the best of the researcher's knowledge, there are two important conclusions for move-step structure and phrase frames of research articles in Dentistry to be examined. Firstly, while many previously published studies investigated the structure of moves and their subsequent steps of research article sections in various fields, there are rarely few in the discipline of Dentistry, let alone contrastive analysis of research articles between sub-disciplines in Dentistry. Secondly, previous studies have been conducted on the study of phrase frames of research articles in some fields, but phrase frames in the whole RA in Dentistry has received scant attention. These two reasons cause the lack of useful resources to support DDS authors in writing manuscripts for international publications.

**1.2.3 National Requirements of Research and Publication**

It is essential for ensuring that the current study is relevant, focused, and impactful, so this part aims to identify real-world problems, justifies the need for the study, and enhances the overall quality and applicability of the study. In the context of Viet Nam, since the 6th National Congress of the Communist Party of Viet Nam, important decisions have been made in the research and publication for the development of the whole country, and health reforms, specifically in Dentistry, are also one of these innovations. Vietnamese People Protection Act by National Assembly and the National strategies of protecting, caring, and enhancing health quality of Vietnamese people from 2011-2020 and the vision to 2030 by Prime Minister of Viet Nam have stated that scientific research and publication are the target purposes to

enhance the Viet Nam healthcare quality and services. The Resolution No. 20-NQ/TW by Central Committee of Communist Party of Viet Nam mentions the necessity of research and publications in Dentistry and other disciplines in Health Sciences for new treatments and examination in the modern society. National campaigns like Science and Technology Development programs are annually held to encourage healthcare professionals for more publications in Dentistry and other disciplines in Health Sciences as stated in the Decision No. 45/2020/TT-BGDDT by MOET. Key universities in Health Sciences from different parts of Viet Nam have conducted academic activities to promote healthcare professionals to have more publications in the field. Especially, English RAs have been highly encouraged to be published among the doctors, pharmacists, nurses in the Vietnamese context, and even among those who want to improve medical diagnosis, examination and treatment quality or pursue higher education degrees in Health Sciences as stated Decision No. 42/QĐHĐGSNN by the State Council for Professorship of Viet Nam.

Since English plays an integral part of accessing the current knowledge of the world in Health Sciences, MOET and MOH have promoted the use of the English language for publishing RAs among healthcare professionals due to the limited number in the English publications, which are listed in the National strategies of protecting, caring, and enhancing health of Vietnamese people from 2011-2020 and the vision to 2030 by Prime Minister of Viet Nam and the Resolution No. 20-NQ/TW dated 01/11/2012 by Central Committee of Communist Party of Viet Nam. The journals that publish English research articles have more priorities and sponsors from the local and central authorities. For example, Journal of Medical Pharmaceutical Research (MedPharmRes) is one of the a few pioneers that publish English manuscripts in the disciplines of Health Sciences in Viet Nam. The journal charges no publication fee for all English RAs, granted by Ministry of Information and Communication in the Decision No.121a/GP-BTTTT, given the ISSN number (2615-9139) by Ministry of Science and Technology dated 01/02/2018, and indexed in ISI PubMed (IF>2).

According to a list of 104 Vietnamese journals that include Dentistry as part of the journal scope, English and Vietnamese have been considered as the target languages to write manuscripts. However, most of the articles in each volume are in Vietnamese language since writing English manuscripts requires researchers to have a good command of the English language, writing styles with conventional structures, and professional knowledge in each discipline. Besides, the Thai university where the researcher is currently carrying out the current study also has the same situation with the limited number of the English RAs in Dentistry.

Taken together, in spite of huge supports from the central government, the RAs in the field of Dentistry are still limited. Besides, most research articles in the Dentistry journals in Viet Nam are still written in Vietnamese. The next section will describe the rationale of the current research based on the move-step structure and phrase frames as well as the contrastive analysis between two sub-disciplines in Dentistry.

## 1.3 Rationale of the Study

### 1.3.1 Theoretical Gaps

In the global trend of publications in Dentistry, an increasing number of RAs have been published over the past two decades of the 21st century in Dentistry (Alam et al., 2021). The findings from this study show that the United States receive the biggest link strength of research and publications, as well as the highest number of citations in the RAs in Dentistry more than any other countries. Moreover, the number of publications in the English language has been increasing over the years in the Scopus-indexed journals, and the annual publications in this discipline are also in an upward trend (Pham et al., 2022). This study also shows that the number of publications in Dentistry has been much lower than the global standard (3.2/11.71%), which causes the high demand of international publication in the field.

In the current status of Dentistry and the publishing language in the RAs in the field, Health sector has been gradually well-noticed in recent years, but scant attention has been paid on the publications about effective oral care strategies in the Vietnamese context (Chuyen, 2021). Hence, more research about the new solutions for the current issues in Dentistry in Viet Nam should be conducted since a large number of Vietnamese people still suffer with oral health symptoms (Nguyen et al., 2010). Besides, in Viet Nam, numerous published RAs in Dentistry are still written in Vietnamese although the Vietnamese journals encourage authors to write the manuscripts in English. For example, a survey carried out by the researcher showed that the publications in Dentistry in the researcher's institution were in Vietnamese with the English translated abstracts. Healthcare professionals have made a lot of efforts, but they still struggle to write high quality manuscripts in English for submitting to the specialized journals and the number of English RAs has been still limited. This fact also calls for an urgent need to promote the use of English in writing scientific research in Dentistry.

In recent years, more policies in Viet Nam have been introduced to enhance the activities of scientific research, especially in Dentistry, across the country. MOET

have encouraged instructors and students to carry out scientific research as stated in the Decision No. 08/2000/QĐ-BGD&ĐT dated from 30/03/2000 by MOET. Take a university where the researcher is currently working as an example. As a state higher institution, VNU-HCM School of Medicine is assigned by MOET, MOH, and University Governors to become a research university which promotes instructors in Dentistry to conduct their scientific research.

For the operation and development of VNU-HCM Journal of Health Sciences. The findings from the current study can assist the editors and reviewers to have a usefully proven guideline to examine the manuscript quality in the peer-review process in the VNU-HCM Journal of Health Sciences. This journal is a sub-journal of Science and Technology Development Journal (ISSN: 2734-9446) of Viet Nam National University, Ho Chi Minh City, which has just been launched since 2020. This journal aims to publish research articles in Dentistry and other disciplines in Health Sciences. The target authors are from DDS doctors and other healthcare professionals. The articles in this journal serve as a bridge to connect theoretical background and its applications for further healthcare development in the context of Viet Nam. In the future, the journal aims to publish English research articles in Dentistry. What is more, the other Vietnamese journals in Health Sciences are also in the same scenario as the VNU-HCM Journal of Health Sciences, so it is the researcher's purpose to disseminate the useful findings from the current study about moves, steps, and corresponding phrase-frames as well as the sub-disciplinary variations of English RAs in Dentistry, to assist the peer-review process in other journals in the group of Health Sciences in Viet Nam.

Compared to the large number of investigations in other disciplines, scant attention, to be illustrated in 2.2 Research Article as a Genre of Chapter 2, has been paid on the investigation of move-step structure of the English research articles, especially the whole research articles in Dentistry (Basturkmen, 2012; Alsyousef, 2021). The reasons for the limitation are from the lack of inadequate research training, shortage of time for writing and submission, insufficient capacity of English language proficiency, and barriers to start writing as mentioned in the studies of Sprague et al., 2003; Pololi et al., 2004; Nasef et al., 2011; Baufreton et al., 2012; Binderup et al., 2012; and Duracinsky et al., 2017. Shah et al. (2009) mention that the lack of available resources is another cause for the inadequately investigated field. Previous studies also show that only certain parts of research articles have been investigated, including Abstracts (Alsyousef, 2021) and the Discussion section (Basturkmen, 2012). Hence, this

confirms that the whole English research article in Dentistry is still understudied, which is the major focus of the current study.

Only some studies, to be presented in 2.4 Phrase frames of Chapter 2, investigate phrase frames in research article sections, including Abstracts in Mathematics (Cunmingham (2017), Introductions in Anthropology, Sociology, Psychology, Economics, Applied Linguistics, and Political Science (Lu et al., 2018, 2021a, 2021b); and Discussions in Education (Golparvar & Barabadi, 2020). Hence, these previous studies show that, among the research on phrase frames, the majority have concentrated on phrase frames in a research article section, with none on phrase frames throughout the whole research article.

Previous studies have been conducted to investigate sub-disciplinary variations on the rhetorical patterns of the research articles in Wildlife Behavior and Conservation Biology of Environmental Sciences (Samraj, 2005); Second Language Acquisition and Second Language Writing Research in Applied Linguistics (Ozturk, 2007); ESP and English for General Purposes (EGP) in Applied Linguistics (Shooshtari & Jalilifar, 2012); Management and Marketing in Business (Li & Pramoolsook, 2015; Pramoolsook et al., 2015). However, the sub-disciplinary variations in move-step structure and phrase frames in the whole English RAs in Dentistry, to the best of the researcher's knowledge, are still unexplored.

**1.3.2 Pedagogical Gaps**

The current study is the researcher's efforts to improve his current working environment. His colleagues, e.g., Doctors of Dental Surgery, struggle to write English manuscripts for publications since writing manuscripts in English requires both specialized knowledge in Dentistry and in-depth understanding in academic writing in English language. Their academic writing level has not been high enough to compose well-written manuscripts to meet the requirements of high-ranking journals, so it is necessary to have more insightful guidance about moves, steps, and corresponding phrase-frames as well as the sub-disciplinary variations in the field of Dentistry. A well-written manuscript in Dentistry should follow the requirements of language uses and specialized knowledge in each RA section. Besides, it is also the researcher's purpose to provide a useful resource in terms of move-step structure and phrase frames of English research articles to support other healthcare professionals in other Vietnamese universities in the group of Health Sciences for international publications. Research and publication have become more important in the Vietnamese context nowadays.

In terms of the requirement of publishing RAs that students are required to conduct before graduation in the researcher's university. Having at least one published

article has been one of prerequisites for doctors in graduate courses or residency programs before graduation. As the Doctors of Dental Surgery, they can utilize the results from the current research to improve their linguistic knowledge about how to utilize the moves, steps, and corresponding phrase frames, as well as the sub-disciplinary variations in the two sub-disciplines and apply them to their research writing for international publications. Novice researchers, e.g., DDS graduate students, really need these specialized learning resources for further writing improvement. The findings are also useful for DDS students in other Vietnamese higher institutions in the groups of Health Sciences.

**1.3.3 Contextual Gaps**

It important to investigate the two sub-disciplines in the field of Dentistry. The two chosen sub-disciplines for conducting this current study have been identified as potentials in terms of disciplinary growth. Oral and Maxillofacial Surgery is extremely important to investigate so that effective solutions are found to treat the traumatic and degenerative diseases which can cause tissue loss (US Department of Health and Human Services, 2007). In the United States, craniomaxillofacial injuries are identified as one of the most challenging treatments since they require specialized practitioners, advanced diagnostic imaging modalities, skilled and professional services, and high-tech instrument (Bell, 2007). Maxillofacial trauma, experienced in the first trauma level centers or hospitals, share the similar challenges in oral and maxillofacial surgery, plastic surgery, and otolaryngology. Most state trauma systems are burdened by lacking of workforce training for new dental surgeons, reimbursement decreases in medical services, the increasing number of uninsured patients, and the increasing specialization (Vanlandingham, 2004). Meanwhile, in the sub-discipline of Orthodontics and Dentofacial Orthopedics, scant attention has been paid on the research of this sub-discipline (Carbonaro et al., 2008). The aims of studies on Orthodontics and Dentofacial Orthopedics treatment are different to other sub-disciplines since studying this sub-discipline is to correct the previously false understandings about theories of examination and treatment from the perspective of Dentistry (O'Brien et al., 1998). Previous studies show that they lack up-to-date theoretical background and clinical practice to the field of Dentistry (Chugh et al., 2013). Little has been known on the measurement of Orthodontics and Dentofacial Orthopedics in Dentistry that helps to locate the planning sites of implant placement of bone healing and evaluate the tooth movement (Chugh et al., 2013).

The current study is aimed to help improve the quality of the teaching pedagogy of Vietnamese instructors, e.g., language teachers and doctors. The results

from the current study can contribute to the teaching practice of two groups of Vietnamese instructors in Dentistry. Group 1 includes the language teachers who consist of the researchers and the other instructors, majoring in TESOL, TEFL, English Language Studies, Applied Linguistics, Education or other relevant specializations and teach target courses in the Dentistry academic program, e.g., English for Dentistry and Scientific Research Writing, in the researcher' university and the other Vietnamese health science universities. Group 2 includes Doctors of Dental Surgery working as instructors and teaching specialized courses that require 100% of English, in the researcher's university and the DDS instructors in other Vietnamese universities in the field of Dentistry. These two groups lack useful teaching resources to compose the lesson plans.

The current researcher, language teachers, and doctors in the researcher's university and other Vietnamese universities in the group of Health Sciences do not have much in-depth knowledge about the moves, steps, and corresponding phrase-frames as well as the sub-disciplinary variations in the two sub-disciplines of Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics of Dentistry, which can be applied in their teaching and working practice. The researcher is currently employed as a full-time faculty member in the Registrar's Office and Department of Foreign Languages, School of Medicine, Viet Nam National University, Ho Chi Minh City. He has also worked as a secretary in the compiling council to open the Dentistry academic program and has hands-on experiences in the context of Dentistry from its first proposal until submission for the MOET and MOH's approval as well as the first enrollment of this undergraduate course in the researcher's university until now. He has also been an instructor, a course designer, a textbook developer of English for Dentistry Purposes and other English for Specific Purposes courses in different academic programs in the group of Health Sciences of VNU-HCM School of Medicine. Moreover, the knowledge from the study also assists the researcher with further tasks in the VNU-HCM Journal of Health Sciences to examine the RA quality in Dentistry before publication. The next section will present the research purposes of the current study.

## 1.4 Research Purposes

The current study is anticipated to investigate the move-step structure and phrase frames as well as identify their sub-disciplinary variations of the two sub-disciplines of English research articles in Dentistry, i.e., Oral and Maxillofacial Surgery and

Orthodontics and Dentofacial Orthopedics. Hence, there are 4 research objectives in the current study, which is the target concentration of the current study:

1. To investigate the moves, steps, and their structure of the Introduction, Methods, Results, Discussion, and Conclusion sections of English research articles in Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO)
2. To investigate the phrase frames in terms of structural and functional categories of the Introduction, Methods, Results, Discussion, and Conclusion sections of English research articles in Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO)
3. To find out the sub-disciplinary variations of the moves, steps and move-step structure of the Introduction, Methods, Results, Discussion, and Conclusion sections of English research articles in Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO)
4. To find out the sub-disciplinary variations of the phrase frames of the Introduction, Methods, Results, Discussion, Conclusion sections of English research articles in Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO)

The next section will describe the research questions based on the research purposes of the current study.

## 1.5 Research Questions

The present study seeks to answer the following questions:

1. What are the moves, steps, and their structure of the Introduction, Methods, Results, Discussion and Conclusion sections of English research articles in Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO)?
2. What are the phrase frames in terms of structural and functional categories of the Introduction, Methods, Results, Discussion and Conclusion sections of English research articles in Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO)?
3. What are the sub-disciplinary variations of the moves, steps and move-step structure of the Introduction, Methods, Results, Discussion and Conclusion sections of English research articles in Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO)?

4. What are the sub-disciplinary variations of the phrase frames of the Introduction, Methods, Results, Discussion and Conclusion sections of English research articles in Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO)?

In the next section, the theoretical and pedagogical significance of the present study are presented to justify the current research, demonstrate its potential impact, and connect it to a wider context.

## 1.6 Significance of the Study

### 1.6.1 Theoretical Significance

In the current research, the theoretical significance is elaborated in following target dimensions. Firstly, the findings from the current study can provide an insight that contributes to the existing literature of the ESP, academic writing, and genre analysis, which makes the present research significant and complimentary to the previous studies. For the ESP field, the findings can offer a useful list of moves, steps and corresponding phrase frames of the two sub-disciplines of Dentistry, which enriches the existing knowledge about rhetorical structure of RAs. For academic writing, they can serve as a useful guideline of moves, steps, and phrase frames in the RA writing process for scholarly publications. For genre analysis field, the findings can be beneficial as a useful resource so that a factor of genre, i.e., rhetorical structure, can be further analyzed in the Introduction, Methods, Results, and Discussion section of RAs within the field of Dentistry.

Secondly, the differences and similarities of moves, steps, and phrase frames in the current study can also contribute significantly to the current knowledge of the sub-disciplinary variations that exist in each of RA sections between two sub-disciplines of Dentistry. They can provide an insight on the shared features as well as those features that could be used specifically and exclusively in the two sub-disciplines, i.e., Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, of Dentistry. Also, such variations can be a useful guideline for further investigations of the research article genre for the benefits for ESP teaching and learning, academic writing, and genre analysis. The findings from the current study can be a pioneering effort in a contrastive study between two sub-disciplines of Dentistry, an important step for more publications in other sub-disciplines of Dentistry and, furthermore, other disciplines of Health Sciences.

**1.6.2 Pedagogical Significance**

In the current study, the findings on the moves, steps, and phrase frames can contribute to the teaching and learning of EAP and ESP, as follows:

First and foremost, the findings from the present research can be useful for Vietnamese students in different programs and levels, e.g., undergraduate, graduate, residency, and CME, of the discipline of Dentistry; in different Ministries; e.g., MOET and MOH; and in different universities, e.g., the researcher's university and other Vietnamese universities in the group of Health Sciences. The crucial elements, e.g., moves, steps, and phrase frames, in the two sub-disciplines, form a useful and authentic resource that these students can utilize as a guideline and a framework for research article composition. In addition, the findings can assist those students to compose well-written texts in different research article sections. They can also select the most suitable moves, steps and corresponding phrase frames to write manuscripts based on the linguistic features of the two sub-disciplines.

Secondly, it is a useful resource for Vietnamese instructors, e.g., language teachers and doctors, to create a course syllabus and develop teaching materials for academic writing courses and for writing research articles in Dentistry. For the language teachers, they can utilize the findings to design relevant content in the syllabus that is more suitable and updated to the current trend of research publication in Dentistry. Hence, they can be informed by the findings in the current research in terms of utilizing accepted moves, steps and corresponding phrase frames for teaching purposes and RA writing practice. Besides, Doctors of Dental Surgery can apply the findings to teach some specialized English courses in the Dentistry program, which requires research article reading and writing as parts of the content of the syllabus. Therefore, doctors can receive benefits from the findings of the current research in applying the accepted moves, steps, and phrase frames in their writing manuscripts. The findings from the current study can be also disseminated to other instructors who are teaching Dentistry academic programs in Vietnamese universities. They can introduce updated syllabus and teaching materials in writing RAs. Hopefully, more research articles in the two sub-disciplines, which reflects a good balance between content and language, are published.

Thirdly, the Vietnamese educational administrators and policymakers can utilize the findings from the present study to improve the current research environment in the researcher's university. They can update the current knowledge in terms of moves, steps and phrase frames in the existing program that enhances the student's learning outcomes in the context of Dentistry teaching and learning. Besides,

the findings are also utilized to provide language teachers and doctors with professional and specialized trainings, workshops, and seminars for further instructional development. Administrators and policymakers can organize such academic events about how to write research articles in Dentistry by utilizing moves, steps and phrase frames in RA sections as well as how to distinguish the sub-disciplinary variations to enhance the writing competence of both language teachers and doctors.

Finally, the findings are also beneficial to the journal editors and RA reviewers in Health Sciences, e.g., Dentistry, to improve the quality of peer-review process in the researcher's university since research and publication have been a major focus in the recent years at this university. The editors can utilize the helpful reference of the moves, steps and phrase frames in the manuscript evaluation process by checking if the manuscripts submitted to the journal have all necessary moves and steps, and they use appropriate phrase frames as suggested from the findings of the current study, which can be part of the criteria of language use (the discourse and variations specific two sub-disciplines of OMS and ODO) in the RAs in the field of Dentistry. Besides, the findings from this study can be also a useful resource to help reviewers in terms of the moves, steps and phrase frames in each RA section. In the peer-review process, the RA reviewers can receive the benefits of recognizing on how these crucial elements are utilized and organized in different RA sections of two sub-disciplines of Dentistry for further making decision of accepting or rejecting the manuscripts. It can be also projected to disseminate the findings from the current study to other Vietnamese specialized journals to publish the research articles in the two sub-disciplines, i.e., Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, of Dentistry. The next section will describe the scope and limitations of the study.

## 1.7 Scope of the Study

For the scope of the study, this current research investigates the move-step structure and phrase frames of English research articles and identifies their similarities and differences through a sub-disciplinary contrastive analysis between two sub-disciplines in the field of Dentistry, i.e., Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics. Hence, the scope and limitations of this study are proposed with the following areas:

Firstly, in the current study, research article will be the target genre and the chosen field of study is Dentistry, with a focus on the two sub-disciplines, i.e., Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, so the data

collected are only in the research articles of these two sub-fields of Dentistry. These sub-disciplines are internationally recognized and accredited by the Commission on Dental Accreditation (CODA) and the U.S. National Commission on Recognition of Dental Specialties and Certifying Boards (NCRDSCB), two well-known specialized agencies of the American Dental Association in the United States.

Secondly, the required components of research articles to be investigated will include Introduction, Methods, Results, Discussion, and Conclusion sections in each English research article in Dentistry in the two corpora of the sub-disciplines. Any articles which do not meet the requirement are excluded from the study. However, due to the characteristics of research articles in Dentistry, in some cases, there may be no headings entitled "Introduction" and "Conclusion". The first paragraphs before the Methods sections which are to introduce the research being reported are thus considered as Introduction sections of the article.

Besides, the Conclusion section has been embedded into the Discussion section to address the overall and specific research outcomes as well as research conclusions. Therefore, move-step structure and phrase frames of the Conclusion will be labeled only for Discussion section and the research articles with and without Conclusion section will be also selected in the present study.

In addition, although the literature review section exists in most different disciplines, it is not found in the RAs in Dentistry. To confirm this finding, a survey has been conducted from the top 10% of Scopus Q1 journals, as presented in Table 1.1, and it showed the same results. Hence, the researcher has no data to collect and analyze this RA section, and the current study follows the IMRD section only.

**Table 1.1 A Summary of Top 10% Scopus Q1 Journals in Dentistry (August 2024)**

| No. | Journal names | Publishers | Highest percentage |
|---|---|---|---|
| 1 | International Journal of Oral Science | Sichuan University Press | 99% |
| 2 | Oral Oncology | Elsevier | 99% |
| 3 | Journal of Dental Research | SAGE | 98% |
| 4 | Progress in Orthodontics | Springer Nature | 98% |
| 5 | Clinical Implant Dentistry and Related Research | John Wiley & Sons | 97% |
| 6 | Journal of Oral Microbiology | Taylor & Francis | 97% |
| 7 | Periodontology 2000 | John Wiley & Sons | 97% |
| 8 | Dental Materials | Elsevier | 96% |
| 9 | International Endodontic Journal | John Wiley & Sons | 96% |
| 10 | Journal of Oral Pathology and Medicine | John Wiley & Sons | 96% |
| 11 | Oral Diseases | John Wiley & Sons | 96% |
| 12 | Clinical Oral Implants Research | John Wiley & Sons | 95% |
| 13 | Journal of Thermal Analysis and Calorimetry | Springer Nature | 95% |
| 14 | European Journal of Orthodontics | Oxford University Press | 94% |
| 15 | Journal of Endodontics | Elsevier | 94% |
| 16 | Caries Research | Karger | 93% |
| 17 | Journal of Prosthodontic Research | Japan Prosthodontic Society | 93% |
| 18 | Journal of Prosthodontics | John Wiley & Sons | 92% |

| | | | |
|---|---|---|---|
| 19 | Journal of Clinical Periodontology | John Wiley & Sons | 91% |
| 20 | Orthodontics and Craniofacial Research | John Wiley & Sons | 91% |
| 21 | Journal of Cranio-Maxillofacial Surgery | Elsevier | 90% |
| 22 | Journal of Dentistry | Elsevier | 90% |
| 23 | Journal of Prosthetic Dentistry | Elsevier | 90% |

Finally, Dentistry is a large discipline in the group of Health Sciences and includes 12 sub-disciplines. In the current study, 2 sub-disciplines, i.e., Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, are chosen for investigation of the move-step structure and phrase frames of English RA sections. The reason why these sub-disciplines are chosen is stated in 1.2.4 Discipline Needs under 1.3 Rationale of the Study.

In the next section, it will describe the definitions of key terms that are utilized in the current study. It is essential for ensuring clarity, consistency, and precision as well as establishing a common understanding of the terms that are fundamental to the current study.

## 1.8 Definitions of Key Terms

Eight key terms that are used in the current study need to be defined to guide the current study. Besides, other relevant terms will be elaborated in Chapter 2.

**Genre**

It refers a communicative event basically determined by communicative purposes and it aims to establish an internal structure of a genre from a group of professional and academic discourse community members (Swale, 1990; Bhatia, 1993). This communicative event varies from different genres since it has been established through a long duration of exposing and experiencing the target genre. Besides, other important factors, e.g., target audience, and rhetorical structures, are also characterized by communicative purposes. Hence, there are three essential elements that constitute the genre, i.e., communicative purposes, target audience, and rhetorical structures. Swales (1990) and Bhatia (1993) are influential names who determine the genre definitions, so these definitions are also utilized in the current study as well. Research article is the genre that includes its own characteristics in their communicative purposes, target audience, and rhetorical structures.

**Move**

It is defined as a unit of linguistic features that shows the communicative functions in a particular genre, which aims to achieve the general communicative purposes of a specific genre (Nwogu, 1997; Swales, 2004; Biber et al., 2007). In the current study, move consists of all text segments like phrases or sentences that identify the target communicative purpose in the research article sections of the two sub-disciplines, i.e.,

Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, of Dentistry.

**Step**

It is defined as a unit of rhetorical feature that serves as a lower level of move in discourse analysis. In the current study, step refers to the sub-text under one move in each research article section to achieve the communicative purpose.

**Move-step structure**

It refers to the discourse analysis of rhetorical moves, steps, and the cycle of move-step sequence in a specific spoken and written discourse. Although there are variations of names, e.g., "generic structure" (Henry & Roseberry, 1999; Yu & Bondi, 2017), "discourse structure" (Biber, 2007; Samraj, 2016), "schematic structure" (Nwogu, 1991; Flowerdew, 2000), or "organizational pattern" (Fairclough, 2006), these mentioned terms refer the move-step structure as a whole. Hence, in the current study, "move-step structure" is employed to investigate the moves and steps and their structure in the RA sections in the two sub-disciplines of Dentistry since its popularity was utilized in numerous RAs and high-ranking journals (Xianjian, 2014; Li, 2014; Maswana et al., 2015; Ono, 2017; Sirijanchuen & Gampper, 2018; Vathanalaoha & Tangkiengsirisin, 2018b; Aziz et al., 2022; Gao & Pramoolsook, 2022; Gao & Pramoolsook, 2023).

**Phrase frame**

It is a set of several fixed words that establish a frame around one replaceable word and it is completely different from a lexical bundle in the literature (Gray and Biber, 2013; Grabowski, 2015). This term is utilized since it is predominantly employed by scholars, including Fletcher, 2006; Biber, 2009; Simpson-Vlach and Ellis, 2010; Fletcher, 2011; Martinez and Schmitt, 2012; Gray and Biber, 2013; Cunningham, 2017. In the current study, this term is employed to investigate the phrase frames that are utilized in different RA sections in the two sub-disciplines of Dentistry.

**Contrastive analysis**

It is a method in linguistics and applied linguistics that systematically compares two or more languages, dialects, or linguistic systems to identify their similarities and differences (Connor, 1996). It operates on the assumption that languages differ in aspects such as grammar, phonology, and syntax, and that analyzing these differences can offer important insights into language learning and use. In the current study, it

identifies the sub-disciplinary variations of moves, steps, and their structure as well as the phrase frames in different RA sections between the two sub-disciplines.

**Variations**

According to Samraj (2005), disciplinary variation is identified as one of the two major categories of variations, which is defined as the variability and differences in the two disciplines. In the present study, the researcher takes a deeper examination of a discipline to investigate the differences in move-step structure and phrase frames as well as their sub-disciplinary variations between Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics research articles.

## 1.9 Chapter Summary

This chapter just provided an overview of the present research at hand. The research background was firstly introduced with brief information about English for international publication, the Health Sciences, Dentistry, and its sub-disciplines. The lack of previous studies on the linguistic features and genre-based analysis of RAs in Dentistry was presented to constitute the statements of problem of the present research. The reasons why the current research relied on genre analysis in the ESP tradition were reported in the rationale of the study. Four research purposes and their corresponding research questions were presented, and followed by the significance of the study. The scope and limitations of the study were then presented. Definitions of the key terms in the current study were reported. In the next chapter, it will review the theoretical background and prior research to lay a theoretical foundation for the whole study.

มหาวิทยาลัยเทคโนโลยีสุรนารี

# CHAPTER 2
# LITERATURE REVIEW

As the second chapter of the dissertation, this literature review starts with introducing the definition of genre and the three traditions of genre studies, i.e., the Systemic Functional Linguistics (SFL), the New Rhetoric, and the English for Specific Purposes (ESP). Then, the second section "Research Article as a Genre" with the focus on the move-step structure in previous studies is discussed by presenting an overview of research article (RA), followed by move-step structure in individual sections of research article and in the whole research article as well as previous studies conducting move analysis of RA. Next, English for Dentistry Purposes and Dentistry Discourse are explored by introducing three ESP approaches to writing research, an overview of English for Dentistry Purposes, Dentistry discourse, and the language use in the original research articles and case reports, the two main genres in the field of Dentistry. Previous studies are also reviewed under this section. After that, details about the definition and categories of phrase frames as well as their previous studies are introduced. Then, a review of contrastive rhetoric in the existing literature is reported. Finally, research gaps in the studies of moves, steps, and their structure as well as corresponding phrase frames are identified and discussed leading to the reason for the present study.

## 2.1 Genre and Genre Studies

The concept of genre serves as a valuable framework for investigating dimensions of writing and useful resources for exploring discursive practice in various fields. Previous studies show that genre has been utilized in different educational contexts to support teaching and learning practice and to serve as a useful guideline for scholars to carry out their genre studies. The following sections will describe in details the definitions of genre with relevant genre studies and three traditions of genre studies.

### 2.1.1 Definitions of Genre

Numerous scholars have defined genre from different perspectives. According to Martin (1987, p.53), genre refers to "a staged, goal-oriented social process" that members in a discourse community engage in to interact with one another. From this definition, it is *staged* since genre is a structured and organized form

of communication that follows several conventions and expectations. In addition, it is *goal-oriented* since it is designed to achieve particular purposes, e.g., persuasion, instruction, education, and information dissemination, while it is also *social practice* because it evolves over time from interactions among individuals or communities in a society. Besides, according to Swales (1990), genre can be defined, as follows:

> "A genre compromises a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by the expert members of the parent discourse, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constrains choice of content and style. Communicative purpose is both a privileged criterion and one that operates to keep the scope of a genre as here conceived narrowly focused on comparable rhetorical action. In addition to purpose, exemplars of a genre exhibit various patterns of similarity in terms of structure, style, content and intended audience."
>
> (p.58)

This definition provides a comprehensive explanation of genre in the English for Specific Purposes School of genre studies. Swales (1990) states clearly about what a genre means and what relevant factors are. The key point of genre consists of language patterns created by a particular demand in a discourse community, and the schematic structures are repeatedly utilized and shaped to correspond to the user's needs.

Later, Bhatia (1993) proposes another definition of genre based on Swales's (1990) definition:

> "A genre is a recognizable communicative event characterized by a set of communicative purpose(s) identified and mutually understood by the members of the professional or academic community in which it regularly occurs. Most often it is highly structured and conventionalized with constrains on allowable contributions in terms of their intent, positioning, form and functional value. These constrains, however, are often exploited by the expert members of the discourse community to achieve private intentions within the framework of socially recognized purpose(s)."
>
> (p.13)

From the above definition, the communicative purpose has been the major element that establishes the nature and structure of genre, so different communicative purposes can lead to different genres. Besides, the writers are required to utilize conventional structures that are specialized and specific only in that genre. Since genre is created from a long process of producing and utilizing texts in a group of people or a professional and academic discourse community, so newcomers who would like to enter this discourse community need to have comprehensive trainings about the

conventional structures to become full and accepted members. Moreover, genre is not static from the tactical perspective of genre construction (Bhatia, 1993). Bhatia's definition (1993) of genre has expanded into the professional and academic community, which contributes to further growth of genre in the future (Flowerdew, 2005).

In the following years, genre's definition has been more elaborated by other scholars. For instance, genre refers to "a form of social action" (Miller, 1994), a type of text determined by a particular communicative purpose and distinctive conventional structures (Holmes, 1997), and an event of communication (Paltridge, 2014). These perspectives have defined genre with a comprehensive elaboration in different angles and emphasize 3 factors of genre, i.e., communicative purposes, target audience, and rhetorical structures. In the current research, regarded as a successful communicative event, genre, i.e., research article, is explored to identify the rhetorical structure in the Introduction, Methods, Results, Discussion, and Conclusion sections of the two sub-disciplines, i.e., Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, of Dentistry.

**2.1.2 Genre Studies and the English for Specific Purposes Tradition**

Numerous approaches have been established by experienced scholars to analyze a genre based on their concentration, analytical approaches, and genre-based pedagogy, which have been utilized as analysis frameworks in the later studies (Hyon, 1996; Hyland, 2002). Artemeva (2016) mentions popular traditions of genre, e.g., the Systemic Functional Linguistics, the English for Specific Purposes, the New Rhetoric, and Geneva School. However, there are two reasons why the fourth tradition is not utilized in the current study. Firstly, Geneva School has been widely popular in the Brazilian context only (Motta-Roth & Heberle, 2015). Secondly, it does not concentrate on teaching practice. Hence, the present study will highlight on the first three mentioned traditions, i.e., SFL, ESP, and the New Rhetoric. Although there are some overlaps among the three traditions, the genre theories are still situated and provide a valuable insight in terms of genre conceptions, research and pedagogies (Hyland, 2002).

This study investigates move analysis and phrase frames within two sub-disciplines of Dentistry, adopting the English for Specific Purposes (ESP) tradition of genre analysis. While genre studies can also be approached through Systemic Functional Linguistics (SFL) and New Rhetoric (NR), these frameworks are not employed in the present research due to their differing focus and methodologies. The SFL tradition emphasizes the linguistic realization of meaning through grammatical

structures, which, although insightful, does not align with the study's aim of analyzing rhetorical moves and functional stages as well as the phrase frames within academic texts. Similarly, the New Rhetoric tradition focuses on the social and contextual dimensions of genre, often relying on ethnographic methods, which may not provide the systematic, text-based approach required for move analysis. In contrast, the ESP tradition offers a structured and replicable methodology for identifying move-step structure and phrase frames, making it the most appropriate framework for examining the rhetorical structure of texts within specialized academic disciplines such as Dentistry.

This tradition covers a wide domain of English studies, ranging from academic to professional English. According to Swales (1990), the ESP approach concentrates on the patterns and functions of a target text, which mentions genres as communicative events determined by communicative purposes, target audiences and rhetorical structures. Besides, genres in both written and spoken forms are examined in relation to formal properties and communicative purposes in particular social circumstances. The target discourse community consists of individuals utilizing texts with the same communicative purposes, so the objective of the tradition is to find out the useful resources for students to learn and improve their understanding about the specific features of the genre structures (Swales, 1990; Bhatia, 1993; Otngam & Jeanjaroonsri, 2022).

Originally, this tradition concentrates on international students who study in tertiary institutions, e.g., graduate students, but then it extended with wider settings to investigate genres in professional contexts (Bhatia, 2004; Bawarshi & Reiff, 2010). Therefore, ESP research traditionally investigates genre in the teaching practice for non-English learners in academic and professional contexts (Swales, 1990; Nwogu, 1991; Bhatia, 1993; Flowerdew, 1993).

In this tradition, ESP scholars aim to seek out the formal features of genres rather than specific roles of texts and social circumstances. As such, structural move analysis has been utilized to identify the conventional structures in a variety of genres. Another group of scholars also focus on sentence-level grammatical elements, e.g., verb tenses, hedges, boosters and attitude markers, and passive voice in various senses. Numerous genre scholars in this tradition have conducted their studies on the investigation of move-step structure of different genres, e.g., research articles - Medicine (Nwogu, 1991), letters - Business (Bhatia, 1993), textbooks - Indonesia - Economics (Dalimunte & Pramoolsook, 2020), news articles - the U.S - Politics (Srichai & Phoocharoensil, 2016), CSR reports - China - Business (Lin, 2020), TED Talks

(Kraisriwattana & Poonpon, 2021), minutes of meetings - Thailand - Engineering (Changpueng, 2021); Editorials – Thailand and the U.S - Journalism (Rojanaatichartasakul & Phoocharoensil, 2022), research articles – Chemical Engineering (Piromkij & Phoocharoensil, 2022), research articles - China – Traditional Medicine (Zhao & Pramoolsook, 2023), research articles – Thailand - Medicine (Satthachai & Kenny, 2024), research articles – Thailand - Applied Linguistics and English Language Teaching (Sriwanat & Phoocharoensil, 2024) etc.

In the present study, the purpose is to explore the move-step structure and corresponding phrase frames in terms of structural and functional categories of English research articles in the Introduction, Methods, Results, Discussion and Conclusion sections in the two sub-disciplines, i.e., Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, of Dentistry. The study also identifies the sub-disciplinary variations of the move-step structure and phrase frames in the RA sections between the two sub-disciplines. Hence, the ESP tradition will be adopted as a theoretical and analytical guideline during the process since move analysis in the ESP tradition can highlight variations in the communicative purpose, target audience, and rhetorical structure of a specific genre, making this tradition suitable for analyzing a specific academic convention. In addition, the ESP tradition delves into the EFL/ESL teaching and learning practice, which is also the focus of this current research. In the next section, "Research Article as a Genre" is discussed by presenting an overview of research article (RA), followed by move-step structure in individual sections of research article and in the whole research article as well as previous studies conducting move analysis of RA. In this research, a notice is that move-step structure is a macro structure while phrase frame is a micro structure, as illustrated in Figure 2.1.

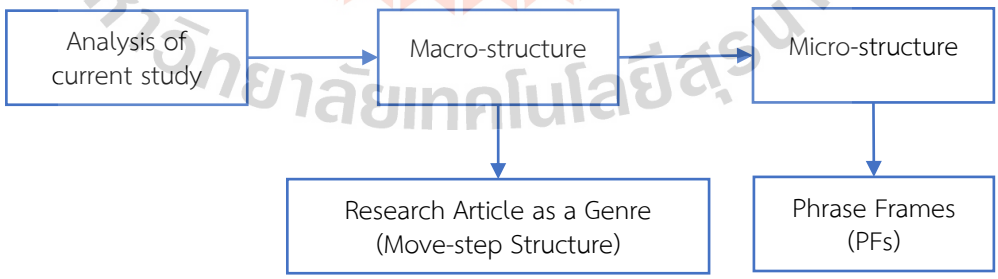



**Figure 2.1 A Summary of Analysis of Macrostructure and Microstructure of the Current Study**

## 2.2 Research Article as a Genre

According to Ravenscroft et al. (2013), research ideas are shared and exchanged under an overall structure of a case study, correspondence, essay, opinion, perspective, original research, review, and viewpoint in scientific research. From these forms, research articles attract scholars' attention the most (Yang & Allison, 2003). This form is considered as a standard product of knowledge, which is presented under a printed or electronic form. The predominant language in research articles is English that aims to report the scientific knowledge into the wider context (Swales, 1990, 2004). According to Swales (1990), research article is defined as follows:

> "The research article is taken to be a written text (although often containing non-verbal elements), usually limited to a few thousand words, that reports on some investigation carried out by its author or authors. In addition, the RA will usually relate the findings within it to those of others, and may also examine issues of theory and/or methodology."
>
> (p.93)

There are 3 types of research articles, i.e., empirical, theoretical, and review (Swales, 2004).

Firstly, empirical research articles present the results from the direct observations, which are normally replicated (Weissberg & Buker, 1990). A normal and typical structure of the research article sections includes Introduction, Methods, Results, Discussion, and Conclusion. However, not all the research articles possess the same headings, and the variations still exist based on the disciplines. For example, when addressing the Methods section, it can be "Research Design", "The Study", "Data", or "Empirical Design".

Secondly, theoretical research articles discuss the development or any disputes surrounding a theory to generate analytical deductions from them. Two typical fields of using theoretical research articles are Biostatistics and Engineering. In some cases, if the research just presents the results through equations by utilizing computer software, it will be categorized into logical argumentative theoretical research articles (Lin, 2020).

Finally, review research articles provide comprehensive overviews of existing literature on a particular topic. If the research just concentrates on the analysis and discussion of the specific articles, it will not need to report the original data. However, if the research comments on the literary work to make some evaluations, it is required to include the original data.

Taken together, research article, as a distinct genre within academic writing, primarily aims to communicate original research findings to advance existing knowledge, persuade scholars, document research, and facilitate academic dialogues

in the academic and professional discourse community. Targeting an audience of experts, students, academics, and policy makers and professionals, research article serves as a critical resource for staying informed about the latest developments in a field. The rhetorical structure of research articles is standardized to enhance clarity and reproducibility, typically including an abstract, introduction, methods, results, discussion, and conclusion. This structure ensures that the research is presented logically, enabling readers to understand the context, methodology, findings, and implications. By adhering to these conventions, research articles effectively contribute to the scholarly community and broader societal applications.

The following paragraphs will review the literature of genre studies on the rhetorical structure of the whole RA and individual sections of RA, which is the focus of the current study and elaborated in Figure 2.2.

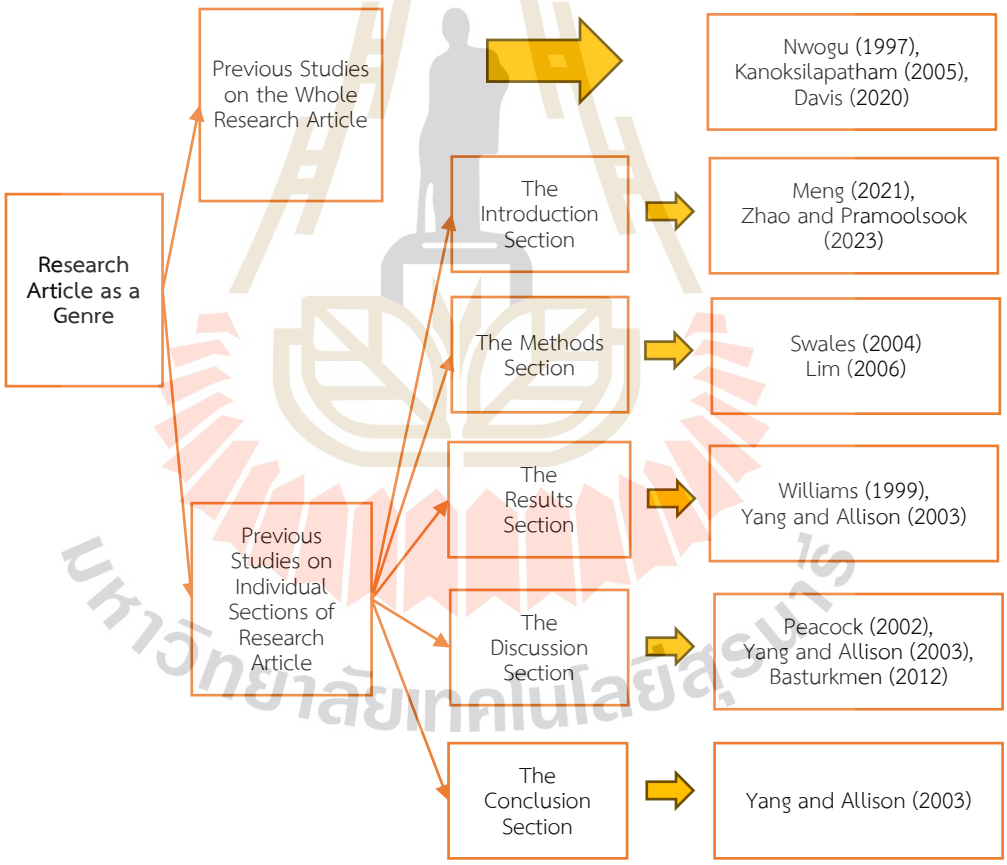



**Figure 2.2 A Summary of Previous Studies in the Whole RA and Individual Sections of RA**

The literature review section was not identified in the analyzed texts, because it is often integrated into other sections rather than presented as a standalone

component, particularly in the field of Dentistry. In some academic fields, especially those that follow a more empirical or clinical structure, background literature is commonly embedded within the Introduction or Discussion sections, serving to contextualize the research rather than appearing under a distinct heading. This structural variation reflects disciplinary conventions and the rhetorical preferences of the academic community, which may prioritize concise presentation and immediate focus on research procedures and findings over an extended review of prior studies.

### 2.2.1 Previous Studies on the Whole Research Article

Overall, one of the benefits of studying the whole research article is to generate the overall structure of moves and steps in a specific discipline. In the literature, several researchers have investigated the rhetorical structures on the whole RA in different disciplines, e.g., Nwogu (1997), Posteguillo (1999), Kanoksilapatham (2005), Stoller and Robinson (2013), Tessuto (2015), Davis (2020), and Nasirizadeh et al., (2022). However, the studies of Nwogu (1997), Kanoksilapatham (2005), and Davis (2020) will be presented in details since the other 4 studies belong to the disciplines that are not closely related to the group of Health Science disciplines, including Dentistry, which is the focus of the current study.

**Table 2.1 A Summary of Move-step Structure in Medical Research Articles by Nwogu (1997)**

| |
|---|
| Introduction |
| Move 1: *Presenting background information* |
| M1S1: *Reference to established knowledge in the field* |
| M1S2: *Reference to main research problems* |
| Move 2: *Reviewing related research* |
| M2S1: *Reference to previous research* |
| M2S2: *Reference to limitations of previous research* |
| Move 3: *Presenting new research* |
| M3S1: *Reference to research purpose* |
| M3S1: *Reference to main research procedure* |
| Methods |
| Move 4: *Describing data-collection procedure* |
| M4S1: *Indicating source of data* |
| M4S2: *Indicating data size* |
| M4S3: *Indicating criteria for data collection* |
| Move 5: *Describing experimental procedures* |
| M5S1*: Identification of main research apparatus* |
| M5S2: *Recounting experimental process* |
| M5S3: *Indicating criteria for success* |
| Move 6: *Describing data-analysis procedures* |
| M6S1: *Defining terminologies* |
| M6S2: *Indicating process of data classification* |
| M6S3: *Identifying analytical instrument/procedure* |
| M6S4: *Indicating modification to instrument/procedure* |
| Results |
| Move 7: *Indicating consistent observation* |
| M7S1: *Highlighting overall observation* |
| M7S2: *Indicating specific observations* |
| M7S3: *Accounting for observations made* |
| Move 8: *Indicating non-consistent observations* |
| Discussion |

| |
|---|
| Move 9: *Highlighting overall research outcome* |
| Move 10: *Explaining specific research outcomes* |
| M10S1: *Stating a specific outcome* |
| M10S2: *Interpreting the outcome* |
| M10S3: *Indicating significance of the outcome* |
| M10S4: *Contrasting present and previous outcomes* |
| M10S5: *Indicating limitations of outcomes* |
| Move 11: *Stating research conclusions* |
| M11S1: *Indicating research implications* |
| M11S2: *Promoting further research* |

(p.135)

As illustrated in Table 2.1, Nwogu (1997) investigates the move-step structure of the whole research articles in the field of Medicine. A corpus of 30 articles is collected with 15 articles analyzed in details by using Swales's (1981,1990) frameworks. The 5 chosen high-ranking journals are from *The Lancet, the British Medical Journal*, *the New England Journal of Medicine, the Journal of Clinical Investigation*, and *the Journal of the American Medical Association*. The results lead to a proposed framework with 11 moves in the whole RA, which consists of three moves in each Introduction, Methods, and Discussion while two moves are found in the Results. Three moves, i.e., Moves 1, 6, and 8, are less frequently identified, thus, optional moves. In addition, seven moves appear in all the texts, i.e., Move 2, Move 3, Move 4, Move 5, Move 7, Move 9, Move 10, whereas Move 11 occurs in 14 texts only.

**Table 2.2 A Summary of Move-step Structure in Biochemistry Research Articles by Kanoksilapatham (2005)**

| |
|---|
| **Introduction** |
| Move 1: *Announcing the importance of the field* |
| M1S1: *Claiming the centrality of the topic* |
| M1S2: *Making topic generalizations* |
| M1S3: *Reviewing previous research* |
| Move 2: *Preparing for the present study* |
| M2S1: *Indicating a gap* |
| M2S2: *Raising a question* |
| Move 3: *Introducing the present study* |
| M3S1: *Stating purpose(s)* |
| M3S2: *Describing procedures* |
| M3S3: *Presenting findings* |
| **Methods** |
| Move 4: *Describing materials* |
| M4S1: *Listing materials* |
| M4S2: *Detailing the source of the materials* |
| M4S3: *Providing the background of the materials* |
| Move 5: *Describing experimental procedures* |
| M5S1: *Documenting established procedures* |
| M5S2: *Detailing procedures* |
| M5S3: *Providing the background of the procedures* |
| Move 6: *Detailing equipment* |
| Move 7: *Describing statistical procedures* |
| **Results** |
| Move 8: *Stating procedures* |
| M8S1: *Describing aims and purposes* |
| M8S2: *Stating research questions* |
| M8S3: *Making hypotheses* |
| M8S4: *Listing procedures or methodological techniques* |
| Move 9: *Justifying procedures or methodology* |

| |
|---|
| M9S1: *Citing established knowledge of the procedure* |
| M9S2: *Referring to previous research* |
| Move 10: *Stating results* |
| M10S1: *Substantiating results* |
| M10S2: *Invalidating results* |
| Move 11: *Stating comments on the results* |
| M11S1: *Explaining the results* |
| M11S2: *Making generalizations or interpretations of the results* |
| M11S3: *Evaluating the current findings* |
| M11S4: *Stating limitations* |
| M11S5: *Summarizing* |
| **Discussion** |
| Move 12: *Contextualizing the study* |
| M12S1: *Describing established knowledge* |
| M12S2: *Presenting generalizations, claims, deductions, or research gaps* |
| Move 13: *Consolidating results* |
| M13S1: *Restating methodology* |
| M13S2: *Stating selected findings* |
| M13S3: *Referring to previous literature* |
| M13S4: *Explaining differences in findings* |
| M13S5: *Making overt claims or generalizations* |
| M13S6: *Exemplifying* |
| Move 14: *Stating limitations of the study* |
| M14S1: *Limitations about the findings* |
| M14S2: *Limitations about the methodology* |
| M14S3: *Limitations about the claims made* |
| Move 15: *Suggesting further research* |

(p.289-291)

As elaborated in Table 2.2, Kanoksilapatham (2005) explores move-step structure of the whole research articles in the field of Biochemistry. A corpus of 60 research articles from five high-ranking journals are compiled and analyzed based on Swales's (1990) framework. The chosen renowned journals are *Cell, Molecular Cell, Molecular and Cellular Biology, Journal of Biological Chemistry*, and *Molecular Biology of the Cell*. The proposed model of Biochemistry research articles consists of 15 moves, i.e., 3 in the Introduction, 4 in the Methods, 4 in the Results, and 4 in the Discussion. The results show some moves follow a linear structure in each section. Besides, Moves 4 and 5, Moves 8 and 9, and Moves 10 and 11 are generally interwoven. Six moves, i.e., Moves 1 and 3 in the Introduction, Moves 4 and 5 in the Methods, Move 10 in the Results, and Move 13 in the Discussion, appear in all the texts, which become obligatory moves in the study.

**Table 2.3 A Summary of Move-step Structure in Medical Research Articles by Davis (2020)**

| |
|---|
| **Introduction** |
| Move 1: *Describing the study and situation* |
| M1S1: *Framing statement* |
| M1S2: *Background work by others* |
| Move 2: *Describing the problem* |
| M2S1: *Identifying gap* |
| M2S2: *Presenting hypothesis* |
| Move 3. *Describing the way to the solution* |
| M3S1: *Outlining the procedures* |
| M3S2: *Describing the subjects* |
| M3S3: *Stating the specific aims* |

| |
|---|
| M3S4: *Previewing the findings* |
| **Methods** |
| Move 4: *Presenting statement of ethics* |
| Move 5: *Describing what is being treated* |
| M5S1: *Describing the study location* |
| M5S2: *Presenting the biodata of the subjects* |
| M5S3: *Presenting the rationale* |
| Move 6: *Describing the experiment* |
| M6S1: *Describing the materials used* |
| M6S2: *Outlining procedures and precautions* |
| M6S3: *Detailing any medical tests* |
| M6S4: *Reviewing statistical tests* |
| **Results** |
| Move 7: *Reporting the findings* |
| M7S1: *Stating the outcomes* |
| M7S2: *Supporting with evidence* |
| M7S3: *Directing readers to figures or tables* |
| Move 8: *Reviewing experiment* |
| M8S1: *Reviewing subjects* |
| M8S2: *Reviewing procedures* |
| M8S3: *Reviewing and/or comparing to previous work* |
| Move 9: *Describing statistical tests and state their findings* |
| Move 10: *Presenting summary of findings* |
| **Discussion** |
| Move 11: *Presenting discoveries from the research* |
| M11S1: *Presenting main findings* |
| M11S2: *Presenting secondary findings* |
| Move 12: *Presenting treatment review* |
| Move 13: *Presenting rationale* |
| Move 14: *Comparing with other studies* |
| Move 15: *Presenting limitations* |
| Move 16: *Suggesting for future research* |
| Move 17: *Presenting study importance* |

(p.27-29)

As reported in Table 2.3, Davis (2020) investigates the rhetorical structure in the research articles in Medicine. A corpus of 250 articles between 2001 and 2011 is collected and analyzed by utilizing Nwogu's (1997) framework. The chosen prestigious journals are from the *PubMed Central free full-text archive* in the U.S. National Library of Medicine. The results show that there are 3 moves and 8 steps in the Introduction, 3 moves and 7 steps in Methods, 4 moves and 8 steps in Results, and 7 moves and 2 steps in the Discussion. Only Move 1 in the Introduction is the most frequently utilized in the study, which becomes the only obligatory move. Six steps, e.g., M1S1, M1S2 in the Introduction; M6S1, M6S2 in the Methods; M7S1 in the Results; and M11S1 in the Discussion, are found in all the texts.

The studies of Nwogu (1997), Kanoksilapatham (2005), and Davis (2020) significantly contribute to the understanding of move-step structure in Medicine and Biochemistry. For the theoretical implications, the studies expand the knowledge about how move analysis is applied in the research articles, which makes academic writing in different disciplines understood and predictable. Besides, they also provide an insight into how moves contribute to the formation of RA sections. For the pedagogical implications, the move-step structure can be taught in the classroom

setting to raise students' awareness of the field-based reading skills, which makes students become proficient academic readers. Moreover, novice writers also receive benefits from utilizing the findings of the study as a guideline in the research writing practice. Besides, teachers can also utilize the frameworks as useful guidelines in their teaching practice. The findings also provide an in-depth knowledge of medical and Biochemistry research article writing for reviewers in the peer review process and for editors in making further decisions to the manuscript quality. However, more research is highly recommended to investigate the whole RA sections in other disciplines, including Dentistry, based on one of the suggested frameworks in order to provide a valuable and accurate insight to a wider range of disciplines in scientific research.

Taken together, the frameworks of Nwogu (1997) and Kanoksilapatham (2005) are chosen due to the following reasons. These two studies are widely cited as frameworks in the literature. Recommendations from prior research also point to the two studies as the suggested frameworks. Kanoksilapatham's (2005) work belongs to hard sciences which is similar to Medical Sciences (Meng, 2021), so it is qualified for utilizing as a framework. Besides, recent studies of Meng (2021), and Zhao and Pramoolsook (2023) also adopt these two suggested frameworks. For the other reasons, they will clearly be presented in 3.4.1 Selection of Framework of Move-step Structure. In addition, the framework of Davis (2020) is also utilized to analyze the Results sections in the current study since it is an updated version of Nwogu's (1997) framework. The discipline of Davis's (2020) study is Medicine, which is also closely related to Dentistry, since it is within the group of Health Sciences.

### 2.2.2 Previous Studies on Individual Section of Research Article

#### 2.2.2.1 The Introduction Section

The Introduction is presented as the first section of a research article and plays an important role to generate the overview of the study. The section identifies the innovation and values of the current research for further promotion of the work being reported (Swales, 2004). It also serves as avenue to persuade the international scholars about the significance of the research globally (Lim, 2012). Hence, there are a large number of scholars investigating the Introduction section. According to Swales (2004), there are 3 moves (Move 1: *Establishing a territory,* Move 2: *Establishing a niche,* and Move 3: *Occupying the niche*) in the RA Introduction, which has been an initial and influential framework for a series of studies for international publication. In the literature, several researchers, e.g., Khany and Tazik (2010); Loi (2010); Rahman, Mataram and Sofwan (2012); Amnuai and Wannaruk (2013); Chahal (2014); Jalilifar, Golgol, and Saidian (2016); Suryani and Rahim (2016); Farnia and Barati

(2017); Rahman and Sofwan (2017); Öztürk, 2018; Ebrahimi and Weisi (2019); Arsyad et al. (2018); Lu et al. (2021c); Meng (2021); Duruk (2021); Piromkij & Phoocharoensil (2022); Gao and Pramoolsook (2023), and Zhao and Pramoolsook (2023), have explored the Introduction section in different fields. However, Meng (2021), and Zhao and Pramoolsook (2023) will be reviewed here since they focus their analyses on the group of Health Science disciplines, to which Dentistry, the focus of the current study, belongs.

Meng (2021) studies about the rhetorical structure of RA Introduction sections in the discipline of Medical Sciences. A corpus of 30 articles from 25 high-ranking journals is collected and analyzed by utilizing Kanosilapatham's (2005) framework. The results show that the three moves, i.e., Move 1: *Announcing why the topic is worth investigating*, Move 2: *Preparing for the present study,* and Move 3: *Introducing the present study*, are found in the study. The writers tend to present the general knowledge of the target study and review the related theories and previous studies, emphasize the statements of the problems in the research articles, and claim the significance of the target study in this introductory section.

Zhao and Pramoolsook (2023) explore the move-step structure of RA Introduction section in the field of Traditional Chinese Medicine. A corpus of 40 articles from five high ranking journals between 2020-2021 is collected and analyzed based on Kanoksilapatham's (2005) framework. The results show that Move 1: *Announcing the importance of the field* is the most frequently found move, which show the importance of the research and provide background knowledge of the study being reported. M1S2: *Making topic generalizations* is the most favored, which is marked as obligatory move in the study. Move 2: *Preparing for the present study* is a conventional move used to highlight the lack of relevant research studies, which shows no obligatory step and only one conventional step in the move. Move 3: *Introducing the present study* is identified as an obligatory move.

The findings from the studies of Meng (2021) and Zhao and Pramoolsook (2023) provide a useful guideline to teachers and students to enhance their awareness of communicative purposes and linguistics features in RA sections, which facilitates their academic writing ability for international publications. Besides, these studies also serve as useful guidelines to novice researchers in Medical Sciences and Traditional Chinese Medicine to understand the move-step patterns and write the manuscripts for international publications. The teachers also receive benefits from the findings of the study as a useful resource for teaching and writing practice.

Taken together, Meng (2021) and Zhao and Pramoolsook (2023) have explored the rhetorical structure of RA Introduction section in Medical Sciences and Traditional Chinese Medicine, respectively. Two studies also utilized Kanoksilapatham's (2005) framework for their studies. However, more research should also be carried out in other disciplines in the group of Health Sciences, including Dentistry, which is a focus of the current study.

**2.2.2.2 The Methods Section**

The Methods section describes in details the study population, materials, as well as how the data are collected and analyzed. This section is considered as a bridge to connect the existing literature in Literature Review and the obtained results in the following Results section. There are some major headings, including *The Study, Methods, Data and Methodology, Methodology, and Setting and Methodology*, used to call this part as illustrated by Swales (2004). This part plays a key role to persuade the audience about the validity and reliability of the study. One of the most noted features in this part is the use of citations from other studies, especially in the research design to enhance the readers' interests. In the literature, several researchers, e.g., Musa et al. (2015), Afshar and Ranjibar (2017), Khansari (2018), and Hendrawan (2022), have investigated the Methods section in their studies. However, Swales (2004) and Lim (2006) will be reviewed since these two studies are widely cited in the literature.

Swales (2004) explores the rhetorical structure of research articles in the Methods section and finds a number of subsections, (presently known as *Moves*), including *Materials, Procedure, Apparatus,* and *Statistical Analysis,* which are similarly found in previous studies (Weissburg & Buker, 1990; Kanoksilapatham, 2003). In the studies of Feak (1994) and Swales (2004), methodological descriptions are also discussed to investigate the variations in the Methods section. Although details of moves and steps are not much discovered, a summary of variations in this section is also proposed by Swales (2004).

Lim (2006) investigates the rhetorical structure of the RA Methods section in the field of Management. A corpus of 20 articles from two prestigious journals in 2000 is collected and analyzed. The results show 3 typical moves, i.e., Move 1: *Describing data collection procedures,* Move 2: *Delineating procedures for measuring variables,* and Move 3: *Elucidating data analysis procedures*. M1S1: *Describing the sample,* M2S2: *Explaining method/s of measuring variables,* and M2S3: *Justifying the method/s of measuring variables* appear in all the texts.

Swales (2004) and Lim (2006) are pioneering studies to explore the Methods section, which significantly contributes to the knowledge of genre research in different disciplines. Besides, they assist the students in the research writing practice and novice researchers to write the Methods section in RA manuscripts for international publication. They also serve as a useful guidance for teachers by utilizing these findings in their teaching and writing pedagogy.

Taken together, although little is known about the rhetorical structure of the Methods section, valuable knowledge in move-step structure and linguistic features has been found in the literature. It is recommended that more research should be conducted to meet the research demands of genre scholars and, furthermore, to provide an insight for teachers and students into research writing practice of the Methods section in different disciplines.

**2.2.2.3 The Results Section**

Like the other sections, the Results section plays a crucial role to describe the results or findings from the study after restating the research questions as well as how the data was collected and analyzed. One typical feature of this section is the employment of figures and tables. This section consists of new knowledge and claims via clear data display, interpretations, and explanations (Salager-Meyer, 1994). The highly conventional discourse assists to persuade the audiences about the reliability ang validity of the research (Hyland, 1998). In some disciplines, the Results and Discussion sections are combined to form a single section in the research articles. Nevertheless, after a preliminary survey carried out by the researcher, these two sections are structured separately in research articles in Dentistry. In the literature, several researchers, e.g., Brett (1994), Williams (1999), Yang and Allison (2003), and Gao and Pramoolsook (2022), have investigated the Results section. However, only Williams (1999) and Yang and Allison (2003) will be reviewed in this study because of the following reasons. The study of Williams (1999) about Medicine belongs to the group of Health Sciences whereas the study of Yang and Allison (2003) is the most widely recognized and cited in the literature.

Williams (1999) identifies the rhetorical features in the RA Results sections in the field of Medicine. A corpus of 8 articles in Medicine is collected and analyzed based on Brett's (1994) framework. The results show that *Pointer* and *Structure of section* are found in the *Metatextual* move. Move *Presentation* includes *Procedural, Statement of finding/ Result, Substantiation of finding*, and *Non-validation of finding*. Move *Comment* consists of *Explanation of finding, Comparison of finding with literature, Evaluation of finding re-hypotheses*, and *Interpretation of finding*.

Especially, the findings show that *Statement of finding* accounts for 77% of occurrences. The feature of report and subject issues are the influencing factors on the whole structures. The rhetorical structure in Brett's (1994) study was less popular in the research articles in Medicine field.

Yang and Allison (2003) examine the rhetorical structure of the Results sections in the discipline of Applied Linguistics. A corpus of 20 research articles is collected from the high-ranking journals and analyzed based on Swales's (1990) framework. The results show 3 moves, i.e., Move 1: *Preparatory information*, Move 2: *Reporting results*, and Move 3: *Commenting on results*, are frequently found in the study. The other three moves, Move 4: *Summarizing results*, Move 5: *Evaluating the study* and Move 6: *Deductions from the research*, are found to be optional. A noted cycle is that Move 2 is followed by Move 3 to report and comment in results if Move 2 does not appear.

These findings offer significant contributions to the understanding of the rhetorical structure of the Results section of Medicine and Applied Linguistics. Besides, the findings also provide an insight that serves as useful resources for novice researchers in scientific research writing for international publication. EAP/ESP teachers and students can apply the findings in their teaching and learning practice.

Taken together, two main moves, i.e., *Reporting results,* and *Commenting on results*, frequently occur in the Results section. This section also follows a linear and cyclical pattern. Brett's (1994) and Swales's (1990) frameworks have been utilized in the previous studies. However, the rhetorical structure of RA Results section in other disciplines, including Dentistry, should be further investigated to contribute to the existing literature.

**2.2.2.4 The Discussion Section**

The Discussion section plays an integral part of the research articles to make a summary of the addressed results, discuss, and interpret the important findings from comparing to previous studies (Paltridge & Starfield, 2007). The section aims to identify the significance of the study by claiming the contributions to the existing literature as well as teaching and learning practice (Kanoksilapatham, 2015). From the discussion based on the results, the section connects to the wider implications (Swales, 1990). Claims to convince the importance of the study being reported as well as the recommendations and diverse perceptions for further research are also mentioned in the section (Basturkmen, 2012). In the literature, several researchers, e.g., Holmes (1997), Peacock (2002), Amirian et al. (2008), Basturkmen (2009), Basturkmen (2012), Ammuai and Wannaruk (2013), Dobakhti (2013), Loi et al.

(2015), Loi et al. (2016), Jin (2018), and Boonyuen and Tangkiengsirisin (2018), have investigated the Discussion section. However, Peacock (2003), Yang and Allison (2003), and Basturkmen (2012) will be reviewed in this current study due to the following reasons. Peacock (2002) and Yang and Allison (2003) are frequently cited and used in the previous studies while Basturkmen (2012) explores the rhetorical structure in Dentistry RAs, which is the focus of the current study.

Peacock (2002) conducts a study on the rhetorical structures of RA Discussion sections in seven disciplines. A total of 252 articles are collected and analyzed based on the suggested framework of Dudley-Evans (1994). The results show a large quantity of interdisciplinary differences is found in terms of move categories. Specifically, Move 7: *Claim,* Move 3: *Finding,* Move 5: *Reference to previous research,* and Move 9: *Recommendation* are the four most popular ones in the study. Move 1: *Information* occurs frequently in Biology and Physics compared to the Environmental Science, Language and Linguistics. Move 4: *(Un)expected outcome* and Move 6: *Explanation* are utilized more frequency in the hard sciences. The findings significantly contribute to teaching research writing in English for Specific Purposes courses.

Yang and Allison (2003) investigate rhetorical structures of RA Discussion sections in the field of Applied Linguistics. A corpus of 20 articles from four prestigious journals between 1996 and 1997 are collected and analyzed based on the suggested framework from Swales (1990). The results show that Move 2: *Reporting results* is the most favored move, which appears in all the articles. Move 4: *Commenting on results* ranks second, which appears repeatedly in the Discussion section by utilizing four steps: M4S1: *Interpreting results* (11 articles), M4S2: *Comparing results with literature* (7), M4S3: *Accounting for results* (18), and M4S4: *Evaluating results* (3 articles). Three moves, i.e., Move 5: *Summarizing the study*, Move 6: *Evaluating the study*, and Move 7: *Deductions from the research*, are optional since they raise a question about whether they can be considered as Conclusion section in the articles that do not contain the Conclusion section. The findings provide an insight to novice writers in the field to write a Discussion section for publication and to ESP/EAP teachers in the writing pedagogy.

Basturkmen (2012) investigates the rhetorical structures of research articles in the discipline of Dentistry. A corpus of 10 Discussion sections from the British Dental Journal is analyzed by the suggested framework in the field of Applied Linguistics. The results show that arguments and results in the Discussion section are found with distinctive features. One move is newly found and not presented in the previous studies. Specifically, Move 1: *Background information* and Move 2:

*Summarizing results* are found to provide the audience with the aims of the study and the main results, respectively. There are cyclical sequences of Move 3: *Reporting a result or linked results* and Move 4: *Commenting on that result/those results*. Move 5: *Evaluating the study* is found in two articles while Move 6: *The findings* occurs in 6 articles. The study contributes to the current knowledge of disciplinary variations and provide an in-depth guidance for teaching purposes.

Taken together, Peacock (2002), Yang and Allison (2003), and Basturkmen (2012) have investigated the rhetorical structure of the Discussion section in different perspectives. However, a call for more research on this section is highly recommended since there is still a lack of studies on move-step structure in some disciplines, including Dentistry which needs more in-depth exploration.

**2.2.2.5 The Conclusion Section**

To the best of the researcher's knowledge, a limited number of previous studies on the investigation of move-step structure of RA Conclusion is found since this section is considered as part the RA Discussion section (Swales, 1990; Posteguillo, 1990). The RA Conclusion plays an important role to provide an outline, implications, recommendations of a research article (Morales, 2012). In the literature, several researchers, e.g., Yang and Allison (2003), Mortiz et al. (2008), and Amnuai and Wannaruk (2013), have investigated the Conclusion section. However, the study of Yang and Allison (2003) will be reviewed here since recommendations from the previous studies show that it is the most chosen framework in the analysis of RA Conclusion section.

Yang and Allison (2003) explore rhetorical structures of research articles in the field of Applied Linguistics. A corpus of 20 Discussion sections from 4 high rated journals in 1996-1997 is collected and analyzed based on the guidelines from CARS model (Swales, 1990). The results show that only thirteen articles consist of Conclusion section, which exhibits three important moves as follows: Move 1: *Summarizing the study*, Move 2: *Evaluating the study*, Move 3: *Deductions from the research*. Move 1 is found to be the most frequently utilized with 18 occurrences in the study. Move 3 appears 7 times while Move 2 appears 6. For the steps, M3S2: *Drawing pedagogic implication* is the most widely found with 14 occurrences in this study. The findings make significant contributions to EFL graduates, teachers and students in academic reading and writing courses. This framework is also a useful guideline for them to follow.

Taken together, little has been known in the Conclusion when this section is compared to the other RA sections. For this section, previous studies tend

to focus on comparative analysis between L1 and L2 differences (Vazifenhdan & Amjadiparvar, 2016), and disciplinary variations (Ghazanfari et al., 2016). However, more research is highly recommended to identify the rhetorical structure in the Conclusion section in other disciplines, including Dentistry, which is the focused discipline of the current study. In the next section, English for Dentistry Purposes and Dentistry Discourse are explored by introducing three ESP approaches to writing research, an overview of English for Dentistry Purposes, Dentistry discourse, and the language use in the original research articles and case reports, the two main genres in the field of Dentistry. Previous studies are also reviewed under this section.

## 2.3 English for Dentistry Purposes and Dentistry Discourse

### 2.3.1 English for Dentistry Purposes (EDP)

In order to explore EDP, it is important to review the 3 ESP approaches to research writing in the field of Dentistry based on the background knowledge about the ESP tradition in 2.1.2 Three Traditions of Genre Studies. According to Hyland (2013) and Paltridge and Starfield (2013), there are 3 ESP approaches to research writing, i.e., a textual study, a contextual study, and a critical study.

Firstly, in a textual study, genre analysis as elaborated in 2.2 Research Article as a Genre has been the most popular method in ESP writing research (Johns, 2002; Hyland, 2004). As such, texts are a response to a particular communitive setting and reveal the purposes and functions based on the linguistic forms in these texts. Authors are required to follow conventions to organize messages and identify purposes as well as a repertoire of linguistic responses to communicative in common circumstances. ESP research into texts describes how language forms work to accomplish goals and engage effectively with their readers. Following the principles laid out by Swales (1990), genre analysis, especially move analysis, become an integral part of ESP. It involves analyzing the structure and language features of specific text genres that are common in a particular field.

Secondly, in a contextual study, ESP research delves into ethnographic case studies, reader responses, and interviews to explore writing context (Prior, 1998; Locker, 1999; Hyland, 2004). Ethnographic research has been carried out into professional settings with a focus on a spoken form although there are studies into written professional discourse. In the contextual studies, research shows that workplace writing is part of an organized set of activities determined by power, friendship, and feeling (Gunnarsson, 2009).

Thirdly, in a critical study, language is defined as a form of social practice and commonly known as critical discourse analysis (CDA). CDA focuses on how social relations, identities, knowledge are established through written and spoken texts (Hyland, 2013; Paltridge & Starfield, 2013). CDA is closely related to SFL since this tradition offers CDA a sophisticated way to analyze the relationship between language and social contexts.

From the analysis above, the first ESP approach, i.e., a textual study, is utilized with a focus on the two sub-disciplines of Dentistry.

Taken together, there are 3 main conclusions about English for Dentistry Purposes, as follows:

1. English for Dentistry Purposes is a specialized branch of English for Specific Purposes that caters to the linguistic needs of healthcare professionals in Dentistry (Lasekan et al., 2022; Khazaie & Derakhshan, 2024). EDP focuses on teaching the specialized vocabulary, communication skills, and genre-specific knowledge required in the dental field. This includes patient communication, professional writing (e.g., original research articles and case reports), and understanding dental literature. The goal is to equip learners with the language skills necessary to perform effectively in clinical and academic settings.
2. Move analysis plays a significant role in EDP by helping learners understand the structure and rhetorical moves of key dental genres. For example, move analysis can break down the typical structure of a research article or case report in Dentistry, helping students identify essential moves like patient history, diagnosis, treatment, and outcome discussion. This analytical approach is also useful for understanding and writing research articles, where learners need to navigate the typical moves, steps and their structure found in the RA Introductions, methods, results, discussions, and conclusions.
3. Incorporating move analysis into EDP ensures that the instruction is highly relevant and practical, tailored to the specific communicative needs of healthcare professionals in Dentistry. By focusing on the authentic structures used in the context of Dentistry, EDP prepares learners not only to comprehend and produce specialized texts but also to excel in patient interactions, academic writing, and professional presentations in this field.

มหาวิทยาลัยเทคโนโลยีสุรนารี

**2.3.2 Dentistry Discourse**

In terms of the relationship between English for Dentistry Purposes and Dentistry discourse, EDP is the instructional approach aimed at teaching those language skills to non-native speakers, enabling them to participate effectively in Dentistry discourse community using actual language and communication practices, i.e., Dentistry discourse.

In order to understand Dentistry discourse, it is important to explore more about what the term "discourse" means. It refers to the linguistic communication between individuals to exchange mutual messages for a particular purpose. Its meanings are defined by 3 crucial terms, i.e., text, sentence, and ideology (Hawthorn, 1992; Mills, 2001). Discourse is basically associated to certain disciplines, e.g., engineering discourse (Roldán-Riejos & Úbeda-Mansilla, 2006), medical discourse (Wilce, 2009), legal discourse (Goodrich, 1990), business discourse (Bargiela-Chiappini et al., 2013), religious discourse (Hjelm, 2014), etc. In the group of Health Sciences, discourse is also associated to 3 fundamental concepts, i.e., Discourse system, Utilitarianism, and Deontological ethical theory, and doctors can learn and use them in their professional and academic community.

Firstly, Discourse system, taught to students in academic undergraduate programs, is constituted by 2 types, i.e., professional and institutional discourse. The former is the fundamental and theoretical discourse from the profession which students in each discipline can learn during their university time. The latter refers to the practical discourse that is obtained during clinical practice, e.g., clerkship or on-the-job training, in an institution-based context.

Secondly, Utilitarianism refers to the concept that "the rightness/wrongness of an action is determined by the goodness/badness of its consequences; the only thing that is good in itself is pleasure and the only thing bad in itself is pain; and happiness/misery is constituted of the aggregation of pleasures and pains", which is created by Jeremy Bentham in *A Fragment on Government* (Crimmins, 2001, p.1). Based on its nature, it is the doctor's responsibility to prevent patients' diseases early, and the practice can maximize the happiness to as many people as possible. Although the happiness can be harmful in some cases, it is still encouraged to do. Utilitarianism consists of the standards that specialized texts should follow, e.g., clarity, shortness, sincerity, individualism, originality, deductive reasoning. Besides, texts should avoid the ambiguity and respect the audiences, e.g., patients, which is closely associated to the politeness strategies (Brown & Levinson, 1987). Moreover, texts should avoid the misunderstanding both spoken and written forms and ensure the relevance in language

use (American Psychological Association, 2001). Utilitarianism mainly focuses on the actions with careful consideration on the harms and benefits of carrying out any steps. The ultimate goal is to bring as many advantages to patients as possible (Barrow & Khandhar, 2023).

Finally, Deontological ethical theory, commonly known as Kantism, was first developed by Immaniel Kant with two primary beliefs: hypothetical and categorical imperatives (Barrow & Khandhar, 2023). For categorical imperatives, Kant concentrates on the moral and unconditional absolutes in his writing. That is, any actions conducted by healthcare providers need to be moral, and there is no concern about the situational context and consequences during the diagnosis, examination and treatment. The theory states that the morality of practice relies on the nature of practice, which follows the moral rules: "*don't lie, don't steal, don't cheat*" (Dillon, 2021, p.1). In other words, the primary issue concentrates on whether the practice is right or wrong since it is not accepted and highly avoided when harm appears during the practice. Therefore, this theory is closely associated with scripture, and moral law and right should be highly priopritized over the happiness (Dillon, 2021).

According to WHO's (2003) guidelines, Dentistry is among the health professionals, which is also defined and recognized by International Standard Classification of Occupations (ISCO). Hence, Dentistry discourse, in a spoken or written form, refers to the linguistic communication under a big umbrella of the healthcare professionals and their patients, and in the field of Dentistry to achieve the communicative purposes in a preclininal and clinical practice. The popular classifications of Dentistry academic written discourse are Perspectives (Chen et al., 2024), Review articles (Muniz et al., 2018), Original research articles (Tsai et al., 2024), Case reports (Mulinari-Santos et al., 2024), Short communications (Zhou et al., 2024), Correspondence (Lin et al., 2024), Editorials (Casale et al., 2016), and Letters to the Editor (Pandarathodiyil et al., 2023). The following parts will introduce two popular genres, i.e., original research articles and case reports, which are widely utilized by healthcare professionals in Dentistry.

Recent developments in Dentistry discourse worldwide have significantly influenced academic and professional communication practices in Viet Nam. As English increasingly becomes the lingua franca of scientific research, Vietnamese DDS authors are expected to engage with international conventions in writing and publishing. This has led to a gradual alignment of local discourse practices with global norms, particularly in terms of rhetorical structure, terminology, and genre expectations. However, local contextual factors, such as educational traditions, language proficiency, and institutional

requirements, continue to shape how these international influences are adopted and adapted in the Vietnamese setting. Understanding this interplay between global and local discursive practices is essential for analyzing the distinctive features of Dentistry discourse in the Vietnamese context.

**2.3.3 Original Research Articles in Dentistry**

In the group of Health Sciences, including Dentistry, there are different types of publications serving different pursposes, including original research, case reports, review articles, short communications, editorials, etc. Among them, the original research article has been identified as one of the first professional genres that students need to approach in their specialized courses in undergraduate programs (Crosthwaite & Cheung, 2019). Since a research article is a genre, it possesses the characteristics of its own communicative purposes, target audience, and rhetorical structure in the Dentistry discourse community. For the communicative purpose, it aims to disseminate knowledge, advance clinical practice, stimulate further research, support professional development, and inform policy-making in the field of Dentistry. Talking about the target audience, this genre is read by healthcare professionals including practicing physicians and specialists, researchers and academics, students and educators, hygienists and technicians, policy makers and regulators, journal editors and peer reviewers, and industry professionals. In terms of its rhetorical structure, it consists of several sections, including Introduction, Methods, Results, Discussion, and Conclusion.

Exploring disciplinary linguistic characteristics of RAs in Dentistry assists the researchers to utilize them as strategies and apply them into writing of this genre and in the discipline as well (Schryer et al., 2003). In this case, multidimensional analysis (MDA) is utilized to investigate linguistic features comprehensively and their variations are clearly characterized. MDA, commonly known as multi-feature multi-dimensional analysis (Biber, 1988), refers to a methodological approach that is employed for language variation analysis in different contexts and communicative purposes. A noted feature in this approach is the employment of corpus linguistics and statistics to generate the clusters and language variations (Biber & Conrad, 2009), so it offers a comprehensive understanding of specific registers, e.g., situational contexts, and communicative purposes, and thus, it attracts attention from genre scholars in terms of descriptive and applied linguistics (Conrad & Biber, 2013; Biber, 2014).

MDA consists of two typical methods to analyze a corpus-based data in research articles in Dentistry. Method 1 is to compare the language use of a given corpus against a pre-determined list of dimensions from constructed benchmarks, e.g., dimensions suggested by Biber (1988,1989). Method 2 is to derive a new list of

dimensions from a specific corpus, e.g., original research articles in Dentistry, and compare the data of the specific corpus with equivalent data from another corpus (Crosthwaite & Cheung, 2019).

For Method 1, five dimensions in linguistic features are utilized to analyze a corpus-based data in research articles in Dentistry, as follows:

1. Dimension 1 mentions involved and informational discourse, which shows the use of nouns, long words, and adjectives.
2. Dimension 2 emphasizes narrative and non-narrative concerns, which shows the interrupted occurrence of past tense and third person pronouns.
3. Dimension 3 addresses explicit and situation-dependent reference that shows the high occurrence of nominalizations.
4. Dimension 4 mentions overexpression of persuation that expresses the linguistic features about the author's viewpoints and presents assessments of certainty. Several examples of this Dimension are the use of modal verbs, lexical hedges and boosters (Hyland, 2005).
5. Dimension 5 highlights abstract and non-abstract information, which contains passive clauses and conjuncts, e.g., *moreover, while*, and *although*. In this Method 1, research articles in Dentistry employ more uses of passive voice and adverbial subordinators, e.g., *while* or *whilst*, to introduce the experimental results (Crosthwaite & Cheung, 2019).

For Method 2, several functional lexico-grammatical dimensions are utilized to analyze a corpus-based data in research articles in Dentistry. The results from analyzing these functions are obtained by utilizing Exploratory Factor Analysis (EFA). EFA is a statistical method to explore the data variations from different factors to determine the genre or register (Crosthwaite & Cheung, 2019). Due to the characteristics of research articles in Dentistry, some dimensions are called "function" since they are not fully qualified to be called "dimension". According to Crosthwaite & Cheung (2019), a *dimension* refers to a continuum of opposing features along which a given text is located whereas a *function* refers to "a set of correlated features that may be present or absent in a given text without necessarily requiring an opposing set of features that have the inverse function" (p. 53). Totally, two functions and three dimensions are utilized to analyze a corpus-based data in research articles in Dentistry, as follows:

1. Function 1 implies the confirmation of findings as facts with the use of predictive models (e.g., *will, shall, can*) and main verbs, which appear in the RA Introduction and Literature Review. The purpose of these uses of language is to add legitimacy and certainty that the findings from previous

studies mention. These findings are similar to what Hyland (2005) called "boosters" to enhance the proposition.

2. Function 2 refers to classifying patient types with the use of WH-pronouns, e.g., *what, where, when*, and WH-relative clauses to classify and elaborate the patient conditions in the study. These uses are frequently found in the Methods section.
3. Dimension 1 refers to narrative and non-narrative concerns, which is also found in Biber's (1988) study. A noticed feature is the extensive use of past tense in the RA Literature Review (active), Methods (passive), Results, and Discussion (passive). Present tense is also utilized, but less popular, to mention methodological procedure that really happens previously to avoid retelling of past events and to mention the clinical features of a problem that occurs in a patient.
4. Dimension 2 refers to the use of active and passive voice in accordance with third person pronouns, e.g., *they* and *their*. Passive voice is frequently utilized in different research article sections, e.g., Methods, Results, and Discussion, in Dentistry whereas active voice appears mostly in the Methods section to describe methodological procedures.
5. Dimension 3 refers to involved and informational discourse, which employs the perfect, e.g., *present perfect*, in active or passive. This feature is also similar to Biber's (1988) study. Involved discourse uses more verbs and pronouns to show emotions and interactions while informational discourse uses more nouns and adjectives.

In the literature, several scholars have investigated the language use in research articles in Dentistry. Carlson (2000) conducts a study on word frequency and collocations in RAs. A corpus of 1400 abstracts are collected from high-ranking journals for further analyzing sentences and extracting the common structures. The results show significant findings about the use of collocations in the Dentistry research articles. The study makes significant contributions to the ESP writing teaching and learning practice, especially for non-native Dentistry students who utilize English in Dentistry for their future career. Besides, Basturkmen (2012) investigates the rhetorical pattern of RA Discussion section in the field of Dentistry. A corpus of 10 Discussion sections from one prestigious journal is collected and analyzed based on Swales (2004). The results show 6 moves frequently utilized in the RA Discussion section in Dentistry. Especially, a result-comment sequence is found in Move 3: *Reporting a result or linked results,* and Move 4: *Commenting on that result/those results*. The findings are useful for researchers and

teachers to understand the features of RA Discussion section in Dentistry and apply them into research, teaching, and learning practice. In addition, Khedri and Basirat (2022) conduct a study on interactive metadiscourse in the field of Dentistry. A corpus of 40 research articles is collected from 4 international-ISI indexed and Iranian journals and analyzed based on Hyland's (2005) framework, totaling 113,840 words. The results show that there are the shared characteristics and disciplinary variations in terms of frequencies and usages in the two corpora. The Iranian corpus utilized interactive metadiscourse markers more frequently than the non-Iranian one. There were also significant differences in the use of interactive categories in the two corpora. The findings provide a valuable insight for scholars who belong to other cultural and linguistic settings as well as novice writers to utilize the socio-rhetorical and discursive norms and structures appropriately.

From the above studies, little is still known about written Dentistry discourse and how to perform effective linguistic communications by professional doctors despite its crucial role in healthcare sector as well as the necessity to conduct more related research in the ESP teaching and learning practice (Salager-Meyer, 1994; Morse & Nakahara, 2001; Hernandez et al., 2003; Crawford et al., 2007; Crosthwaite et al., 2017; Crosthwaite & Cheung, 2019; Mijomanović et al., 2021). Besides, although the studies in medical discourse are still available, they still fail to transfer to the field of Dentistry due to the significant disciplinary variations in the healthcare setting (Bowman et al., 2022). Crosthwaite and Cheung (2019) also claim the differences of discourse in Medicine and Dentistry since the latter possesses its own textual patterns and language use that are only specialized and specific to Dentistry. Besides, the sub-disciplinary variations between the two sub-disciplines in Dentistry are not found in the existing literature. Hence, these are the reasons that lead to the research gap in the investigation of the Dentistry discourse, which is the focus of the current study.

In the current research, the original research articles in two sub-disciplines of Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics of Dentistry are the target genres. Research articles should be investigated rather than case reports in terms of move-step structure and phrase frames because they typically follow a standardized format that clearly delineates distinct moves, steps, and their structure as well as corresponding phrase frames. Additionally, research articles present broader findings that contribute to generalizable knowledge within a field, making them more relevant for understanding disciplinary norms and trends compared to the specific instances highlighted in case reports. They will be analyzed and compared to identify the sub-disciplinary variations in the move-step structure and corresponding phrase

frames. It is supposed that the similarities can be claimed to come from the commonalities of the two sub-fields and the differences may exist due to the sub-disciplinary variations within a single discipline. In the next section, details about the definition and categories of phrase frames as well as their previous studies are introduced.

## 2.4 Phrase Frames

In terms of the text patterns in academic writing, phraseological sequences, e.g., phrase frames, or lexical bundles, have attracted the attention of scholars to conduct a varity of studies (Cunningham, 2017; Lu et al., 2018; Rujirawan & Phoocharoensil, 2020; Panthong & Poonpon, 2020a; Panthong & Poonpon, 2020b; Golparvar & Barabadi, 2020; Lu et al., 2021a; Lu et al., 2021b; He et al., 2021; Narkprom & Phoocharoensil, 2022; Thuannadee & Phoocharoensil, 2022; ; Piromkij & Phoocharoensil, 2022; Cortes, 2023; Wu et al., 2024; Appel et al., 2024). Phrase frame, or commonly known as p-frame (PF), is a set of several fixed words that establish a frame around one replaceable word. Previous studies show a difference between a phrase frame and a lexical bundle. A phrase frame deals with discontinuous phraseological expressions (Gray and Biber, 2013; Grabowski, 2015; Cortes, 2023; Wu et al., 2024; Appel et al., 2024; Mathew & Mccallum, 2024). Besides, a lexical bundle concerns about the continuous phraseological expressions (Gray and Biber, 2013; Rujirawan & Phoocharoensil, 2020; Panthong & Poonpon, 2020a; Panthong & Poonpon, 2020b; He et al., 2021; Narkprom & Phoocharoensil, 2022; Thuannadee & Phoocharoensil, 2022; Piromkij & Phoocharoensil, 2022; Cortes, 2023). Besides, previous scholars have employed phrase frames in university lectures (Liu & Chen, 2022), essays (Yan et al., 2024; Appel et al., 2024), theses and dissertations (Zhou & Li, 2024), research reports (Wu et al., 2024), and research project abstracts (Mathew & Mccallum, 2024). In the current study, phrase frame is also utilized to analyze the data in the present research in terms of structural and functional categories.

Numerous studies have been conducted to explore lexical bundles in field-specific academic texts (Rujirawan & Phoocharoensil, 2020; Panthong & Poonpon, 2020a; Panthong & Poonpon, 2020b; Narkprom & Phoocharoensil, 2022; Thuannadee & Phoocharoensil, 2022; Piromkij & Phoocharoensil, 2022). However, little has been reported on the investigation of phrase frames to identify the useful list of them for teaching and learning purposes in specialized disciplines (Cunningham, 2017, Lu et al., 2018, 2021a, 2021b; Golparvar & Barabadi, 2020; Cortes, 2023; Wu et al., 2024; Mathew

& Mccallum, 2024). Research on the phrase frames should be conducted due to the following reasons:

1. To offer pedagogically useful sources for teaching, learning, and research practice (Lu et al., 2021a, 2021b, 2021c; Wu et al., 2024)
2. To provide insights for the teaching and assessment in tertiary education (Mathew & Mccallum, 2024)
3. To identify the proficiency differences in L2 English writing and the potential values of phrase frames in teaching pedagogy (Appel et al., 2024).

Previous studies show that there are two common ways to categorize phrase frames, e.g., structural and functional categories.

Structural analysis of phrase frames examines the form and arrangement of words within a phrase frame. It focuses on identifying phrase types such as noun phrases, verb phrases, adjective phrases, adverb phrases, etc. In the literature, Gray and Biber (2013) classified them into three major types. For the verb-based type, a phrase frame consists of one or more verbs. For the other-content-word type, a phrase frame includes one or more nouns, adjectives, adverbs. For the function-word type, a phrase frame comprises prepositions, determiners, conjunctions, pronouns, and complementizers only. These three categories are illustrated in Figure 2.3.

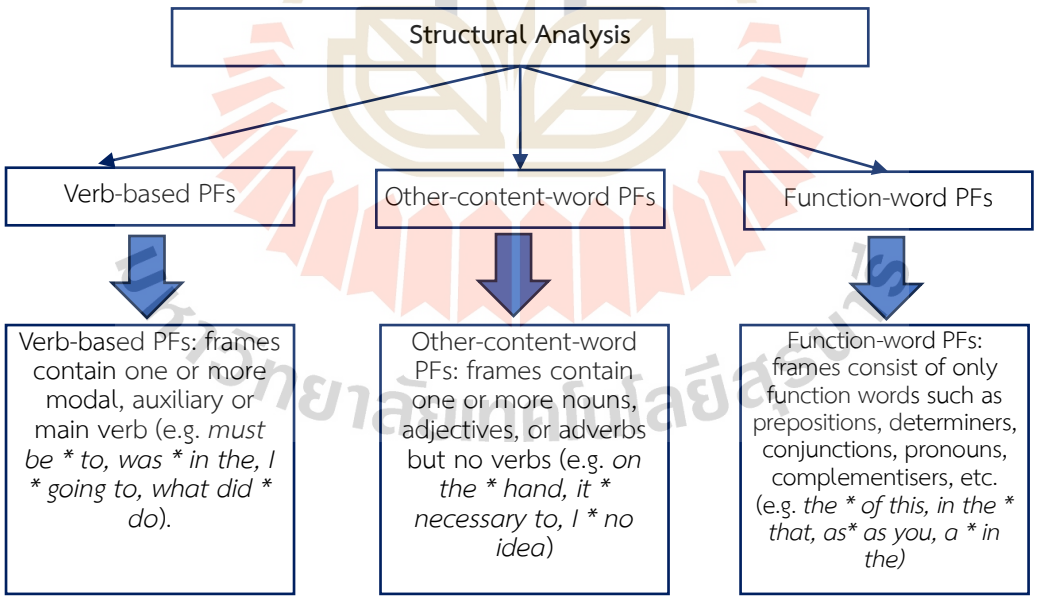



**Figure 2.3 The Structural Analysis of Phrase Frames**
**by Gray and Biber (2013, p.122)**

Functional analysis of phrase frames examines the role that phrase frames play within a sentence, focusing on their contribution to the overall meaning and function of

the sentence. It identifies syntactic functions and semantic roles of a phrase frame. This analysis also considers the information structure of a sentence, distinguishing between the topic, which is what the sentence is about, and the focus, which is the new or important information. By analyzing these functional aspects, one can understand how different phrases interact to convey meaning and achieve communicative goals. In the literature, two frameworks have been recommended from previous studies.

Firstly, proposed by Hyland (2008) and utilized by some other studies, e.g., Grabowski (2015) and Ren (2022), a phrase frame can be classified in the same way as continuous multiword sequences since it presents a high degree of lexico-grammatical homogeneity (Ren, 2022). With five- or six-word phrase frames, they can present a high degree of homogeneity (Cunningham, 2017; Lu et al., 2018, 2021; Casal & Kessler, 2020). Therefore, three major categories are recommended. If a phrase frame shows the author's evaluations, comments, or attitudes, it is categorized into "participant-oriented" type. If a phrase frame presents logical connections, stating a restricted condition, explaining a given topic, or implying a text itself, it is marked "text-oriented" type. If a phrase frame implies an entity or a specific attribute, it is considered as "research-oriented" type, as reported in Figure 2.4.

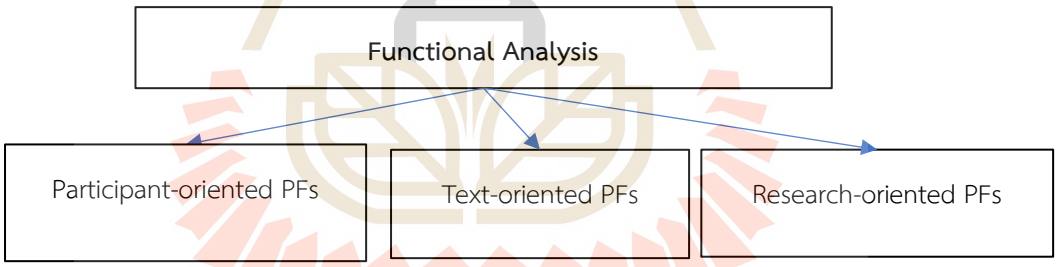



**Figure 2.4 The Functional Analysis of Phrase Frames by Hyland (2008, p.13-19)**

Secondly, Simpson-Vlach and Ellis (2010) also propose another way to functionally categorize the phrase frames, which consists of three main types as follows:

The first type of phrase frames is referential expression, which consists of five sub-types:

Sub-type 1.1: Specification of attributes includes intangible and tangible framing attributes. Intangible framing attributes include concrete entities, e.g., *based on*; abstract concepts, e.g., *the notion of*; an entire clause, e.g., *the way in which*; a bridge between a verb and clause, e.g., *in such a way*. Besides, the tangible framing attributes are physical or measurables of nouns, e.g., attributes like *the amount of, the size of, the value of, the level of*, or cataphoric expressions stating the amount of noun phrase,

e.g., *a list of*, *there are four, little or no, all sorts of*, quantity specifiers stating the previous the noun phrase, e.g., *both of these, of these two*.

Sub-type 1.2: Identification and focus include expository phrases, e.g., *as an example*, *such as the, referred to as, means that the*, auxiliary verbs or modal constructions, e.g., *it is not, so this is, this would be*.

Sub-type 1.3: Contrast and comparison include explicit markers of comparisons, e.g., *same, different, similar, as opposed to*.

Sub-type 1.4: Deictics and locatives include physical locations in the environment in the phrase frames, e.g., *the real world*, reference points, e.g., *a and b, at this point*.

Sub-type 1.5: Vagueness markers include such attributes like *and so on*, or *something like that*, and *stuff like that*, and *things like that*.

The second type of phrase frames is stance expression, which consists of six sub-types as follows:

Sub-type 2.1: Hedges includes phrases which have different functions to show levels of possibility, e.g., *there may be, to some extent, you might want to.*

Sub-type 2.2: Epistemic stance includes claims, demonstrations, expressions of (un)certainty, beliefs, thoughts, reports by others, e.g., *assume that*.

Sub-type 2.3: Obligation and directive include verb phrases stating readers or listeners doing or not doing something or joining observations, facts, or conclusions, e.g., *Tell me what*.

Sub-type 2.4: Ability and possibility include potential or possible actions, e.g., *you can see, you can look at, you are trying to*.

Sub-type 2.5: Evaluation includes interpersonal obligation, e.g., *it is important to, it is necessary to*, or other evaluative attributes, e.g., *the importance of, is consistent with, it is obvious that, it doesn't matter.*

Sub-type 2.6: Intention/volition includes speaker's attention to so something or questioning the listener's intention, e.g., *let me just*.

The third type of phrase frames is discourse organizing expression, which consists of four sub-types:

Sub-type 3.1: Metadiscourse and textual reference include phrases like *in the next section*.

Sub-type 3.2: Topic introduction and focus include phrases to introducing topic, e.g., *a look at*.

Sub-type 3.3: Topic elaboration includes non-causal phrases, e.g., *it turns out that*, *what happens is, see what I'm saying, any questions about*, *in order to*, and *as a result*.

Sub-type 3.4: Discourse markers include connectives, e.g., *as well as, at the same time, in other words*, and interactive devices, e.g., *thank you very much, yes yes yes,* and *no no no*.

A summary of functional analysis of p-frames is presented in Figure 2.5.

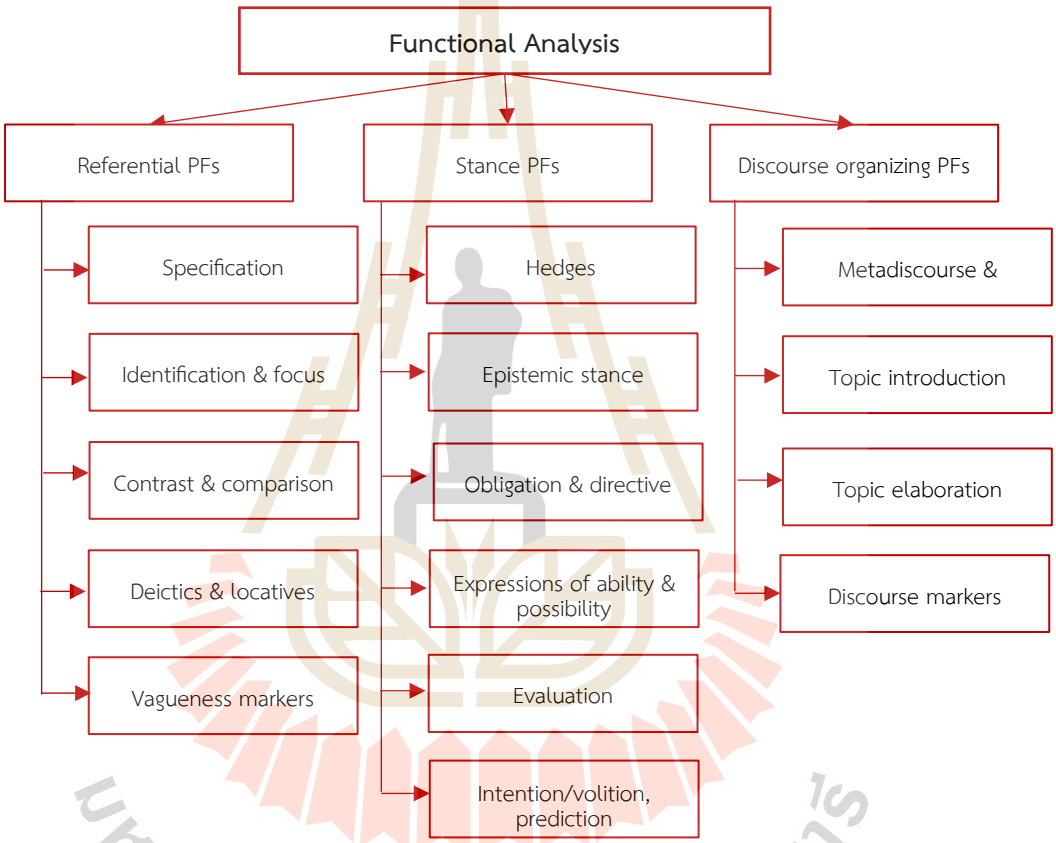



**Figure 2.5 The Functional Analysis of Phrase Frames by Simpson-Vlach and Ellis (2010, p.498-502)**

The model of Gray and Biber (2013) will be utilized for structural category while Simpson-Vlach and Ellis (2010) will be employed for functional category. The main reason for these selections is the recommendations from the previous studies which show that the two frameworks should be utilized for structural and functional analysis (Cunningham, 2017; Lu et al., 2018, 2021a, 2021b; Golparvar & Barabadi, 2020; He et al., 2021). For the other reason, they will be presented in 3.5.1 Selection of Framework of Phrase Frames of Chapter 3.

The following parts will introduce previous studies on phrase frames of the whole research articles and in different sections of research articles as outlined in Figure 2.6.

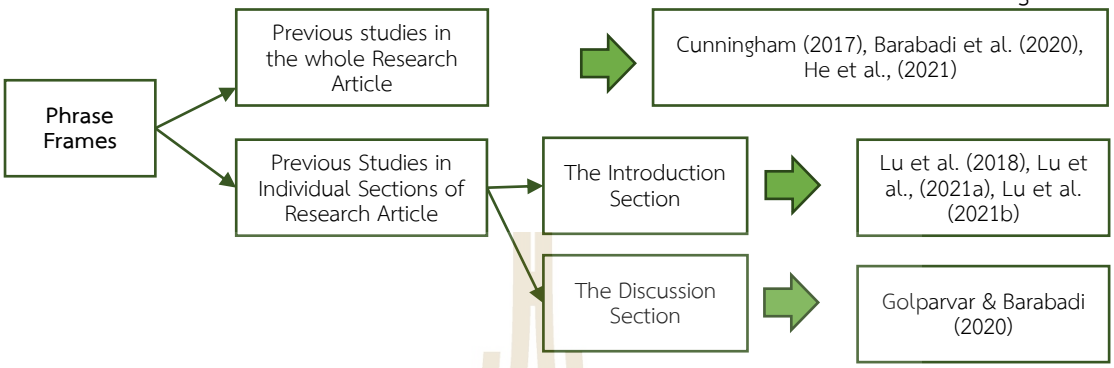



**Figure 2.6 A Summary of Previous Studies in Phrase Frames in RA Sections**

### 2.4.1 Previous Studies in Phrase Frames in the Whole Research Articles

Cunningham (2017) investigated the phrase frames in the whole RA in Mathematics since scant attention has been paid on their conventional phrase frames in the field. A corpus of more than 2.2 million words with 128 papers from eight high impact journals is investigated with five-and six-word frames generated by utilizing kfNgram (Fletcher, 2012). The standards are based on the Contemporary American English in phrase frequency and the data are then coded and grouped. The results show 180 phrase frames, with the majority of function-word phrase frames, found in the corpus, 60% of which appears in the end position. For the structural category, noun phrase + of (e.g., *the * of theorem*) accounts for 33% (59 occurrences), which is the most frequently utilized frames in this study. The following frames, e.g., be noun/adverbial phrases or prepositional phrases (e.g., *that if * is a* or *in this * we prove*) cover 13% (23 occurrences in each). For the functional category, twenty frames utilized *we* in the phrase. The findings also illustrate that the passive forms of phrase frames are utilized and how effective phrase frames contribute to the quality of research articles. They also support students with clearer understanding of how these phrase frames are utilized in Mathematics and EAP/ESP teachers in understanding these new disciplines and serve as useful resources for their teaching pedagogy.

Barabadi et al. (2020) carried out a study on the phrase frames in the whole RA in the field of Environmental Science. A corpus of 125 articles is collected from high rated journals in the 2014-2018 period and analyzed by utilizing kfNgram software (Fletcher, 2011). The results show that the four-word phrase frame *the * of nitrate* is the most frequently found (84 occurrences) in the study, which consists of fillers (frequencies) like *reduction* (23), *removal* (18), *conversion* (6), *use* (6), and *risk* (4). For the structural analysis, the majority of four-word phrase frames delves into other-

content-word with 59 occurrences, which is followed by verb-based (5 occurrences) and function-word (1 occurrence). For the functional category, the majority of four-word phrase frames is in referential phrase frames with 58 occurrences. The findings provide an insight to support novice researchers in the field to write research articles based on the norms and expectations of the Environmental Science discourse community. The findings also make significant contributions to help EAP/ESP teachers and their students in the teaching and learning practice.

He et al. (2021) conducted a study on the phrase frames in the whole RA in the discipline of Business Management. A corpus of 160 articles from three high rated journals from 2013 to 2018 is compiled and analyzed by utilizing KfNgram (Fletcher, 2011). The results show 116 phrase frames, with the majority in four-word phrase frames, which meet the study's requirements. Moreover, phrase frames in three-word phrase frames are 51% of non-verb content (e.g., *high * of*) with their fillers like *level, levels, degree*; 16% of verb-based (e.g., *are * likely*) with their fillers like *more, less*; and 33% of function-word phrases (e.g., *the * between*) with their fillers like *relationship, link, interaction*, whereas the numbers in four-word phrase frames are 23% (e.g., a * relationship between) with their fillers like *positive, negative*; 19% (e.g., *to test * hypotheses*) with their fillers like *the, our*; and 58% (e.g., *in the * form of*) with their fillers like *context, case, form*, respectively. The findings provide pedagogical implications for Business Management students and course designers for EAP syllabus and material development.

To sum up, three studies above examine the typical phrase frames in Mathematics, Environmental Science, and Business Management research articles. The studies also identify the employment of KfNgram software to automatically extract the data and the use of frameworks to analyze the phrase frames in the structural and functional categories. However, studies about phrase frames still remain limited in the literature and there is a need to call for more research on the whole research article sections with different disciplines, especially Dentistry.

**2.4.2 Previous Studies in Phrase Frames in Individual Sections of Research Article**

In the following sections, previous studies on phrase frames will be presented with the concentration on the RA Introduction and Discussion section. To the best of the researcher's knowledge, no previous studies of phrase frames were found in the other RA sections, including Methods, Results, and Conclusion.

#### 2.4.2.1 The Introduction Section

Lu et al. (2018) carried out a study on phrase frames in RA Introductions from Anthropology, Applied Linguistics, Economics, Political Science, Psychology, and Sociology in social sciences. A corpus of 600 articles from five prestigious journals from 2012-2016 is collected based on Fletcher's (2002) framework. There are 4 major stages to construct, analyze, and assess the data, i.e., automatic extraction, manual extraction, structural and functional extraction, and rater assessment. The study shows the results based on two categories. For the structural type, a list of 454 phrase frames, which satisfy the criteria of the study, is found with more five-word than six-word frames (e.g., 370-84). For the functional category, more five-word than six-word frames, e.g., 370-84, are found in the current study. Moreover, some typical phrase frames are referential phrase frames (e.g., *the presence of absence of* *) with their fillers like *information, data, feature*; stance frames (e.g., *are * likely to be*) with their fillers like *less, relatively, more, not, also*; and discourse organizing phrases (e.g., *the article/paper is * as follows*) with their fillers like *structure, organized*. The findings report important phrase-frames, which are widely used among instructors and student writers, so they offer useful pedagogical implications to academic writing.

The study of Lu et al. (2021a) plays a key role in examining the phrase frames in the research article Introduction sections. They investigate 500 articles from Social Sciences from five international journals in 2012-2016 by using Swales's CARS model (2004). The results show three types of phrase frames, as follows:

Type 1: *Specialized phrase frames* includes the phrase frames that appear in only one move, or step in the corpora, and are specialized in a specific move or step.

Type 2: *Semi-specialized phrase frames* includes the phrase frames that appear in two or more moves, or steps, and clearly show a strong connection to a communicative purpose.

Type 3: *Non-specialized phrase frames* includes the phrase frames that appear in two or more moves, or steps, but show no connection to a specific communicative purpose.

The findings report that the most frequently utilized phrase frame is found in Move 1 with 149 occurrences and the phrase frames in Type 3 are the most widely utilized. Fourteen phrase frames in Type 3 are found in Move 2, which become predominant frames in the move. This type still ranks first in Move 3 with 126

occurrences. To be more specific, phrase frames in Type 1 only appear in one move or step, e.g., *a number of * have* with the fillers like *scholars*, which accounts for 16% of the total phrase frames. Phrase frames in Type 2 are found in two or more moves or steps to show a strong relation to the target moves or steps, e.g., *play an * role in* with the fillers like *important, undisputed*, which is marked in M1S2: *Making generalization*. Phrase frames in Type 3 appear in two or more moves or steps, but show no relation to any specific moves or steps, e.g., *at the * of the* with the fillers like *time*. The findings are hoped to contribute significant contributions in teaching and learning practice.

Another study by Lu et al. (2021b) was carried out about phrase frames in 500 RA Introduction sections in five disciplines in Social Sciences by using Swales's CARS model. The study also presents the use of Cohen's Kappa, one of the two popular methods to measure the inter-rater reliability, commonly utilized in Health Science disciplines. The results show that different phrase frames (frequencies/number of journals) are found in different disciplines, e.g., *in this article I * in* Anthropology (13/12), *the role of *** in Applied Linguistics (13/10), *in this article we * (19/18)* in Political Science, *about the nature of * (11/3)* in Psychology, *in this article we * (19/19)* in Sociology. The occurrence of these phrase frames shows that they are not utilized exclusively in any specific discipline, but employed in shared disciplinary settings. The results also find two phrase frames in a specific discipline and move-step structure. The findings show that there are some important variations across the disciplines in terms of move-steps and phrase frames, which makes a significant contribution to understanding of disciplinary variations, and is useful for writing scientific research and pedagogical implications.

To sum up, the above-mentioned studies offer valuable findings in the use of phrase frames, which are utilized in RA Introduction of social science disciplines, but the phrase frames in the RA Introduction section of Dentistry are still unexplored.

**2.4.2.2 The Discussion Section**

To the best of the researcher's knowledge, only one study investigates the phrase frames in the RA Discussion section. To be more specific, Golparvar & Barabadi (2020) investigate 422 research articles in thirteen prestigious journals in Education and Educational Research between 2013 and 2018 to identify key phrase frames in Discussion sections. The results show a list of 58 four-word and 40 five-word frames which are typical and frequently utilized in the field. More non-verb content word phrase frames than verb-based frames and function word frames

are found in their study. The results show that *to the * of* (268 frequencies) is the most frequently utilized four-word frames with the fillers like *development* (13), *use* (12), *importance* (7), *lack* (6), *results* (6), *kinds* (5), *level* (5), *needs* (5), *success* (5). For structural category, the majority of four- and five-word phrase frames is found in non-verb content word with 83.9% and 76.8%, which is followed by verb-based four- and five-word frames with 11.30% and 13.90%, respectively. For the functional category, the referential four- and five-word phrase frames are found to be the most frequently utilized with 91.3% and 70%, respectively. The findings from current study serve as useful guidelines for novice researchers on how to write research articles in the target field and student writers for their writing practice.

To sum up, the typical phrase frames in the Discussion section have been identified in terms of structural and functional categories. However, to the best of the researcher's knowledge, the other RA sections are still understudied and there is still a lack of previous studies about phrase frames in different RA sections in other disciplines, including Dentistry, which is the focus of the present study.

Taken together, little is known about the frequency, patterns and functions of phrase frames used in research article sections. A criticism posed in the methodology of phrase frame studies is that the number of words and the number of occurrences in a phrase frame should be not less than three. Besides, phrase frames can be analyzed in terms of structural and functional categories. For the discourse functions, phrase frames are determined by the semantic features of the variants, which is similarly found in the studies of Lu et al. (2018, 2021a, 2021b) and He et al., (2021). Besides, it is recommended that more research on RA sections should be carried out to meet the current demands of genre investigations and provide an in-depth knowledge for the existing literature in terms of Dentistry discipline, as well as for scholars, doctors, teachers, and graduates for their genre-specific research article writing. In the next section, research gaps in the studies of moves, steps, and their structure as well as corresponding phrase frames are identified and discussed leading to the reason for the present study.

## 2.5 Contrastive Rhetoric

In order to examine the sub-disciplinary discourse variations, it is important to explore the term "Contrastive rhetoric", which is one of the major focus of the current study. This term has been utilized in 1966 when Kaplan introduced his publication entitled "Cultural Thought Patterns in Intercultural Education" about the impacts of native language to his perceptions. In this case, language, to some degrees, dominates

the ways we see the world and authors, from diverse background, have diverse writing habits. In 1990s, significant changes have been made in the study of contrastive rhetoric. Ann Raimes and Ilona Leki explore the importance of contrastive rhetoric in their studies by highlighting the effect of L1 backgrounds on L2 writing. Although there are some critiques about the contrastive rhetoric, it is still a feasible theory of second language writing. Connor (1996) elaborates the definition of Contrastive Rhetoric, as follows:

> Contrastive rhetoric is an area of research in second language acquisition that identifies problems in composition encountered by second language writers and, by referring to the rhetorical strategies of the first language, attempts to explain them.
>
> (p.5)

From this definition, contrastive rhetoric identifies specific challenges second language writers face, often due to differing rhetorical styles and conventions. By understanding these differences, teachers can support students in improving their writing skills in a new language. In Applied Linguistics, contrastive rhetoric concentrates on the five areas: contrastive text linguistics, the study of writing as a cultural activity, classroom-based contrastive studies, contrastive rhetoric and genre analysis (e.g., research articles); and contrastive rhetoric and the teaching of an ideology (Connor, 1996). In the current study, it is categorized into the contrastive rhetoric and genre analysis, which follows an increasing interest of writing for different purposes and contexts for ESL students. Besides, Swales's (1990) framework has been the primary model that defines genre and discourse in the analysis of contrastive rhetoric.

Each language has its own rhetorical patterns that are influenced by L2 writing and the Contrastive Rhetoric concentrates on the cognitive and social-cultural factors of writing. At the beginning, studies of contrastive rhetoric focus on the writing of expository essay by ESL students. After that, they tend to examine writing in academic and workplace contexts, including research articles, grant proposal, and business letter. According to Connor (1996, 2002, 2004), recent studies show that the contrastive rhetoric has expanded its scale in different disciplines, which offers insightful perceptions on teaching L2 writing. The following paragraphs introduce the contrastive analysis between the two sub-disciplines.

Samraj (2005) investigates the sub-disciplinary variations of the rhetorical structure of RA Introductions and Abstracts in Wildlife Behavior and Conservation Biology in Environmental Sciences. A corpus of 12 research articles are collected from high-ranking journals and analyzed based on the frameworks of Swales (1990) and Bhatia (1993). The results show some similarities and differences in communicative

purposes, rhetorical structures, and recurrent organizations. Especially, Move 1: *Establishing a territory* is a predominant move in the Conservation Biology Introductions while it appears in only half of the Wildlife Behavior Introduction corpus. Move 2: *Creating a niche* is commonly utilized in the Abstracts of Conversation Biology while this move appears only a few RAs in the Wildlife Behavior. Besides, compared to prior research, some non-traditional moves exist in two genres of the Wildlife Behavior, which is Move 3: *Occupying the niche* in the RA Introduction. M3S1: *Background descriptions* is not commonly found in Conservation Biology Introductions and Abstracts. The results show that the communicative purposes and rhetorical patterns in two genres may not be often different as elaborated from prior research. The findings provide an insight to understand the genre theory and EAP teaching purposes.

Ozturk (2007) identifies the sub-disciplinary variations of the rhetorical structure of RA Introduction in Second Language Acquisition and Second Language Writing Research in Applied Linguistics. A corpus of 20 articles from high-ranking journals are compiled based on the model of Swales (1990). The results report some major differences in terms of structural organization between the two sub-disciplines, where it contrasts to the prior research about the existence of sub-disciplinary variations in the structural patterns in a discipline. Besides, the Second Language Acquisition is considered an "established" domain with utilizing a Move 1-Move 2-Move 3 pattern while the Second Language Writing is known as "emerging" area with the popularity of Move 1-Move 2-Move 1-Move 3 and Move 1-Move 3 in the RA Introduction. The study also shows the predominance of M1S2: *Topic generalization* and M1S3: *Literature Review* in the Second Language Writing due to the interdisciplinary characteristic and the topic diversity get readers familiar with the research issues. The result significantly contributes the existing literature about the possibility of variations within a discipline and the teaching pedagogy writing.

Shooshtari and Jalilifar (2012) conduct a study on the sub-disciplinary variations of the rhetorical structure of RA Discussion sections in English for Specific Purposes (ESP) and English for General Purposes (EGP) in Applied Linguistics. A corpus of 80 articles are compiled from prestigious journals based on the model of Thompson and Tribble (2001). The results show the similarities in terms of using frequencies between the two sub-disciplines and the sub-disciplinary variations from local and international author's perspectives. In the Iranian writers, they are influenced by the journal editors and do not follow the common sense of international discourse community. This leads to the sub-disciplinary features due to 4 reasons, i.e., the social and epistemological features, the individual study categories, the readers, and the nature of patterns. The

study raises the scholars' awareness of the important role of Discussion section and provides a useful resource for the existing literature and ESP/EAP pedagogy.

Li and Pramoolsook (2015) investigates the sub-disciplinary variations of the rhetorical structure of RA Abstracts in Management and Marketing in Business. A corpus of 64 articles are collected from refereed journals based on the adoption of Hyland's (2012) model. The results present the Introduction-Purpose-Product has been the most dominant in two sub-disciplines and five types of hedging are also found in the two corpora due to the characteristics of each sub-discipline. Specifically, the Methods move is embedded within Product move are found in 44% in Management and 22% in Marketing. The Introduction-Purpose-Product-Conclusion pattern was identified as the most predominant structure in Marketing while the Purpose-Product structure is widely utilized in Management. For the move cycles, there are a few occurrences in the two corpora due to the possibility to repeat the move in a limited space. There is one new move which is different from the prior research to emphasize the significance of research. The study proposes pedagogical implications to teaching sub-disciplinary variability to understand the target contexts.

Pramoolsook et al. (2015) also identify the sub-disciplinary variations of the move-step structure of RA Methods sections in Management and Marketing in Business. A corpus of 20 articles from high ranking journals are compiled based on the model of Lim (2006). The results show some similarities and discrepancies within the two datasets and the Marketing dataset has more diversity of rhetorical structures than the other. Especially, Move 1: *Describing data collection procedure* is the widely utilized move in Management and appear in half of the Marketing corpus. Move 2: *Declining Procedure for Measuring Variables* appears more frequently in Marketing than in Management corpus. Move 3: *Elucidating data analysis procedure* does not appear in all research articles since the combination of data analysis and results may be easier for the authors to report the data. The findings provide an insight to teach how to write the Methods section of RAs and to understand the rhetorical variability in the sub-disciplines in Business.

Contrastive analysis is a research method in linguistics and applied linguistics that involves systematically comparing two or more languages, dialects, or linguistic systems to identify their similarities and differences. It is based on the assumption that language systems vary in terms of grammar, phonology, syntax, and other features, and that understanding these variations can provide valuable insights into language learning and usage. In the context of second language acquisition, contrastive analysis has been particularly influential in predicting areas of difficulty for learners. This

prediction is grounded in the idea that learners may experience positive transfer (where similarities between languages help learning) or negative transfer (where differences between languages cause errors). For example, if a learner's first language (L1) shares certain grammatical structures with the target language (L2), they are more likely to use those structures correctly. Conversely, when the structures differ significantly, learners may produce errors or transfer patterns from their L1 that are inappropriate for the L2.

Over time, the scope of contrastive analysis has expanded beyond its original focus on predicting language learning difficulties to encompass other fields such as translation studies, sociolinguistics, and intercultural communication. In translation, for example, contrastive analysis helps identify potential mismatches in meaning, syntax, or cultural context between languages, aiding in the production of more accurate and culturally sensitive translations. Similarly, in intercultural communication, it can help anticipate misunderstandings arising from differences in communication styles or cultural norms. Current approaches to contrastive analysis emphasize a more nuanced understanding of linguistic diversity, focusing not just on predicting errors but also on understanding cross-linguistic interactions, promoting awareness of structural differences, and appreciating the diversity of linguistic systems.

According to Connor (1996), there are 6 methods, i.e., reflective inquiry, quantitative descriptive research, prediction and classification studies, sampling surveys, qualitative descriptive research (e.g., case studies and ethnographies), and true and quasi experiments. Each of these methods contributes a distinct approach to contrastive analysis, offering both quantitative and qualitative insights into the similarities and differences between the two sub-disciplines, as follows:

Firstly, reflective inquiry investigates the issues via observations, introspection, and literature review (Bereiter & Scadamilia, 1983). This method is categorized into 3 types based on their purposes, including surveys of a field, the origins and developments of a field, and calls for a paradigm shift in a field (Sugiharto, 2004). Reflective inquiry involves the researcher engaging in self-reflection to critically examine their assumptions, biases, and interpretations during the analysis of contrasting features between the sub-disciplines. This method helps uncover deeper insights into theoretical perspectives and the underlying principles that shape the contrasts observed in the study.

Secondly, quantitative descriptive research focuses on summarizing and describing data using numerical statistics such as totals, percentages, and frequencies. This method enhances objectivity by minimizing subjective interpretation, enabling the

identification of data across various disciplines. Contrastive analysis through quantitative descriptive research involves collecting and analyzing numerical data to identify and describe patterns across the two sub-disciplines. This approach enables the researcher to quantify the differences and similarities between the sub-disciplines, such as the frequency of occurrence of specific features, providing objective, measurable contrasts.

Thirdly, prediction and classification studies aim to identify the measurable variables of writing, so complex relationships are found among the variables. However, they are not adequately proved with theories and their relations are also misinterpreted. In the context of contrastive analysis, prediction and classification studies involve using data to predict outcomes or classify instances based on the distinguishing characteristics of each sub-discipline. This method allows researchers to determine how contrasting features of the sub-disciplines can be used to forecast future behaviors or categorize linguistic patterns.

Fourthly, sampling surveys are research methods used to gather data from a subset of a population to make inferences about the entire group (Lauer & Asher, 1988). Instead of surveying every individual, researchers select a representative sample, which helps to save time and resources while still providing insights that can be generalized. Contrastive analysis using sampling surveys involves selecting a representative sample from each sub-discipline and collecting data via surveys or questionnaires. This method allows for a comparison of the prevalence or distribution of certain features, behaviors, or practices within the two sub-disciplines, offering valuable insights into their contrasts.

Fifthly, case studies and ethnographies are qualitative descriptive research methods that provide in-depth insights into specific contexts. Case studies explore particular cases, addressing "how" and "why" questions through interviews and observations. Ethnographies focus on cultures and social practices through immersive observation, aiming to understand lived experiences. In contrastive analysis, qualitative descriptive research, including case studies and ethnographies, focuses on deeply exploring specific instances or groups within each sub-discipline. This method helps researchers understand the cultural and contextual factors that influence the contrasting features between the sub-disciplines, providing a rich, narrative-based analysis.

Finally, true and quasi experiments are methods used to determine causal relationships between variables. True experiments involve random assignment to control for extraneous variables, while quasi-experiments rely on existing groups,

providing valuable insights but generally with lower internal validity. Contrastive rhetoric in these experiments are rare. Contrastive analysis through true and quasi-experimental methods involves manipulating variables to examine their effects on the two sub-disciplines. By testing how different experimental conditions or interventions influence outcomes, this method allows for causal inferences about the differences and similarities between the sub-disciplines, offering insights into how specific factors may shape contrasting features.

Taken together, the current study is concerned with the investigation of moves, steps and corresponding phrase frames as well as the sub-disciplinary variations of the RA sections between the two sub-disciplines, so it is categorized as a mixed-method study with qualitative and quantitative descriptive research. A mixed-method study is suitable for analyzing move-step structure and phrase frames of the RA sections between the two sub-disciplines of Dentistry. In the move-step analysis, qualitative descriptive research allows for in-depth examination of specific texts, providing detailed insights into their organization and linguistic features of move-step structure and phrase frames. In the phrase frame analysis, quantitative descriptive research systematically quantifies the presence and frequency of phrase frames by using software, providing a clear overview of how authors structure their arguments.

To sum up, these 5 above studies have shown the contrastive analysis between sub-disciplines in different RA sections (Introductions, Abstracts, Discussion, Methods), disciplines (Environmental Sciences, Applied Linguistics, Business), frameworks (Swales, 1990; Bhatia, 1993; Thompson & Tribble, 2001; Hyland, 2012; Lim, 2006), which results more valuable findings to contribute to the existing literature. However, more investigations in different sub-disciplines within a single discipline should be carried out to response the research needs of genre studies.

There are 3 reasons why a contrastive analysis between two sub-dsiciplines should be carried out to investigate the move-step structure and phrase frames:

Firstly, a contrastive analysis can help researchers understand the sub-disciplinary variations in a discipline. Sub-disciplines often have distinct research focuses and communication purposes. Comparing their move-step structures and phrase frames helps to identify differences in how moves, steps and corresponding phrase frames are organized and presented, which can reveal unique features within each sub-discipline.

Secondly, a contrastive analysis can be a useful resource to improve academic writing. The findings from analyzing the sub-disciplinary move-step structure and phrase frames of the research articles offer more valuable insights for scholars to

compose research articles in their target journals. This understanding can enhance clarity, persuasiveness, and the high possibility of successful publication.

Finally, a contrastive analysis can be used for pedagogical benefits. Insights from the sub-disciplinary comparisons can inform academic writing instruction, helping students develop discipline-specific writing skills. Understanding move-step variations in writing means recognizing the different moves and steps used across various disciplines. This knowledge allows teachers to tailor instruction to the unique conventions of each field, helping students write more effectively in diverse contexts. By teaching these adaptable techniques, teachers equip students with transferable writing skills that enhance clarity, coherence, and discipline-specific communication.

## 2.6 Research Gaps

Regarding the investigation of move-step structure, several studies have been conducted on the RA Introduction section (Meng, 2021; Gao & Pramoolsook, 2023); the Methods section (Swales, 2004; Lim, 2006); the Results section (William, 1999; Yang & Allison, 2003); the Discussion section (Peacock, 2002; Yang & Allison, 2003); Basturkmen (2012); the Conclusion section (Yang & Allison, 2003). In addition, the move-step structure in the whole research articles is also investigated in several disciplines, e.g., Nwogu (1997), Kanoksilapatham (2005), and Davis (2020). However, in the field of Dentistry, only one study examines move-step structure of the RA Discussion section and no study identifies move-step structure on the whole RA in Dentistry. This shows scant attention paid to this underexplored discipline for obtaining more valuable findings.

With reference to the exploration of phrase frames, several studies have investigated in the RA Introduction and Discussion sections, including Cunningham (2017), Golparvar and Barabadi (2020), Lu et al. (2018), Lu et al. (2021a), Lu et al. (2021b), Wu et al., 2024). However, to the best of the researcher's knowledge, only RA Abstract, Introduction, and Discussion sections have been investigated, and phrase frames in the whole RA sections are understudied. The disciplines of Mathematics, Educations, Anthropology, Sociology, Psychology, Economics, Applied Linguistics, and Political Science have been explored, but Dentistry has not been a subject of investigation. Hence, these previous studies show that, among the research on phrase frames, the majority have concentrated on phrase frames in RA Introduction and Discussion sections, with none on phrase frames throughout the whole research article.

In terms of the investigation of contrastive rhetoric, previous studies have investigated move-step structure of specific research article sections in the two sub-

disciplines within a single discipline, including Environmental Sciences (Samraj, 2005), Applied Linguistics (Ozturk, 2007; Shooshtari & Jalilifar, 2012), and Business (Li & Pramoolsook, 2015; Pramoolsook et al., 2015). Besides, Kanoksilapatham (2015) also conducts a contrastive move analysis among three Engineering sub-disciplines. However, the investigation of sub-disciplinary variations in move-step structure and phrase frames of the whole research articles between the two sub-disciplines of Dentistry, including Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, are still not found in the existing literature.

Therefore, it is the attempt of this current study to investigate the move-step structure and corresponding phrase frames of English research articles in Dentistry as well as to conduct the contrastive analysis of move-step structure and phrase frames between Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics sub-disciplines, as presented in Figure 2.7. In the current study, there are three aspects that make the present research different and complimentary to the existing literature. Firstly, the current study explores the whole English research article, including Introduction, Methods, Results, Discussion, and Conclusion. Secondly, the field of study is Dentistry in the group of Health Sciences, which has been underexplored. Thirdly, the contrastive analysis is between *Oral and Maxillofacial Surgery* and *Orthodontics and Dentofacial Orthopedics* sub-disciplines, which could be the first attempt to be reported in the literature.

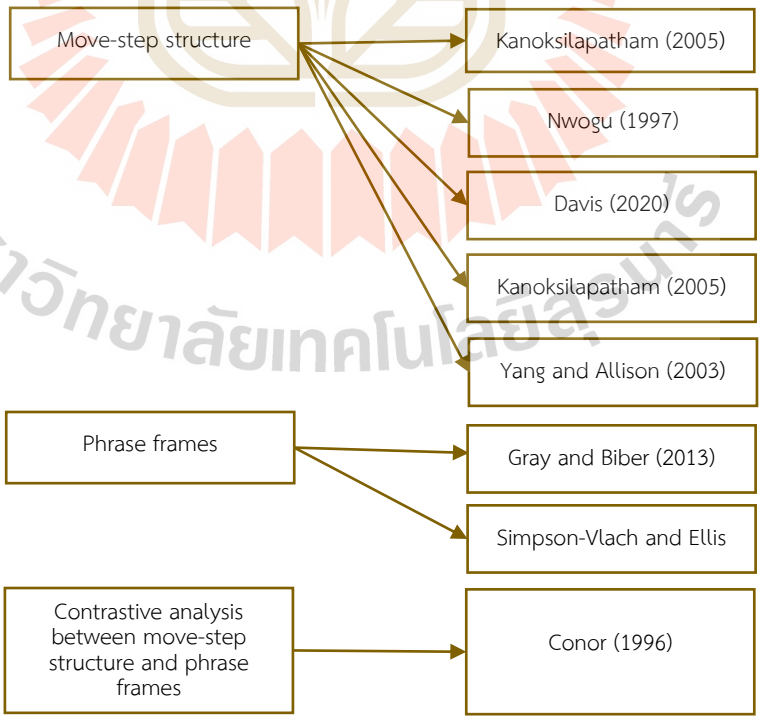


Figure 2.7 The Conceptual Framework of the Analysis of Move-step Structure and Phrase Frames between the two sub-disciplines

มหาวิทยาลัยเทคโนโลยีสุรนารี

## 2.7 Chapter Summary

The chapter provided a literature review pertinent to the present research. It commenced with key definitions of genre based on the previous studies and highlighted 3 traditions of genre, i.e., New Rhetoric, Systemic Functional Linguistics, and English for Specific Purposes. Previous studies of move-step structure of research articles in different sections and different disciplines were then reported. The theoretical background, including English for Dentistry Purposes and Dentistry discourse with two main genres, was reviewed. Details about previous studies in phrase frames were discussed. The chapter also showed the research gaps in the current study to explore for better comprehension in research articles in the field of Dentistry. In the next chapter, it will show more information about methodology that informs the research activities of the present research.

มหาวิทยาลัยเทคโนโลยีสุรนารี

# CHAPTER 3
# RESEARCH METHODOLOGY

As the third chapter of the dissertation, several themes related to its methodology are addressed. Firstly, the research objectives are introduced to guide the direction of the present study's methodology, helping to focus on the research process, frame the research questions, and establish the methodology. Secondly, the research design is proposed to provide an overview of how the study is to be carried out to achieve the objectives. By providing a structured approach, the research design ensures that the study is systematic, replicable, and capable of producing valid and reliable results. Thirdly, corpus compilation is described to show the systematic organization of data to be analyzed in the current study. This process includes the determination of the size of the corpora, the selection of journals and research articles, and the management of the corpora. Fourthly, the analysis of move-step structure and phrase frames is mentioned. Details about the selection of framework of the move-step structure, the identification of moves and steps, and the determination of the status of moves and steps are included to ensure the sufficient background knowledge before starting collecting data. Fifthly, the analysis of phrase frames is reported with information about the selection of framework of phrase frames, the identification of phrase frames, and the determination of the status of phrase frames. Finally, details about contrastive analysis between the two sub-disciplines are presented.

## 3.1 Research Design

A mixed-method design is suitable for analyzing move-step structure and phrase frames of the RA sections between the two sub-disciplines of Dentistry in this current study. In the move-step analysis, qualitative descriptive research allows for in-depth examination of specific texts, providing detailed insights into their organization and linguistic features of move-step structure and phrase frames. In the phrase frame analysis, quantitative descriptive research systematically quantifies the presence and frequency of phrase frames by using software, providing a clear overview of how authors use phrase frames to describe different communicative purposes in the RA sections.

In order to achieve the research objectives and to answer the four research questions, the exploration of move-step structure and phrase frames as well as the contrastive analysis between them are involved in the current study. In the current study, it starts with the research background which is from the existing literature and the researcher's own working experiences. After that, there are 4 research purposes that corresponds to 4 research questions. Next, two corpora are compiled with 30 RAs in each of the two sub-disciplines. Finally, research design consists of move-step analysis to answer RQ1, phrase frame analysis to answer RQ2, and contrastive analysis between the two sub-disciplines to answer RQs 3&4, as illustrated in Figure 3.1.

มหาวิทยาลัยเทคโนโลยีสุรนารี

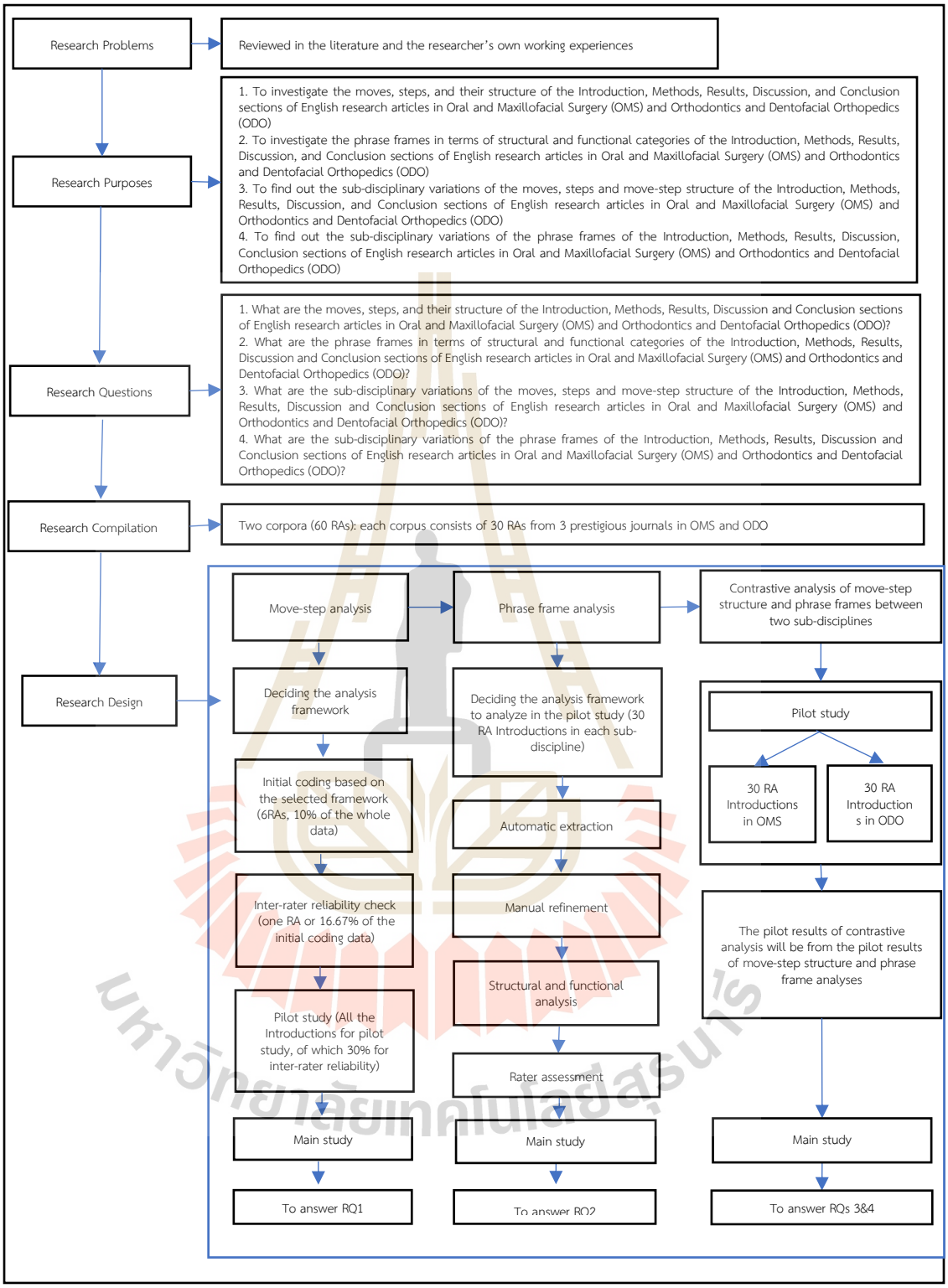



**Figure 3.1 Research Design Flowchart of the Present Study**

In the next section, corpus compilation is presented to illustrate a systematic organization of data for analysis in the present research. This process involves

determining the corpus size, selecting journals and research articles, and managing the corpus.

## 3.2 Corpus Compilation

### 3.2.1 Corpus Size

The size of corpus plays a crucial role to decide the validity and generalizability of the ultimate analysis results. The question about the size of a corpus still remains unanswered since it relies on several key elements, including research objectives, guidelines from previous studies, and data representativeness. The following elaborations are provided to answer the questions why 60 research articles are chosen to compile for the current study.

Firstly, the present study will include the exploration of the moves, steps, and their structure as well as corresponding phrase frames in terms of structural and functional categories of the Introduction, Methods, Results, Discussion and Conclusion sections in the two sub-disciplines of Dentistry. Besides, the study also identifies the sub-disciplinary variations of the move-step structure and phrase frames in the RA sections between these two sub-disciplines. These research purposes are composed of four layers of analysis in the present research, and the data will be analyzed in a sequential order. In other words, the target research articles are analyzed to identify the moves, steps and their move-step structure in each RA section in each sub-discipline first. Next, they are analyzed to extract the phrase frames in terms of structural and functional categories. The final step is to compare the move-step structures and phrase frames to identify the similarities and differences between two sub-disciplines in each of RA sections. These four layers of analysis ensure the appropriate and substantial workload to analyze the moves, steps, and their structure as well as the corresponding phrase frames of the research articles in the two sub-disciplines of Dentistry.

Secondly, previous studies illustrated in Tables 3.1, 3.2, and 3.3 are useful resources to determine the appropriate number of corpus:

To begin with, in terms of the previous studies that investigate move-step structure of a whole RA in a single discipline, the corpus size of each study ranges from 15 to 60 research articles, as displayed in Table 3.1.

**Table 3.1 A Summary of Research Articles Analyzing a Single Discipline**

| Studies | Disciplines | Sections | No. of journals | No. of RAs |
|---|---|---|---|---|
| Skelton (1994) | Medicine | IMRD | 1 | 50 |
| Nwogu (1997) | Medicine | IMRD | 5 | 15 |
| Posteguillo (1999) | Computer Science | IRDC | 3 | 40 |
| Yang and Allison (2004) | Applied Linguistics | IMRD | 4 | 40 |
| Kanoksilapatham (2005) | Biochemistry | IMRD | 5 | 60 |
| Fryer (2012) | Medicine | IMRD | 3 | 16 |
| Stoller and Robinson (2013) | Chemistry | IMRDC | 6 | 60 |
| David (2020) | Medicine | IMRD | 5 | 30 |

In addition, review from the literature shows that the corpus size of each sub-discipline to carry out a contrastive analysis ranges from 10 to 40 research articles and the RA sections that have been investigated are Introduction (I), Abstract (A), Methods (M), and Discussion (D), as elaborated in Table 3.2.

**Table 3.2 Number of Research Articles Analyzing Two Sub-disciplines within a Single Discipline**

| Studies | RA sections - Disciplines | No. of Journals (articles) | Years | Sub-disciplines | |
|---|---|---|---|---|---|
| | | | | 1 | 2 |
| Samraj (2005) | I & A - Environmental Sciences | 1(12) - 1(12) | 1995 | Wildlife Behavior | Conservation Biology |
| Ozturk (2007) | I - Applied Linguistics | 1 (10) – 1(10) | 2001 | Second Language Acquisition | Second Language Writing Research |
| Shooshtari and Jalilifar (2012) | D - Applied Linguistics | 6 (40) – 6 (40) | 2000 onward | ESP | English for General Purposes (EGP) |
| Li and Pramoolsook (2015) | A - Business | 4 (32) – 4 (32) | 2012 | Marketing | Management |
| Li et al. (2015) | M - Business | 2 (10) – 2 (10) | 2011 | Marketing | Management |

Furthermore, previous studies show that little has been known about the corpus size of phrase frames of research articles within a single discipline, as illustrated in Table 3.3. For the whole research article section, Cunningham (2017) investigates the phrase frames in the Introduction, Methods, Results, and Discussion sections of 123 research articles in Mathematics. He et al. (2021) carry out a phrase frame analysis in 160 research articles in Business Management. For the individual section, Golparvar and Barabadi (2020) build a corpus of 422 research articles in the Discussion section in Education. A summary of previous studies is elaborated in Table 3.3.

**Table 3.3 A Summary of Research Articles Analyzing PFs within a Single Discipline**

| | Studies | Disciplines | RA sections | No. of RAs |
|---|---|---|---|---|
| Whole RAs | Cunningham (2017) | Mathematics | IMRD | 123 |
| | He et al. (2021) | Business Management | IMRD | 160 |
| Individual RAs | Golparvar and Barabadi (2020) | Education | Discussion | 422 |

Moreover, from previous studies on phrase frames presented in Chapter 2 and the scope of the present study are two criteria for determining the number of two corpora in the current study. For the phrase frame exploration of the whole article, Cunningham (2017) selects 123 articles while He et al. (2021) choose 160 articles. These studies investigate the phrase frames only, so for future studies that combine phrase frames and other elements, including move-step structure, the number of research articles can be smaller and the criteria are also adjusted based on the scope of the study and the recommendations from Gray and Biber (2013) and Lu et al. (2018, 2021a, 2021b)

Finally, criteria to choose the English research articles in Dentistry are established to guarantee the representativeness of the data as elaborated in 3.3.2. Selection of Journals and Research Articles.

Taken together, from these above guidelines, the current study should meet the requirement of the number of research articles when collecting and analyzing data for the four layers of analysis mentioned earlier. Moreover, the data from these RAs should also ensure the quality and significance of the present study. In addition, considering the present research's investigation on the move-step structure and phrase frames in research articles, the sub-disciplinary contrastive analysis in the two sub-disciplines of Dentistry, as well as the recommendations are from Gray and Biber (2013) and Lu et al., (2018, 2021a, 2021b), 30 articles will be chosen in each of the sub-disciplines with a total number of 60 research articles to be included as the main corpus of this study.

### 3.2.2 Selection of Journals and Research Articles

There are three fundamental factors that assist the researcher to decide on the target journals and articles, including accessibility, reputation, and representativeness (Nwogu, 1997).

1. In terms of the accessibility, since Dentistry is an established field and belongs to the group of Health Sciences, most of the articles are not open-access. To solve this problem, they can be accessed through ClinicalKey. It is an authorized education platform in Science Direct database that provides healthcare professionals and students with

standardized and up-to-date evidence-based practices in diverse formats, including articles, books, and videos. This platform is renowned for physicians, including Doctors of Dental Surgery, who are the focus of the current study, to keep themselves updated with the rapidly expanding clinical knowledge, nurses to conduct treatment procedures, pharmacists to serve as a guideline in drug treatment, and students to learn specialized knowledge. The researcher will log in via his registered institutional domain and get access to the selected articles, as illustrated in Figure 3.2.

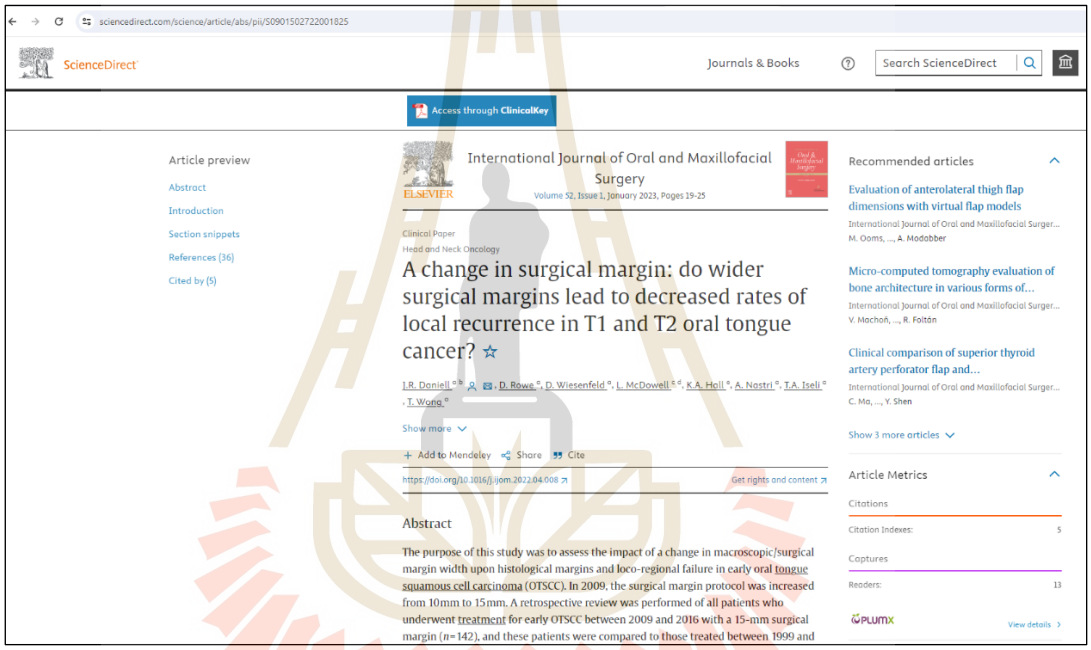



**Figure 3.2 The Screenshot of ClinicalKey to Access the Research Articles in Science Direct**

The second platform to collect research articles used in the current study is EBSCOhost Research, which is utilized by numerous higher institutions worldwide to access the high-quality research articles licensed in prestigious publishers. Registered by the researcher's university, there are 6 typical features in this platform: basic and advanced searching options, reliable and peer-reviewed content, citation supports, customization, flexible access, and privacy. The illustration of this platform can be seen in Figure 3.3.

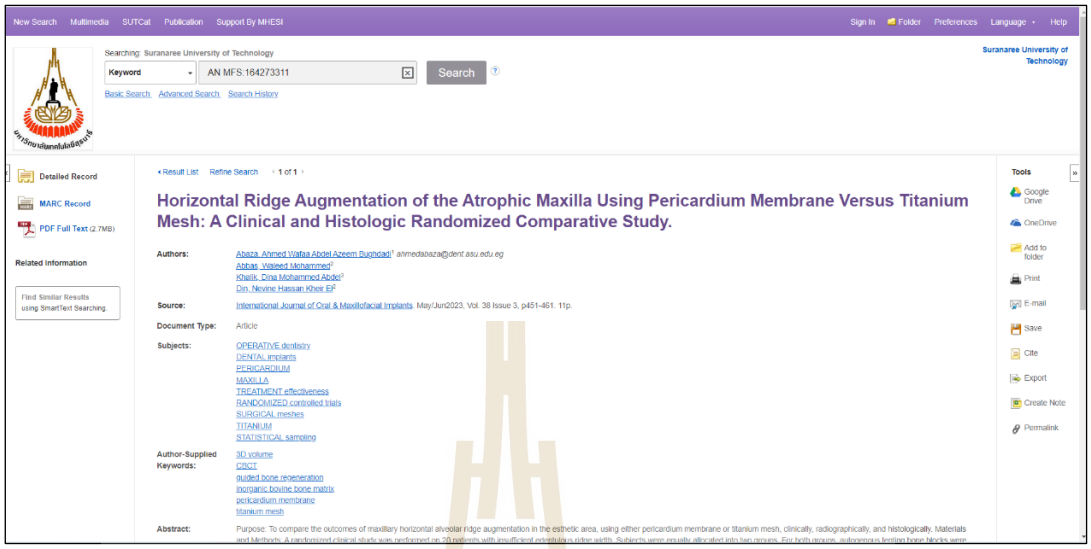



**Figure 3.3 The Screenshot of the EBSCOhost Registered by the Researcher's University**

Hence, the selected articles are collected through the digital platforms of the researcher's university since they are not open-access to the general public.

2. In terms of the reputation, once journals are indexed in Scopus Q1, it means they are high-impact journals, and other crucial elements including research and writing quality are also ensured. For example, in Oral and Maxillofacial Surgery, there are International Journal of Oral and Maxillofacial Surgery, Journal of Cranio-Maxillofacial Surgery, and International Journal of Oral and Maxillofacial Implants. In Orthodontics and Dentofacial Orthopedics, there are Progress in Orthodontics, European Journal of Orthodontics, and American Journal of Orthodontics and Dentofacial Orthopedics. These journals should be based in the United States and United Kingdom since these countries can serve as good examples of having high impact journals in Dentistry, and this is also good for an established field with long historical development.
3. In terms of the representativeness, the two leading developed countries, i.e., the United States and United Kingdom, are chosen. Although Progress in Orthodontics is based in Germany, it is still chosen in the current study due to two reasons. It is published by the renown Springer Nature, where Springer's published journals and books are fully accessed, and it is also indexed in Scopus Q1. Besides, the disciplinary insiders speaks highly of this journal and strongly recommends it to the researcher. Besides, the additional criterion about the official representative of renown

international association is also considered. For example, American Journal of Orthodontics and Dentofacial Orthopedics is the official journal of the American Association of Orthodontists (AAO) that was established in 1900. This Association has been known as the world's largest and oldest in the sub-discipline of Orthodontics. In addition, Journal of Cranio-Maxillo-Facial Surgery is an official publication of European Association for Cranio-Maxillofacial Surgery that was established in 1970. This Association has been highly respected by professionals and academics in Dentistry in Europe. Likewise, International Journal of Oral and Maxillofacial Implants is the official journal of Academy of Osseointegration (AO) that was established in 1982. This association has been the premier global organization for implant Dentistry with 6,000 members in 70 countries. Besides, International Journal of Oral and Maxillofacial Surgery (IJOMS) has been internationally recognized in oral and maxillofacial worldwide. Being part of the International Association of Oral and Maxillofacial Surgeons (IAOMS) established in 1960s, IJOMS consists of 4.000+ individuals and experts in oral and maxillofacial surgery in more than 120 countries.

Details about how the journals are selected in the current study as shown in Figure 3.4.

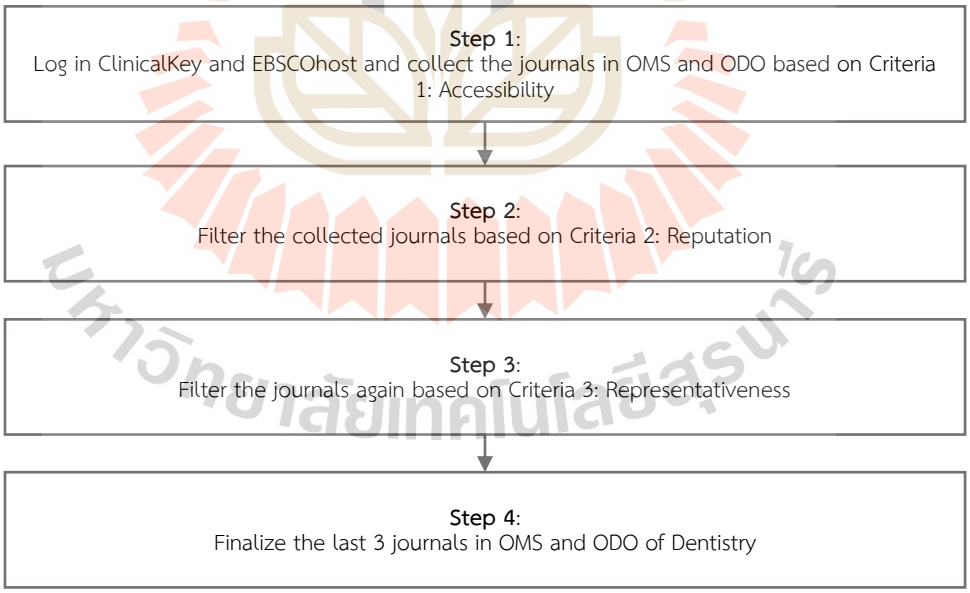



**Figure 3.4 A Summary of Procedure to Select Journals in the Current Study**

Therefore, when comparing the criteria of choosing journals to Scopus Q1 journals in Oral and Maxillofacial Surgery and Scopus Q1 in Orthodontics and Dentofacial Orthopedics as well as the recommendations from the disciplinary insiders, 6 journals

are selected, including International Journal of Oral and Maxillofacial Implants, International Journal of Oral and Maxillofacial Surgery, Journal of Cranio-Maxillofacial Surgery, Progress in Orthodontics, American Journal of Orthodontics and Dentofacial Orthopedics, and European Journal of Orthodontics. Table 3.4 reports the description of the journals chosen for the present research based on the Scopus database.

**Table 3.4 Description of the Chosen Journals in the Two Sub-disciplines of Dentistry**

| No. | Journal names | Countries | Ranks | Impact factor (2023) | Publishers |
|---|---|---|---|---|---|
| | **Oral and Maxillofacial Surgery** | | | | |
| 1. | International Journal of Oral and Maxillofacial Surgery (IJOMS) | United States | 10/60 | 2.6 | Elsevier |
| 2. | Journal of Cranio-Maxillofacial Surgery (JCMS) | United Kingdom | 7/60 | 2.1 | Elsevier |
| 3. | International Journal of Oral and Maxillofacial Implants (IJOMI) | United States | 14/60 | 1.7 | Quintessence Publishing Company |
| | **Orthodontics and Dentofacial Orthopedics** | | | | |
| 4. | Progress in Orthodontics (PO) | Germany | 1/29 | 4.5 | Springer Nature |
| 5 | American Journal of Orthodontics and Dentofacial Orthopedics (AJODO) | United States | 5/29 | 3.2 | Elsevier |
| 6 | European Journal of Orthodontics (EJO) | United Kingdom | 2/29 | 2.8 | Oxford University Press |

As shown in Table 3.4, although the rank of International Journal of Oral and Maxillofacial Implants is lower than the ones of some other high-ranking journals in the Scopus database, this journal is still selected since the disciplinary insiders recommends it as reliable data for conducting the current study.

In addition, after selecting the English journals in Dentistry, several criteria, including category, rhetorical patterns, and currency of publication, are established for the selection of research articles as data of the current study.

Firstly, in terms of the article category, the chosen type of articles is the empirical original RAs in Dentistry. Other types, mentioned in 2.3 Dentistry Discourse, e.g., perspectives, review articles, case reports, short communications, correspondence, Editorials, Letters to the Editor, are excluded from the study.

Secondly, the original research articles of Dentistry should consist of IMRD sections, including Introduction, Methods, Results, Discussion, and/or Conclusion sections. Besides, the articles that have slight variations in headings and omission of Introduction heading are also accepted since the headings and omission of these headings still keep the same content.

Finally, in terms of the currency of publication, three consecutive years, including 2021, 2022, and 2023, are chosen. This is because they show the up-to-date publications and increase the validity of the analysis results (Li & Pramoolsook, 2015). Furthermore, L1 and L2 background of authors are not considered in this current study since the articles are published in Scopus Q1 journals, which guarantees the writing quality. Therefore, the authors can come from different countries in the world. The authorship from different universities is also considered to ensure the generalizability. These above-mentioned criteria serve as a guideline to choose appropriate articles in the current study.

Details about how the RAs are selected in the current study as shown in Figure 3.5.

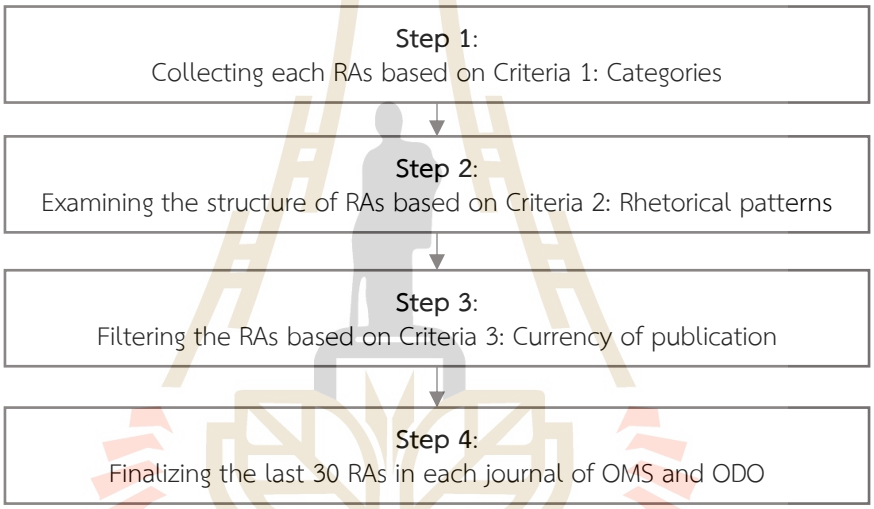



**Figure 3.5 A Summary of Procedure to Select RAs in the Current Study**

Therefore, two corpora, 30 articles in each, are compiled in the present research. For each sub-discipline, three issues of a selected journal per year are chosen, and three articles of the chosen journals per year are selected. The macro-structure of the 60 RAs is summarized and illustrated in Table 3.5.

**Table 3.5 The Sections of the 60 RAs in the Two Sub-disciplines**

| Sub-disciplines | Journal names | Macro-structure of 60 research articles | | | | |
|---|---|---|---|---|---|---|
| | | Introduction/ Background | (Materials/ Subjects) Methods | Results | Discussion | Conclusion |
| OMS | IJOMS | 10 | 10 | 10 | 10 | 10 |
| | JCMS | 10 | 10 | 10 | 10 | 10 |
| | IJOMI | 10 | 10 | 10 | 10 | 0 |
| ODO | PO | 10 | 10 | 10 | 10 | 10 |
| | AJODO | 10 | 10 | 10 | 10 | 10 |
| | EJO | 10 | 10 | 10 | 10 | 10 |

As illustrated in Table 3.5, there are 10 RAs that have no Conclusion section in OMS. After consulting with the disciplinary expert, these RAs are still kept in the current study due to the following reasons.

1. RAs with and without the Conclusion section are quite common in Dentistry. If this section exists, it is just a paragraph, a few sentences, or even only one sentence, to summarize the main findings.
2. When the researcher checks 60 RA Conclusion sections of the current study, these sections also show the same findings as elaborated in the first reason.
3. These 10 RAs should be kept to show the common features of RAs in Dentistry, and the Conclusion section is embedded into the Discussion section.
4. After skimming the moves and steps in the Introduction, Methods, Results, and Discussion of these 10 articles with the suggested frameworks, these sections show more complete and accurate communicative purposes of moves and steps of RAs than the ones in any other RAs in Dentistry in the journals.

Therefore, in the current study, these 10 RAs are included in the investigation of the move-step structure and corresponding phrase frames as well as the sub-disciplinary variations in the two sub-disciplines of Dentistry to achieve the research purposes of the present research.

### 3.2.3 Corpus Management

In order to manage 60 research articles for data analysis, two electronic folders are created to store the articles that are downloaded from the journals. There are totally 3 articles in 3 volumes of each of the selected journals in a year. They are coded based on the sub-disciplines and the order in the database. For example, in Oral and Maxillofacial Surgery, the articles are named from OMS1 to OMS30 from 2021-2023. The order of RAs in this sub-discipline is as follows: International Journal of Oral and Maxillofacial Implants (OMS1-OMS10), International Journal of Oral and Maxillofacial Surgery (OMS11-OMS20), and Journal of Cranio-Maxillofacial Surgery (OMS21-OMS30). For the sub-discipline of Orthodontics and Dentofacial Orthopedics, the order is as follows: Progress in Orthodontics (ODO1-ODO10), American Journal of Orthodontics and Dentofacial Orthopedics (ODO11-ODO20), and European Journal of Orthodontics (ODO21-ODO30). Since the format of RA files are in PDF, they are transformed into word files, with removal of all the tables, figures, and graphs in the articles, so the main content of Introduction, Methods, Results, Discussion, and

Conclusion is kept. Each article is put into a word file for the analysis of moves and steps. When a text file is coded with moves and steps, it is saved for storing the move-step analysis results. In this process, two invited disciplinary insiders is also involved to explain and clarify any findings related to specialized knowledge in Dentistry, as illustrated in Tables 3.6 and 3.7.

**Table 3.6 Journals and RAs in Oral and Maxillofacial Surgery (OMS)**

| Journals | Oral and Maxillofacial Surgery | | |
|---|---|---|---|
| | No. of RAs | Codes | Year |
| International Journal of Oral and Maxillofacial Implants (IJOMI) | 10 | OMS1 | 2021 |
| | | OMS2 | 2022 |
| | | OMS3 | 2023 |
| | | OMS4 | 2021 |
| | | OMS5 | 2022 |
| | | OMS6 | 2023 |
| | | OMS7 | 2021 |
| | | OMS8 | 2022 |
| | | OMS9 | 2023 |
| | | OMS10 | 2023 |
| International Journal of Oral and Maxillofacial Surgery (IJOMS) | 10 | OMS11 | 2021 |
| | | OMS12 | 2022 |
| | | OMS13 | 2023 |
| | | OMS14 | 2021 |
| | | OMS15 | 2022 |
| | | OMS16 | 2023 |
| | | OMS17 | 2021 |
| | | OMS18 | 2022 |
| | | OMS19 | 2023 |
| | | OMS20 | 2023 |
| Journal of Cranio-Maxillofacial Surgery (JCMS) | 10 | OMS21 | 2021 |
| | | OMS22 | 2022 |
| | | OMS23 | 2023 |
| | | OMS24 | 2021 |
| | | OMS25 | 2022 |
| | | OMS26 | 2023 |
| | | OMS27 | 2021 |
| | | OMS28 | 2022 |
| | | OMS29 | 2023 |
| | | OMS30 | 2023 |

**Table 3.7 Journals and RAs in Orthodontics and Dentofacial Orthopedics (ODO)**

| Journals | Orthodontics and Dentofacial Orthopedics | | |
|---|---|---|---|
| | No. of RAs | Code | Year |
| Progress in Orthodontics (PO) | 10 | ODO1 | 2021 |
| | | ODO2 | 2022 |
| | | ODO3 | 2023 |
| | | ODO4 | 2021 |
| | | ODO5 | 2022 |
| | | ODO6 | 2023 |
| | | ODO7 | 2021 |
| | | ODO8 | 2022 |
| | | ODO9 | 2023 |
| | | ODO10 | 2023 |
| American Journal of Orthodontics and Dentofacial Orthopedics (AJODO) | 10 | ODO11 | 2021 |
| | | ODO12 | 2022 |
| | | ODO13 | 2023 |
| | | ODO14 | 2021 |
| | | ODO15 | 2022 |
| | | ODO16 | 2023 |
| | | ODO17 | 2021 |
| | | ODO18 | 2022 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Journals | Orthodontics and Dentofacial Orthopedics | | |
|---|---|---|---|
| | No. of RAs | Code | Year |
| European Journal of Orthodontics (EJO) | 10 | ODO19 | 2023 |
| | | ODO20 | 2023 |
| | | ODO21 | 2021 |
| | | ODO22 | 2022 |
| | | ODO23 | 2023 |
| | | ODO24 | 2021 |
| | | ODO25 | 2022 |
| | | ODO26 | 2023 |
| | | ODO27 | 2021 |
| | | ODO28 | 2022 |
| | | ODO29 | 2023 |
| | | ODO30 | 2023 |

In the next section, the analysis of move-step structure is mentioned. Details about the selection of framework of the move-step structure, the identification of moves and steps, and the determination of the status of moves and steps are included to ensure the sufficient background knowledge before starting collecting data.

## 3.3. Analysis of Move-step Structure

### 3.3.1 Selection of Framework of Move-step Structure

A reliable analysis framework plays an important role to guarantee the analysis of the results in each genre study. The decision to choose the analysis framework in the current study was made due to three main reasons, as follows:

Firstly, prior research presented in Chapter 2 shows four frameworks, e.g., Kanoksilapatham (2005) in Biochemistry, Nwogu (1997) in Medicine, Davis (2020) in Medicine, and Yang and Allison (2003) in Applied Linguistics, to analyze the move-step structure in the RA sections. These studies have provided detailed descriptions of the rhetorical structure in these disciplines and served as useful resources for other subsequent studies until recently, such as Moritz et al. (2008), Li and Ge (2009), Fryer (2012), Stoller and Robinson (2013), Amnuai and Wannaruk (2013), Shi and Wannaruk (2014), Boonyuen and Tangkiengsirisin (2018), Davis (2020), Gao and Pramoolsook (2021), Piromkij and Phoocharoensil (2022); and Zhao and Pramoolsook (2023).

Secondly, the researcher started to code a full-length article with the 4 frameworks above. This decision was made since a more reliable framework from analyzing one full-length article would be more suitable for the current study. Besides, recommendations from previous studies and from the disciplinary expert were also utilized to support this study and to decide on the most appropriate frameworks to analyze the RA sections. Hence, the results showed several findings, as follows:

1. In the Introduction section, the framework from Kanoksilapatham (2005) shows more similar moves and steps to the ones in a RA in Dentistry than

the other frameworks. For example, 3 moves and 5 steps identified in this initial coding are found similarly in the framework of Kanoksilapatham (2005) whereas only 3 steps are identified similarly in the framework of Nwogu (1997). Besides, recommendations from previous studies, e.g., Stoller and Robinson (2013), Shi and Wannaruk (2014), Gao and Pramoolsook (2021), Piromkij and Phoocharoensil (2022), Zhao and Pramoolsook (2023), also point out that the framework of Kanoksilapatham (2005) should be utilized for this section.

2. In the Methods section, the framework from Nwogu (1997) is more appropriate than the other frameworks to analyze current data. For example, the cycle of moves follows the order suggested by Nwogu (1997) with firstly *describing data-collection procedure*, rather than *describing materials* as stated in Kanoksilapatham (2005). This initial finding was then assessed by the disciplinary insiders who had the same analysis results. Besides, Nwogu (1997) investigates the move-step structure in Medicine, which is within the group of Health Sciences, including Dentistry. Hence, it should be utilized for this section in this current study. Another reason is the framework of Nwogu (1997) has been recommended by previous scholars, e.g., Lim (2006), Kanoksilapatham (2005, 2007), and Davis (2020).
3. In the Results section, the framework of Davis (2020) is adopted since two moves and three steps of this framework clearly state the purpose of text segments in the current corpora while the framework of Kanoksilapatham (2005) is limited with only one step. Besides, when compared to the frameworks of Kanoksilapatham (2005), Yang and Allison (2003), and Nwogu (1997), Davis's (2020) framework is chosen since it is originally constructed and updated from Nwogu (1997)'s and belongs to the same group of disciplines, which shows the shared features with other disciplines in the group of Health Sciences. Hence, the framework of Davis (2020) should be utilized in this section.
4. In the Discussion section, Kanoksilapatham's (2005) framework is adopted to show more details about the context, results, and limitations of the study with three moves and six steps rather than only one step in the Nwogu's (1997) framework. In addition, suggestions from the previous studies, e.g., Kanoksilaptham (2012, 2013, 2023); Thanajirawat and Chueanongthon (2022), also promote the framework of Kanoksilapatham (2005)

for analyzing this section. Hence, Kanoksilapatham's (2005) framework should be utilized in this section.

5. In the Conclusion section, recommendations from previous studies, shown in 2.2.2.5 The Conclusion Section of Chapter 2, show that Yang and Allison's (2003) framework has been widely selected for this section, so this framework has been employed in the subsequent studies, including Nodoushan, 2012; Amnuai & Wannaruk, 2013; Wuttisrisiriporn, 2015. Therefore, Yang and Allison's (2003) framework should be utilized in this section.

Thirdly, recommendations from the disciplinary insiders suggest the most appropriate framework for specific RAs after skimming through the communicative purposes of each move and step in the selected frameworks, including Kanoksilapatham (2005) to analyze the RA Introduction and Discussion sections, Nwogu (1997) to analyze the RA Methods sections, Davis (2020) to analyze the RA Results sections, and Yang and Allison (2003) to analyze the RA Conclusion sections.

Finally, recommendations from previous studies show that they use different frameworks to analyze different RA sections. For example, Boonyuen and Tangkiengsirisin (2018), who conduct the move-step structure of research articles in Applied Linguistics, also use several frameworks, including Belanger, 1982; Peng, 1987; Hopkins & Dudley-Evans, 1988; Swales, 1990, 2004; Holmes, 1997; Nwogu, 1997; Posteguillo, 1999; Yang & Allison, 2003, to analyze RA Discussion sections.

Therefore, from these four reasons above, the frameworks for each RA section in the current study are, as follows:

1. The RA Introduction and Discussion will be analyzed using Kanoksilapatham's (2005) framework.
2. The RA Methods section will be analyzed using Nwogu's (1997) framework.
3. The RA Results section will be analyzed using Davis's (2020) framework.
4. The RA Conclusion section will be analyzed using Yang and Allison's (2003) framework.

An initial framework is established for analyzing a full-length article as illustrated in Table 3.8.

**Table 3.8 The Framework Used for Analyzing a Full-length Research Article**

| |
|---|
| **Introduction (Kanoksilapatham, 2005)** |
| Move 1: *Announcing the importance of the field* |
| M1S1: *Claiming the centrality of the topic* |
| M1S2: *Making topic generalizations* |
| M1S3: *Reviewing previous research* |
| Move 2: *Preparing for the present study* |
| M2S1: *Indicating a gap* |
| M2S2: *Raising a question* |
| Move 3: *Introducing the present study* |
| M3S1: *Stating purpose(s)* |
| M3S2: *Describing procedures* |
| M3S3: *Presenting findings* |
| **Methods (Nwogu, 1997)** |
| Move 4: *Describing data-collection procedure* |
| M4S1: *Indicating source of data* |
| M4S2: *Indicating data size* |
| M4S3: *Indicating criteria for data collection* |
| Move 5: *Describing experimental procedures* |
| M5S1: *Identification of main research apparatus* |
| M5S2: *Recounting experimental process* |
| M5S3: *Indicating criteria for success* |
| Move 6: *Describing data-analysis procedures* |
| M6S1: *Defining terminologies* |
| M6S2: *Indicating process of data classification* |
| M6S3: *Identifying analytical instrument/procedure* |
| M6S4: *Indicating modification to instrument/procedure* |
| **Results (Davis, 2020)** |
| Move 7: *Reporting the findings* |
| M7S1: *Stating the outcomes* |
| M7S2: *Supporting with evidence* |
| M7S3: *Directing readers to figures or tables* |
| Move 8: *Reviewing the experiment* |
| M8S1: *Reviewing subjects* |
| M8S2: *Reviewing procedures* |
| M8S3: *Reviewing and/or compare to previous studies* |
| Move 9: *Describing statistical tests and state their findings* |
| Move 10: *Summarizing findings* |
| **Discussion (Kanoksilapatham, 2005)** |
| Move 11: *Contextualizing the study* |
| M11S1: *Describing established knowledge* |
| M11S2: *Presenting generalizations, claims, deductions, or research gaps* |
| Move 12: *Consolidating results* |
| M12S1: *Restating methodology* |
| M12S2: *Stating selected findings* |
| M12S3: *Referring to previous literature* |
| M12S4: *Explaining differences in findings* |
| M12S5: *Making overt claims or generalizations* |
| M12S6: *Exemplifying* |
| Move 13: *Stating limitations of the study* |
| M13S1: *Limitations about the findings* |
| M13S2: *Limitations about the methodology* |
| M13S3: *Limitations about the claims made* |
| Move 14: *Suggesting further research* |
| Conclusion (Yang and Allison, 2003) |
| Move 15: *Summarizing the study* |
| Move 16: *Evaluating the study* |
| M16S1: *Indicating significance/advantage* |
| M16S2: *Indicating limitations* |
| M16S3: *Evaluating methodology* |
| Move 17: *Deductions from the research* |
| M17S1: *Recommending further research* |
| M17S2: *Drawing pedagogic implication* |

มหาวิทยาลัยเทคโนโลยีสุรนารี

### 3.3.2 Identification of Moves and Steps

In order to identify the moves and steps by utilizing the top-down approach, several steps were involved in the procedure. To begin with, each text segment was examined in terms of its function based on the communicative purposes. Then, the researcher assumed that one move consists of one or multiple sentences. If a sentence consists of different functions or communicative purposes, the most dominant purpose is the major concentration. In other words, the move can be composed of one sentence, multiple sentences, one paragraph, or multiple paragraphs as long as they share the same communicative purpose. In the move identification process, subjectivity is unavoidable, so inter-rater reliability is required to ensure the quality of the procedure (Holmes, 1997; Yang & Allison, 2004). An example of move analysis from the RA Introduction section of OMS7 is illustrated in Table 3.9.

**Table 3.9 An Example of Move Analysis in the Current Study**

| Sentences | Move-step Structure |
|---|---|
| Restoration in the esthetic zone with implant supported prostheses is one of the most difficult procedures to achieve in maxillofacial surgery. Bone resorption following periodontal disease or traumatic extraction causes a diminution in the alveolar ridge dimension due to bone resorption. This can make implant placement difficult or even impossible. | M1S1: Claiming the centrality of the topic |
| *The focus of recent research has shifted from osseointegration to an implant restorative-driven concept that is compatible with the surrounding hard and soft tissue.1 Within 12 months of tooth extraction, the alveolar ridge resorption rate is 40% to 60% of the pre-extraction dimensions of the ridge height and width, which is equal to 5 to 7 mm loss of width, creating a residual knife edge ridge.2* | *M1S3: Reviewing previous research* |
| Alveolar bone defects can be reconstructed through variable surgical techniques, including guided bone regeneration (GBR), onlay grafting, interpositional inlay grafting, distraction osteogenesis, and ridge splitting, as well as forced orthodontic eruption. | M1S2: Making topic generalizations |
| *In a systematic review, GBR was determined to be the best way to augment the alveolar ridge based on implant survival rates.3* | *M1S3: Reviewing previous research* |
| GBR is a surgical technique that increases the volume of alveolar ridge for implant placement using barrier membranes with or without bone substitutes. | M1S2: Making topic generalizations |
| *The exclusion of soft tissue cells during bone remodeling by osteoblasts is considered the key success factor for GBR.4 The biologic basis for GBR involves building a stable and immovable base that allows for a constant release of growth factors, blood supply access to the defect areas, and space for adequate bone formation, as well as cell occlusion through the use of barrier membranes.5* | *M1S3: Reviewing previous research* |
| The tenting technique is an alternative surgical technique, based on GBR principles to achieve new bone formation in the atrophic ridge. | M1S2: Making topic generalizations |
| *It involves lifting the periosteum like a tent so the osteoblasts can migrate into the gap to initiate osteogenesis.6 There are various types of membranes: resorbable membranes like collagen and polylactide-co-glycolide, nonresorbable membranes like polytetrafluoroethylene (PTFE) and titanium mesh (Ti mesh), and others, like acellular* | *M1S3: Reviewing previous research* |

| Sentences | Move-step Structure |
|---|---|
| *dermal matrix, absorbable gelatin compressed sponge, and cargile and pericardium membranes.7 Some studies have shown that even in cases with a large bone cavity, Ti mesh maintains the space with a higher degree of predictability,8 but with cutting, trimming, and bending. This mesh results in sharp edges that can cause mucosal irritation and membrane exposure.9 Although collagen membranes exhibit an efficient regeneration profile, their main drawback is their rapid resorption, which leads to an early loss of barrier function, significantly affecting the rate of bone formation.10 Compared with collagen membranes, the pericardial membranes showed efficient cross-linking, indicating prolonged resorption time.* | |
| Various in vitro and in vivo studies have demonstrated the bioeffectiveness of these pericardiam membranes to enhance bone augmentation. | M2S3: Presenting positive justification |
| *However, further clinical studies are needed to prove their effectiveness in GBR.11. Radiographic analysis was critical in determining the clinical efficacy of GBR interventions.* | *M2S1: Indicating a gap* |
| CBCT has established itself as a reliable 3D imaging method for implant dentistry, providing cross-sectional scans of the bone at a lower radiation dosage than multislice computed tomography (CT). It is anticipated that the evaluation of grafted bone volume would be improved by using interactive 3D data measurement and visualization technologies. | M2S3: Presenting positive justification |
| *Some studies have used 3D data from CBCT or CT scans to evaluate volumetric changes in grafted bone following sinus floor augmentation.12,13,14*<br>However, few studies have used reconstituted 3D models of grafted bone to examine volume changes following GBR operations. | *M1S3: Reviewing previous research*<br>M2S1: Indicating a gap |
| *Therefore, the purpose of this randomized controlled study was to compare the use of resorbable bovine pericardium membranes (BPs) for horizontal alveolar ridge augmentation versus titanium mesh in terms of clinical, radiographic volumetric bone changes and histologic outcomes before implant placement.* | *M3S1: Stating purpose(s)* |

### 3.4.2.1 Inter-rater Reliability (IRR)

Before addressing the inter-rater reliability check, it is important to distinguish the difference between inter-rater reliability (IRR) and inter-rater agreement (IRA) based on the theories of Gisev et al. (2013), Rau & Shih (2021), and Díaz et al. (2023).

1. For the inter-rater reliability utilized in a formative stage, it is a type of inter-rater analysis that refers to the extent that raters keep consistent to define and distinguish diverse text segments during the coding process. In other words, IRR implies the procedure of ensuring the consistency and agreement in different judgements made by coders when they carry out the coding process of the same data (Kim et al., 2024). There are two ways, i.e., Correlation and Chi square, to test the inter-rater reliability in move analysis. However, these two ways are not utilized in the

current study since the statistics is not appropriate to measure the consistency of the coding process in move analysis (Rau & Shih, 2021).

2. For the inter-rater agreement utilized in a summative stage, it deals with the extent that the individual text segment is rated similarly by different raters. The details about inter-rater agreement will be reported in 3.4.2.2 Interrater Agreement (IRA).

Since the traits of move, step, and phrase frame identification and analysis rely on the human decision, subjectivity is unavoidable. Previous studies show the use of IRR during the coding process ensures the reliability of move and step analysis (e.g., Crookes, 1986; Chang & Kuo, 2011; Cotos et al., 2015). In the current study, IRR consists of 4 steps, i.e., the selection of an inter-rater, the selection of two disciplinary insiders, the coder training, and the coding process.

1. In terms of the selection of an inter-rater, according to Biber et al. (2007), the use of a different rater ensures the reliability and validity check in qualitative research. Three previous studies, i.e., Dudley-Evan (1994); Holmes (1997, 2001); and Sithlaothavorn & Trakulkasemsuk (2016), also suggest having an invited rater to ensure the quality of the data analysis. In the current study, talking about the educational background, the inivited inter-rater is an MA holder in Applied Linguistics and TESOL. The criterion about the qualification is based on the studies of Chang and Kuo (2011) and Cotos et al. (2015). Besides, the inter-rater has been teaching English in Dentistry courses, so he has primary knowledge to read and understand what is expressed in the RAs of Dentistry. The invited rater also helps to ensure the correct textual boundaries and contribute with disciplinary knowledge in the coding process. According to Shohamy et al. (1992), the background knowledge of the coder plays an integral part to contribute to the quality of the coding process.
2. In terms of the selection of the disciplinary insiders, the criteria will be based on the studies of Kanoksilapatham (2005; 2007; 2012; 2015) and Shi and Wannaruk (2014). In the current study, two disciplinary insiders are currently working in the discipline of Dentistry and they are also the ones who assist the researcher to identify the target English research journals and articles in

Dentistry. The first disciplinary insider was an associate professor in the discipline of Dentistry, and has been working in the field of Dentistry for 20 years. He assists the researcher to choose journals and research articles. Besides, the second disciplinary insider, holding a doctoral degree in Dentistry, was also invited to support the researcher during the move analysis. The consultantancy with the disciplinary insider is necessary since he has been a specialist in the field (Noguchi, 2006) and his support increases the reliability of the results (Kanoksilapatham, 2005; Stoller & Robinson, 2013; Maswana et al., 2015).

3. In terms of the coder training, there are two phases. Firstly, the researcher introduces the purposes and procedure of the study, as well as explains the instructions for move coding. Secondly, the researcher lets the invited coder to get used to the analytical models for the moves, steps and phrase frames. The researcher then utilizes the four sample texts from the corpora to explain the coding procedure. In this case, all the texts are made into separate segments. The identification of moves and steps is conducted. In the case of recycled moves or steps where they occur more than once in a text, they are still counted only once. This process ensures the complete understanding of move coding for the invited coder.
4. In terms of the coding process, the researcher and the inter-rater code independently one full-length article and discuss any discrepancies. The initial data coding consists of a full-length article. In the initial coding, pilot coding, and main study, the researcher and inter-coder will work independently to ensure the reliability and validity of coding (Rau & Shih, 2021). For the specialized knowledge, the researcher asks the disciplinary expert for further information. If there are any disagreements, discussion will be made until two raters reach consensus. If the discrepancies still exist or the two raters do not agree on a specific text segment in any communicative purposes, they will be sent to the researcher's advisor for final decision.

**3.4.2.2 Inter-rater Agreement (IRA)**

As the name suggests, IRA implies the level of two coders reaching consensus and it is made by utilizing nominal, ordinal, interval (Tinsley & Weiss, 2000; Rau & Shih, 2021). In the literature, three measures of inter-rater agreement are found, i.e., Krippendorff's multi-valued alpha (Krippendorff & Craggs, 2016; Kim et al., 2024); Cohen's Kappa coefficient (e.g., Lim, 2010; Parkinson, 2017), and percent agreement (e.g., Lin & Evans, 2012; Cortes, 2013; Shi & Wannaruk, 2014; Kanoksilapatham, 2012, 2015; Zhao & Pramoolsook, 2023). While extensive studies deploy one measure in the study (Kim et al., 2024), some studies employ two measures, e.g., Kanoksilapatham (2005, 2007); Moreno & Swales (2018). Brief introduction for these three measures is illustrated, as follows:

1. Krippendorff's multi-valued alpha, commonly known as Alpha coefficient, mv-alpha or mv-**α**, relies on the observations of disagreements and handle the multifunctional moves and/or steps analysis. As such, it is considered as the most correct measure to ensure methodological rigors and robustness in EAP genre research (Kim et al., 2024). However, Krippendorff's multi-valued alpha is not utilized in the current study due to its drawback mentioned from the previous studies to analyze the rhetorical structure of RAs (Lin & Evans, 2012; Kanoksilapatham, 2012, 2015; Cortes, 2013; Shi & Wannaruk, 2014).
2. Kappa, commonly known as K, or **K**, consists of two types: Cohen's **K** with two raters and Fleiss's **K** with three or more raters. In this measure, three important elements, i.e., predetermined, fixed and independent, of the units must be ensured (Rau & Shih, 2021). However, it is not utilized in the current study since Cohen's Kappa is only utilized to measure agreement in the corpus analysis.
3. Percent agreement has been the most utilized correlation statistics in health-related studies (e.g., Goodwin, 2001; Holdford, 2008; Mokkink et al., 2010; McHugh, 2012; Gisev et al., 2013; Marchevsky et al., 2020; Piromkij & Phoocharoensil, 2022). Furthermore, in the inter-rater agreement procedure, it employs the use of percentage after the process to check the inter-rater reliability. This step is utilized to ensure the collected data to be the most appropriate representation in the current study.

For the percent agreement, the equation is calculated, as follows:

$$\text{Percent agreement} = \frac{\text{Total number of responses}}{\text{Number of concordant responses}*100\%}$$

In the equation, there is no limitation of how many raters are assessed. However, the higher the percentage of the result is, the higher the reliability of the IRA is. The detailed calculations of results are described in the result of pilot study and in the following chapters of the current study.

Taken together, percent agreement was chosen to check inter-rater reliability in the current study because of the following reasons:

1. It is the only possible measure of inter-rater agreement (Rau & Shih, 2021).
2. It is used to reduce the coder bias (Kim et al., 2024).
3. It has been utilized in the healthcare studies (Goodwin, 2001; Mokkink et al., 2010; McHugh, 2012; Gisev et al., 2013; Marchevsky et al., 2020).

**3.3.3 Procedure of Analyzing Move-step Structure**

In the literature, there is a recommendation from Biber et al. (2007), who describe in details about how to prepare a framework for reference and analyze moves and steps from a top-down approach. The current study also follows the guidance from Biber et al. (2007), but an additional step is an initial coding to measure the feasibility of the chosen frameworks. A total number of 6 full-length RAs (10%) are chosen from 6 target journals. This number is selected due to the suggestions from previous studies, which varies from 10-20% of the whole corpus (Gao, 2021; Zhao & Pramoolsook, 2023).

There are 4 stages in the analysis of the move-step structure of research articles in the two sub-disciplines of Dentistry in the current study.

1.In the first stage, the RAs are skimmed through to get an overview about the titles, headings, sub-headings, and content of the articles. This step is done with careful and precise reading to ensure the quality of the initial data content before starting the coding process. Any misunderstanding in terms of specialized knowledge is consulted with the disciplinary insiders for more clarifications.

From the first stage, the results show several findings:

1.1 Thirty articles, i.e., OMS1-OMS20, ODO11-ODO20, have no headings entitled “Introduction” in the RA Introduction section although there are several first

paragraphs before the Methods sections which are to introduce the research being reported.

1.2 Twenty articles, i.e., OMS21-OMS30, ODO21-ODO30, have headings named “Introduction”. Ten articles, i.e., ODO1-ODO10, have headings entitled “Background”.

1.3 Fifty-eight articles have the headings named “Materials and Methods” for the Methods section. ODO9 has the heading entitled “Methods”. ODO25 has the heading named “Subjects and Methods”.

1.4 The Results and Discussion sections are separated in the RAs in the field of Dentistry.

1.5 Fifty articles, i.e., OMS1-OMS10, OMS21-OMS30, ODO1-ODO30, have the headings entitled “Conclusion” while ten articles, i.e., OMS11-OMS20, have no Conclusion sections.

These findings from the Introduction, Methods, and Conclusion section are consulted with the disciplinary insiders for more clarifications, and several conclusions are made. Due to the characteristics of research articles in Dentistry, in some cases, there may be no headings entitled “Introduction”. The first paragraphs before the Methods sections which are to introduce the research being reported are considered as Introduction sections of the article. Besides, a previous study from Lu et al. (2018) also recognizes this issue, and such untitled first sections are considered as the Introduction sections. Moreover, due to the characteristics of RAs in Dentistry, in some cases, the Conclusion section is embedded into the Discussion section to address the overall and specific research outcomes as well as research conclusions. Therefore, in the current study, the research articles with and without the Conclusion section will be also selected for the analysis in the present research.

2.In the second stage, moves and steps in each of 6 RAs are determined by their communicative purposes using 4 previous frameworks adopted and adapted in the current study, i.e., Nwogu (1997), Yang and Allison (2003), Kanoksilapatham (2005), and Davis (2020). Two crucial elements, i.e., linguistic signals and cognitive judgement, are taken into accounts. For example, during the process, there are some variations to conclude an idea, including *in summary*, *in conclusion*, or *taken together*. However, these segments are coded with different communicative purposes although they have the same linguistic clues.

Excerpts 1 from OMS20 and 2 from ODO26 are reported to show the different coding with the same linguistic signals.

**Excerpt 1:**

Taken together, the findings suggest that although MMA can significantly alter the soft tissue facial profile, the balance between the nose, lips, and chin is acceptable for patients with and without deficiency. (OMS20)

**Excerpt 2:**

Taken together, 21 patients had RS and 22 had T21. Two patients had TC and six patients had an MR. Due to physiological growth, some patients had to be scanned again to produce a new orthodontic plate, leading to 43 patients being scanned once, 28 twice, 9 three times, 2 four times, and 1 patient seven times as shown in Figure 3. The IOS of two patients with unilateral and two with bilateral CLP had to be repeated and was therefore defined as unsuccessful (4 of 141 scans), yielding a success rate of 94%. (ODO26)

In the above examples, the first excerpt, found in the RA Discussion section, is coded as M11S1: *Stating outcomes* and it is under Move 11: *Highlighting research outcomes* in Kanoksilapatham's (2005) framework. Its purpose is to conclude the selection of the soft tissue facial profile in the experiment. However, the second excerpt, found in the RA Methods section, is classified as Move 7: *Indicating data characteristics* in Nwogu's (1997) framework. Its aim is to provide the information about the characteristics of patients only. From these illustrations, the process of identifying the moves and steps is not an easy task since it requires an obvious understanding of the content and communicative purpose of each text segment.

3.In the third stage, the inter-rater reliability is measured to ensure the accurate identification of moves and steps. In this process, the current researcher and the invited coder worked independently for a full-length RA (16.67% of the primary coding data), and discussed any disagreements on the identification of moves and steps. Table 3.10 shows the number of codings of each coder and between the sub-disciplines. There were some discrepancies in some sections, and the agreement percentage was 96.30% in OMS and 97.41 in ODO, which showed the satisfying proportion to continue the next step. All of the them were discussed and both coders eventually agreed with the results.

**Table 3.10 A Summary of Number of Coding Agreement between Coders**

| RAs | Researcher | Inter-coder | No. of different codings | Agreed codings | Agreement Percentage | Total |
|---|---|---|---|---|---|---|
| | | | OMS | | | |
| Introduction | 8 | 6 | 2 | 8 | 96.30 | |
| Methods | 9 | 11 | 2 | 11 | 96.30 | |
| Results | 3 | 3 | 0 | 3 | 100.00 | **96.30** |
| Discussion | 31 | 27 | 4 | 31 | 92.59 | |
| Conclusion | 1 | 1 | 0 | 1 | 96.30 | |

| RAs | Researcher | Inter-coder | No. of different codings | Agreed codings | Agreement Percentage | Total |
|---|---|---|---|---|---|---|
| | | | ODO | | | |
| Introduction | 7 | 9 | 2 | 9 | 96.30 | |
| Methods | 9 | 7 | 2 | 9 | 96.30 | |
| Results | 6 | 6 | 0 | 6 | 100.00 | **97.41** |
| Discussion | 7 | 10 | 3 | 10 | 94.44 | |
| Conclusion | 1 | 1 | 0 | 1 | 100.00 | |

4.In the final stage, new moves or steps are added into the framework based on the mentioned coding process. The definitions of moves and steps were reviewed again to ensure the sufficient understanding of the communicative purposes of each text segment in the corpora. After analyzing 6 articles, no new moves were found, but several steps were deleted to suit with the current communicative purposes of English research articles in the field of Dentistry. For instance, M2S2: *Raising a question* in the original framework of Kanoksilapatham (2005) was deleted since there was no presentation of M2S2 in the RAs in the two sub-disciplines of Dentistry. In addition, several words were also removed from the titles of the move and step to make them more adaptable. For example, in M3S2: *Presenting RQs or hypotheses*, which appeared in the framework of Kanoksilapatham (2005), the word "RQs" was removed since there was no presentation of research questions in the RAs in the two sub-disciplines of Dentistry. This finding was consulted with the disciplinary insiders who confirmed the omission of research questions in the RAs in Dentistry. Excerpts 3 from OMS 24 and 4 from ODO2 are taken to show the use of M3S2 in the current study.

**Excerpt 3:**

We hypothesized that risk analysis would be more effective if the factors related to complications were classified and analyzed. (OMS24)

**Excerpt 4:**

The hypothesis was that there is no correlation between mandibular incisor changes after comprehensive orthodontic treatment using the Jasper Jumper appliance, and the increase in gingival recession in the long term. (ODO2)

After investigating the moves and steps from 6 RAs in 6 journals, a probable framework is suggested. This framework is modified by adding, removing, or revising the moves or steps. The final version of framework is developed when six research articles are analyzed. Hence, the preliminary analysis of the six RAs, based on the frameworks of Nwogu (1997), Kanoksilapatham (2005), Davis (2020), and Yang and Allison (2003), showed their effectiveness to analyze the English research articles in

the two sub-disciplines of Dentistry. Table 3.11 reports the revised frameworks after analyzing 6 research articles.

**Table 3.11 The Revised Frameworks after Analyzing 6 Research Articles between Two Sub-disciplines**

| |
|---|
| **Introduction** |
| Move 1: *Announcing the importance of the field* |
| M1S1: *Claiming the centrality of the topic* |
| M1S2: *Making topic generalizations* |
| M1S3: *Reviewing previous research* |
| Move 2: *Preparing for the present study* |
| M2S1: *Indicating a gap* |
| M2S2: *Showing the problems* |
| Move 3: *Introducing the present study* |
| M3S1: *Stating purpose(s)* |
| M3S2: *Presenting hypotheses* |
| **Methods** |
| Move 4: *Describing data-collection procedure* |
| M4S1: *Ethical considerations* |
| M4S2: *Indicating the data* |
| M4S3: *Indicating criteria for data collection* |
| Move 5: *Describing Experimental Procedures* |
| M5S1: *Defining variables* |
| M5S2: *Recounting methods/ experimental process* |
| Move 6: *Describing data-analysis procedures* |
| M6S1: *Indicating process of data classification* |
| M6S2: *Recounting analytical instrument/procedure* |
| M6S3: *Indicating modification to instrument/procedure* |
| M6S4: *Indicating statistical significance* |
| **Results** |
| Move 7: *Indicating data characteristics* |
| Move 8: *Reporting the findings* |
| M8S1: *Stating the outcomes* |
| M8S2: *Stating figures or tables* |
| M8S3: *Reviewing/comparing to previous work* |
| Move 9: *Stating comments on the results* |
| M9S1: *Comparing the experimental and control group* |
| M9S2: *Indicating statistical tests* |
| M9S3: *Making generalizations or interpretations of the results* |
| **Discussion** |
| Move 10: *Indicating aims of study* |
| Move 11: *Highlighting research outcomes* |
| M11S1: *Stating outcomes* |
| M11S2: *Interpreting the outcome* |
| M11S3: *Indicating significance of the outcome.* |
| M11S4: *Contrasting present and previous outcomes.* |
| Move 12: *Stating limitations of the study* |
| M12S1: *Limitations about the findings* |
| M12S2: *Limitations about the methodology* |
| M12S3: *Limitations about the claims made* |
| Move 13: *Stating research conclusions* |
| M13S1: *Evaluating the study* |
| M13S2: *Deductions from the research* |
| M13S3: *Stating future studies* |
| **Conclusion** |
| Move 14: *Summarizing the findings* |

This is the researcher's framework based on trialing and using a combination of frameworks (Table 3.8) after the intimal coding stage. Hence, this framework will be utilized for coding move-step structure in the current research. Therefore, new moves and steps can be added to the framework and existing moves can be removed based

on the analysis of the pilot study and main study. At the end, the new frameworks of full-length English research articles in the two sub-disciplines of Dentistry will be constructed after analyzing all the 60 RAs.

**3.3.4 Determination of the Status of Moves and Steps**

Previous studies, e.g., Nwogu (1997), Kanoksilapatham (2005), Amnuai & Wannaruk (2013), Saeeaw & Tangkiengsirisin (2014), and Gao and Pramoolsook (2023), show that frequency of moves and steps determines their status in the corpora. To be specific, if a move or a step occurs at least once in each text of all the corpora, then, its frequency reaches 100%. In case a move or a step is only found in 30 texts among the whole corpus of 60 texts, its frequency is 50%. In the situation of recycled moves or steps where they occur more than once in a text, they are still counted only once. Therefore, the frequency calculated from the corpus is objective (Maswana et al., 2015).

Recommendations from previous studies show that there are two popular ways to set a cut-off threshold.

Firstly, Nwogu (1997) suggests the cut-off frequency, which is also utilized in later studies of Li and Ge (2009), Loi (2010), Maswana et al. (2015), Moyetta, (2016), Parkinson (2017), Gao and Pramoolsook (2021), and Gao and Pramoolsook (2023). To be more specific, this study uses cut-off thresholds of 50% and 80% to categorize obligatory, conventional, and optional moves and steps based on their frequency of occurrence. As such, obligatory moves and steps are in the 80–100%, conventional 50–79%, and optional below 50%.

Secondly, Kanoksilapatham (2005) suggests the cut-off threshold is 60% after investigating 60 full-length articles in Biochemistry, which has been utilized as a guidline in later studies (e.g., Amnuai & Wannaruk, 2013; Saeeaw & Tangkiengsirisin, 2014; Zhang & Wannaruk, 2016; Changpueng & Patpong, 2021; Alyousef, 2021a, 2021b; Piromkij & Phoocharoensil, 2022). To be more specific, an obligatory move or step appears in all of research articles (100%). If the frequency of a move or step is from 60% to 99%, it is considered conventional. If the frequency of a move or step is below 60%, it is considered optional.

From these two approaches, in the current study, the threshold proposed by Kanoksilapatham (2005) is adopted to establish the status of moves and steps. This decision is made due to the recommendations from the previous studies (Amnuai & Wannaruk, 2013; Saeeaw & Tangkiengsirisin, 2014, Zhang & Wannaruk, 2016; Changpueng & Patpong, 2021; Alyousef, 2021a; Piromkij & Phoocharoensil, 2022). Moreover, in the study of Alyousef (2021b) who carries out the move analysis of the

RAs in Dentistry, the status of moves and steps proposed by Kanoksilapatham's (2005) is also adopted.

After coding 6 full-length articles to measure the suitability and reliability of the selected frameworks and establish the modified frameworks, the researcher decides to choose the Introduction section for the pilot study since the section highlights the importance of the study, and introduces the background knowledge. Besides, the RA Introduction section has been studied extensively in the literature, e.g., Khany and Tazik, 2010; Loi, 2010; Rahman et al., 2012; Amnuai and Wannaruk, 2013; Chahal, 2014; Jalilifar et al., 2016; Suryani and Rahim, 2016; Farnia and Barati, 2017; Rahman and Sofwan, 2017; Öztürk, 2018; Ebrahimi and Weisi, 2019; Arsyad et al., 2018; Lu et al., 2021c; Meng, 2021; Duruk, 2021; Piromkij & Phoocharoensil, 2022; Gao and Pramoolsook, 2023, and Zhao and Pramoolsook, 2023. In the next section, the analysis of phrase frames is reported with more information about the selection of framework, the identification of phrase frames, and the determination of the status of phrase frames.

The findings of moves, steps, and their structure, originally illustrated in this section, were relocated to Section 4.1 in Chapter 4 so that the move-step structure findings of the RA sections were reported in one chapter.

**3.4.5 The Interater-agreement of moves, steps and their structure in the RA sections between the two sub-disciplines.**

In the Introduction section, 18 RAs from 6 journals were selected for inter-rater reliability based on the stratified and random selection. They were coded independently by the researcher and an invited coder. The number of chosen RAs was well considered since recommendations from the previous studies (e.g., Shi & Wannaruk, 2014; Parkinson, 2017) confirmed the common benchmark of number of RAs from 20% to 30% to be adequate for the inter-rater agreement. The results showed the high consistency of communicative purposes (90% in OMS and 90.57% in ODO) between 2 coders in inter-rater agreement as illustrated in Table 3.12. The discrepancy of moves and steps was discussed until the 2 coders reached consensus. These text segments were then discussed between the two raters and agreed by the disciplinary insiders.

**Table 3.12 The Inter-Rater Agreement of Moves and Steps in the English Dentistry RA Introduction Section**

| Moves | Coded Unit | | Agreed Codings | | Different Codings | | Agreement Percentage | |
|---|---|---|---|---|---|---|---|---|
| | OMS | ODO | OMS | ODO | OMS | ODO | OMS | ODO |
| Move 1 | 142 | 163 | 132 | 149 | | | | |
| Move 2 | 50 | 85 | 48 | 78 | 14 | 28 | 90.00 | 90.57 |
| Move 3 | 38 | 49 | 36 | 42 | | | | |
| Total | 240 | 297 | 216 | 269 | | | | |

In the Methods section, the inter-rater reliability was checked before reporting the findings. One noted feature in this section was the presentation of knowledge in Dentistry, so two disciplinary insiders were asked to take part in this process. In order to determine the precise communicative functions of text segments that required knowledge of Dentistry, these segments were sent to the disciplinary experts for further clarification. The rate of inter-rater agreement in this section was 90.25% in OMS and 93.83% in ODO. The discrepancies between the two inter-raters were then discussed and the agreement was settled. For example, the text segments in OMS7: "*For both groups, the particulate graft was an equal mixture (1:1) of autogenous and anorganic bovine bone matrix (ABBM) covering bone block harvested from the symphysis area using a trephine bur. Group 1 (PM) received BP as a barrier membrane, whereas group 2 (TM) received Ti mesh.*" should belong to M5S1: *Defining variables* rather than M5S2: *Recounting methods/ experimental process* since its primary communicative function is to highlight the descriptions of two study groups. Table 3.13 reports the inter-rater reliability check of moves and steps in the Methods section.

**Table 3.13 The Inter-Rater Agreement of Moves and Steps in the English Dentistry RA Methods Section**

| Moves | Coded Unit | | Agreed Codings | | Different Codings | | Agreement Percentage | |
|---|---|---|---|---|---|---|---|---|
| | OMS | ODO | OMS | ODO | OMS | ODO | OMS | ODO |
| Move 4 | 86 | 83 | 73 | 75 | | | | |
| Move 5 | 69 | 70 | 64 | 67 | 23 | 14 | 90.25 | 93.83 |
| Move 6 | 81 | 74 | 76 | 71 | | | | |
| Total | 236 | 227 | 213 | 213 | | | | |

In the Results section, the inter-rater agreement was checked after the coding process. Table 3.14 presents the rate of inter-rater agreement of this section, which accounted for 93.44% in OMS and 92.48% in ODO. The discrepancies between the two inter-raters were then discussed and the agreement was settled.

**Table 3.14 The Inter-Rater Agreement of Moves and Steps for the RA Results Section**

| Moves | Coded Unit | | Agreed Codings | | Different Codings | | Agreement Percentage | |
|---|---|---|---|---|---|---|---|---|
| | OMS | ODO | OMS | ODO | OMS | ODO | OMS | ODO |
| Move 7 | 24 | 13 | 21 | 10 | | | | |
| Move 8 | 44 | 45 | 43 | 43 | 8 | 10 | 93.44 | 92.48 |
| Move 9 | 54 | 75 | 50 | 70 | | | | |
| Total | 122 | 133 | 114 | 123 | | | | |

In the Discussion section, the inter-rater agreement was checked after the coding process. The results showed the high consistency of move identification

(91.68% in OMS and 92.78% in ODO) between the two coders reflected through inter-rater agreement as illustrated in Table 3.15.

**Table 3.15 The Inter-Rater Agreement of Moves and Steps for the English Dentistry RA Discussion Section**

| Moves | Coded Unit | | Agreed Codings | | Different Codings | | Agreement Percentage | |
|---|---|---|---|---|---|---|---|---|
| | OMS | ODO | OMS | ODO | OMS | ODO | OMS | ODO |
| Move 10 | 15 | 6 | 13 | 4 | | | | |
| Move 11 | 360 | 307 | 342 | 295 | | | | |
| Move 12 | 54 | 69 | 44 | 59 | 39 | 29 | 91.68 | 92.78 |
| Move 13 | 40 | 20 | 31 | 15 | | | | |
| Total | 469 | 402 | 430 | 373 | | | | |

## 3.4 Analysis of Phrase Frames

### 3.4.1 Selection of Framework of Phrase Frames

The current study will adopt the models from Gray and Biber (2013) as well as Simpson-Vlach and Ellis (2010), presented in 2.4. Phrase Frames of Chapter 2. This decision is made due to the recommendations from previous studies on phrase frames (Lu et al., 2018, 2021a, 2021b). Besides, since there are several levels of a structural and functional category in the models, the current study includes all of the levels to collect all the phrase frames in each level. This makes this present study different from the existing literature since previous studies only analyze the first level of categories of phrase frames.

Since the functional classification is based on meaning of the phrase frames and fillers, it is expected that some phrase frames are identified as multi-functional. There is another approach to determine the functional labels of phrase frames proposed by Grabowski (2015). He suggested utilizing a fixed-frame-based approach rather than filler-based approach based on the fixed elements, so the use of fillers to determine the frame classification was also utilized in previous studies (Rommer, 2010; Fuster-Marquez & Pennock-Speck, 2015). In the present study, the exploration on the phrase frames is based on the frequency of phrase frames suggested by the fixed-frame-based approach and the number of fillers based on the filler-based approach to examine the phrase frames in different angles, which greatly contributes to the purpose of the study.

The rationale for the adoption of Gray and Biber (2013) as well as Simpson-Vlach and Ellis (2010) for examining the phrase frames is three folds. To begin with, the taxonomies of these two studies are utilized to identify the phrase frames in the research articles in different disciplines. Next, these taxonomies provide insights of phrase frames which are utilized as useful resources to compose RAs for international publications. Finally, these taxonomies are the most widely adopted by recent studies

for the analysis of formulaic sequences, including phrase frames (Ang & He, 2017; Baranchikova et al., 2018; Durrant, 2018; Barabadi et al., 2020; Walcott, 2021; Liu & Chen, 2022; Omidian et al., 2023; Casal & Yoon, 2023;). Thus, these two taxonomies set models for the present study to investigate of phrase frames in the English research articles in Dentistry.

### 3.4.2 Identification and Procedure of Extracting Phrase Frames

Two approaches are recommended to carry out phrase frame investigation (Granger & Paquot, 2008). Firstly, the traditional approach, commonly known as phraseological approach, depends on the lexical and grammatical standards to include or exclude a phrase. Secondly, the distributional approach utilizes a corpus-driven aproach to identify target phrases in terms of their frequency, which is carried out by previous studies, e.g., Renouf & Sinclair (1991), Hunston & Francis (2000), and Cortes (2013).

Therefore, in the current study, the second approach is adopted based on the criteria from Lu et al. (2018, 2021a, 2021b). This decision is made since the procedure of this approach is to identify the list of phrase frames in the corpora and includes 4 stages: automatic extraction, manual refinement, structural and functional analysis, and rater assessment, based on the guideline from Lu et al. (2018), as illustrated in Figure 3.6.

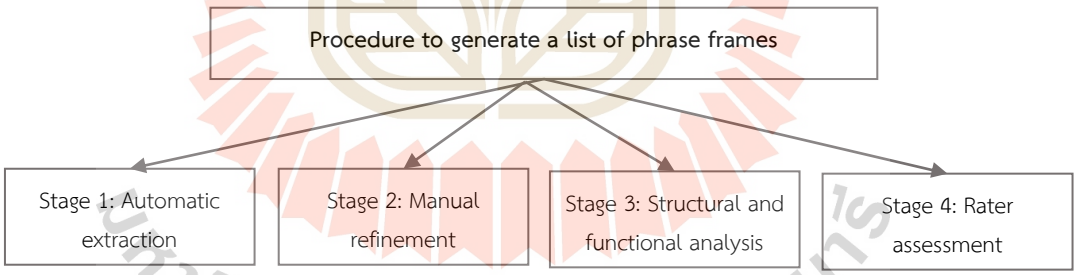



**Figure 3.6 A Summary of Procedure to Generate the List of Phrase Frames by Lu et al. (2018)**

#### 3.5.2.1 Automatic Extraction

In terms of the number of words in a phrase frame to extract, the decision is based on the initial observation of the data. For example, in the current study, the phrase frames with fewer four words include mostly the function words, including *a, an, the*, etc., which leads to the lack of understanding and analyzing structural and semantical aspects. The researcher utilizes kfNgram sofware (Fletcher, 2011) based on a number of pre-determined criteria. The longer than four-word frames

are also not calculated since the number of these frames is not common due to the size of two corpora.

The researcher also decides the cut-off points of the phrase frame occurrence. For the cut-off threshold, four previous studies suggest from 10 to 20 times per million words for four- and five-word frames and 8-15 times for six-word phrase frames (Biber et al., 2004; Simpson-Vlach & Ellis, 2010; Cortes, 2013; Lu et al., 2018, 2021a). Hence, in the current study, the researcher finally decides 10 occurrences per million words with four-word phrase frames based on the recommendations from the existing literature and the number of articles in the study.

For the approaches for data analysis, two common approaches to analyze the data functionally are filler-based approach (Fuster-Marquez & Pennock-Speck, 2015; Romer, 2010) and fixed-frame-based approach (Grabowski, 2015). In the current study, the former will be adopted since this approach is suitable with the current study due to the following reasons:

1. The filler-based approach is utilized by recent scholars, e.g., Tan & Römer, 2022; Yan et al., 2024; Zhou & Li, 2024.
2. Studies in the existing literature, e.g., Lu et al. (2018, 2021a, 2021b), suggest to choose this approach for data analysis.

Besides, there are some other tools, including AntConc, WordSmith, and Python. According to Lu et al. (2018), Python requires an IT expert to write the codes and process the data. WordSmith and AntConc take time to prepare the codes and process the whole procedure while kfNgram is friendly to the users with simple procedures and easy data extraction. Therefore, kfNgram is the software used in the current study.

After having sufficient knowledge about how to use the software, several steps are carried out to extract the phrase frames automatically.

Step 1: The software kfNgram is downloaded from the website: http://www.kwicfinder.com/kfNgram/kfNgramHelp.html. This program is created by William Fletcher and used for linguistic study to generate lists of phrase-frames.

Step 2: Sixty RAs are converted into .txt file to import into the software. This task takes time to do to ensure the quality of the corpora

Step 3: The .txt file is imported into the software.

Step 4: The step consists of clicking on “Get Wordgrams” first and then “Get Phrase Frames from Wordgram file” to get the

result. A preliminary result is released after the automatic extraction.

**3.5.2.2 Manual Extraction**

After automatic extraction in Step 4, the preliminary result is obtained. Next, the phrase frames are extracted manually by removing the outliners of phrase frames. Each phrase frame is identified in the original texts and filtered based on the suggestions from Lu et al. (2018) which include:

1. The phrase frames are linguistically incomplete or crossed clausal boundaries.
2. The phrase frames can be part of larger frames.
3. The phrase frames can be better formed as lexical bundles than phrase frames.

**3.5.2.3 Structural and Functional Analysis**

The data of phrase frames are categorized based on Gray and Biber's (2013) and Simson-Vlach and Ellis's (2010) taxonomies to identify the usefulness of the phrase frames to EAP/ESP teachers and students, as mentioned in 2.4 Phrase Frames of Chapter 2. The analysis of phrase frames is conducted based on the structural and functional category. In the current study, after analyzing data in the pilot study, the examples of structural category are illustrated in Tables 3.16 and 3.17 while the instances of functional category are reported in Tables 3.18 and 3.19. In each category, the frequency of phrase frames and the number of fillers are reported in the two sub-disciplines. Due to the long list of data, the overall results of each phrase frames and fillers are presented only.

**Table 3.16** An Example of Frequency of Phrase Frames in the Structural Category

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| | *** this study was** | **39** | **39** | **39** | **39** | **0** |
| 1 | of this study was | 25 | X | X | | |
| 2 | in this study was | 14 | X | X | | |
| | **analyses were performed *** | **20** | **14** | **20** | **14** | **6** |
| 1 | analyses were performed using | 14 | X | X | | |
| 2 | analyses were performed with | 6 | | X | | |
| | **the * group was** | **19** | 14 | **14** | **9** | **10** |
| 1 | the control group was | 9 | X | X | | |
| 2 | the submental group was | 5 | X | | | |
| 3 | the INH group was | 5 | | X | | |
| | **tipping of the *** | **16** | **0** | **16** | **0** | **16** |
| 1 | tipping of the mandibular | 4 | | X | | |
| 2 | tipping of the posterior | 4 | | X | | |
| 3 | tipping of the canines | 4 | | X | | |
| 4 | tipping of the incisors | 4 | | X | | |

Table 3.16 shows the frequency of 4 phrase frames, i.e., ** this study was, analyses were performed *, the * group was,* and *tipping of the *,* in the structural

category. To be more specific, ** this study was* appeared the most in the data with 39 times in the data. In this phrase frame, 39 occurrences were similar between the two sub-disciplines. Besides, *tipping of the ** appeared the least in the data with 16 times in ODO only. Therefore, this phrase frame indicates a difference between these two sub-disciplines.

**Table 3.17 An Example of Number of Fillers in the Structural Category**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| | **tipping of the *** | 4 | 0 | 4 | 0 | 4 |
| 1 | tipping of the mandibular | | | X | | |
| 2 | tipping of the posterior | | | X | | |
| 3 | tipping of the canines | | | X | | |
| 4 | tipping of the incisors | | | X | | |
| | **the * group was** | 3 | 2 | 2 | 1 | 2 |
| 1 | the control group was | | X | X | | |
| 2 | the submental group was | | X | X | | |
| 3 | the INH group was | | | X | | |
| | *** more likely to** | 3 | 1 | 3 | 1 | 1 |
| 1 | were more likely to | | | X | | |
| 2 | be more likely to | | | X | | |
| 3 | are more likely to | | X | X | | |
| | *** there was no** | 2 | 2 | 1 | 1 | 1 |
| 1 | that there was no | | X | X | | |
| 2 | however there was no | | X | | | |

Table 3.17 shows the number of fillers of 4 phrase frames, i.e., *tipping of the *, the * group was*, ** more likely to,* and ** there was no,* in the structural category. To be more specific, *tipping of the ** appeared the most in the data with 4 times in ODO only. Besides, ** there was no* appeared the least in the data with 2 times in OMS and 1 time in ODO.

**Table 3.18 An Example of Frequency of Phrase Frames in the Functional Category**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| | **the * of this** | 53 | 53 | 30 | 30 | 23 |
| 1 | the results of this | 18 | X | | | |
| 2 | the aim of this | 17 | X | X | | |
| 3 | the purpose of this | 5 | X | X | | |
| 4 | the limitations of this | 5 | X | | | |
| 5 | the findings of this | 4 | X | X | | |
| 6 | the objective of this | 4 | X | X | | |
| | **the use of *** | 27 | 22 | 16 | 16 | 11 |
| 1 | the use of the | 9 | X | X | | |
| 2 | the use of a | 7 | X | X | | |
| 3 | the use of adjunctive | 6 | X | | | |
| 4 | the use of direct | 5 | X | | | |
| | **the * number of** | 23 | 23 | 8 | 8 | 15 |
| 1 | the average number of | 11 | X | | | |
| 2 | the total number of | 8 | X | X | | |
| 3 | the mean number of | 4 | X | | | |
| | **the * committee of** | 10 | 5 | 10 | 5 | 5 |
| 1 | the ethics committee of | 5 | X | X | | |
| 2 | the ethical committee of | 5 | | X | | |

Table 3.18 shows the frequency of 4 phrase frames, i.e., *the * of this, the use of *, the * number of,* and *the * committee of*, in the functional category. To be more specific, *the * of this* appeared the most in the data with 53 times in OMS and 30 times in ODO. Besides, *the * committee of* appeared the least in the data with 5 times in OMS and 10 times in ODO.

**Table 3.19 An Example of Numbers of Fillers in the Functional Category**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| | **at the * of** | **5** | **2** | **5** | **2** | **3** |
| 1 | at the end of | | | X | | |
| 2 | at the age of | | | X | | |
| 3 | at the time of | | X | X | | |
| 4 | at the level of | | X | X | | |
| 5 | at the ages of | | | X | | |
| | **to the * of** | **4** | **4** | **4** | **4** | **0** |
| 1 | to the best of | | X | X | | |
| 2 | to the presence of | | X | X | | |
| 3 | to the lack of | | X | X | | |
| 4 | to the type of | | X | X | | |
| | *** tipping of the** | **3** | **0** | **3** | **0** | **3** |
| 1 | distal tipping of the | | | X | | |
| 2 | mesial tipping of the | | | X | | |
| 3 | lingual tipping of the | | | X | | |
| | **of the * teeth** | **2** | **0** | **2** | **0** | **2** |
| 1 | of the anterior teeth | | | X | | |
| 2 | of the posterior teeth | | | X | | |

Table 3.19 shows the number of fillers in 4 phrase frames, i.e., *at the * of, to the * of, * tipping of the*, and *of the * teeth,* in the functional category. To be more specific, *at the * of* appeared the most in the data with 2 times in OMS and 5 times in ODO. Besides, *of the * teeth* appeared the least in the data with 2 times in ODO only.

During the process, the phrase frames are examined in the two sub-disciplines, so any cases that appear in the two corpora are noted. For instance, the phrase frame ** between the groups* was utilized in verb-based and other-content-word phrase frames, as shown in Tables 3.20 and 3.21.

**Table 3.20 An Example of an Exception of Phrase Frames in the Current Study in Verb-based Phrase Frames**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * between the groups | 5 | 0 | 5 | 0 | 5 |
| **No.** | **Phrase frames** | **Fillers** | **Sub-disciplines** | | **Similarities** | **Differences** |
| | | | OMS | ODO | | |
| 1 | * between the groups | 1 | 0 | 1 | 0 | 1 |

Table 3.20 shows an exception of a phrase frame in verb-based type. For the frequency of this phrase frame, there were 5 times in ODO only. For the number of fillers of this phrase frame, 1 filler was used in ODO only.

**Table 3.21 An Example of an Exception of Phrase Frames in the Current Study in Other-content-word Phrase Frames**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * between the groups | 14 | 4 | 14 | 4 | 10 |
| **No.** | **Phrase frames** | **Fillers** | **Sub-disciplines** | | **Similarities** | **Differences** |
| | | | OMS | ODO | | |
| 1 | * between the groups | 3 | 1 | 3 | 1 | 2 |

Table 3.21 shows an exception of a phrase frame in other-content-word type. For the frequency of this phrase frame, it appeared 4 times in OMS and 14 times in ODO. In this phrase frame, 4 occurrences were similar whereas 10 occurrences were different between the two sub-disciplines. For the number of fillers of this phrase frame, only 1 filler appeared in OMS while 3 fillers appeared in ODO. One filler was similar whereas 2 fillers were different between the two sub-disciplines.

**3.5.2.4 Rater Assessment**

In this stage, the researcher contacted four informants, i.e., two teachers and two students, based on the following criteria. The invited teachers are currently associate professors, including a language teacher in Linguistics and a doctor in Dentistry, and have experienced in teaching academic writing courses. Meanwhile, the students are MA holders, and enroll in a graduate program in Education, specializing in TESOL, in the University of Southern Queensland (Australia). In the current study, only two teachers and two students are invited to take part in the interview following the recommendations from the previous studies, e.g., Lu et al. (2018; 2021a). The aim of this interview is to obtain the general ideas about how the identified phrase frames are utilized in the views of language teachers and doctors only.

Previous studies show that rater assessment depends mostly on the teacher's viewpoints (Simpson-Vlach & Ellis, 2010; Ackerman & Chen, 2013). Lu et al. (2018) suggest that it is informative and important to involve the learner's viewpoints to guarantee the possible usefulness of the target list to teachers and learners. In this case, the teachers and students are given a list of 25 four-words phrase frames in each structural and functional category. The list also includes the information about the frequency of phrase frames and the number of fillers. Instead of utilizing four informants to rate the phrase frames, the researcher follows the prior research, e.g.,

Lu et al. (2018), by interviewing these informants to identify the initial sense of percentage of phrase frames that can be pedagogically beneficial to EAP/ESP teachers and/or students.

A four-point likert scale is utilized in the current study to rate the phrase frames. The range and interval are also calculated, which are 3 and 0.75, respectively, as illustrated in Table 3.22.

**Table 3.22 A Summary of 4-likert Scale in the Current Study (Lu et al., 2018, pp.80-81)**

| Likert scale | Interval | Description |
|---|---|---|
| 1 | 1.00-1.74 | pattern not recognizable; frame not useful |
| 2 | 1.75-2.49 | pattern recognizable; frame not useful |
| 3 | 2.50-3.24 | pattern recognizable; frame somewhat useful |
| 4 | 3.25-4.00 | pattern recognizable; frame very useful |

Therefore, if the average score is ≥ 2.5, it shows the pedagogical usefulness of the list to teachers and/or students. A noted feature is that the reviewers can comment on what they observe, which can be a useful resource to identify the implications of phrase frames.

### 3.4.3 Determination of the Status of Phrase Frames

Important factors, e.g., length, fillers, play a crucial role to ensure the validity and the reliability of the methodological procedure. Biber et al. (2004) suggest a cut-off degree of 40 times per million words to identify the phrase frames and the chosen number is four words in a phrase frame. Cortes (2013) selects a frequency of 10- 20 times per million words for five-words and 8-15 times for six-word frames in the corpus of 600 research articles in six disciplines. According to Le and Harrington (2015), these factors are calculated in different methods and by different researchers, so a set of cut-off threshold should be established based on the occurrence of phrase frames and number of words in a phrase frame. Barabadi et al., (2020) suggest a four- and five-word phrase frames in their study with 125 research articles from five journals due to two reasons. It is impossible to extract semantically a phrase frame with six or more words, and five-word phrase frames can be extracted in terms of discipline, genre, and registers, which is similar to the findings in the previous studies (Romer, 2009; Cunningham, 2017). For the frequency, they set the cut-off point with 17 times per million words. Lu et al. (2021a) choose 16 times per million words for five-word frames and 12 times per million words for six-word frames. Lu et al. (2021b) carry out another study on phrase frames in 500 RA introductions from 5 disciplines (100 articles from each discipline). They choose five- and six-word phrase frames with two fillers which appear in three or more articles in each discipline. Compared to previous studies, Lu

et al. (2018; 2021a) set a lower frequency of length, e.g., four-word phrase frames, since three-word phrase frames consist of function words only and have little lexical meanings whereas phrase frames with more than four words are quite rare in the corpus.

In the present study, the frequency of phrase frames is proposed to be 10 times per million words, and the four-word phrase frames are extracted 4 times or more in the two corpora. Recommendations of the length of phrase frames from previous studies, e.g., Romer, 2009; Le and Harrington, 2015; Cunningham, 2017; Lu et al., 2018, 2021a, 2021b, are also guidelines in the currents study.

While 3-word bundles are often more frequent, they tend to be less specific and carry limited rhetorical weight, frequently consisting of general function words that may not fully represent meaningful discourse patterns. In contrast, 5-word bundles, though often more semantically rich, occur less frequently and show greater variability, which can make them less reliable for identifying consistent discourse features across a corpus. Four-word bundles, however, are long enough to capture more informative and field-specific structures while still occurring frequently enough to support quantitative analysis. In the context of Dentistry research articles, analyzing 4-word phrase frames provides a practical and insightful way to uncover how writers construct arguments, convey findings, and conform to disciplinary norms.

Table 3.23 reports an example of the phrase frames that appear in each of the move and step in the current study.

**Table 3.23 An Example of Phrase Frames in the RA Introduction Section in the Current Study**

| Move-step Structure (OMS7) | Phrase Frames |
|---|---|
| M1S1: *Claiming the centrality of the topic* | 1. in the * zone (esthetic) |
| | 2. * one of the (is) |
| | 3. one of the * (most) |
| M2S2: *Showing the problems* | 4. studies have * that (shown) |
| M3S1: *Stating purpose(s)* | 5. the * of this (purpose) |
| | 6. study was to * (compare) |

As illustrated in Table 3.19, there are 6 phrase frames that appear in 3 steps in the RA Introduction. To be more specific, three phrase frames, i.e., *in the * zone*, ** one of the*, and *one of the **, occurred in M1S1: *Claiming the centrality of the topic.* One phrase frame, i.e., *studies have * that*, appeared in M2S2: *Showing the problems* while two phrase frames, i.e., *the * of this*, and *study was to **, were found in M3S1:

*Stating purpose(s).* In the next section, the pilot study is provided to demonstrate the feasibility of the data analysis, the results and discussion, and the implications that can inform the improvement of the research in the main study.

The findings of phrase frames, originally illustrated in this section, were relocated to Section 5.1 in Chapter 5 so that the phrase frame findings of the RA sections were reported in one chapter.

## 3.5 Contrastive Analysis between the Two Sub-disciplines

Contrastive analysis is a linguistic research method that compares two or more languages, dialects, or linguistic systems to identify similarities and differences. It plays a key role in second language acquisition by helping predict areas where learners might struggle. When a learner's first language (L1) shares features with the target language (L2), learning is often facilitated through positive transfer. Conversely, differences between the two can lead to negative transfer, resulting in errors.

Beyond language learning, contrastive analysis is applied in fields like translation studies, sociolinguistics, and intercultural communication. In translation, it helps identify potential mismatches in syntax, meaning, or cultural context. In intercultural communication, it aids in understanding and anticipating misunderstandings that may arise from differing communication styles or cultural norms.

Connor (1996) outlines six methods commonly used in contrastive analysis. The first is reflective inquiry, which involves observation, introspection, and literature review to critically examine underlying assumptions. This approach uncovers deeper theoretical insights by encouraging researcher self-reflection.

The second is quantitative descriptive research, which relies on numerical data-such as frequencies or percentages-to identify patterns across languages or sub-disciplines. This method enhances objectivity and allows for measurable comparisons. Third, prediction and classification studies use data to forecast outcomes or categorize linguistic features based on their differences, although these studies often lack strong theoretical grounding.

Sampling surveys, the fourth method, gather data from representative samples to draw generalizable conclusions. This approach is time-efficient and useful for comparing distributions of linguistic features. The fifth method, qualitative descriptive research, includes case studies and ethnographies that provide in-depth insights into specific cultural or linguistic contexts, offering a narrative-based understanding of contrasts.

Finally, true and quasi-experimental methods involve manipulating variables to determine causal relationships. Although rarely used in contrastive rhetoric, these methods can reveal how specific factors influence linguistic outcomes by comparing different experimental conditions.

Together, these methods provide both qualitative and quantitative tools for exploring cross-linguistic differences, enhancing our understanding of language structures and their implications across various fields.

Taken together, the current study is concerned with the investigation of moves, steps and corresponding phrase frames as well as the sub-disciplinary variations of the RA sections between the two sub-disciplines, so it is categorized as a mixed-method study with qualitative and quantitative descriptive research.

## 3.6 Chapter Summary

The chapter provided a detailed explanation of the research design and how the data was collected and analyzed to answer four research questions. The criteria of corpus size, corpus compilation as well as RA and journal selection were addressed. The detailed analysis of move-step structure and phrase frames, which included the frameworks of pilot coding, the process of moves and steps analysis, and the procedure of how to carry out the inter-rater reliability check, was presented. The findings of the pilot study showed the feasibility and reliability to conduct the current study and answer the four research questions as well as the proven capacity of the present researcher to carry out the main study.

มหาวิทยาลัยเทคโนโลยีสุรนารี

# CHAPTER 4
# RESULTS AND DISCUSSION OF MOVES, STEPS, AND THEIR STRUCTURE IN THE RA SECTIONS

As the fourth chapter of the dissertation, it consists of the results and discussion of moves, steps, and their structure of 5 RA sections, i.e. Introduction, Methods, Results, Discussion, and Conclusion. In each section, the inter-rater reliability check and the proposed framework are also presented. Then, the results and discussion are reported based on the number, status, and move cycles of moves and steps in each RA section. The last part of each section is the description of each move and step.

## 4.1 Moves and Steps of the Introduction Section

The proposed framework for the current study was adopted and adapted on some points after the coding process was completed. Table 4.1 reports the initial version of the move-step structure of the English Dentistry RA Introduction sections from the pilot coding. Totally, there were 3 moves and 7 steps in this version.

**Table 4.1 The Initial Version of Move-Step Structure for English Dentistry RA Introduction Section**

| Moves | Steps |
|---|---|
| Move 1: *Announcing the importance of the field* | M1S1: *Claiming the centrality of the topic* |
| | M1S2: *Making topic generalizations* |
| | M1S3: *Reviewing previous research* |
| Move 2: *Preparing for the present study* | M2S1: *Indicating a gap* |
| | M2S2: *Showing the problems* |
| Move 3: *Introducing the present study* | M3S1: *Stating purpose(s)* |
| | M3S2: *Presenting hypotheses* |

### 4.1.1 Results of Frequency, Status and Move Cycles of Moves and Steps in the English Dentistry RA Introduction Sections in Two Sub-Disciplines

In this study, the moves, steps, and their structure are analyzed for the English Dentistry RA Introduction section based on the framework of Kanoksilapatham (2005). After the analysis, the findings of the current study proposed a framework of 3 moves for the English RA Introduction sections in the two sub-disciplines, i.e., Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO), of

Dentistry. Besides, 11 steps were found in OMS and ODO. Table 4.2 illustrates the number and frequency of moves and steps identified whereas Table 4.3 presents the status of those moves and steps, i.e., obligatory, conventional, and optional, in the two sub-disciplines. Table 4.4 shows the move cycles in the two sub-disciplines of Dentistry.

**Table 4.2 The Number and Frequency of RAs in Moves or Steps for the English Dentistry RA Introduction Section in the Two Sub-disciplines**

| Introduction | OMS | | | | ODO | | | |
|---|---|---|---|---|---|---|---|---|
| | No. of RAs | % | Occurrence | % | No. of RAs | % | Occurrence | % |
| Move 1: *Announcing the importance of the field* | 30 | 100 | 72 | 19.41 | 30 | 100 | 78 | 17.77 |
| M1S1: *Claiming the centrality of the topic* | 13 | 43.33 | 14 | 3.77 | 21 | 70.00 | 23 | 5.24 |
| M1S2: *Making topic generalizations* | 28 | 93.33 | 47 | 12.67 | 22 | 73.33 | 34 | 7.74 |
| M1S3: *Reviewing previous research* | 29 | 96.67 | 59 | 15.90 | 29 | 96.67 | 70 | 15.95 |
| *M1S4: *Generalizations from previous studies* | 18 | 60.00 | 19 | 5.12 | 21 | 70.00 | 31 | 7.06 |
| Move 2: *Preparing for the present study* | 24 | 80.00 | 38 | 10.24 | 25 | 83.33 | 44 | 10.02 |
| M2S1: *Indicating a gap* | 7 | 23.33 | 8 | 2.16 | 11 | 36.67 | 16 | 3.64 |
| M2S2: *Showing the problems* | 17 | 56.67 | 23 | 6.20 | 11 | 36.67 | 39 | 8.88 |
| M2S3: *Presenting positive justification* | 14 | 46.67 | 19 | 5.12 | 18 | 60.00 | 27 | 6.15 |
| Move 3: *Introducing the present study* | 30 | 100 | 35 | 9.43 | 29 | 96.67 | 32 | 7.29 |
| M3S1: *Stating purpose(s)* | 29 | 96.67 | 29 | 7.82 | 27 | 90.00 | 28 | 6.38 |
| *M3S2: *Presenting hypotheses* | 2 | 6.67 | 2 | 0.54 | 6 | 20.00 | 6 | 1.37 |
| *M3S3: *Introducingequipment/ methods* | 4 | 13.33 | 6 | 1.62 | 4 | 13.33 | 7 | 1.59 |
| *M3S4: *Stating the value of present research* | 0 | 0.00 | 0 | 0.00 | 4 | 13.33 | 4 | 0.91 |

Note: Note: Steps with * mean new for the English Dentistry RA Introduction section of the two sub-disciplines

Table 4.2 shows the analysis results of 60 English Dentistry RA Introduction sections in the two sub-disciplines with 4 new steps identified. In Move 1, one new step, i.e., M1S4: *Generalizations from previous studies*, was discovered. Likewise, in Move 2, one new step, i.e., M2S3: *Presenting positive justification,* was also added. In Move 3, two new steps, i.e., M3S3: *Introducing methods/equipment* and M3S4: *Stating the value of present research*, were found.

At the move level, Move 1: *Announcing the importance of the field* in the two corpora was a predominant move, which appeared 72 times (19.35%) in OMS and 78 times (17.89%) in ODO. At the step level, in Move 1, M1S3: *Reviewing previous research* accounted for 59 times (15.86 %) in OMS and 67 times (16.06%) in ODO, which most frequently occurred for the English Dentistry RA Introduction section in the two sub-disciplines.

**Table 4.3 The Status of Moves and Steps in the Introduction Section between the Two Sub-disciplines**

| Move-Step | OMS | ODO |
|---|---|---|
| Obligatory (100%) | Move 1: *Announcing the importance of the field*<br>Move 3: *Introducing the present study* | Move 1: *Announcing the importance of the field* |
| Conventional (60%–99%) | Move 2: *Preparing for the present study*<br>M1S2: *Making topic generalizations*<br>M1S4: *Generalizations from previous studies*<br>M3S1: *Stating purpose(s)*<br>M1S3: *Reviewing previous research* | Move 2: *Preparing for the present study*<br>Move 3: *Introducing the present study*<br>M3S1: *Stating purpose(s)*<br>M1S2: *Making topic generalizations*<br>M1S4: *Generalizations from previous studies*<br>M2S3: *Presenting positive justification*<br>M1S3: *Reviewing previous research*<br>M1S1: *Claiming the centrality of the topic* |
| Optional (< 60%) | M1S1: *Claiming the centrality of the topic*<br>M2S1: *Indicating a gap*<br>M2S2: *Showing the problems*<br>M2S3: *Presenting positive justification*<br>M3S2: *Presenting hypotheses*<br>M3S3: *Introducing methods* | M2S1: *Indicating a gap*<br>M2S2: *Showing the problems*<br>M3S2: *Presenting hypotheses*<br>M3S3: *Introducing methods*<br>M3S4: *Stating the value of present research* |

Table 4.3 shows the status of moves and steps of 60 English Dentistry RA Introduction sections in the two sub-disciplines. For the obligatory category, in OMS, there were two moves, i.e., Move 1 and Move 3, which appeared 100% of RAs in the two sub-disciplines. In ODO, only Move 1 belonged to this category.

For the conventional category, there were Move 2 and four steps, i.e., M1S2, M1S3, M1S4, and M3S1, which shared the same status in the two sub-disciplines. However, in ODO, three more steps, i.e., M1S1, M2S1, and M2S3, were also conventional in the current study.

For the optional category, one step in Move 1, three steps in Move 2, and three steps in Move 3 appeared less than 60% in OMS, which were M1S1, M2S1, M2S2, M2S3, M3S2, M3S3, and M3S4. In ODO, the same steps were found to be optional except for M1S1 and M2S3. Table 4.4 reports the move cycle of the English RA Introduction sections in the two sub-disciplines of Dentistry.

**Table 4.4 A Summary of Move Cycles in the English Dentistry RA Introduction Section in the Two Sub-disciplines**

| No. | OMS | | | ODO | | |
|---|---|---|---|---|---|---|
| | Move cycles | No. of RAs | % | Move cycles | No. of RAs | % |
| 1 | M1S2-M1S3 | 16 | 59.25 | M1S2-M1S3 | 19 | 70.37 |
| 2 | M1S3-M1S4 | 16 | 59.25 | M1S3-M1S4 | 19 | 70.37 |
| 3 | M2S2-M3S1 | 6 | 22.22 | M2S2-M3S1 | 9 | 33.33 |
| 4 | M1S2-M1S4 | 8 | 29.62 | M1S2-M2S4 | 4 | 14.81 |
| 5 | M2S3-M3S1 | 8 | 29.62 | M1S3-M1S4 | 5 | 18.51 |
| 6 | M2S3-M3S1 | 12 | 44.44 | M1S2-M2S1 | 3 | 11.11 |
| 7 | M2S2-M2S3 | 9 | 33.33 | M1S1-M1S4 | 7 | 25.92 |
| 8 | M1S1-M1S3 | 6 | 22.22 | M3S1-M3S2 | 8 | 29.62 |
| 9 | M1S1-M1S3 | 7 | 25.92 | M2S1-M3S1 | 3 | 11.11 |

### 4.1.2 Discussion of Moves and Steps in the Introduction Section

This section aims to give detailed information on the communicative purposes of each of the moves and steps identified in the Introduction section of Dentistry RAs. Overall, 3 moves and 11 steps were found in the English Dentistry RA Introduction section.

**Move 1:** ***Announcing the importance of the field.*** The communicative purpose of this move is to explore the essential role of the general and specific field of study, which shows the significance and impacts of the understudied field from different perspectives. This move can be accomplished by 4 steps, i.e., M1S1*: Claiming the centrality of the topic*, M1S2: *Making topic generalizations*, M1S3: *Reviewing previous research*, and M1S4: *Generalizations from previous studies*. In Swales (2004), this move introduces the background of the research area by mentioning the present circumstance of the general research. In the current study, this move was the introductory part of the Introduction section, which occurred in all the 60 research articles, so this move was obligatory. This result is similar to Meng (2021) in Medical Sciences, Kanoksilapatham (2005) in Biochemistry, Gao and Pramoolsook (2023) in Electronic Engineering, and Zhao and Pramoolsook (2023) in Traditional Chinese Medicine.

**M1S1:** ***Claiming the centrality of the topic.*** The communicative purpose of this step is to point out the fundamental knowledge of the topic and to confirm the well-established and important research topic to conduct in the study being reported. Linguistic clues in this step include “essential”, “prevalent”, “important”, “the most common”, “the majority of”, “a major problem”, “the gold standard”, “one of unique importance”, “one of the most difficult procedure”, “one of the most controversial topics”, “the sixth most common cancer worldwide”, or “a subject of interest in a large number of studies”. This step occurred in 13 articles (43.33%) in OMS

and 21 articles (70.00%) in ODO, so it was an optional step in the two sub-disciplines. Excerpts 4.1 and 4.2 demonstrate this step.

**Excerpt 4.1**:

Restoration in the esthetic zone with implant supported prostheses **is one of the** most difficult procedures to achieve in maxillofacial surgery. (OMS7)

**Excerpt 4.2**:

Root resorption **is one of the most common** side effects of orthodontic treatment, and it can lead to root shortening, which may affect the stability and normal function of the teeth and even result in tooth loss.7,16,17 (OMS19)

**M1S2: *Making topic generalizations*.** The communicative purpose of this step is to provide the subject of the study by presenting the background or the phenomenon of a target community of the study being reported. Linguistic clues include "is widely used", "is defined as", "originally defined as", "were defined as", "is characterized by", or "is commonly described as". This step occurred in 28 articles (93.33%) in OMS and 22 articles (73.33%) in ODO, so it was a conventional step in the two sub-disciplines. Excerpts 4.3 and 4.4 are illustrations of M1S2.

**Excerpt 4.3:**

Buser et al8 defined success as "the absence of peri-implant infection, absence of pain or subjective discomfort, absence of a continuous radiolucency around the implant, and absence of clinically detectable implant mobility," while survival is **defined as** an implant that is still in function, without considering the success criteria.9 (OMS5)

**Excerpt 4.4:**

A tooth transposition **is defined** as a positional interchange of two neighboring teeth. (ODO5)

**M1S3: *Reviewing previous research*.** The communicative purpose of this step is to review the previous studies relevant to the study being reported to provide support or justification. This step occurred in 29 articles (96.67%) in OMS and in ODO, so it was a conventional step in the two sub-disciplines. Excerpts 4.5 and 4.6 show illustrations of M1S3.

**Excerpt 4.5**:

Clinical and experimental **studies have shown that** critical-sized bone defects simulating the extraction socket cannot spontaneously heal without the use of any osteopromotive material.2 (OMS3)

**Excerpt 4.6**:

**Studies of** root development in orthodontic treatment **have shown** different results. Hendrix et al7 reported that the final root length of developing roots was

shorter after orthodontic treatment than the normally developed root length. (ODO19)

**M1S4: *Generalizations from previous studies*.** The communicative purpose of this step is to make conclusions based on the previous studies reviewed. Hence, this step usually follows M1S3: *Reviewing previous studies* to provide summaries of evaluations about key findings from the literature reviewed. Besides, it was also found similarly in Meng's (2021) study, which showed the cycle of reviewing prior research and making conclusions. This step occurred in 18 articles (60.00%) in OMS and 21 articles (70.00%) in ODO, so it was a conventional step in OMS and ODO. This frequency was higher than the one in Meng (2021) with 40%. Excerpts 4.7 and 4.8 illustrate this step.

**Excerpt 4.7**:

(... *previous studies*). Hence, the involvement of HPV infection in OSCC carcinogenesis in the Netherlands **seems to be limited**. (OMS13)

**Excerpt 4.8**:

(... previous studies). Therefore, investigating the biomechanical characteristics of different anchorage controls **would lay the foundation** for exploring more strategies for extraction cases. (ODO4)

**Move 2: *Preparing for the present study*.** The communicative purpose of this move is to identify the problems in the current literature and to assert a specific issue which needs to be addressed, which can be realized by three steps: M2S1: *Indicating a gap*, M2S2: *Showing the problems*, and M2S3: *Presenting positive justification*. In the current study, this move occurred in 24 articles (88.88%) in OMS and 22 articles (81.48%) in ODO, so it was a conventional move.

**M2S1: *Indicating a gap.*** The communicative purpose of this step is to point out the lack of previous studies in the phenomenon being carried out in the study. There were three types of linguistic signals, i.e., conjunctive words, negative adjectives, and words referring to the limitations of prior research, in this step. Examples of these linguistic signals were "however", "although", "limited", "unknown", "few", or "little". What makes this communicative purpose different from the one of M2S2 is the focus on the insufficiency or gaps of the study being reported in the research world. This step occurred in 7 articles (23.33%) in OMS and 11 articles (36.67%) in ODO, so it was an optional step in the two sub-disciplines. Excerpts 4.9 and 4.10 demonstrate this step.

**Excerpt 4.9**:
The long-term effect on speech and articulation outcomes after TLA and subsequently cleft palate repair **is unknown**. (OMS30)

**Excerpt 4.10**:
**Further investigation** is needed to clarify root changes in developing teeth after orthodontic treatment. (ODO19)

**M2S2: *Showing the problems*.** The communicative purpose of this step is to stress the downside of a problem that needs to be addressed or the negative effect of a treatment that needs to be replaced and improved. What makes this step different from M2S1 was that the focus of the step stems on the problems from the previous studies. There are two types of linguistic signals, i.e., conjunctive words and negative adjectives, in this step. Examples of these linguistic signals are "although", "even though", "ambiguity", "failure", "drawback", or "lack". This step occurred in 17 articles (56.67%) in OMS and 11 articles (36.67%) in ODO, so it was a conventional step in the two sub-disciplines. Excerpts 4.11 and 4.12 are illustrations of M2S2.

**Excerpt 4.11**:
Clinical knowledge on parotid SCC is far from comprehensive, and **it is still difficult** to make an early diagnosis and determine the most appropriate treatment for this malignancy. (OMS13)

**Excerpt 4.12**:
Causative factors in MSI failure (acute/chronic periimplant inflammation, soft tissue response, and orthodontic loading force) **are still an enigma**. (ODO3)

**M2S3: *Presenting positive justification.*** The communicative purpose of this step is to introduce the positive reason for carrying out the study being reported. This step is found similarly in Samraj (2002) and Swales (2004) and is utilized to achieve the Move- creating a niche. Besides, this step should be included in RAs in Dentistry due to the following reasons. Firstly, it clarifies the rationale behind the study, highlighting its significance and potential contributions to the existing background knowledge and patient care in the field of Dentistry. Secondly, positive justification also enhances the scientific credibility of the research by demonstrating that it is based on a solid foundation of existing knowledge and a well-reasoned hypothesis. Thirdly, it ensures the effective use of resources by justifying the study's relevance and importance. Hence, this step strengthens the quality and impact of the research, making it meaningful and valuable to the target community.

In the current study, this step is found similarly in the study of Samraj (2002) and Swales (2004). This step occurred in 14 articles (46.67%) in OMS and 18 articles

(60.00%) in ODO, so it was an optional step in OMS and conventional in ODO. Excerpts 4.13 and 4.14 show illustrations of M2S3.

**Excerpt 4.13**:

Digital techniques for evaluating efficacy using computer methods to reconstruct the original CT image data in 3D provides **a new method** for accurately evaluating cystic lesions postoperatively. (OMS24)

**Excerpt 4.14**:

Electronic reminders have been **proven effective** in improving adherence in relation to medication use and self-monitoring of chronic conditions.7,8 (ODO16)

**Move 3: *Introducing the present study*.** The communicative purpose of this step is to introduce the research being reported. This move can be realized by 4 steps: M3S1: *Stating purpose(s)*, M3S2: *Presenting hypotheses*, M3S3: *Introducing methods*, and M3S4: *Stating the value of present research*. In the current study, this move occurred in 30 articles (100%) in OMS and 26 articles (96.29%) in ODO, so it was an obligatory move in OMS and a conventional move in ODO.

**M3S1: *Stating purpose(s).*** The communicative purpose of this steps is to provide more details about the objectives of the study. Most of the articles analyzed provided one aim, but some articles included two or more aims in the current study. Examples of linguistic clues of this step are “aim, “purpose”, “objective”, “to investigate”, “to evaluate”, “to assess”, “to compare”, “to analyze”, “to establish”, “to perform”, “to provide”, “to elucidate”, “to clarify”, “to determine”, or “to examine”. This step occurred in 29 articles (96.29%) in OMS and 27 articles (90.00%) in ODO, so it was a conventional step in the two sub-disciplines. Excerpts 4.15 and 4.16 are illustrations of M3S1.

**Excerpt 4.15:**

Therefore, this RCT **aimed to** clinically apply a CS/PVA nanofibrous scaffold into alveolar sockets following tooth extraction and to assess its ability to enhance bone repair by monitoring ridge alterations and bone density at two time points: immediately after tooth extraction (T0) and 4 months later (T4). (OMS25)

**Excerpt 4.16:**

Therefore, in this study, we **aimed to** (1) investigate the root development of patients with developing roots after orthodontic treatment; and (2) evaluate the differences in root changes after orthodontic treatment for patients at different stages of root development. (ODO18)

**M3S2: *Presenting hypotheses.*** The communicative purpose of this step is to provide possible hypotheses or null hypotheses after presenting the aims of the

study. This step, which is the same as the step in Swales (2004), was newly added into the current framework. Common linguistic clues in this step are "hypothesize" and "hypothesis". Originally, the step was Presenting *RQs or hypotheses* in Kanoksilapatham's (2005) framework, but it was then modified by removing *RQs* to fit to the communicative purpose of the step identified in this study. This step occurred in 2 articles (6.67%) in OMS and 6 articles (20.00%) in ODO, so it was an optional step in the two sub-disciplines. Excerpts 4.17 and 4.18 illustrate this step.

> **Excerpt 4.17**:
> We **hypothesized** that risk analysis would be more effective if the factors related to complications were classified and analyzed. (OMS22)
> **Excerpt 4.18**:
> The **hypothesis** was that there is no correlation between mandibular incisor changes after comprehensive orthodontic treatment using the Jasper Jumper appliance, and the increase in gingival recession in the long term. (ODO2)

**M3S3: *Introducing methods/equipment.*** The communicative purpose of this step is to present brief information about the methods or equipment being utilized in the study. This step was newly added to the framework of Kanoksilapatham (2005), which is similarly found in the study of Swales (2004) named "*Summarizing methods*". However, in the current study, the step was introduced briefly to name the methods or an equipment, so the step was modified into "*Introducing methods/equipment*" to suit the communicative purpose of this step in the current study. This step occurred in 4 articles (13.33%) in OMS and ODO, so it was an optional step in the two sub-disciplines. Excerpts 4.19 from OMS25 and 4.20 from ODO4 illustrate this step.

> **Excerpt 4.19**:
> **Cone-beam computed tomography** (CBCT) was used to evaluate the efficacy of the scaffold, which has potential implications for future bone tissue engineering and regenerative applications (Aranaz et al., 2021). (OMS25)
>
> **Excerpt 4.20**:
> To make the results more straightforward, tooth displacement was extracted and converted into a tooth movement table, which is in line with the current CA design systems, such as **ClinCheck of Invisalign** (Align Technology, Santa Clara, CA, USA). (ODO4)

**M3S4: *Indicating the value of present research*.** The communicative purpose of this step is to point out the contributions of the study. It was a newly added step, which was found similarly in the study of Swales (2004) and Meng (2021). However, this step was only available in ODO and showed that authors in ODO of Dentistry tend to provide significance of the study in the Introduction. This move

occurred in 4 articles (13.33%) in ODO, so it is an optional step in the two sub-disciplines. Excerpt 4.21 from ODO13 illustrates this step.

**Excerpt 4.21**:

Understanding the driving factors of the specialty's real-time decision-making process in a period of crisis **will give insight into** whether the decisions made were prudent and how similar crises might be handled in the future. (ODO13)

The absence of M3S4: *Stating the Value of the Present Research* in OMS research articles can be attributed to several interrelated factors tied to the nature of the discipline and its writing conventions. Unlike fields that emphasize theoretical contributions or conceptual advancement, OMS is a highly procedural and clinically focused area. Research in this field typically centers on surgical techniques, case outcomes, and technical improvements. As a result, authors may assume that the value of their work is self-evident through its practical application, reducing the perceived need to explicitly state its importance.

Furthermore, in OMS research, the value of the study is often implicitly conveyed through the presentation of results. For example, a new technique that reduces operative time or complications inherently demonstrates its worth. Instead of dedicating rhetorical space to highlighting the significance of the research, authors rely on empirical data and outcomes to communicate its contribution. This contrasts with other sub-disciplines, such as Orthodontics and Dentofacial Orthopedics (ODO), where the value of the research may need to be explicitly stated to position the study within a theoretical or research-based framework.

Disciplinary writing norms also play a critical role. OMS authors may adhere to a tradition of maintaining objectivity and brevity, particularly in the introduction section of a paper. Explicitly stating the value of a study, such as claiming it "fills an important gap" or "makes a significant contribution," might be seen as overly promotional or subjective. This aligns with the clinical ethos of the field, where the focus is on evidence-based practice rather than rhetorical positioning.

In addition, journal editorial policies and reviewer expectations in OMS-focused publications may discourage subjective language or self-promotional claims. Editors might prioritize methodological rigor and the clarity of clinical relevance over rhetorical moves that emphasize the value of a study. Consequently, authors may avoid M3S4 altogether, not because their research lacks value, but because stating it directly is neither expected nor encouraged in the genre conventions of the field.

In summary, the omission of M3S4 in OMS research articles reflects a combination of clinical orientation, genre expectations, and disciplinary writing

practices. The field emphasizes practical utility and data-driven validation, making the explicit articulation of a study's value less common than in sub-disciplines that operate within more theoretical or research-driven frameworks.

Taken together, we could see the proposed frameworks of the move-step structure of Dentistry in the English Dentistry RA Introduction section with the sub-disciplinary variations based on the characteristics of Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics sub-disciplines. The findings showed that the moves and steps in the English Dentistry RA Introduction section were the same in OMS and ODO, but the status of moves and steps were different. For the move cycles, only three are the same while most of them are different. As such, the sub-disciplinary variations still exist in a single discipline in the status of moves, steps and the move cycles.

To be more specific, Move 1: *Announcing the importance of the field* was similar in Swales's (2004) framework. The occurrence of M1S1: *Claiming the centrality of the topic* was much lower than in the previous study, accounting for 53.33% in Meng (2021), 86.1% in Gao and Pramoolsook (2023), and 72.5% in Zhao and Pramoolsook (2023). The frequency of M1S2: *Making topic generalizations* was lower than the previous studies with 100% in Meng (2021), 86.1% in Gao and Pramoolsook (2023), and 100% in Zhao and Pramoolsook (2023). For M1S3: *Reviewing previous research*, the frequency was lower than in the previous studies with 83.3% in Gao and Pramoolsook (2023), 96.67% in Meng (2021), and 97.5% in Zhao and Pramoolsook (2023).

In Move 2, it was also found in the prior research with 83.3% in Gao and Pramoolsook (2023), 66.67% in Meng (2021), 92.5% in Zhao and Pramoolsook (2023). M2S1: *Indicating a gap* was similar to in the previous studies with 13.9% in Gao and Pramoolsook (2023), 56.67% in Meng (2021), and 70% in Zhao and Pramoolsook (2023). For M2S2: *Showing the problems*, this step was originally found in Samraj (2002, 2005) which was congruent with the previous studies with 13.33% in Meng (2021), and 57.5% in Zhao and Pramoolsook (2023). For M2S3: *Presenting positive justification*, its frequency was also identified in the previous study with 27.5% in Zhao and Pramoolsook (2023).

In Move 3: *Introducing the present study*, it was similarly found in the previous studies with 100% of texts in Meng (2021), Gao and Pramoolsook (2023), and Zhao and Pramoolsook (2023). M3S1: *Stating purpose(s)* appeared 80% in Meng (2021), 77.8% in Gao and Pramoolsook (2023), and 47.5% in Zhao and Pramoolsook (2023). M3S3: *Introducing the methods* was similar in the previous studies. It occurred 66.7% in Gao and Pramoolsook (2023) and 25% in Zhao and Pramoolsook (2023). M3S4:

*Stating the value of present research* was adopted from Swales (2004) and its frequency in this study is congruent with the previous studies with 11.1% in Meng (2021), 30% in Gao and Pramoolsook (2023), and 25% in Zhao and Pramoolsook (2023).

## 4.2 Moves and Steps of the Methods Section

The proposed analysis framework for this section was adapted from Nwogu (1997) after the coding process was completed. Table 4.5 reports the proposed analysis framework of the move-step structure of the English Dentistry RA Methods sections from the coding. Totally, there were 3 moves and 8 steps in this framework.

**Table 4.5 The Proposed Analysis Framework of Move-Step Structure for English Dentistry RA Methods Section (adapted from Nwogu, 1997)**

| Moves | Steps |
|---|---|
| **Move 4: *Describing data-collection procedure*** | M4S1: *Ethical considerations* |
| | M4S2: *Indicating the data* |
| | M4S3: *Indicating criteria for data collection* |
| **Move 5: *Describing experimental procedures*** | M5S1: *Defining variables* |
| | M5S2: *Recounting methods/ experimental process* |
| **Move 6: *Describing data-analysis procedures*** | M6S1: *Indicating process of data classification.* |
| | M6S2: *Recounting analytical instrument/procedure* |
| | M6S3: *Indicating modification to instrument/procedure* |

### 4.2.1 Results of Frequency, Status and Move Cycles of Moves and Steps in the English Dentistry RA Methods Section in Two Sub-disciplines

As the second section of English RAs in Dentistry, the Methods section functions primarily to illustrate the main methods that were utilized in the experiment. After analyzing the data, 3 moves and 8 steps were identified in the the Methods section in the two sub-disciplines, i.e., Oral and Maxillofacial Surgery (OMS) and Orthodontics and Dentofacial Orthopedics (ODO), of Dentistry. Table 4.6 illustrates the number and frequency of moves and steps identified while Table 4.7 presents the status of those moves and steps, i.e., obligatory, conventional, and optional, in the two sub-disciplines. Table 4.8 shows the move cycles in the two sub-disciplines of Dentistry.

**Table 4.6 The Number and Frequency of Moves and Steps in the Two Sub-disciplines**

| Methods | OMS | | | | ODO | | | |
|---|---|---|---|---|---|---|---|---|
| | No. of RAs | % | Occurrences | % | No. of RAs | % | Occurrences | % |
| **Move 4: *Describing data-collection procedure*** | 30 | 100 | 32 | 9.36 | 30 | 100 | 30 | 8.82 |
| M4S1: *Ethical considerations* | 22 | 73.33 | 22 | 6.43 | 22 | 73.33 | 22 | 6.47 |

| Methods | OMS | | | | ODO | | | |
|---|---|---|---|---|---|---|---|---|
| | No. of RAs | % | Occurrences | % | No. of RAs | % | Occurrences | % |
| M4S2: *Indicating the data* | 29 | 96.67 | 30 | 8.77 | 28 | 93.33 | 29 | 8.53 |
| M4S3: *Indicating criteria for data collection* | 29 | 96.67 | 31 | 9.06 | 27 | 90.00 | 28 | 8.24 |
| **Move 5: *Describing experimental procedures*** | 30 | 100 | 44 | 12.87 | 30 | 100 | 45 | 13.24 |
| M5S1: Defining variables | 16 | 53.33 | 16 | 4.68 | 13 | 43.33 | 14 | 4.12 |
| M5S2: Recounting methods/ experimental process | 29 | 96.67 | 43 | 12.57 | 29 | 96.67 | 44 | 12.94 |
| * M5S3: Indicating criteria for success | 13 | 43.33 | 12 | 3.51 | 11 | 36.67 | 13 | 3.82 |
| **Move 6: *Describing data-analysis procedures*** | 30 | 100 | 31 | 9.06 | 28 | 93.33 | 31 | 9.12 |
| M6S1: Indicating process of data classification | 14 | 46.67 | 14 | 4.09 | 14 | 46.67 | 14 | 4.12 |
| M6S2: Recounting analytical instrument/procedure | 17 | 56.67 | 17 | 4.97 | 18 | 60.00 | 20 | 5.88 |
| M6S3: Indicating modification to instrument/procedure | 22 | 73.33 | 22 | 6.43 | 23 | 76.67 | 23 | 6.76 |
| * M6S4: Indicating statistical significance | 28 | 93.33 | 28 | 8.19 | 27 | 90.00 | 27 | 7.94 |

Note: steps with * means new in the two sub-disciplines of Dentistry

Table 4.6 shows the number of moves and steps and their occurrences of 60 English Dentistry RA Methods sections in the two sub-disciplines, including 3 steps found in Move 4 and Move 5, and 4 steps in Move 6. Notably, 2 steps were added in the current study. Two steps, i.e., M4S1: *Ethical considerations* in Move 4: *Describing data-collection procedure* and *M6S4: Indicating statistical significance of* Move 6: *Describing data-analysis procedures*, were added into the proposed framework to accommodate the communicative purposes of these steps. M5S1: *Defining variables* in Move 5: *Describing experimental procedures* adopted from Davis's (2020) framework was also added to the framework. (You understood correctly).

At the move level, move with the highest frequency was Move 5 with 44 times (12.87%) in OMS and 45 times (13.24%) in ODO. Move 4 occurred 32 times (9.36%) in OMS and 30 times (8.82%) in ODO, followed by Move 6 with 31 times (9.06%) in OMS and 31 times (9.12%) in ODO.

At the step level, the three most popular steps were M5S2 with 43 times (12.57%) in OMS and 44 times (12.94%) in ODO, M4S3 with 31 times (9.06%) in OMS and 28 times (8.24%) in ODO, and M4S2 with 30 times (8.77%) in OMS and 29 times (8.53%) in ODO. The other steps were M4S1, M5S1, M5S3, M6S1, M6S2, M6S3, and M6S4. In these steps, the most frequent step was M6S4 with 28 times (8.19 times) in OMS and 27 times (7.94%) in ODO while the least frequent step was M5S3 with 12 occurrences (3.51%) in OMS and 13 occurrences (3.82%) in ODO.

**Table 4.7 The Status of Moves and Steps in the Methods Section between the Two Sub-disciplines**

| Move-Step | OMS | ODO |
|---|---|---|
| Obligatory (100%) | **Move 4:** ***Describing data-collection procedure*** | **Move 4:** ***Describing data-collection procedure*** |
| | **Move 5:** ***Describing experimental procedures*** | **Move 5:** ***Describing experimental procedures*** |
| | **Move 6:** ***Describing data-analysis Procedures*** | **Move 6:** ***Describing data-analysis procedures*** |
| Conventional (60%–99%) | M4S1: *Ethical considerations* | M4S1: Ethical considerations |
| | M4S3: *Indicating criteria for data* collection. | M4S3: *Indicating criteria for data collection.* |
| | M4S2: *Indicating the data* | M4S2: *Indicating the data* |
| | M5S2: *Recounting methods/ experimental process* | M5S2: *Recounting methods/ experimental process* |
| | M6S3: *Indicating modification to instrument/procedure* | M6S3: *Indicating modification to instrument/procedure* |
| | M6S4: *Indicating statistical significance* | M6S4: *Indicating statistical significance* |
| | | M6S2: *Recounting analytical instrument/procedure* |
| | M5S1: *Defining variables* | M5S1: *Defining variables* |
| Optional (< 60%) | M5S3: *Indicating criteria for success* | M5S3: *Indicating criteria for success* |
| | M6S1: *Indicating process of data classification* | M6S1: *Indicating process of data classification.* |
| | M6S2: *Recounting analytical instrument/procedure* | |

Table 4.7 reports the status of moves and steps in the Methods sections of English research articles in two sub-disciplines of Dentistry. Move 4, Move 5, and Move 6 are obligatory in OMS, but only Move 4 and Move 5 belonged to this status in ODO. Moreover, six steps, i.e., M4S1, M4S3, M4S2, M5S2, M6S3, and M6S4, were conventional in the two sub-disciplines. However, Move 6 and M6S2 belonged to this status in ODO. In addition, the optional steps were M5S1, M5S3, M6S1, and M6S2 in OMS, which was the same in ODO, except for M6S2. Table 4.10 shows eight move cycles in the two sub-disciplines of Dentistry.

**Table 4.8 Summary of Move Cycles in the English Dentistry RA Methods Section in the Two Sub-disciplines**

| No. | OMS | | | ODO | | |
|---|---|---|---|---|---|---|
| | Move cycles | No. of RAs | % | Move cycles | No. of RAs | % |
| 1 | M4S2-M4S3 | 30 | 100.00 | M4S2-M4S3 | 20 | 66.67 |
| 2 | M4S1-M4S3 | 29 | 96.67 | M4S1-M4S3 | 18 | 60.00 |
| 3 | M4S1-M4S2 | 26 | 86.67 | M4S1-M4S2 | 17 | 56.67 |
| 4 | M6S3-M6S4 | 15 | 50.00 | M6S3-M6S4 | 15 | 50.00 |
| 5 | M5S1-M5S2 | 12 | 40.00 | M5S1-M5S2 | 12 | 40.00 |

| No. | OMS | | | ODO | | |
|---|---|---|---|---|---|---|
| | Move cycles | No. of RAs | % | Move cycles | No. of RAs | % |
| 6 | M5S2-M5S3 | 11 | 36.67 | M5S2-M5S3 | 11 | 36.67 |
| 7 | M6S2-M6S3 | 10 | 33.33 | M6S2-M6S3 | 10 | 33.33 |
| 8 | M6S1-M6S2 | 7 | 23.33 | M6S1-M6S2 | 7 | 23.33 |

### 4.2.2 Discussion of Moves and Steps in the Methods Section

This section aims to give detailed information on the communicative purposes of each of the moves and steps identified in the Methods section of Dentistry RAs. Most of moves and steps were similar to Nwogu's (1997) study, while some are newly found in the two sub-disciplines of Dentistry.

**Move 4: *Describing data-collection procedure.*** The communicative purpose of this move is to demonstrate how the data were identified and selected to suit the scope of the study. In the present research, the Methods section describes the characteristics of sample (i.e., patients) and illustrations of the steps or actions that were involved. This move was found in all texts, which became an obligatory move in the two sub-disciplines. Move 4 is realized by 3 steps, i.e., M4S1: *Ethical considerations*, M4S2: *Indicating the data*, and M4S3: *Indicating criteria for data collection*. Some headings used to signal this section are *Materials and Methods, Subjects and Methods*, or *Methods*.

**M4S1: *Ethical considerations.*** The communicative purpose of this step is to spell out an ethical protocol that has been approved for the research reported. This step was similarly found in the study of Davis (2020), and was found in 22 articles equally (73.33%) in both OMS and ODO, so it was categorized as a conventional step in the two sub-disciplines of Dentistry. Excerpts 4.23 and 4.24 illustrate this step.

**Excerpt 4.23**:

This study was conducted in accordance with **the code of ethics** of the World Medical Association (Declaration of Helsinki) and was approved by the internal ethics committee (study number 4575, prot.1442/C.e). Patients provided informed consent for the diagnostic and therapeutic procedures and for the possible use of biological samples for research purposes. (OMS11)

**Excerpt 4.24**:

The study was a parallel-group randomized controlled trial with 1:1 allocation ratio. **Ethical approval** was obtained from the East of England, Cambridge Central Research Ethics Committee (16/EE/0189). The trial protocol was registered before the commencement of the study (ClinicalTrials.gov Identifier: NCT03224481). Further details concerning the methodology can be found in a previous publication.16 (ODO15)

**M4S2:** ***Indicating the data.*** The communicative purpose of this step is to mention details about the source, sample size, and some relevant information of the data. This step was similarly found in Lim's (2006). This step appeared in 29 articles (96.67%) in OMS and 28 articles (93.33%) in ODO, a conventional step in these two sub-disciplines of Dentistry. Excerpts 4.25 and 4.26 illustrate this step.

**Excerpt 4.25**:

**All patients with early primary tongue SCC** (stage I or stage II) who underwent surgery between January 1997 and December 2019 at Tokyo Dental College, Chiba Hospital or the Chiba Dental Center were enrolled in this retrospective study. All patients were re-staged using the staging system of the eighth edition of the Union for International Cancer Control (UICC) TNM Classification of Malignant Tumours.8 Conversation and swallowing function were evaluated using the Conversation Score, the Method of intake, Time of intake, and Food Score, and the Functional Outcome Swallowing Scale Score.9 (OMS17)

**Excerpt 4.26**:

**The sample was divided into 3 groups** according to the stages of maxillary incisor root development and patients' chronological age. (1) The mixed dentition group included 32 maxillary central incisors from 16 patients (6 males, 10 females; age range, 8-10 years; average age, 8.63 years). The root development of the 2 maxillary central incisors was between the eighth and 10th stages (Nolla staging method), with at least two-thirds root formation.24 (2) The early permanent dentition group included 40 maxillary central incisors from 20 patients (10 men, 10 women; age range, 12-17 years; average age, 13.95 years). The apical foramen of the 2 maxillary central incisors was closed. (3) The adult group included 32 maxillary central incisors from 16 patients (6 males, 10 females; age range, 18-32 years; average age, 23.31 years). All of these patients had permanent dentition with fully developed maxillary central incisors. (ODO18)

**M4S3:** ***Indicating criteria for data collection.*** The communicative purpose of this step is to present details about the inclusion and exclusion criteria to select the data. This step occurred in 29 articles (96.67%) in OMS and 27 articles (90%) in ODO, which was categorized as conventional in these two sub-disciplines of Dentistry. Excerpts 4.27 and 4.28 are examples of this step.

**Excerpt 4.27**:

**The inclusion criteria** encompassed consecutive patients over 18 years of age with a displaced unilateral subcondylar fracture, a deviation degree between the condylar fragment and ascending ramus of 5e40, a decreased ramus length >2 mm, and a restricted mouth opening. Patients with a bilateral condylar fracture, insufficient dentition, any history of temporomandibular joint dysfunction, less than 18 years of age, or who had had a closed approach treatment were excluded. The

concomitant mandible fractures (19 mandible symphysis fractures; 6 contralateral mandibular body fractures; 2 others; 3 with no other fractures) were managed by an open reduction using the suitable osteosynthesis sets and tested through the significance level of a p value of <0.05. (OMS20)

**Excerpt 4.28**:

**The inclusion criteria** were as follows: born full-term (after 37 weeks of gestation), healthy enough to maintain without intensive care, and resided within a 30-minute driving distance from Oulu University Hospital. Exclusion criteria were a diagnosis of cheilopalatoshisis, craniosynostosis, or other dysmorphic features. A total of 102 newborns were enrolled. All participants were part of a randomized controlled trial (RCT) (23). (ODO26)

**Move 5: *Describing experimental procedures.*** The communicative purpose of this move is to provide readers with clear, detailed, and precise information about how the experiment or study was conducted. In the current study, this move appeared in all the texts, which makes it obligatory in the two sub-disciplines in Dentistry. This move is realized by the following steps: M5S1: *Defining variables*, M5S2: *Recounting methods/ experimental process*, and M5S3: *Indicating criteria for success*.

**M5S1: *Defining variables*.** The communicative purpose of this step is to inform readers of the definitions of the variables included in the study in experimental and control groups. This step appeared in 16 articles (53.33%) in OMS and 13 articles (43.33%) in ODO. In Lim's (2006) study, this step was within Move 2: *Delineating procedure/s for measuring variables* and appeared in all the texts. Excerpts 4.29 and 4.30 demonstrate this step.

**Excerpt 4.29**:

Infection **was defined as** the presence of erythema and/or swollen local areas with pain and fever, abscess, and/or radiographic evidence of osteomyelitis, and patients with such infections were classified as the "infection group." (OMS24)

**Excerpt 4.30**:

A tooth transposition **was defined as** a positional interchange of two neighboring teeth. It can also present as the abnormal eruption of a non-neighboring normal tooth [26]. Impacted teeth were defined as those unerupted within a normal timeframe and requiring orthodontic intervention or traction to allow eruption into the arch [27, 28]. (ODO5)

**M5S2: *Recounting methods/ experimental process.*** The communicative purpose of this step is to account for the methods or the procedures that were utilized in the study. This step occurred in 29 articles (96.67%) in OMS and ODO, so it was

marked to be a conventional step in the two sub-disciplines of Dentistry. Excerpts 4.31 and 4.32 are illustrations for this step.

> **Excerpt 4.31**:
> CBCT scans were **taken at three different time points**: before surgery (T0), approximately 2 weeks after surgery (T1), and approximately 5 years after surgery (T2). All the T0 and T1 CBCT scans were acquired using an i-CAT 17e19 CBCT scanner (Imaging Sciences International, Hatfield, PA). Acquisition parameters were 120 kVp, 5-mA X-ray tube current and 7 s of exposure time. Each CBCT dataset consisted of 576 slices, characterized by 0.30-mm isotropic voxels with a field of view of 17.8 cm height and 23 cm diameter. (OMS23).

> **Excerpt 4.32:**
> **Initially, all subjects of the study** received an oral hygiene kit containing 1 toothbrush (Colgate Twister; Colgate-Palmolive Company, S~ao Bernardo do Campo, Sao Paulo, Brazil) and Tandy toothpaste (ColgatePalmolive Company) for having controlled concentrations of 1100 ppm sodium fluoride. The patients did not receive any type of additional instruction on oral hygiene. The mouthwashes analyzed were 0.12% chlorhexidine, 0.5% ZOEO, and placebo (flavored distilled water). The clinician and the participants involved in the study did not receive information on the products, which were visually similar and identified as mouthwash A, mouthwash B, and mouthwash C, respectively. (ODO10).

M5S3: ***Indicating criteria for success.*** The communicative purpose of this step is to report the criteria to carry out the study successfully and ensure the accurate results at the end. This step appeared in 13 articles (43.33%) in OMS and 11 articles (36.67%) in ODO, so it was an optional step in the two sub-disciplines of Dentistry. Excerpts 4.33 and 4.34 demonstrate this step.

> **Excerpt 4.33**:
> **In order to obtain as accurate data as possible**, the contrast of images taken at different times was unified after image import and before reconstruction processing, the window width and window level of the image was adjusted, and bone scale (0-2674hu) was selected in the software as the unified contrast setting after image import each time. In preoperative cases, the boundary of the lesion was defined by the preoperative margin of the cyst. (OMS24)

> **Excerpt 4.34**:
> **The primary outcome measure was objective wear time** based on TheraMon microelectronic timer readings. Data recorded included duration of retainer wear per day, percentage of days in which the retainer was worn $8 h/d, and whether there was a lack of retainer wear for $3 consecutive days. The secondary outcome measures included stability assessed using Little irregularity index17 together with transverse dimensions (intercanine, interpremolar, and intermolar widths), and

periodontal outcomes including plaque scores, bleeding on probing, and probing depth. (ODO15)

**Move 6:** ***Describing data-analysis procedures.*** The communicative purpose of this move is to present the procedure for analyzing the data. This move can be realized by M6S1: *Indicating* process *of data classification*, M6S2: *Recounting analytical instrument/procedure*, M6S3: *Indicating modification to instrument/procedure*, and M6S4: *Indicating statistical significance*. The results showed that this move was obligatory in OMS and conventional in ODO.

**M6S1:** ***Indicating process of data classification.*** The communicative purpose of this step is to demonstrate details about how the data were categorized into different groups with statistical tools or experimental procedures. This step appeared in 14 articles (46.67%) in OMS and ODO, so it was considered as an optional step in the two sub-disciplines. Excerpts 4.35 and 4.36 are illustrations for this step.

**Excerpt 4.35**:

Amoxicillin (Amoxil, GlaxoSmithKline, Medical Union Pharmaceuticals, 500 mg) **was administered 1 hour before the surgical procedure**. Patients were required to rinse with chlorhexidine HCl (CHX) 0.25% mouthwash immediately prior to surgery as an antiseptic and disinfectant at the surgical site. All procedures were performed under local anesthesia infiltration. Articaine 4% 1:100,000 epinephrine (Artinibsa 40 mg/mL + 0.01 mg/ mL, Inibsa Dental) was used. (OMS7)

**Excerpt 4.36**:

**In this study, two coordinate systems were used**: (1) the global coordinate system, referenced to the occlusal plane, was used to assess the vertical displacement of the teeth; (2) the local coordinate system, set on every tooth, was used to evaluate individual tooth movements in the labial/lingual and mesial/distal directions. (ODO4)

**M6S2:** ***Recounting analytical instrument/procedure.*** The communicative purpose of this step is to describe the instrument or procedure utilized in each step or process. This step occurred in 17 articles (56.67%) in OMS and 18 articles (60%) in ODO, so an optional in OMS and conventional in ODO. Excerpts 4.37 and 4.38 are examples for this step.

**Excerpt 4.37**:

In order to compare the exact locations of the resection planes between the different preoperative, intraoperative, and postoperative models, the segmentations of the mandibles were registered **using the surface registration algorithm in MATLAB**. (OMS10)

**Excerpt 4.38**:

> The variation of facial profile was explored with **3D plots of the PCs**. In order to visualize the direction of variation explained by each PC, profile shapes were created using the mean shape coordinates and the shape coordinates corresponding to ±3 standard deviation (SD) from the mean (34). In this way, the direction of variation was visualized as change in profile shape configurations. This process was performed for the entire sample, as well as for the female and male subsamples separately. Shape differences between males and females were detected with permutation tests on the mean Procrustes distance between the male and female profile configurations. (ODO22).

**M6S3:** ***Indicating modification to instrument/procedure.*** The communicative purpose of this step is to provide the relevant modifications made during utilizing the instrument or carrying out the experimental procedures. This step appeared in 22 articles (73.33%) in OMS and 23 articles (76.67%) in ODO, so it was categorized as a conventional step in the two sub-disciplines. Excerpts 4.39 and 4.40 demonstrate this step.

> **Excerpt 4.39**:
> The results were presented as the nonadjusted odds ratio (OR) with the corresponding 95% confidence interval (95% CI). In order to achieve an adjusted OR, **multivariable logistic regression models were performed**. (OMS5).

> **Excerpt 4.40**:
> Since the position of the upper second premolar cusp to the HPC line was proposed as a novel prognostic factor in the present study, the sensitivity and specificity and positive and negative predictive values, as well as the accuracy of it for the prediction of upper second deciduous molar anchorage stability during treatment, were calculated. **The diagnostic accuracy was calculated at different follow-ups**, including the 7, 10, 13, and 16 months follow-up. The kappa statistic was used to test intraexaminer and interexaminer repeatability. (ODO21).

**M6S4:** ***Indicating statistical significance.*** The communicative purpose of this step is to highlight the key findings that have been statistically validated in a research study. This step occurred in 28 articles (93.33%) in OMS and 27 articles (90%) in ODO, so it was conventional in the two sub-disciplines. Excerpts 4.41 and 4.42 are examples of this step.

> **Excerpt 4.41**:
> The Bonferroni correction was applied for multiple group comparisons, and **P < .05 was considered statistically significant**. (OMS3)

> **Excerpt 4.42**:
> Wilcoxon test was used to evaluate the change over time (T1–T2) within the group (L or H). P-values were considered **statistically significant if they were less than**

**0.05**. Reliability of the measurements was tested by intraclass correlation coefficients (ICCs) to compare re-measurements. (ODO23)

Taken together, by adapting the framework of Nwogu (1997) to be the main analytical tool, the current research aims to report the move-step structure of the English RA Methods section in Dentistry. The findings of the study showed that the proposed framework for the Methods section of English research articles in Dentistry does not follow precisely the model of Nwogu's (1997) framework. The move cycles were similar, but the frequency of moves and step was different between the two sub-disciplines. Besides, the obligatory, conventional, and optional moves and steps were identified in the two sub-disciplines of Dentistry although there were several variations in terms of their status in each move and step.

To be more specific, M4S1: *Ethical considerations* was the same as Move 4: *Statements of ethics* in Davis's (2020) study. Interestingly, this step was newly added to the proposed framework in the current study. This indicates that the importance of ethics for Dentistry research has been consistently acknowledged. Moreover, the current study introduces this ethical step explicitly in its proposed framework, highlighting its growing recognition as a distinct and essential component of the research process. The inclusion of ethics as a formal part of the rhetorical structure reflects an evolving understanding of how critical it is for researchers to address ethical concerns in their work, thereby shaping the way research articles are structured.

M4S2: *Indicating the data* was the same as the one in Lim's (2006). This indicates a consistency in how researchers structure their presentation of data within research articles, specifically within the context of M4S2. By aligning with Lim's framework, the current study may reinforce a well-established description of indicating data, which could imply that this step is widely accepted or effective in conveying data clearly to readers.

M4S3: *Indicating criteria for data collection* was within the move *Describing the sample* in Lim's (2006) framework. This indicates that the description of the sample, in Lim's framework, also included details about the criteria for data collection, whereas the current study distinguishes these aspects as 2 separate moves. This shift may reflect a more nuanced approach to how researchers structure their methodological descriptions, possibly to highlight the criteria for data collection more explicitly rather than combining it with the sample description.

M5S1: *Defining variables* in the current study was within the M2S2: *Explaining method/s of measuring variables* of Lim's (2006) framework. This indicates a structural shift, where the current study distinguishes between defining variables and explaining

how they are measured, perhaps to clarify these concepts for the reader. It reflects a step toward a more detailed and structured approach to presenting the research methodology, separating the conceptualization of variables from the practical methods used to measure them.

M5S2: *Recounting methods/ experimental process* was modified from Lim (2006). While Lim (2006) included *recounting methods* or *experimental process* as part of his framework, the current study introduces an additional "*Methods*" feature to this step to make it more explicit. This change reflects an adaptation to improve how the methods are communicated, possibly to provide greater clarity or to align better with the expectations of the target audience or the specific objectives of a study being reported. This finding suggests that the current study builds upon Lim's (2006) framework by adapting the structure to fit the step's communicative purposes.

M6S1: *Indicating process of data classification* was similarly found in Nwogu (1997). This suggests that the process of classifying data remains a fundamental and consistent element in the rhetorical structure of research articles, and the current study chose to maintain this practice as it was deemed effective or appropriate for conveying this aspect of data classification the research process.

M6S2: *Recounting analytical instrument/procedure* was in Move 3: *Elucidating data analysis procedure(s)* of the Methods section in Lim's (2006) study. The finding indicates that this step, in Lim's (2006) framework, was consistently included as part of Move 3, which focuses on explaining the data analysis procedure. The phrase "100% occurrence" suggests that every instance of this move in Lim's study involved detailing the analytical tools or methods used. This highlights the importance of providing clear and thorough explanations of the data analysis process, as the process of data analysis was included within this move. It also suggests that the study being reported placed a strong emphasis on transparency in terms of the methods and instruments used to analyze data.

M6S3: *Indicating modification to instrument/procedure* was similarly identified in Nwogu (1997). This finding suggests that the study being reported maintains the same communicative purpose as the original framework in indicating any modifications made in the analytical instrument or procedure. This step is presented in the same way as it was in Nwogu (1997), highlighting the importance of acknowledging and explaining any changes made to the tools or methods used in data analysis. The consistency indicates that this element of the RA structure remains relevant and necessary for ensuring transparency in how the analytical procedures are adapted or refined throughout the study.

Interestingly, M6S4: *Indicating statistical significance* was a new step in the current study. This step specifically addresses the indication of statistical significance, suggesting that the study being reported places particular emphasis on explicitly reporting the statistical values of the results. The addition of this step reflects a shift in how research is structured, possibly in response to the increasing importance of clearly communicating statistical findings in research, ensuring that readers understand the relevance and reliability of the results.

## 4.3 Moves and Steps of the Results Section

The proposed framework for the current study was adapted from Davis (2020) when the coding process was completed. Table 4.9 reports the proposed analysis framework of the move-step structure of the RA Results sections from the coding. Totally, there were 3 moves and 6 steps in this framework.

**Table 4.9 The Proposed Analysis Framework of Move-Step Structure for English Dentistry RA Results Section (adapted from Davis, 2020)**

| Moves | Steps |
|---|---|
| **Move 7:** ***Indicating data characteristics*** | |
| Move 8: *Reporting the findings* | M8S1: *Stating the outcomes* |
| | M8S2: *Stating figures or tables* |
| | M8S3: *Reviewing/comparing to previous work* |
| **Move 9:** ***Stating comments on the results*** | M9S1: *Comparing the experimental and control group* |
| | M9S2: *Indicating statistical tests* |
| | M9S3: *Making generalizations or interpretations of the results* |

### 4.3.1 Results of Frequency, Status and Move Cycles of Moves and Steps for the RA Results Section in the two Sub-disciplines of Dentistry

As the third section in English RAs in Dentistry, the Results section functions primarily to present the findings of the study being reported in a clear, organized, and objective manner. After analyzing the data, 3 moves and 6 steps were identified in the Results section in the two sub-disciplines of Dentistry. Table 4.10 illustrates the frequency of moves and steps identified while Table 4.11 presents the status of those moves and steps, i.e., obligatory, conventional, and optional, in the two sub-disciplines. Table 4.12 shows the move cycles in the two sub-disciplines of Dentistry.

**Table 4.10 The Number and Frequency of Moves or Steps from the Dentistry RA Results Section in the Two Sub-disciplines**

| Results | OMS | | | | ODO | | | |
|---|---|---|---|---|---|---|---|---|
| | No. of RAs | % | Occurrence | % | No. of RAs | % | Occurrence | % |
| * **Move 7: *Indicating data characteristics*** | 21 | 77.78 | 21 | 12.80 | 10 | 37.04 | 10 | 5.15 |
| **Move 8: *Reporting the findings*** | 23 | 85.19 | 23 | 14.02 | 21 | 77.78 | 28 | 14.43 |
| M8S1: *Stating the outcomes* | 21 | 77.78 | 21 | 12.8 | 20 | 74.07 | 23 | 11.86 |
| M8S2: *Stating figures or tables* | 17 | 62.96 | 17 | 10.37 | 14 | 51.85 | 20 | 10.31 |
| M8S3: *Reviewing/comparing to previous work* | 4 | 14.81 | 5 | 3.05 | 0 | 0 | 0 | 0 |
| **Move 9: *Stating comments on the results*** | 26 | 96.3 | 27 | 16.46 | 24 | 88.89 | 43 | 22.16 |
| * M9S1: *Comparing the experimental and control group* | 12 | 44.44 | 13 | 7.93 | 19 | 70.37 | 27 | 13.92 |
| * M9S2: *Indicating statistical tests* | 10 | 37.04 | 10 | 6.10 | 16 | 59.26 | 22 | 11.34 |
| M9S3: *Making generalizations or interpretations of the results* | 26 | 96.30 | 27 | 16.46 | 15 | 55.56 | 21 | 10.82 |

Note: Move or step with * means a new move or step identified for the Results sections in the two sub-disciplines of Dentistry

Table 4.10 shows 3 moves and 6 steps that occurred in the Results section. Move 7: *Indicating data characteristics*, which was newly added to this section, did not include any steps. M8S3: *Reviewing/comparing to previous work* was also added to this section. Move 9: *Stating comments on the results* was modified by adding M9S1: *Comparing the experimental and control group,* revising M9S2: *Indicating statistical tests* in the current framework, and adding M9S3: *Making generalizations or interpretations of the results*.

At the move level, Move 9 was found to be the most frequent, accounting for 27 times (16.46%) in OMS and 43 times (22.16%) in ODO. At the step level, M9S3 was the most frequently identified step with 27 times (16.46%) in OMS while M9S1 ranked first with 27 times (13.92%) in ODO.

**Table 4.11 The Status of Moves and Steps in the Results Section between the Two Sub-disciplines**

| Move-Step | OMS | ODO |
|---|---|---|
| Conventional (60%–99%) | **Move 7: *Indicating data characteristics*** | **Move 8: *Reporting the findings*** |
| | **Move 8: *Reporting the findings*** | M8S1: *Stating the outcomes* |
| | M8S1: *Stating the outcomes* | **Move 9: *Stating comments on the results*** |
| | M8S2: *Stating figures or tables* | M9S1: *Comparing the experimental and control group* |
| | **Move 9: *Stating comments on the results*** | |
| | M9S3: *Making generalizations or interpretations of the results* | |
| Optional (< 60%) | M8S3: *Reviewing/comparing to previous work* | **Move 7: Indicating data characteristics** |
| | M9S1: *Comparing the experimental and control group* | M8S2: *Stating figures or tables* |
| | M9S2: *Indicating statistical tests* | M9S2: *Indicating statistical tests* |
| | | M9S3: *Making generalizations or interpretations of the results* |

Table 4.11 reports the status of moves and steps in the Results sections of English research articles in two sub-disciplines of Dentistry. Obligatory moves and steps were not found in the current data. For the conventional status, all the three moves and three steps, i.e., M8S1, M8S2, and M9S3, were marked as conventional in OMS. Moreover, two moves, i.e., Move 8 and Move 9, as well as two steps, i.e., M8S1 and M8S2, were also considered conventional in ODO. For the optional status, three steps, i.e., M8S3, M9S1, M9S2, were found to be optional in OMS. In ODO, Move 7 and three steps, i.e., M8S2, M9S2, M9S3, were optional in the study. Table 4.12 illustrates the move cycles of the RA Results section in two sub-disciplines. M8S1-M8S2 was the most favored move cycle in the study with 24 RAs (80%) in OMS and 20 RAs (66.67%) in ODO.

**Table 4.12 A Summary of Move Cycles for the Dentistry RA Results Section in the Two Sub-disciplines**

| | OMS | | | ODO | | |
|---|---|---|---|---|---|---|
| **No.** | **Move cycles** | **No. of RAs** | **%** | **Move cycles** | **No. of RAs** | **%** |
| 1 | M8S1-M8S2 | 24 | 80 | M8S1-M8S2 | 20 | 66.67 |
| 2 | M9S1-M9S2 | 19 | 63.33 | M9S1-M9S2 | 5 | 16.67 |
| 3 | M9S2-M9S3 | 9 | 30 | M9S2-M9S3 | 9 | 30.00 |
| 4 | M8S2-M8S3 | 7 | 23.33 | | | |

### 4.3.2 Discussion of Moves and Steps in the Results Section

This section aims to give detailed information on the communicative purposes of each of the moves and steps identified in the Results section of Dentistry RAs. There were one move and two steps that are newly found in the current study.

**Move 7: *Indicating data characteristics.*** The communicative purpose of this move is to introduce and explain the data used in a research being reported. This move appeared in 21 texts (77.78%) in OMS while in 10 texts (37.04%) in ODO, so it was conventional in OMS and optional in ODO. There was no step in this move. Excerpts 4.43 and 4.44 illustrate the move.

**Excerpt 4.43**:

**The cohort study included 1,510 patients who received a total of 4,842 dental implants over a 7-year period (2011 to 2018)**. The sample consisted of 790 women (52.3%) and 720 men (47.7%), with a mean age of 58.1 ± 12.5 years (range: 18 to 90 years). Overall, 72.3% of the patients referred were systemically healthy. Most patients were nonsmokers (n = 1,256) representing 83.2% of the total population. It was observed that 48.2% of patients, with a total of 2,135 implants, had a previous history of chronic periodontal disease, while 51.8% of patients with

2,707 implants were periodontally healthy at the time of implant placement (Table 2). (OMS5)

**Excerpt 4.44**:

**A total of 1050 children were examined**. The participation rate was 93.5%, and the main reasons for non-participation were lack of information and absence on the day of the examination. However, the socio-economic questionnaire with information about family income, parental education, prematurity and low birth weight had a low rate of return to researchers, which resulted in a lower response rate (less than 51.0%). (ODO1)

**Move 8: *Reporting the findings.*** The communicative purpose of this move is to present the results of a study being reported in a clear, organized, and objective manner. This move occurred in 23 articles (85.19%) in OMS and 21 articles (77.78%) in ODO, which makes this step conventional in this current research. The reason for the conventional status, not obligatory status, of this move can be from the established practice of academic writing of the field of Dentistry. While it is essential for authors to present and discuss their research outcomes, the emphasis on reporting findings varies depending on the nature of the study in Dentistry. In other disciplines, summarizing findings may be sufficient, while in Dentistry, detailed reporting of results is more crucial. This feature allows researchers to tailor their way of writing based on the specific context and expectations of their intended audience, while still adhering to general academic conventions.

This move is realized by 3 steps: M8S1: *Stating the outcomes*, M8S2: *Stating figures or tables*, and M8S3: *Referring to previous research.*

**M8S1: *Stating the outcomes.*** The communicative purpose of this step is to highlight the findings of a study being reported. This step occurred in 21 articles (77.78%) in OMS and 20 articles (74.07%) in ODO, which makes it conventional in the current analysis. In Davis (2020), this step was an obligatory move. The difference of the step status between the previous study and current investigation could be from from the nature of writing practice in each discipline. Medical RAs in Davis (2020) focus on reporting results, requiring a clear presentation of outcomes as a standard writing practice, while Dentistry RAs in the current study follow more flexible conventions. Excerpts 4.45 and 4.46 illustrate this step.

**Excerpt 4.45**:

**The majority of implants were placed in the posterior area (78.2%) compared with the anterior zone (21.8%)**, while implant placement between the maxilla and mandible was more balanced (55.5% vs 44.5%, respectively). The distribution

of the implants was as follows: 15.6% anterior maxilla, 39.9% posterior maxilla, 6.2% anterior mandible, and 38.3% posterior mandible. (OMS5)

**Excerpt 4.46**:

The random errors ranged between 0.15 mm (clinical crown height) and 0.43 mm (L1 to Apo) for linear measurements and between 1.66° (L1-NB) and 1.8° (IMPA) for angular measurements. **No variables showed statistically significant systematic errors**. (ODO2)

M8S2: ***Stating figures or tables.*** The communicative purpose of this step is to present the visual representations (e.g., figures or tables) in a way that enhances understanding and supports communication in a study being reported. This step occurred in 17 articles (62.96%) in OMS and 14 articles (51.85%) in ODO, which makes this step optional in OMS and conventional in ODO. Excerpts 4.47 and 4.48 are examples of this step.

**Excerpt 4.47**:

**Table 2 shows the differences between the centres of gravities of the resection planes**, with the differences in angles for the preoperative and intraoperative comparison, intraoperative and postoperative comparison, and the preoperative and postoperative comparison, for the anterior and posterior osteotomies. (OMS10)

**Excerpt 4.48**:

**From 17 to 61 years of age, crown mesiodistal angulation of central and lateral incisors continued to decrease (Table 1)**. Reductions in the CI/LI gingival and incisal step and in the CI/C gingival step were observed. No sexual difference was observed, except for the canine angulation, which decreased more in women from T1 to T2 (Table 2). (ODO8)

M8S3: ***Reviewing/comparing to previous work.*** The communicative purpose of this step is to evaluate and compare an output of a study being reported to that of prior studies. This step occurred in 4 articles (14.81%) in OMS only, which makes this step optional in the two sub-disciplines of Dentistry. Excerpt 4.49 demonstrates this step.

**Excerpt 4.49**:

**Other concerns included the measurement of the outcomes in three of the studies31,32,35** because the blinding of examiners was not mentioned. Finally, one study31 had a high risk of bias on the selection of the reported results because the authors stated that probing depths, attachment levels, and probing bone levels were measured, but the results were not provided. Overall, five articles30,33,34,36,38 were ranked as low risk of bias, four articles29,32,35,37 were ranked as some concerns, and one article31 was ranked as high risk of bias. (OMS6)

**Move 9: *Stating comments on the results.*** The communicative purpose of this move is to give explanation and evaluation on the results of a study being reported. This move occurred in 26 articles (96.30%) in OMS and 24 articles (88.89%) in ODO, which makes this step conventional in the current framework. This move is realized by 3 steps: M9S1: *Comparing the experimental and control group*, M9S2: *Indicating statistical tests*, and M9S3: *Making generalizations or interpretations of the results*.

**M9S1: *Comparing the experimental and control group.*** The communicative purpose of this step is to make comparisons between the experimental and control group of a study being reported. This step occurred in 12 articles (44.44%) in OMS and 19 articles (70.37%) in ODO, which makes it conventional in OMS and optional in ODO. Excerpts 4.50 and 4.51 demonstrate this step.

**Excerpt 4.50**:

For the implant failure outcome, no significant differences were observed between **the experimental and control groups,** either in the maxilla and mandible (risk ratio [RR]: 1.24; 95% CI: 0.53 to 2.89; P = .62; I2: 0%; Appendix Fig 1), or in relation to follow-up times: 4 months (RR: 0.94; 95% CI: 0.35 to 2.54; P = .99; I2: 0%), 12 months (RR: 0.69; 95% CI: 0.27 to 1.74; P = .95; I2: 0%), 36 months (RR: 0.85; 95% CI: 0.54 to 6.36; P = .42; I2: 0%), and 60 months (RR: 0.85; 95% CI: 0.54 to 6.36; P = .42; I2: 0%; Appendix Fig 2). (OMS8)

**Excerpt 4.51**:

As shown in Table III, the prevalence of root dilaceration in maxillary impacted canines of **the experimental group was significantly higher than the coinciding erupted canines in the control group** (P\0.001). Significant differences in root dilaceration prevalence were also found in adjacent lateral incisors (P \ 0.001) and premolars (P 5 0.001) of the experimental group, compared with those of the control group (Table III). (ODO11)

**M9S2: *Indicating statistical tests.*** The communicative purpose of this step is to describe the statistical tests utilized in a study being reported. This step occurred in 10 articles (37.04%) in OMS and 16 articles (59.26%) in ODO, which makes this step optional in two sub-disciplines. This step was revised to suit the communicative purpose of Dentistry research because M9S2 aims to provide a clear report of statistical tests to enhance the transparency and credibility of the findings, allowing readers to assess the validity and reliability of the results within the context of Dentistry studies. Excerpts 4.52 and 4.53 illustrate this step.

**Excerpt 4.52**:

A quantitative analysis of the change in histological margin category was performed. There was a significant increase in the rate of clear histological margins (30.8–64.1%; odds ratio (OR) 4.01, 95% confidence interval (CI) 2.14–7.59, P < 0.001)

and reduction **in close (56.4–34.5%; OR 0.41, 95% 0.22–0.75, P = 0.002) and involved histological margins (12.8–1.4%; OR 0.10, 95% CI 0.01–0.48, P < 0.001)**. (OMS16)

**Excerpt 4.53**:

However, the difference was not statistically significant (P 5 0.30; 95% confidence interval [CI], 3.91 to 1.19). Similarly, the percentage of days with wear as instructed (8 h/d) at T4 was **higher in the intervention group (median, 25.67%; IQR, 79.01) compared with the control group (median, 8.91%; IQR, 83.53)**, although there was also no statistically significant difference between the groups (P 5 0.56; 95% CI, 20.4 to 11.10). (ODO15)

**M9S3:** ***Making generalizations or interpretations of the results.*** The communicative purpose of this step is to extend the results from a study being reported to a wider context or clarify the implications of the data, offer explanations for why certain results occurred, and provide insights into what the results mean. According to Hyland (1998), this step contains the writer's perspectives based on or adapted from the theories in a study being reported. This step occurred in 26 articles (96.30%) in OMS and 15 articles (55.56%) in ODO, which makes this step optional in OMS and conventional in ODO. Excerpts 4.54 and 4.55 are examples of this step.

**Excerpt 4.54**:

Of the five patients with local recurrence, three were T2 and all were N0. At the time of recurrence, **four patients underwent salvage resection and one patient was palliated with best supportive care**. Amongst the four patients who proceeded with salvage resection, three died as a result of their disease recurrence within the follow-up period. (OMS16)

**Excerpt 4.55**:

Due to the significant sexual dimorphism in profile, **shape variation was also assessed separately for males and females**, presenting similar morphing patterns for PC1–PC4 as the ones observed in the entire sample (Supplementary Figures 3–6). (ODO22)

Taken together, by adopting the framework of Davis (2020) to be the main analytical framework, this section aims to report the move-step structure of the RA Results section in Dentistry. The findings showed that 2 moves and 4 steps in Davis (2020) were employed in the RA Results section in the two sub-disciplines of Dentistry. However, one move and two steps were adapted to suit the communicative purposes in the two sub-disciplines, which showed the sub-disciplinary variations in the field of Dentistry. Move 7: *Indicating data characteristics* and M9S1*: Comparing the experimental and control group* were newly found in the two sub-disciplines of

Dentistry while M9S2: *Indicating statistical tests* was modified from the original framework.

To be more specific, Move 7: *Indicating data characteristics* was a new move in the two sub-disciplines of Dentistry. This move focuses on describing the nature, features, or attributes of the data collected. The inclusion of this move suggests that the study being reported emphasizes providing more detailed context about the data, potentially to help readers better understand the data's relevance, quality, or limitations. This addition reflects an evolving approach to research article structure, highlighting the growing importance of data transparency and context for the Results section in scholarly communication.

Move 8: *Reporting the findings* in Nwogu (1997) was divided into consistent and non-consistent observations. However, in the two sub-disciplines of Dentistry, this move included 3 steps: M8S1: *Stating outcomes,* M8S2: *Stating figures or tables*, and M8S3: *Reviewing/comparing to previous work.* This shift reflects a more granular approach to presenting and discussing the findings, emphasizing clarity in presenting outcomes, the use of visual aids such as figures and tables, and the contextualization of results by comparing them to those of existing literature.

M8S1: *Stating outcomes* was conventional, but this step was obligatory in other disciplines, including Biochemistry (Kanoksilapatham, 2005), Agricultural Sciences (Shi & Wannaruk, 2014), Traditional Chinese Medicine (Gao & Pramoolsook, 2023). This suggests that different research communities may have different expectations or norms for how findings should be presented, with some disciplines, e.g., Dentistry, placing a stronger emphasis on the patient-centered outcomes, long-term effects, and the application of new technologies and materials, all of which require a highly detailed and transparent approach to outcome reporting.

M8S2: *Stating figures or tables* was the same in the original framework of Davis (2020). This suggests that the use of figures has become almost ubiquitous in the RAs Results section in the two sub-disciplines of Dentistry, possibly reflecting an increasing reliance on visual data representation to communicate findings effectively. The emphasis on figures alone might also point to a trend in simplifying or standardizing how results are visually presented in academic writing.

M8S3: *Reviewing/comparing to previous work* was modified from M9S2: *Referring to previous research* in the original framework of Davis (2020), which appeared in 30% in the Davis's (2020) corpus and 71.59% in the current corpus. While "*referring*" is about citing or acknowledging previous studies in a more straightforward manner, without the same level of in-depth analysis, "*reviewing/comparing*" is about

synthesizing and critically analyzing past research. This modification reflects a growing emphasis of writing practice in Dentistry on not just recognizing past studies but also engaging with them more deeply. In Dentistry research, where advancements are often built on the foundation of prior work, critically reviewing previous studies and comparing them with the one being presented help situate new findings within the existing body of knowledge. This practice provides a clearer understanding of how the research reported advances or challenges established theories, methodologies, or results. The occurrence of this step in the current corpora indicates a disciplinary feature of a more analytical and integrative approach of academic writing practice in the field of Dentistry.

The absence of M8S3: *Reviewing or Comparing to Previous Work* in ODO research articles can be attributed to various factors related to the field's unique research focus, writing conventions, and the specific nature of its studies. Unlike other sub-disciplines where the direct comparison to prior research is more explicitly emphasized, ODO research tends to prioritize clinical outcomes, patient-specific results, and innovations in treatment protocols rather than broad theoretical or methodological discussions. As such, the primary goal in ODO articles is often to report on new treatments, techniques, or findings, with less emphasis on positioning the study within a broader research context.

One key reason for the absence of M8S3 in ODO is the field's emphasis on clinical application and treatment efficacy. Many ODO studies focus on patient case studies, clinical trials, and treatment outcomes that are often specific to the population or the methodology being used. As such, authors may not feel the need to explicitly compare their findings with previous work because the results are often seen as innovations in practice or improvements on specific techniques that are already established. The value of the research is often perceived as self-evident through the presented data, and comparisons to previous work might be seen as unnecessary or redundant.

Another reason for the lack of M8S3 in ODO articles lies in the narrow scope of many studies. While some sub-disciplines engage in broad theoretical frameworks and extensive literature reviews, ODO research is often focused on specific treatment methods, techniques, or technologies. These studies may not always have a broad theoretical base that requires direct comparison to previous work. For instance, an article about the efficacy of a specific orthodontic appliance or a surgical technique may not have a large body of previous research to compare it to, or the comparison

may not be viewed as critical to the study's goal of presenting practical, patient-centered findings.

Additionally, the rhetorical conventions of ODO research play a significant role in shaping how studies are written. In contrast to fields that are more theory-driven or concerned with expanding academic discourse, ODO tends to focus on practical outcomes and clinical evidence, which can sometimes lead to a more straightforward presentation of results. This focus on pragmatic clinical research, rather than theoretical positioning or dialogue, means that there is less emphasis on reviewing and comparing previous work. Instead, conclusions are often framed in terms of treatment implications, limitations, and future clinical applications, rather than on engaging with the broader research community.

Finally, editorial practices and journal expectations in Orthodontic and Dentofacial Orthopedic journals may also discourage extensive comparisons to prior work. Editors and reviewers may prioritize clarity, specificity, and practical significance over theoretical discussions, encouraging authors to focus on presenting data and outcomes rather than engaging in extensive literature reviews. As a result, authors may avoid including M8S3 because it might be viewed as outside the scope of what is expected for these types of articles, especially if the study is primarily concerned with clinical applications rather than contributing to a theoretical or methodological debate.

In summary, the absence of M8S3 in ODO research articles reflects the field's focus on clinical, patient-centered research, the pragmatic nature of the studies, and the rhetorical and editorial expectations of ODO publications. Rather than engaging in broad theoretical discourse or comparing findings to previous studies, ODO authors prioritize presenting their findings in relation to clinical outcomes and treatment efficacy, often deeming extensive comparisons to prior work unnecessary or outside the scope of their study.

Interestingly, M9S1*: Comparing the experimental and control group* was newly found in the two sub-disciplines of Dentistry. This suggests that a study being reported places particular importance on making direct comparisons between these 2 groups, likely to highlight differences or similarities in outcomes. The addition of this move indicates a shift in how research findings are presented, with an explicit focus on group comparisons becoming an integral part of the framework, which may be particularly relevant in experimental research. This change reflects the evolving emphasis on clearer, more structured reporting of comparative results between two sub-disciplines in research articles.

Interestingly, M9S2: *Indicating statistical tests* was modified from Davis (2020). This modification reflects a shift in how statistical tests are presented, emphasizing their role in interpreting and discussing results rather than just in the methods section. The high occurrence rate (85.6%) of this move in the corpus indicates that it has become a common practice in the field of Dentistry, demonstrating how statistical tests are increasingly discussed in relation to findings and broader implications for the RA Results section. This step could be a typical example of disciplinary variations in Dentistry discourse compared to that of other disciplines.

M9S3: *Making generalizations or interpretations of the results* was the same step in the Kanoksilapatham (2005). This suggests that both frameworks recognize the importance of not just presenting results, but also interpreting or generalizing the findings in a broader context. By maintaining this step in the same way, the results from the RA Results section in the two sub-disciplines of Dentistry reinforce the significance of offering insights and broader implications based on the research outcomes as early as in the Results section.

## 4.4 Moves and Steps of the Discussion Section

The proposed framework for the Discussion section of the current study was adapted from Kanoksilapatham (2005) when the coding process was completed. Table 4.13 reports the proposed analysis framework of the move-step structure of the English Dentistry RA Discussion sections from the coding. Totally, there were 4 moves and 10 steps in this framework.

**Table 4.13 The Proposed Analysis Framework of Move-Step Structure for English Dentistry RA Discussion Sections (adapted from Kanoksilapatham, 2005)**

| Moves | Steps |
|---|---|
| **Move 10:** ***Indicating aims of study*** | |
| **Move 11:** ***Highlighting research outcomes*** | M10S1: *Stating outcomes* |
| | M10S2: *Interpreting the outcome* |
| | M10S3: *Indicating significance of the outcome* |
| | M10S4: *Contrasting present and previous outcomes* |
| **Move 12:** ***Stating limitations of the study*** | M11S1: *Limitations about the findings* |
| | M11S2: *Limitations about the methodology* |
| | M11S3: *Limitations about the claims made* |
| **Move 13:** ***Stating research conclusions*** | M12S1: *Evaluating the study* |
| | M12S2: *Deductions from the research* |
| | M12S3: *Stating future studies* |

### 4.4.1 Results of Frequency, Status, and Move Cycles for the English Dentistry RA Discussion Section in the Two Sub-disciplines

As the fourth section in English RAs in Dentistry, the Discussion section functions primarily to explain, interpret, and contextualize the research findings in a way that answers the research hypotheses, addresses implications, and suggests directions for future research. After analyzing the data, there were 4 moves and 10 steps in the English Dentistry RA Discussion section. This framework was adapted from Kanoksilapatham (2005). Table 4.14 shows the number and frequency of moves and steps while Table 4.15 illustrates the status of each move and step identified in the Discussion section. Table 4.16 presents the cycles of moves and steps in the two sub-disciplines of Dentistry.

**Table 4.14 The Number and Frequency of Moves or Steps from the English Dentistry RA Discussion Section in the Two Sub-disciplines**

| Discussion | OMS | | | | ODO | | | |
|---|---|---|---|---|---|---|---|---|
| | No. of RAs | % | Occurrence | % | No. of RAs | % | Occurrence | % |
| * **Move 10:** ***Indicating aims of study*** | 11 | 36.67 | 13 | 2.07 | 4 | 13.33 | 4 | 0.72 |
| **Move 11:** ***Highlighting research outcomes*** | 30 | 100 | 125 | 19.87 | 30 | 100 | 108 | 19.53 |
| M11S1: *Stating outcomes* | 30 | 100 | 119 | 18.92 | 30 | 100 | 107 | 19.35 |
| M11S2: *Interpreting the outcome* | 22 | 73.33 | 72 | 11.45 | 26 | 86.67 | 80 | 14.47 |
| M11S3: *Indicating significance of the outcome* | 20 | 66.67 | 62 | 9.86 | 13 | 43.33 | 29 | 5.24 |
| M11S4: *Contrasting present and previous outcomes* | 30 | 100 | 113 | 17.97 | 30 | 100 | 99 | 17.90 |
| **Move 12:** ***Stating limitations of the study*** | 21 | 70.00 | 21 | 3.34 | 27 | 90 | 33 | 5.97 |
| M12S1: *Limitations about the findings* | 18 | 60.00 | 19 | 3.02 | 17 | 56.67 | 21 | 3.80 |
| M12S2: *Limitations about the methodology* | 17 | 56.67 | 17 | 2.7 | 23 | 76.67 | 28 | 5.06 |
| M12S3: *Limitations about the claims made* | 10 | 33.33 | 10 | 1.59 | 11 | 36.67 | 13 | 2.35 |
| **Move 13:** ***Stating research conclusions*** | 16 | 53.33 | 23 | 3.66 | 11 | 36.67 | 14 | 2.53 |
| * M13S1: *Evaluating the study* | 11 | 36.67 | 20 | 3.18 | 8 | 26.67 | 11 | 1.99 |
| * M13S2: *Deductions from the research* | 9 | 30.00 | 11 | 1.75 | 5 | 16.67 | 6 | 1.08 |
| M13S3: *Stating future studies* | 2 | 6.67 | 4 | 0.64 | 0 | 0.00 | 0 | 0.00 |

Note: Moves or steps with * mean new for the English Dentistry RA Discussion section of the two sub-disciplines

Table 4.14 shows 4 moves and 10 steps that occurred in the Discussion sections. Move 10: *Indicating* aims *of study* was newly added to the framework. Move 12: *Stating limitations* and three following steps, i.e., M12S1: *Limitations about the findings*, M12S2: Limitations *about the methodology*, and M12S3: *Limitations about the claims made*, were taken from Kanoksilapatham (2005). M13S1: *Evaluating the study* and M13S2: *Deductions from the research* were newly found in the study. Move

13S3: *Stating future studies* was the same as Kanoksilapatham's (2005) and Yang and Allison's (2003) frameworks.

At the move level, Move 11 occurred with 125 times (19.87%) in OMS and 108 times (19.49%) in ODO, which becomes the most frequently identified move in the two sub-disciplines. At the step level, M11S1 was the most frequently utilized step with 119 times (18.92%) in OMS and 107 times (19.31%) in ODO. The least frequent step was M13S3 with 4 times (0.64%) in OMS only.

**Table 4.15 The Status of Moves and Steps in the Discussion Section between the Two Sub-disciplines**

| Move-Step | OMS | ODO |
|---|---|---|
| Obligatory (100%) | **Move 11: *Highlighting research outcomes*** | **Move 11: *Highlighting research outcomes*** |
| | M11S1: *Stating outcomes* | M11S1: *Stating outcomes* |
| | M11S4: *Contrasting present and previous outcomes* | M11S4: *Contrasting present and previous outcomes.* |
| Conventional (60%–99%) | M11S2: *Interpreting the outcome* | **Move 12: *Stating limitations of the study*** |
| | M11S3: *Indicating significance of the outcome.* | M12S2: *Limitations about the methodology* |
| | **Move 12: *Stating limitations of the study*** | M11S2: *Interpreting the outcome* |
| | M12S1: *Limitations about the findings* | |
| Optional (< 60%) | **Move 10: *Indicating aims of study*** | **Move 10: *Indicating aims of study*** |
| | M12S2: *Limitations about the methodology* | M11S3: *Indicating significance of the outcome.* |
| | M12S3: *Limitations about the claims made* | M12S3: *Limitations about the claims made* |
| | | M12S1: *Limitations about the findings* |
| | **Move 13: *Stating research conclusions*** | **Move 13: *Stating research conclusions*** |
| | M13S1: *Evaluating the study* | M13S1: *Evaluating the study* |
| | M13S2: *Deductions from the research* | M13S2: *Deductions from the research* |
| | M13S3: *Stating future studies* | M13S3: *Stating future studies* |

Table 4.15 illustrates the status of moves and steps in the two sub-disciplines. For obligatory status, one move, Move 11 as well as two steps, i.e., M11S1 and M11S4, were obligatory in the two sub-disciplines.

For conventional status, Move 12 as well as three steps, i.e., M11S2, M11S3, and M12S1, were conventional in OMS. In ODO, M11S2, Move 12, and M12S2, were conventional.

For the optional steps, Move 10, M12S2, M12S3, Move 13, M13S1, M13S2, and M13S3, were optional in OMS. In ODO, only M12S3, Move 13, M13S1, and M13S3, were the same as the ones in OMS. The differences were M11S3 and M12S1, which were optional in ODO. Table 4.16 reports the move cycles for English Dentistry RA Discussion section in the two sub-disciplines. The most popular move cycle was

M10S1-M10S2, occurring in 30 RAs (100%) in OMS and M10S3-M10S4 occurring in 27 RAs (90%) in ODO.

**Table 4.16 Summary of Move Cycles for the Dentistry RA Discussion Section in the Two Sub-disciplines**

| | OMS | | | ODO | | |
|---|---|---|---|---|---|---|
| No. | Move cycles | No. of RAs | % | Move cycles | No. of RAs | % |
| 1 | M10S1-M10S2 | 30 | 100 | M10S3-M10S4 | 27 | 90.00 |
| 2 | M10S2-M10S3 | 26 | 86.67 | M10S1-M10S2 | 16 | 53.33 |
| 3 | M11S1-M11S2 | 14 | 46.67 | M11S1-M11S2 | 14 | 46.67 |
| 4 | M10S3-M10S4 | 12 | 40.00 | M10S2-M10S3 | 12 | 40.00 |
| 5 | M10S1-M10S3 | 10 | 33.33 | M10S1-M10S3 | 10 | 33.33 |
| 5 | M10S1-M10S4 | 10 | 33.33 | M10S1-M10S4 | 10 | 33.33 |
| 6 | M11S2-M11S3 | 9 | 30 | M11S2-M11S3 | 9 | 30 |
| 7 | M12S1-M12S2 | 3 | 10.00 | M12S1-M12S2 | 3 | 10.00 |

### 4.4.2 Discussion of Moves and Steps in the English Dentistry RA Discussion Section

This section aims to give detailed information on the communicative purposes of each of the moves and steps identified in the Discussion section of Dentistry RAs. One move and two steps were newly identified in the current study.

**Move 10:** ***Indicating aims of study.*** The communicative purpose of this move is to introduce the objective of the study being reported. This move was found in 11 RAs (36.67%) in OMS and 4 RAs (13.33%) in ODO, so it was an optional move in the two sub-disciplines of Dentistry. Excerpts 4.56 and 4.57 demonstrate Move 10.

> **Excerpt 4.56**:
> **This study aimed to evaluate** the precision of fit of CAD/CAM titanium bars using a novel technique and to determine the effect of alterations in the CAD/CAM process chain on the precision of the bar frameworks. (OMS1)

> **Excerpt 4.57**:
> **This study aimed to compare** and contrast the qualitative and quantitative evaluation of maxillary basal, dentoalveolar, and dental dimensions in patients with and without maxillary impacted canines to better understand the mechanical environment at the non-impacted and impacted sites. (ODO6)

**Move 11:** ***Highlighting research outcomes.*** The communicative purpose of this move is to emphasize the significance and contributions of the research findings. This move was found in 30 RAs (100%) in OMS and ODO, so it was an obligatory move in the two sub-disciplines of Dentistry. This move is realized by 4 steps: M11S1: *Stating*

*outcomes*, M11S2: *Interpreting the outcome*, M11S3: *Indicating significance of the outcome*, and M10S4: *Contrasting present and previous outcomes.*

**M11S1: *Stating outcomes.*** The communicative purpose of this step is to clearly and concisely state the primary research findings of the study being reported. This step was found in 30 RAs in OMS and ODO, which became an obligatory step in the two sub-disciplines of Dentistry. Excerpts 4.58 and 4.59 illustrate this step.

> **Excerpt 4.58**:
> The results show that **the design of the titanium base abutment of the monolithic zirconia iFDPs influenced the following technical outcomes**: debonding, bending moments, zirconia chipping and fracture, and screw loosening and deformation. Hence, the null hypothesis was rejected. (OMS4)

> **Excerpt 4.59**:
> **Severe aesthetic impairments had a negative effect** on psychological quality of life, but most of the individuals were satisfied with their aesthetics despite different levels of aesthetic impairments. (ODO27)

**M11S2: *Interpreting the outcome.*** The communicative purpose of this step is to explain what the findings mean in a broader sense, discusses their significance, and connects them to the existing literature or theoretical framework. This step was found in 21 RAs (73.33%) in OMS and 26 RAs (86.67%) in ODO, which became a conventional step in the two sub-disciplines of Dentistry. Excerpts 4.60 and 4.61 are examples of M11S2.

> **Excerpt 4.60**:
> Tenting of the periosteum and soft tissue matrix was done by a cortical bone block that maintains space, **minimizes resorption of the particulate graft volume**, and minimizes the amount of autogenous bone needed in augmentation. It also guaranteed stabilization of the bone graft. (OMS7)

> **Excerpt 4.61**:
> This result was further supported by observing higher root dilaceration prevalence of canines in the impacted side than the normally erupted side merely in our experimental subjects. **The observed inclination of impacted canines toward presenting a root dilaceration** in our study emphasizes how crucial a timely orthodontic treatment can be to provide an unrestricted environment for the root to elongate. (ODO11)

**M11S3: *Indicating significance of the outcome.*** The communicative purpose of this step is to highlight the value of the findings of the study being reported. In OMS, this step was conventional since it was found in 20 RAs (66.67%), which means that studies in this discipline consistently showed whether the results were statistically

significant or not. This step ensures clarity and precision in reporting, which is important for guiding clinical decisions. However, this step appeared in only 13 RAs (43.33%) in ODO, which made it optional in this sub-discipline. This step was also found in Amnuai and Wannaruk (2013) with 0.33% in Thai Discussion corpus and 1% international Discussion corpus in Applied Linguistics. This optional status allowed authors in ODO to focus on other aspects of their findings, such as clinical relevance, rather than strictly adhering to statistical measures of significance. Excerpts 4.62 and 4.63 are examples of M11S3.

**Excerpt 4.62**:

The mixed linear regression modeling revealed that every 1-mm upward movement of the epiglottis had **a statistically significant impact on the PA and the oropharyngeal airway**; however, this was not clinically significant, considering the modest amount of volume increase (Table 6). (OMS23)

**Excerpt 4.63**:

The areas of largest shape variation in the sample are described by PC1–4 and shown in Figure 2. PC1 was **mainly associated with changes in chin protuberance and lip protrusion and ranged from a convex profile with full lips to a concave profile with thinner lips and a more dominant chin** (Figure 2c). (ODO22)

**M11S4:** ***Contrasting present and previous outcomes.*** The communicative purpose of this step is to make comparisons of current and prior research findings. This step was found in 30 RAs in the two sub-disciplines, which became an obligatory move in the framework. This step was similarly found in Nwogu (1997). Excerpts 4.64 and 4.65 are illustrations M11S4.

**Excerpt 4.64**:

**The incidence is unknown, but the literature suggests that there are geographical variations** (Almeida et al., 2016; Effiom et al., 2018; Krishnapillai et al., 2010; Ruslin et al., 2018; Giraddi et al., 2017; Pogrel et al., 2009; Franca et al., 2012; Antonoglou et al., 2015; Cavarra et al., 2019; Patini et al., 2018). (OMS19)

**Excerpt 4.65**:

**Previous studies analyzing this same sample of untreated patients demonstrated the maturational occlusal and cephalometric changes** [6, 16, 17]. The main changes observed after 47 years of follow-up were mandibular crowding, decrease in the overbite, changes in the maxillary second molar position, increase in the clinical crown length, discoloration, increases in the maxillary and mandibular anterior displacement, and increases in the facial and ramus height [6, 16, 17]. (ODO8)

**Move 12: *Stating limitations of the study.*** The communicative purpose of this move is to mention the shortcomings of the study being reported. This move appeared in 21 RAs (70%) in OMS and 27 RAs (90%) in ODO, which made this step conventional in the two sub-**disciplines** of Dentistry. This move is realized by 3 steps: M12S1: *Limitations about the findings*, M12S2: *Limitations about the methodology*, and M12S3: *Limitations about the claims made*.

**M12S1: *Limitations about the findings.*** The communicative purpose of this step is to present specifically the shortcomings in terms of outcomes of the study being reported. This step was found in 18 RAs (60%) in OMS and 17 RAs (56.67%) in ODO, which makes it conventional in the two sub-disciplines of Dentistry. Excerpts 4.66 and 4.67 demonstrate M12S1.

**Excerpt 4.66**:

Furthermore, the present study **failed to analyze advanced recession** due to limited evidence. (OMS9)

**Excerpt 4.67**:

First, the concurrence of dilaceration and dental developmental alterations suggested they are closely related to genetic circumstances.1,31,32 However, **because of the limited knowledge on root formation**, precise inferences to the pathogenesis of dysplasias, including dilaceration, are still hampered and demanding more investigations.33 (ODO11)

**M12S2: *Limitations about the methodology.*** The communicative purpose of this step is to report specifically the shortcomings in terms of research design of a study being reported. In OMS, this step was found in 17 RAs (56.67%), so it was an optional step in this sub-discipline. However, in ODO, this step appeared in 23 RAs (76.67%), so it was marked conventional in this sub-discipline. Excerpts 4.68 and 4.69 are examples of M12S2.

**Excerpt 4.68**:

**This study was limited by the retrospective design** and the small numbers of patients. As such, it lacked the statistical power to analyse additional prognoses. In particular, subgroups of pN2 that could potentially predict survival could not be further stratified for statistical analysis. (OMS14)

**Excerpt 4.69**:

Ultimately, in this study, although **the sample size had a power value of over 95%** and represented our main population well, we cannot completely rule out the possibility that there may be differences between our sample and the general population. (ODO11)

**M12S3: *Limitations about the claims made.*** The communicative purpose of this step is to illustrate specifically the shortcomings in terms of research conclusions in the study being reported. This step was found in 10 RAs (33.33%) in OMS and 11 RAs (36.67%) in ODO, which makes it optional in the two sub-disciplines of Dentistry. Excerpts 4.70 and 4.71 are examples of M12S3.

**Excerpt 4.70**:

**It also lacks histomorphological evaluation**, which could give us details about bone remodeling and the reaction to CS/PVA nanofibrous scaffolds in humans. (OMS25)

**Excerpt 4.71**:

Finally, **it is impractical for us to evaluate the impact of COVID-19** on both treatment duration and the final therapeutic outcome of the included patients at the present stage, which motivates us to follow the treatment progress in the coming future. (ODO14)

**Move 13: *Stating research conclusions.*** The communicative purpose of this move is to wrap up the study and reaffirm the significance of the research findings. This move was found in 16 RAs (53.33%) in OMS and 11 RAs (36.67%) in ODO, which made it optional in the two sub-disciplines of Dentistry. This move is realized by 3 steps: M13S1: *Evaluating the study*, M13S2: *Deductions from the research*, and M13S3: *Stating future studies*.

**M13S1: *Evaluating the study*.** The communicative purpose of this step is to provide a reflective evaluation of the research process, methodology, and the findings relevant to the study being reported. This step was found in 11 RAs (36.67%) in OMS and 8 RAs (26.67%) in ODO, which makes it optional in the two sub-disciplines of Dentistry. Excerpts 4.72 and 4.73 demonstrate M13S1.

**Excerpt 4.72**:

**The results suggest that improvement of perioral muscles relating to tongue pressure** and lip closure force is related to the stabilization of the skeletal structure and occlusion after orthognathic surgery. (OMS26)

**Excerpt 4.73**:

**The strengths of this investigation were that at start of the study the groups were homogenous**, at same age with small range, skeletally similar according to the cephalometric analysis, of similar occlusal status (43), and all subjects were of co-operative age, in pre-puberty. (ODO23)

**M13S2: *Deductions from the research.*** The communicative purpose of this step is to draw inferences from the research findings, providing interpretations of what the results imply in a broader context. This step was found in 9 RAs (30%) in OMS and

5 RAs (16.67%) in ODO, which makes it optional in the two sub-disciplines of Dentistry. Excerpts 4.74 and 4.75 are illustrations of M13S2.

> **Excerpt 4.74**:
> Using an intraoperatively acquired CBCT scan, **an evaluation was performed to determine** whether this deviation could be caused by the positioning of the patient specific cutting guide. (OMS10)

> **Excerpt 4.75**:
> **Longer observational periods and retention protocols** would have possibly influenced the frequency of exfoliation due to natural teeth leaning and, consequently, the results of the study. (ODO21)

**M13S3: *Stating future studies*.** The communicative purpose of this step is to mention the potential studies that can be carried out in the future. It was also similar to Move 15: *Suggesting further research* with 53.33% in Kanoksilapatham's (2005) study and M11S2: *Promoting further research* with 93.33% occurrence in Nwogu (1997). This optional step was found in 2 RAs (6.67%) in OMS. In the study of Amnuai and Wannaruk (2013), this step appeared in 20% of the Thai corpus and 23.33% in the international corpus in Applied Linguistics. Excerpt 4.76 demonstrates M13S3.

> **Excerpt 4.76**:
> **For future studies investigating IIP in the esthetic area**, the following information is recommended to be provided: integrity of the extraction sockets before implant placement, gingival biotype, detailed soft and hard tissue morphology change, and methods for measuring. (OMS9)

Taken together, by adapting the framework of Kanoksilapatham (2005) as the main analysis framework, the current research aims to report the move-step structure of the English Dentistry RA Discussion section. One new move and two new steps were found in the English Dentistry RA Discussion section in the two sub-disciplines of Dentistry. The following findings originally based on Kanoksilapatham's (2005) framework were compared and contrasted with the previous studies, including Yang and Allison (2003), Nwogu (1997), Basturmen (2012), and Amnuai and Wannaruk (2013).

To be more specific, Move 10: *Indicating aims of study* was newly added in the current study. This move was found in Basturkmen (2012), which was Move 1: *Background information: Review of research purposes, theory, methodology*. In Applied Linguistics, this move was also identified by Amnuai and Wannaruk (2013) who found that it appeared in 13 RAs (46.66%) in the Thai corpus and 15 RAs (50%) in the international corpus. This indicates that while it is a new addition in the current

framework, it aligns with practices observed in prior research. This inclusion highlights the growing importance of explicitly articulating the study's aims as a distinct part of the research article structure, helping to clarify the objectives and purpose of the research for the reader right from the outset.

Move 11: *Highlighting research outcomes* consisted of 4 steps: M11S1: *Stating outcomes,* M11S2: *Interpreting the outcomes,* M11S3: *Indicating significance of the outcome*, and M11S3: *Contrasting present and previous outcomes.* This move could draw attention to the most important outcomes of the study, ensuring that they are clearly communicated to the reader. By explicitly highlighting these outcomes, the current study may aim to enhance the visibility and impact of its findings, making them stand out in the overall narrative of the research. This move could be seen as an important step in helping readers quickly grasp the significance of the study's results, especially in complex or data-heavy research.

In M11S1: *Stating outcomes*, it was the same in Kanoksilapatham (2005) with appearing in 60 Biochemistry RAs (100%) of the corpus. Amnuai and Wannaruk (2013) also identified this step which appeared in 26 RAs (86.66%) in Thai corpus and 28 RAs (93.33%) international corpus in the field of Applied Linguistics. The results also showed the similarity of result-comment sequences between the current study and Basturmen (2012). In Nwogu's (1997) framework, this step was slightly different from the current study since the overall and specific outcomes were separated as 2 different steps. The reference to this step appearing consistently in the literature suggests that stating outcomes is considered a crucial and standardized component of research articles in different fields, and this practice is similarly adopted in the current study. This consistency emphasizes the importance of clearly communicating research findings as a fundamental step in scholarly writing.

M11S2: *Interpreting the outcomes* was similarly reported in Amnuai and Wannaruk (2013) appearing in 21 Applied Linguistics RAs (73.33%) in the Thai corpus and 26 RAs (86.67%) in the international corpus. This shows that interpreting research outcomes is an important and frequently used rhetorical structure in Applied Linguistics, helping to contextualize findings and draw meaningful conclusions. The current study appears to follow this trend, emphasizing the importance of providing interpretations of outcomes as a key part of the research process.

M11S3: *Indicating significance of the outcome* was found in 20 RAs (66.67%). This step was the same in Amnuai and Wannaruk (2013) with 0.33% in Thai Discussion corpus and 1% international Discussion corpus. This indicates that emphasizing the significance of the results is a relatively common move in the Discussion section. This

finding also suggests that the Dentistry RAs in the current study place a stronger emphasis on explicitly discussing the significance of outcomes, possibly reflecting a broader trend or a specific focus in the field of study, where articulating the importance of results is seen as a critical step in the research process.

M11S4: *Contrasting present and previous outcomes* was similarly found in the framework of Nwogu (1997). This step highlights the importance of situating new research findings within the context of existing literature by comparing them to prior outcomes. By maintaining this practice, the Dentistry RAs follow a well-established rhetorical tradition of discussing how its results align or differ from those of earlier studies, which helps to contextualize the research and demonstrate its contribution to the broader field.

In Move 12: *Stating limitations of the study*, there were 3 steps, including M12S1: *Limitations about the findings*, M12S2: *Limitations about the methodology*, and M12S3: *Limitations about the claims made*. Move 12 was M10S5: *Indicating limitations of outcomes* in the study of Nwogu (1997) and was taken from Move 14: *Stating limitations of the study* in the study of Kanoksilapatham (2005). The move was also the same as M6S1: *Indicating limitations* in the study of Amnuai and Wannaruk (2013). This suggests that the Dentistry RAs adapt and refine the prior practices, offering a more detailed and structured approach to presenting the limitations of the research, which is a key component in maintaining transparency and rigor in academic writing.

In Move 13: *Stating research conclusions*, there were 3 steps, including M13S1: *Evaluating the study*, M13S2: *Deductions from the research*, and M13S3: *Stating future studies*. This move highlights a comprehensive approach to concluding a study, ensuring that the conclusions not only summarize the findings but also offer evaluations and guide future research, a practice that enhances the study's relevance and contributes to ongoing academic discourse.

Interestingly, M13S1 was new in the current study and the same step in Yang and Allison's (2003) in Applied Linguistics and Basturmen (2012) in Dentistry. In Amnuai and Wannaruk's (2013) study, it appeared in 5 RAs (16.66%) in the Thai corpus and 10 RAs (33.33%) in the international corpus. This highlights that the inclusion of evaluating the study as part of the conclusion is a relatively recent and evolving practice in research, with the Dentistry RAs adopting this step more systematically across its corpus.

Interestingly, M13S2 was newly added in the current study and the same step as Move 7 in Yang and Allison (2003). In Amnuai and Wannaruk (2013), it appeared in 15 RAs (50%) in Thai corpus and 10 RAs (33.33%) in the international corpus. This

indicates that the practice of making deductions from research findings is recognized across multiple disciplines and is being introduced more systematically to the Dentistry RAs. The finding also points to a cultural or disciplinary difference in how conclusions are drawn and presented. The new inclusion of M13S2 in the current study reflects a broader trend in emphasizing the importance of clearly deriving and articulating conclusions from research results.

M13S3 was the same step as M7S2: *Recommending further research* in Yang and Allison (2003) and Move 15: *Suggesting further research* in Kanoksilapatham (2005) accounting for 53.33% of the corpus. In Amnuai and Wannaruk (2013), this step appeared in 6 RAs (20%) in Thai corpus and 7 RAs (23.33%) in the international corpus. This suggests that, while recommending further research is a significant step in the Dentistry RAs, its frequency varies across different studies and disciplines. The consistency of this step across frameworks like Yang and Allison (2003) and Kanoksilapatham (2005) indicates that suggesting future research is a widely accepted and important part of concluding a study.

The absence of M13S3: *Stating Future Studies* in ODO RAs can be attributed to several interrelated disciplinary, rhetorical, and practical factors. This rhetorical move, which typically appears in the Conclusion or Discussion section of research articles, involves explicitly suggesting directions for future research. Its absence in ODO suggests specific tendencies in how research is conducted and reported within the field.

First, ODO research is often longitudinal, patient-specific, and context-dependent, making broad generalizations or future directions more difficult to assert. Many studies in orthodontics focus on specific populations, treatment protocols, or case outcomes that are tightly controlled and localized. As a result, authors may feel that the findings are not easily generalizable, limiting their ability or willingness to propose future research avenues. Rather than speculating, ODO researchers may prefer to let the data speak for itself, aligning with a cautious, evidence-based writing style.

Second, the culture of orthodontic research tends to be conservative in rhetorical tone, with a focus on reporting observed results rather than projecting future possibilities. Authors might be reluctant to suggest future studies unless they can clearly justify them based on their data. In this genre, speculating on future directions might be perceived as unnecessary or even presumptuous, especially if the study is narrowly focused or exploratory in nature.

Another key reason for the absence of M13S3 is the possibility that ODO articles often aim to reinforce or replicate existing treatment protocols rather than to

disrupt or radically expand the field. In such contexts, authors may prioritize clinical application over theoretical advancement, making forward-looking research suggestions less central to their rhetorical purpose. Instead, conclusions in ODO papers often emphasize practical implications, clinical significance, and limitations, without extending into formal recommendations for future research.

Finally, editorial policies and publication norms within orthodontic journals may also influence this trend. Some journals may not encourage extensive speculation or future-looking commentary unless the study is part of a larger research program or has broader theoretical implications. As a result, authors might omit M13S3 either to meet editorial expectations or to maintain alignment with disciplinary writing standards.

In summary, the absence of M13S3 in ODO research articles likely reflects the field's clinical focus, cautious rhetorical style, and preference for practical applicability over speculative projection. While future research is often implied through discussion of limitations, it may not be explicitly stated, as doing so may not align with the genre norms or epistemological stance of the discipline.

## 4.5 Moves and Steps of the Conclusion Section

In this section, both researcher and inter-rater reached 100% of agreement since there was only one move and the text segments in each RA Conclusion section were short. Besides, the proposed framework, based on the study of Yang and Allison (2003), consisted of only 1 move, i.e. Move 14: *Summarizing the main findings.* This suggests that the summary of key findings is a concise and focused step, typically presented as one clear move in the conclusion or final section of the research article in Dentistry. The simplicity of this move aligns with its purpose: to briefly and clearly recap the most important results of the study for the reader, ensuring that the key takeaways are easily understood. The fact that it is based on Yang and Allison's (2003) framework underscores the continued relevance of summarizing findings as an essential part of research articles.

After analyzing, some findings were made based on the two sub-disciplines. Firstly, Move 14 appeared in 20 RAs (66.67%) in OMS and 30 RAs (100%) in ODO. Secondly, the status of this move was conventional in OMS and obligatory in ODO. Finally, the aim of Move 14 in English Dentistry RAs is to provide a concise overview of the key results and conclusions from a study or research. This helps readers quickly grasp the significance of the research, understand its implications for clinical practice or further studies, and see how it contributes to the existing body of knowledge. Summarizing

findings effectively also aids in communicating the relevance of the work to both specialized and general audiences. Excerpts 4.77 and 4.78 demonstrate the move.

**Excerpt 4.77**:

Extra-short implants **showed similar effectiveness** compared to standard-length implants placed in grafted regions at different longitudinal follow-up times and present reduced biologic complications, shorter treatment times, and greater peri-implant bone crest stability. (OMS8)

**Excerpt 4.78**:

**The highest peak** in the level of cfNAs was observed 24 h after MSI insertion. The expression of the level of cfNAs was greater in cases with a failed MSI. The cfNAs play a major role in mediating acute inflammation. Therefore, cfNAs are an important prognostic biomarker to assess implant stability and the health of soft and hard tissues around an MSI. (ODO3)

## 4.6 Chapter Summary

This chapter provided a summary of moves, steps, and their structure of English RA sections in the two sub-disciplines of Dentistry. Based on the frameworks from Kanoksilapatham (2005), Nwogu (1997), Davis (2020), and Yang and Allison (2003), two new frameworks for two sub-disciplines have been proposed for the whole English RA sections in the field of Dentistry. The findings from this chapter provided the answers for Research Question 1 in the current study. In the following chapter, results and discussion of phrase frames of the English Dentistry RA sections will be presented.

มหาวิทยาลัยเทคโนโลยีสุรนารี

# CHAPTER 5
# RESULTS AND DISCUSSION OF PHRASE FRAMES IN THE RA SECTIONS

As the fifth chapter of the dissertation, it consists of the results and discussion of phrase frames of the RA sections, e.g., Introduction, Methods, Results, Discussion, and Conclusion, in the two sub-disciplines of Dentistry. The findings of phrase frames are presented in the structural and functional categories. One note is that the inter-rater reliability check of is carried out in both structural and functional categories.

## 5.1 Phrase Frames of the RA Introduction Sections

### 5.1.1 Results and Discussion of Phrase Frames from the Analysis of Structural Category in the RA Introduction Section

Based on the framework of Gray and Biber (2013), the findings from our analysis reported that there were 64 phrase frames, i.e., 13 verb-based, 43 other-content-word, and 8 function-word phrase frames appearing in the two sub-disciplines in the English Dentistry RA Introduction sections, as presented in Figure 5.1. Previous studies (e.g., Lu et al., 2018; Lu et al., 2021a; Lu et al., 2021b) reported the overall number of phrase frames only, but the current study presented the number of phrase frames and number of their fillers in different types and sub-types of structural categories, which provides a comprehensive insight about how specific types and sub-types of phrase frames were used in the two sub-disciplines in the English Dentistry RA Introduction sections.

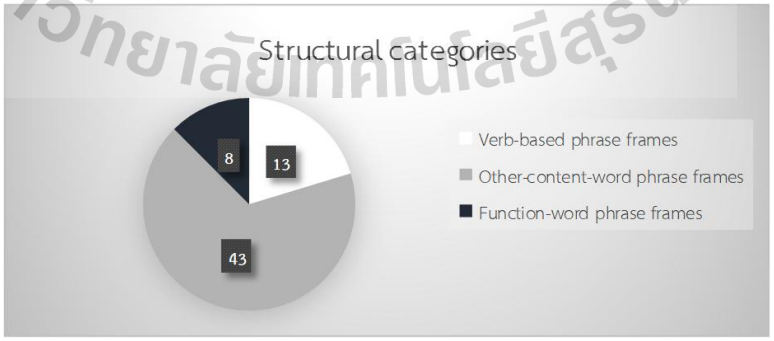



**Figure 5.1 Distribution of Phrase Frames in the Structural Categories in the English Dentistry RA Introdu ction Sections**

#### 5.1.1.1 Verb-based Phrase Frames

For the frequency of this type of phrase frames, as illustrated in Table 5.1, a total of 241 occurrences of phrase frames were reported. There were 216 occurrences of phrase frames that were similar and 25 occurrences of phrase frames that were different between the two sub-disciplines of Dentistry. Specifically, 13 phrase frames with 222 occurrences in OMS and 235 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *was used to* * appeared most frequently, with 49 times in OMS and ODO.

**Table 5.1 A Summary of Phrase Frames in Verb-based Phrase Frames in the RA Introduction Section**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 49 | 49 | 49 | 49 | 0 |
| 2 | this study * to | 32 | 32 | 32 | 32 | 0 |
| 3 | studies have * that | 23 | 23 | 23 | 23 | 0 |
| 4 | has been * to | 22 | 22 | 22 | 22 | 0 |
| 5 | * one of the | 20 | 20 | 20 | 20 | 0 |
| 6 | study was to * | 20 | 20 | 20 | 20 | 0 |
| 7 | have been * to | 18 | 18 | 18 | 18 | 0 |
| 8 | it has been * | 15 | 15 | 15 | 15 | 0 |
| 9 | * tipping of the | 14 | 0 | 14 | 0 | 14 |
| 10 | it is * that | 11 | 11 | 5 | 5 | 6 |
| 11 | have been reported * | 8 | 8 | 8 | 8 | 0 |
| 12 | in order to * | 8 | 4 | 8 | 4 | 4 |
| 13 | * between the groups | 1 | 0 | 1 | 0 | 1 |
| | **Total** | **241** | **222** | **235** | **216** | **25** |

For the number of fillers of each phrase frame, as illustrated in Table 5.2, a total of 35 fillers appeared in 13 phrase frames. Specifically, the result also showed 29 fillers that were similar and 6 fillers that were different between the two sub-disciplines. There were 30 fillers in OMS and 34 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *was used to* * occurred most frequently in the data with 7 fillers in the two sub-disciplines. A total of 7 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.2 A Summary of Fillers in Verb-based Phrase Frames in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 7 | 7 | 7 | 7 | 0 |
| 2 | * tipping of the | 3 | 0 | 3 | 0 | 3 |
| 3 | has been * to | 3 | 3 | 3 | 3 | 0 |

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 4 | have been * to | 3 | 3 | 3 | 3 | 0 |
| 5 | studies have * that | 3 | 3 | 3 | 3 | 0 |
| 6 | study was to * | 3 | 3 | 3 | 3 | 0 |
| 7 | have been reported * | 2 | 2 | 2 | 2 | 0 |
| 8 | * one of the | 2 | 2 | 2 | 2 | 0 |
| 9 | it has been * | 2 | 2 | 2 | 2 | 0 |
| 10 | it is * that | 2 | 2 | 1 | 1 | 1 |
| 11 | in order to * | 2 | 1 | 2 | 1 | 1 |
| 12 | this study * to | 2 | 2 | 2 | 2 | 0 |
| 13 | * between the groups | 1 | 0 | 1 | 0 | 1 |
| | **Total** | **35** | **30** | **34** | **29** | **6** |

To get an overview about the use of phrase frames in this type, Excerpts 5.1 and 5.2 below illustrate the phrase frame ** one of the* found in the RA Introductions in the two sub-disciplines of Dentistry.

**Excerpt 5.1:**

Improvement of functions **is one of the** treatment goals of orthognathic surgery. (OMS28)

**Excerpt 5.2:**

Forgetting to wear retainers has been reported **as one of the** main reasons for suboptimal retainer wear.5,6 (ODO16)

Taken together, the present analysis of verb-based phrase frames in the RA Introduction sections in OMS and ODO reveals consistent rhetorical patterns that serve key communicative functions. These frames establish a foundation of knowledge, identify research gaps, define objectives, and underscore relevance (Golparvar & Barabadi, 2020; Cheng & Zhang, 2025). Their recurrence reflects both the formal conventions of academic writing in the health sciences and the specific communicative needs of researchers in these surgical and orthodontic domains.

**5.1.1.2 Other-content-word Phrase Frames**

In this type, a phrase frame will include one or more nouns, adjectives, adverbs. In the current pilot study, there were 51 phrase frames in the two sub-disciplines.

For the frequency of this type of phrase frames, as illustrated in Table 5.3, a total of 1229 occurrences of phrase frames were reported. There were 556 occurrences of phrase frames that were similar and 673 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 51 phrase frames with 906 occurrences in OMS and 878 occurrences in ODO were identified, which shows the more use of phrase frames in OMS than the ones in ODO. In this type, *the * of the* appeared most frequently, with 211 times in OMS and 207 times in ODO.

**Table 5.3 A Summary of Phrase Frames in Other-content-word Phrase Frames in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * study | 119 | 119 | 12 | 12 | 107 |
| 2 | in the * area | 62 | 58 | 21 | 17 | 45 |
| 3 | * of this study | 49 | 29 | 49 | 29 | 20 |
| 4 | * soft tissue recession | 45 | 41 | 4 | 0 | 45 |
| 5 | * titanium base abutments | 22 | 22 | 0 | 0 | 22 |
| 6 | the early * dentition | 22 | 0 | 22 | 0 | 22 |
| 7 | the * dental arch | 22 | 0 | 22 | 0 | 22 |
| 8 | one of the * | 21 | 21 | 21 | 21 | 0 |
| 9 | and satisfaction with * | 19 | 0 | 19 | 0 | 19 |
| 10 | in the esthetic * | 18 | 18 | 0 | 0 | 18 |
| 11 | * the oral cavity | 18 | 18 | 13 | 13 | 5 |
| 12 | a higher * of | 17 | 13 | 17 | 13 | 4 |
| 13 | * between the groups | 14 | 4 | 14 | 4 | 10 |
| 14 | * the treatment of | 14 | 14 | 14 | 14 | 0 |
| 15 | the number of * | 13 | 13 | 5 | 5 | 8 |
| 16 | a * risk of | 13 | 13 | 13 | 13 | 0 |
| 17 | * orthodontic treatment | 13 | 13 | 13 | 13 | 0 |
| 18 | bone * in the | 13 | 13 | 0 | 0 | 13 |
| 19 | study * to evaluate | 13 | 13 | 13 | 13 | 0 |
| 20 | * of gingival recession | 12 | 0 | 12 | 0 | 12 |
| 21 | a * level of | 12 | 8 | 12 | 8 | 4 |
| 22 | of the maxillary * | 12 | 0 | 12 | 0 | 12 |
| 23 | the * central incisors | 12 | 12 | 12 | 12 | 0 |
| 24 | of the * cavity | 11 | 11 | 0 | 0 | 11 |
| 25 | * clinical crown height | 11 | 0 | 11 | 0 | 11 |
| 26 | and soft tissue * | 11 | 0 | 11 | 0 | 11 |
| 27 | the * third molar | 11 | 11 | 11 | 11 | 0 |
| 28 | abutment for the * | 10 | 10 | 0 | 0 | 10 |
| 29 | of the * bone | 10 | 10 | 4 | 4 | 6 |
| 30 | * dental implant failure | 10 | 10 | 0 | 0 | 10 |
| 31 | the * position of | 10 | 0 | 10 | 0 | 10 |
| 32 | a * rate of | 9 | 9 | 4 | 4 | 5 |
| 33 | an increase * the | 9 | 5 | 9 | 5 | 4 |
| 34 | * the risk of | 9 | 9 | 9 | 9 | 0 |
| 35 | * incisors and canines | 9 | 0 | 9 | 0 | 9 |
| 36 | vertical position of * | 8 | 0 | 8 | 0 | 8 |
| 37 | a high * of | 8 | 4 | 8 | 4 | 4 |
| 38 | in the parotid * | 8 | 8 | 0 | 0 | 8 |
| 39 | in the anterior * | 8 | 0 | 8 | 0 | 8 |
| 40 | * the parotid gland | 8 | 8 | 0 | 0 | 8 |
| 41 | * the observation period | 8 | 4 | 4 | 0 | 8 |
| 42 | * of the anterior | 8 | 0 | 8 | 0 | 8 |
| 43 | first or second * | 8 | 0 | 8 | 0 | 8 |
| | **Total** | **759** | **541** | **442** | **224** | **535** |

For the number of fillers of each phrase frame, as illustrated in Table 5.4, a total of 164 fillers appeared in 51 phrase frames. Specifically, the result also

showed 74 fillers that were similar and 90 fillers that were different between the two sub-disciplines. There were 108 fillers in OMS and 124 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *the * of the* occurred most frequently in the data with 31 fillers in the two sub-disciplines. A total of 26 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.4 A Summary of Number of Fillers in Other-content-word Phrase Frames in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * area | 8 | 7 | 3 | 2 | 6 |
| 2 | * of this study | 6 | 3 | 6 | 3 | 3 |
| 3 | in the parotid * | 5 | 2 | 0 | 0 | 5 |
| 4 | the * dental arch | 4 | 0 | 4 | 0 | 4 |
| 5 | a higher * of | 3 | 2 | 3 | 2 | 1 |
| 6 | * between the groups | 3 | 1 | 3 | 1 | 2 |
| 7 | a * level of | 3 | 2 | 3 | 2 | 1 |
| 8 | of the maxillary * | 3 | 0 | 3 | 0 | 3 |
| 9 | * titanium base abutments | 3 | 3 | 0 | 0 | 3 |
| 10 | bone * in the | 3 | 3 | 0 | 0 | 3 |
| 11 | * of gingival recession | 2 | 0 | 2 | 0 | 2 |
| 12 | the number of * | 2 | 2 | 1 | 1 | 1 |
| 13 | and satisfaction with * | 2 | 0 | 2 | 0 | 2 |
| 14 | vertical position of * | 2 | 0 | 2 | 0 | 2 |
| 15 | a * rate of | 2 | 2 | 1 | 1 | 1 |
| 16 | an increase * the | 2 | 1 | 2 | 1 | 1 |
| 17 | abutment for the * | 2 | 2 | 0 | 0 | 2 |
| 18 | a high * of | 2 | 1 | 2 | 1 | 1 |
| 19 | one of the * | 2 | 2 | 2 | 2 | 0 |
| 20 | a * risk of | 2 | 2 | 2 | 2 | 0 |
| 21 | * the risk of | 2 | 2 | 2 | 2 | 0 |
| 22 | in the esthetic * | 2 | 2 | 0 | 2 | 0 |
| 23 | of the * cavity | 2 | 2 | 0 | 0 | 2 |
| 24 | in the anterior * | 2 | 0 | 2 | 0 | 2 |
| 25 | * the parotid gland | 2 | 2 | 0 | 0 | 2 |
| 26 | of the * bone | 2 | 2 | 1 | 1 | 1 |
| 27 | * orthodontic treatment | 2 | 2 | 2 | 2 | 0 |
| 28 | * the observation period | 2 | 1 | 1 | 1 | 1 |
| 29 | * the oral cavity | 2 | 2 | 1 | 1 | 1 |
| 30 | * the treatment of | 2 | 2 | 2 | 2 | 0 |
| 31 | * clinical crown height | 2 | 0 | 2 | 0 | 2 |
| 32 | * dental implant failure | 2 | 2 | 0 | 0 | 2 |
| 33 | * incisors and canines | 2 | 0 | 2 | 0 | 2 |
| 34 | * of the anterior | 2 | 0 | 2 | 0 | 2 |
| 35 | the * position of | 2 | 0 | 2 | 0 | 2 |
| 36 | and soft tissue * | 2 | 0 | 2 | 0 | 2 |
| 37 | * soft tissue recession | 2 | 1 | 1 | 0 | 2 |
| 38 | the * central incisors | 2 | 0 | 2 | 0 | 2 |
| 39 | the * third molar | 2 | 2 | 2 | 2 | 0 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 40 | first or second * | 2 | 0 | 2 | 0 | 2 |
| 41 | the early * dentition | 2 | 0 | 2 | 0 | 2 |
| 42 | in the * study | 2 | 2 | 1 | 1 | 1 |
| 43 | study * to evaluate | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **107** | **61** | **74** | **34** | **73** |

To get an overview about the use of phrase frames in this type in the current corpus, Excerpts 5.3 and 5.4 containing the phrase frame *the * of the* found in the RA Introductions of the two sub-disciplines of Dentistry are illustrated below.

**Excerpt 5.3**:

**The aim of the** present study was primarily to determine the proportion of close and involved histological margins in early stage OTSCC following a change in the surgical margin from 10 mm to 15 mm and to determine any effect of this on the rate of LRF. (OMS17)

**Excerpt 5.4**:

This study aimed to evaluate the resources and entities that best-aided orthodontists to remain informed on the COVID-19 situation, the strategies orthodontists used to help their businesses survive, the methods used to manage active and future orthodontic patients, as well as **the effect of the** pandemic on orthodontic practice employees in 2020. (ODO14)

Taken together, in the RA Introduction section in OMS and ODO, other-content-word phrase frames serve a variety of important rhetorical functions. These phrase frames help define key concepts, establish context, highlight relevance, and position the study within the existing body of knowledge (Golparvar & Barabadi, 2020; Lu et al., 2021b). While verb-based phrase frames guide the narrative's logical flow, non-verb-based phrase frames provide the necessary conceptual structure that helps the reader understand the study's focus and significance.

#### 5.1.1.3 Function-word Phrase Frames

For the frequency of this type of phrase frames, as illustrated in Table 5.5, a total of 1229 occurrences of phrase frames were reported. There were 556 occurrences of phrase frames that were similar and 673 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 51 phrase frames with 906 occurrences in OMS and 878 occurrences in ODO were identified, which shows the more use of phrase frames in OMS than the ones in ODO. In this type, *the * of the* appeared most frequently, with 211 times in OMS and 207 times in ODO.

**Table 5.5 A Summary of Phrase Frames in Function-word Phrase Frames in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 232 | 211 | 207 | 187 | 45 |
| 2 | at the * of | 102 | 27 | 102 | 27 | 75 |
| 3 | in the * of | 65 | 61 | 65 | 61 | 4 |
| 4 | with * to the | 18 | 18 | 18 | 18 | 0 |
| 5 | on the * of | 18 | 18 | 13 | 13 | 5 |
| 6 | * with and without | 17 | 12 | 17 | 12 | 5 |
| 7 | by the * of | 9 | 9 | 9 | 9 | 0 |
| 8 | with a * of | 9 | 9 | 5 | 5 | 4 |
| | **Total** | **1229** | **906** | **878** | **556** | **673** |

For the number of fillers of each phrase frame, as illustrated in Table 5.6, a total of 164 fillers appeared in 51 phrase frames. Specifically, the result also showed 74 fillers that were similar and 90 fillers that were different between the two sub-disciplines. There were 108 fillers in OMS and 124 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *the * of the* occurred most frequently in the data with 31 fillers in the two sub-disciplines. A total of 26 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.6 A Summary of Number of Fillers in Function-word Phrase Frames in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 31 | 26 | 26 | 21 | 10 |
| 2 | in the * of | 10 | 9 | 10 | 9 | 1 |
| 3 | at the * of | 5 | 2 | 5 | 2 | 3 |
| 4 | on the * of | 3 | 3 | 2 | 2 | 1 |
| 5 | with * to the | 2 | 2 | 2 | 2 | 0 |
| 6 | * with and without | 2 | 1 | 2 | 1 | 1 |
| 7 | by the * of | 2 | 2 | 2 | 2 | 0 |
| 8 | with a * of | 2 | 2 | 1 | 1 | 1 |
| | **Total** | **57** | **47** | **50** | **40** | **17** |

**Excerpt 5.5**:
Improvement of functions **is one of the** treatment goals of orthognathic surgery. (OMS28)

**Excerpt 5.6**:
Forgetting to wear retainers has been reported **as one of the** main reasons for suboptimal retainer wear.5,6 (ODO16)

In the RA Introduction section in OMS and ODO, function-word phrase frames serve an essential role in structuring the narrative, establishing the research's context, and guiding the reader through the introduction to the study's aims and

significance (Golparvar & Barabadi, 2020). These frames, made up of function words such as prepositions, conjunctions, articles, and pronouns, help create cohesion between ideas and concepts, ensuring that the research is presented clearly and logically. Their primary function is to organize the content, define relationships between different research findings, and position the study within the existing body of knowledge.

### 5.1.2 Results and Discussion of Phrase Frames from the Analysis of Functional Category in the RA Introduction Section

Based on the framework of Simpson-Vlach and Ellis (2010), we identified 62 phrase frames, including 47 in referential, 5 in stance, and 10 in discourse organizing type, as reported in Figure 5.2. What makes the current findings different from the previous studies (e.g., Lu et al., 2018; Lu et al., 2021a; Lu et al., 2021b) was the exploration in details of different types and sub-types of phrase frames in the two sub-disciplines of Dentistry English RA Introduction sections.

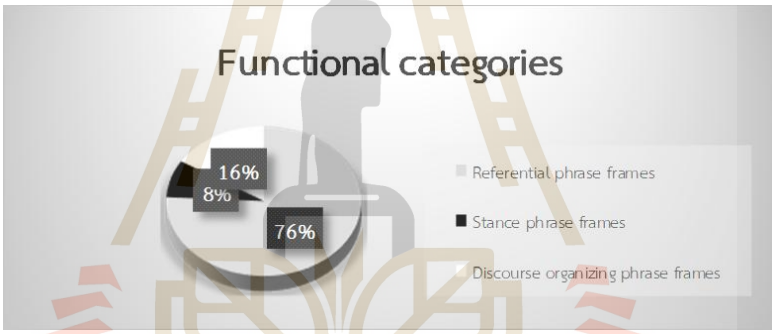



**Figure 5.2 Distribution of Phrase Frames in the Functional Categories in the English Dentistry RA Methods Sections**

#### 5.1.2.1 Referential Phrase Frames

In the referential phrase frames, they are classified into 5 sub-types, i.e., specification of attributes, identification and focus, contrast and comparison, deictics and locatives, and vagueness markers (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020). Interestingly, the results revealed that vagueness markers were not found in the current study. For the other types, 11 phrase frames were identified in specification of attributes, 3 in identification and focus, 7 in contrast and comparison, and 26 in deictics and locatives, as illustrated in Table 5.7.

**Table 5.7 A Summary of Different Types of Phrase Frames in the Functional Category**

| Length | Specification of Attributes | Identification and Focus | Contrast and Comparison | Deictics and Locatives | Vagueness Markers | Total |
|---|---|---|---|---|---|---|
| Four words | 11 | 3 | 7 | 26 | 0 | 47 |

**a) Specification of Attributes**

For the frequency of specification of attributes, as reported in Table 5.8, a total of 606 occurrences of phrase frames in OMS were reported. There were 319 occurrences that were similar and 287 occurrences that were different between the two sub-disciplines. Specifically, 11 phrase frames with 463 occurrences in OMS and 461 occurrences in ODO were identified in the two sub-disciplines, which shows the more use of these phrase frames in OMS. In this type, *the * of the* appeared most frequently, with 211 times in OMS and 207 times in ODO.

**Table 5.8 A Summary of Frequency of Phrase Frames in Specification of Attributes in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 232 | 211 | 207 | 187 | 45 |
| 2 | in the * study | 119 | 119 | 12 | 12 | 107 |
| 3 | at the * of | 102 | 27 | 102 | 27 | 75 |
| 4 | in the * of | 65 | 61 | 65 | 61 | 4 |
| 5 | and satisfaction with * | 19 | 0 | 19 | 0 | 19 |
| 6 | with * to the | 18 | 18 | 18 | 18 | 0 |
| 7 | the number of * | 13 | 13 | 5 | 5 | 8 |
| 8 | * of gingival recession | 12 | 0 | 12 | 0 | 12 |
| 9 | a * rate of | 9 | 9 | 4 | 4 | 5 |
| 10 | an increase * the | 9 | 5 | 9 | 5 | 4 |
| 11 | vertical position of * | 8 | 0 | 8 | 0 | 8 |
| | Total | **606** | **463** | **461** | **319** | **287** |

For the number of fillers of each phrase frame, as reported in Table 5.9, a total of 62 fillers appeared in 11 phrase frames. Specifically, there were 39 fillers that were similar and 23 fillers that were different between the two sub-disciplines. There were 46 fillers in OMS and 55 fillers in ODO, which shows the less use of these fillers than the ones in ODO. The fillers of the phrase frame *the * of the* occurred most frequently with 26 fillers in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.9 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 31 | 26 | 26 | 21 | 10 |
| 2 | in the * of | 10 | 9 | 10 | 9 | 1 |
| 3 | at the * of | 5 | 2 | 5 | 2 | 3 |
| 4 | in the * study | 2 | 2 | 1 | 1 | 1 |
| 5 | * of gingival recession | 2 | 0 | 2 | 0 | 2 |
| 6 | with * to the | 2 | 2 | 2 | 2 | 0 |
| 7 | the number of * | 2 | 2 | 1 | 1 | 1 |
| 8 | and satisfaction with * | 2 | 0 | 2 | 0 | 2 |
| 9 | vertical position of * | 2 | 0 | 2 | 0 | 2 |
| 10 | a * rate of | 2 | 2 | 2 | 2 | 0 |
| 11 | an increase * the | 2 | 1 | 2 | 1 | 1 |
| | **Total** | **62** | **46** | **55** | **39** | **23** |

Excerpts 5.7 and 5.8 of the phrase frame *the * of the* found in the RA Introductions are examples of phrase frames in specification of attributes.

**Excerpt 5.7:**

**The results of the** multivariate analysis are presented as the odds ratio (OR) and 95% confidence interval (CI). (OMS18)

**Excerpt 5.8:**

It has also been suggested that CHG works synergistically with growth to produce positive changes in **the position of the** mandible [18]. However, no effect on mandibular anterior displacement has also been reported [19]. (ODO30)

### b) Identification and Focus

For the frequency of phrase frames, as reported in Table 5.10, a total of 39 occurrences of phrase frames were reported. There were 20 occurrences that were similar and 19 occurrences that were different between the two sub-disciplines. Specifically, 3 phrase frames with 20 occurrences in OMS and 39 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of these phrase frames in OMS than the ones in ODO. In this type, ** with and without* appeared most frequently, with 12 times in OMS and 17 times in ODO.

**Table 5.10 A Summary of Frequency of Phrase Frames in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * with and without | 17 | 12 | 17 | 12 | 5 |
| 2 | * tipping of the | 14 | 0 | 14 | 0 | 14 |
| 3 | have been reported * | 8 | 8 | 8 | 8 | 0 |
| | **Total** | **39** | **20** | **39** | **20** | **19** |

For the number of fillers of each phrase frame, as reported in Table 5.11, a total of 7 fillers appeared in 3 phrase frames. Specifically, there were 3 fillers that were similar and 4 fillers that were different between the two sub-disciplines. There were 3 fillers in OMS and 7 fillers in ODO, which shows the less use of these fillers in OMS than the ones in ODO. The fillers of the phrase frame ** tipping of the* occurred most frequently with 3 fillers in ODO only.

**Table 5.11 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * tipping of the | 3 | 0 | 3 | 0 | 3 |
| 2 | have been reported * | 2 | 2 | 2 | 2 | 0 |
| 3 | * with and without | 2 | 1 | 2 | 1 | 1 |
| | **Total** | **7** | **3** | **7** | **3** | **4** |

Excerpt 5.9 of the phrase frame ** with and without* and Excerpt 5.10 of the phrase frame ** tipping of* the found in the RA Introductions are examples of phrase frames in identification and focus.

**Excerpt 5.9:**

Therefore, the objectives of this study were (1) to compare the effects of MMA on respiratory function between OSA **patients with and without** maxillomandibular deficiency based on respiratory parameters measured by polysomnography (PSG) and patient satisfaction with postoperative breathing, and (2) to compare the changes in facial aesthetics after MMA between the two groups based on cephalometric measurements and patient satisfaction with postoperative facial aesthetics. (OMS20)

**Excerpt 5.10**:

To achieve this, multiple strategies are used to compensate for the control defciency, such as **distal tipping of the** posterior teeth before space closure, adding attachments to the teeth, and designing specialized root control attachments [12, 23]. (ODO4)

**c) Contrast and Comparison**

For the frequency of phrase frames, as reported in Table 5.12, a total of 100 occurrences of phrase frames were reported. There were 88 occurrences that were similar and 12 occurrences that were different between the two sub-disciplines. Specifically, 7 phrase frames with 88 occurrences in OMS and 100 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in OMS than the ones in ODO. In this type, *one of the ** appeared most frequently, with 21 times in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.12 A Summary of Frequency of Phrase Frames in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | one of the * | 21 | 21 | 21 | 21 | 0 |
| 2 | * one of the | 20 | 20 | 20 | 20 | 0 |
| 3 | a higher * of | 17 | 13 | 17 | 13 | 4 |
| 4 | a * risk of | 13 | 13 | 13 | 13 | 0 |
| 5 | a * level of | 12 | 8 | 12 | 8 | 4 |
| 6 | * the risk of | 9 | 9 | 9 | 9 | 0 |
| 7 | a high * of | 8 | 4 | 8 | 4 | 4 |
| | **Total** | **100** | **88** | **100** | **88** | **12** |

For the number of fillers of each phrase frame, as reported in Table 5.13, a total of 16 fillers appeared in 7 phrase frames. Specifically, there were

13 fillers that were similar and 3 fillers that were different between the two sub-disciplines. There were 13 fillers in OMS and 16 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *a higher * of* occurred most frequently, with 2 fillers in OMS and 3 fillers in ODO.

**Table 5.13 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | a higher * of | 3 | 2 | 3 | 2 | 1 |
| 2 | a * level of | 3 | 2 | 3 | 2 | 1 |
| 3 | a high * of | 2 | 1 | 2 | 1 | 1 |
| 4 | one of the * | 2 | 2 | 2 | 2 | 0 |
| 5 | * one of the | 2 | 2 | 2 | 2 | 0 |
| 6 | a * risk of | 2 | 2 | 2 | 2 | 0 |
| 7 | * the risk of | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **16** | **13** | **16** | **13** | **3** |

Excerpts 5.11 and 5.12 of the phrase frame *a high * of* found in the RA Introductions are examples of phrase frames in contrast and comparison.

**Excerpt 5.11**:

For correct indication of the technique and greater planning reliability, up-to-date studies with **a high level of** scientific evidence are needed, which elucidate the success rate and stability in the short, medium, and long term of extra-short implants associated with different types of prosthetic rehabilitation. (OMS8)

**Excerpt 5.12**:

As a consequence, the pathogen, severe acute respiratory syndrome coronavirus 2, may be transmitted potentially in the meanwhile, which exposes dentists, orthodontists and patients to **a high risk of** infection.5-8 (ODO15)

**d) Deictics and Locatives**

For the frequency of phrase frames, as reported in Table 5.14, a total 400 occurrences of phrase frames were reported. There were 70 occurrences that were similar and 330 occurrences that were different between the two sub-disciplines. Specifically, 26 phrase frames with 267 occurrences in OMS and 203 occurrences in ODO were identified in the two sub-disciplines, which shows the more use of phrase frames in OMS than the ones in ODO. In this type, *in the * area* appeared most frequently, with 58 times in OMS and 21 times in ODO.

**Table 5.14 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * area | 62 | 58 | 21 | 17 | 45 |
| 2 | * soft tissue recession | 45 | 41 | 4 | 0 | 45 |
| 3 | * titanium base abutments | 22 | 22 | 0 | 0 | 22 |
| 4 | the early * dentition | 22 | 0 | 22 | 0 | 22 |
| 5 | the * dental arch | 22 | 0 | 22 | 0 | 22 |
| 6 | in the esthetic * | 18 | 18 | 0 | 0 | 18 |
| 7 | * the oral cavity | 18 | 18 | 13 | 13 | 5 |
| 9 | of the maxillary * | 12 | 0 | 12 | 0 | 12 |
| 10 | abutment for the * | 10 | 10 | 0 | 0 | 10 |
| 11 | the * central incisors | 12 | 12 | 12 | 12 | 0 |
| 12 | of the * cavity | 11 | 11 | 0 | 0 | 11 |
| 13 | * clinical crown height | 11 | 0 | 11 | 0 | 11 |
| 14 | and soft tissue * | 11 | 0 | 11 | 0 | 11 |
| 15 | the * third molar | 11 | 11 | 11 | 11 | 0 |
| 16 | of the * bone | 10 | 10 | 4 | 4 | 6 |
| 17 | * dental implant failure | 10 | 10 | 0 | 0 | 10 |
| 18 | the * position of | 10 | 0 | 10 | 0 | 10 |
| 19 | * incisors and canines | 9 | 0 | 9 | 0 | 9 |
| 20 | in the parotid * | 8 | 8 | 0 | 0 | 8 |
| 21 | in the anterior * | 8 | 0 | 8 | 0 | 8 |
| 22 | * the parotid gland | 8 | 8 | 0 | 0 | 8 |
| 23 | * the observation period | 8 | 4 | 4 | 0 | 8 |
| 24 | * of the anterior | 8 | 0 | 8 | 0 | 8 |
| 25 | first or second * | 8 | 0 | 8 | 0 | 8 |
| 26 | bone * in the | 13 | 13 | 0 | 0 | 13 |
| | **Total** | **400** | **267** | **203** | **70** | **330** |

For the number of fillers of each phrase frame, as reported in Table 5.15, a total of 66 fillers appeared in 26 phrase frames. Specifically, there were 11 fillers that were similar and 55 fillers that were different between the two sub-disciplines. There were 35 fillers in OMS and 36 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *in the * area* occurred most frequently with 7 fillers in OMS and 3 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.15 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * area | 8 | 7 | 3 | 2 | 6 |
| 2 | in the parotid * | 5 | 2 | 0 | 0 | 5 |
| 3 | the * dental arch | 4 | 0 | 4 | 0 | 4 |
| 4 | of the maxillary * | 3 | 0 | 3 | 0 | 3 |
| 5 | * titanium base abutments | 3 | 3 | 0 | 0 | 3 |
| 6 | bone * in the | 3 | 3 | 0 | 0 | 3 |

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 7 | in the esthetic * | 2 | 2 | 0 | 2 | 0 |
| 8 | of the * cavity | 2 | 2 | 0 | 0 | 2 |
| 9 | in the anterior * | 2 | 0 | 2 | 0 | 2 |
| 10 | * the parotid gland | 2 | 2 | 0 | 0 | 2 |
| 11 | of the * bone | 2 | 2 | 1 | 1 | 1 |
| 13 | * the observation period | 2 | 1 | 1 | 1 | 1 |
| 14 | * the oral cavity | 2 | 2 | 1 | 1 | 1 |
| 15 | * clinical crown height | 2 | 0 | 2 | 0 | 2 |
| 16 | * dental implant failure | 2 | 2 | 0 | 0 | 2 |
| 17 | * incisors and canines | 2 | 0 | 2 | 0 | 2 |
| 18 | * of the anterior | 2 | 0 | 2 | 0 | 2 |
| 19 | the * position of | 2 | 0 | 2 | 0 | 2 |
| 20 | and soft tissue * | 2 | 0 | 2 | 0 | 2 |
| 21 | abutment for the * | 2 | 2 | 0 | 0 | 2 |
| 22 | * soft tissue recession | 2 | 1 | 1 | 0 | 2 |
| 23 | the * central incisors | 2 | 0 | 2 | 0 | 2 |
| 24 | the * third molar | 2 | 2 | 2 | 2 | 0 |
| 25 | first or second * | 2 | 0 | 2 | 0 | 2 |
| 26 | the early * dentition | 2 | 0 | 2 | 0 | 2 |
| | **Total** | **66** | **35** | **36** | **11** | **55** |

Excerpts 5.13 of the phrase frame ** the parotid gland* and 5.14 of the phrase frame *the * dental arch* found in the RA Introductions are examples of phrase frames in deictics and locatives.

**Excerpt 5.13**:

As a result, the rapidly advancing invasion of SCC **in the parotid gland** can result in high morbidity and mortality. (OMS12)

**Excerpt 5.14**:

Posterior crossbites, either bilateral or unilateral, as well as crowding and teeth impaction in **the upper dental arch**, are frequently associated with a transverse maxillary constriction (1–4). (ODO23)

In the RA Introduction section, 4-word referential phrase frames are commonly used to establish connections to prior research, clarify the research gap, and present the study's aims (Golparvar & Barabadi, 2020; Cheng & Zhang, 2025). These phrases are concise and efficient for referencing existing literature, justifying the study, and setting up the research objectives.

#### 5.1.2.2 Stance Phrase Frames

In the stance phrase frames, they are classified into 5 types, i.e., hedges, epistemic, expression of ability and possibility, evaluation, and intention/volition/prediction (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020). However, the findings reported that only hedges, and epistemic were found in the

current data. To be more specific, 2 phrase frames in hedges, and 3 in epistemic were found in the pilot study, as illustrated in Table 5.16.

**Table 5.16 A Summary of Different Types of Stance Phrase Frames**

| Length | Hedges | Epistemic | Expression of Ability and possibility | Evaluation | Intention/ volition, prediction | Total |
|---|---|---|---|---|---|---|
| Four words | 2 | 3 | 0 | 0 | 0 | 5 |

**e) Hedges**

For the frequency of phrase frames, as reported in Table 5.17, there were 37 occurrences that were similar between the two sub-disciplines. Specifically, 2 phrase frames with 37 occurrences in OMS and ODO were identified. In this type, *has been * to* appeared more frequently than the other phrase frame, with 22 times in OMS and ODO. The reason why *has been * to* was listed in this type since it was based on a list of common phrase frames suggested by Gray and Biber (2013).

**Table 5.17 A Summary of Frequency of Phrase Frames in Hedges in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | has been * to | 22 | 22 | 22 | 22 | 0 |
| 2 | it has been * | 15 | 15 | 15 | 15 | 0 |
| | **Total** | **37** | **37** | **37** | **37** | **0** |

For the number of fillers of each phrase frame, as reported in Table 5.18, a total of 5 fillers appeared in 2 phrase frames. Specifically, there were 5 occurrences that were similar between the two sub-disciplines. The fillers of the phrase frame *has been * to* occurred with 3 fillers in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.18 A Summary of Number of Fillers in Hedges in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | has been * to | 3 | 3 | 3 | 3 | 0 |
| 2 | it has been * | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **5** | **5** | **5** | **5** | **0** |

Excerpts 5.15 and 5.16 of the phrase frame *it has been * found in the RA Introductions are examples of phrase frames in hedges.

**Excerpt 5.15**:

**It has been reported** that not only tongue size and tongue habits, but also tongue adaptation to changes in intraoral volume after orthognathic surgery, have a significant influence on treatment success (Wickwire et al., 1972). (OMS28)

**Excerpt 5.16**:

**It has been estimated** that 1 to 3% of the general population suffers from maxillary persistent canine impaction [5], with unilateral cases being more prevalent than bilateral impaction [6]. (ODO6)

**f) Epistemic**

For the frequency of phrase frames, as reported in Table 5.19, a total of 52 occurrences of phrase frames were reported. There were 46 occurrences that were similar and 6 occurrences that were different between the two sub-disciplines. Specifically, 3 phrase frames with 52 occurrences in OMS and 46 occurrences in ODO were identified in the two sub-disciplines, which shows the more use of phrase frames in OMS than the ones in ODO. In this type, *studies have * that* appeared most frequently, with 23 times in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.19 A Summary of Frequency of Phrase Frames in Epistemic in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | studies have * that | 23 | 23 | 23 | 23 | 0 |
| 2 | have been * to | 18 | 18 | 18 | 18 | 0 |
| 3 | it is * that | 11 | 11 | 5 | 5 | 6 |
| | **Total** | **52** | **52** | **46** | **46** | **6** |

For the number of fillers of each phrase frame, as illustrated in Table 5.20, a total of 8 fillers were used in 3 phrase frames. Specifically, there were 7 fillers that were similar and 1 filler that was different between the two sub-disciplines. There were 8 fillers in OMS and 7 fillers in ODO, which shows the more use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *have been * to* occurred most frequently with 3 fillers in the two sub-disciplines, which indicates a similarity between the two sub-disciplines.

**Table 5.20 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | have been * to | 3 | 3 | 3 | 3 | 0 |
| 2 | studies have * that | 3 | 3 | 3 | 3 | 0 |
| 3 | it is * that | 2 | 2 | 1 | 1 | 1 |
| | **Total** | **8** | **8** | **7** | **7** | **1** |

มหาวิทยาลัยเทคโนโลยีสุรนารี

Excerpts 5.17 and 5.18 of the phrase frame *studies have * that* found in the RA Introductions are examples of phrase frames in epistemic.

**Excerpt 5.17**:

**Studies have shown that** bone mineral changes under 30% cannot be detected on X-rays; therefore, panoramic radiographs are unable to sensitively reflect tiny changes in the bone mineral composition of cystic lesions. (OMS26)

**Excerpt 5.18**:

Several **studies have suggested that** the maxillary central incisors and canines must be placed almost at the same level and that the incisal edge of the lateral incisors should be leveled 0.5–1.5 mm more gingivally [2–4]. (ODO7)

In the RA Introduction section, stance phrase frames serve to establish the author's position relative to the research topic. These phrases also indicate the level of confidence, agreement, or evaluation the author has concerning the research problem, its importance, and its context (Lu et al., 2021b; Cheng & Zhang, 2025). By using these frames, authors communicate their perspective on the field, how their study contributes to it, and the relevance of the research in addressing existing gaps. The use of stance phrase frames helps shape the tone of the article, guiding the reader through the author's viewpoint and understanding of the topic. Below, we explore the functions of 4-word stance phrase frames in the Introduction section.

**5.1.2.3 Discourse Organizing Phrase Frames**

In this type, there were 6 phrase frames in topic elaboration, and 4 in discourse markers. No phrase frames were found in metadiscourse and textual reference, and topic introduction and focus, as illustrated in Table 5.21.

**Table 5.21 A Summary of Different Types of Phrase Frames in Discourse Organizing Type**

| Length | Metadiscourse and textual reference | Topic introduction and focus | Topic elaboration | Discourse markers | Total |
|---|---|---|---|---|---|
| Four words | 0 | 0 | 6 | 4 | 10 |

**g) Topic Elaboration**

For the frequency of phrase frames, as reported in Table 5.21, a total of 171 occurrences of phrase frames were reported. There were 147 occurrences that were similar and 24 occurrences that were different between the two sub-disciplines. Specifically, 6 phrase frames with 147 occurrences in OMS and 171 occurrences in ODO were identified in the two sub-disciplines, which shows the less

use of phrase frames in OMS than the ones in ODO. In this type, ** of this study* appeared most frequently, with 29 times in OMS and 49 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.21 A Summary of Frequency of Phrase Frames in Topic Elaboration in Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * of this study | 49 | 29 | 49 | 29 | 20 |
| 2 | was used to * | 49 | 49 | 49 | 49 | 0 |
| 3 | this study * to | 32 | 32 | 32 | 32 | 0 |
| 4 | study was to * | 20 | 20 | 20 | 20 | 0 |
| 5 | in order to * | 8 | 4 | 8 | 4 | 4 |
| 6 | study * to evaluate | 13 | 13 | 13 | 13 | 0 |
| | **Total** | **171** | **147** | **171** | **147** | **24** |

For the number of fillers of each phrase frame, as illustrated in Table 5.23, a total of 22 fillers were used in 6 phrase frames. Specifically, there were 18 fillers that were similar and 4 fillers that were different between the two sub-disciplines. There were 18 fillers in OMS and 22 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *was used to ** occurred most frequently with 7 fillers in the two sub-disciplines. A total of 7 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.22 A Summary of Number of Fillers in Topic Elaboration in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 7 | 7 | 7 | 7 | 0 |
| 2 | * of this study | 6 | 3 | 6 | 3 | 3 |
| 3 | study was to * | 3 | 3 | 3 | 3 | 0 |
| 4 | in order to * | 2 | 1 | 2 | 1 | 1 |
| 5 | this study * to | 2 | 2 | 2 | 2 | 0 |
| 6 | study * to evaluate | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **22** | **18** | **22** | **18** | **4** |

Excerpts 5.19 from OMS11 and 5.20 from ODO3 of the phrase frame *in order to ** found in the RA Introductions are examples of phrase frames in epistemic.

**Excerpt 5.19**:

The cutting guides were designed with an arch **in order to provide** a better fit to the mandible, thereby minimizing the degrees of freedom in placement. (OMS11)

**Excerpt 5.20**:
Tissue reactions to the applied forces must be known **in order to predict** the stability of MSIs [8]. (ODO3)

**h) Discourse Markers**

For the frequency of phrase frames, as reported in Table 5.23, a total of 50 occurrences of phrase frames were reported. There were 41 occurrences that were similar and 9 occurrences that were different between the two sub-disciplines. Specifically, 4 phrase frames with 50 occurrences in OMS and 41 occurrences in ODO were identified between the two sub-disciplines. In this type, *on the * of* appeared most frequently, with 18 times in OMS and 13 times ODO, which indicates a difference between the two sub-disciplines.

**Table 5.23 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | on the * of | 18 | 18 | 13 | 13 | 5 |
| 2 | * the treatment of | 14 | 14 | 14 | 14 | 0 |
| 3 | by the * of | 9 | 9 | 9 | 9 | 0 |
| 4 | with a * of | 9 | 9 | 5 | 5 | 4 |
| | **Total** | **50** | **50** | **41** | **41** | **9** |

For the number of fillers of each phrase frame, as reported in Table 5.24, a total of 9 fillers appeared in 4 phrase frames. Specifically, there were 8 fillers that were similar and 1 filler that was different between the two sub-disciplines. There were 9 fillers in OMS and 8 fillers in ODO, which shows the more use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *on the * of* occurred most frequently with 3 fillers in the two sub-disciplines. In this phrase frame, there were 3 fillers in OMS and 2 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.24 A Summary of Number of Fillers in Discourse Markers in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | on the * of | 3 | 3 | 2 | 2 | 1 |
| 2 | * the treatment of | 2 | 2 | 2 | 2 | 0 |
| 3 | by the * of | 2 | 2 | 2 | 2 | 0 |
| 4 | with a * of | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **9** | **9** | **8** | **8** | **1** |

Excerpts 5.21 of the phrase frame *on the * of* and 5.22 of the phrase frame ** the treatment of* found in the RA Introductions are examples of phrase frames in discourse markers.

**Excerpt 5.21**:
Thus, this study aimed to evaluate the precision fit of CAD/CAM titanium bars using a novel technique and to investigate the effect of alterations in the CAD/CAM process chain **on the precision of** the resulting bar frameworks. (OMS1)

**Excerpt 5.22**:
Despite their considerable diffusion, their clinical indication is **for the treatment of** non-extractive orthodontic cases of mild to moderate difficulty [3] (ODO10)

In the RA Introduction section, discourse organizing phrase frames play a crucial role in structuring the flow of ideas and guiding the reader through the argument (Golparvar & Barabadi, 2020; Cheng & Zhang, 2025). These frames help organize the presentation of the topic, clarify the relationship between key points, and ensure that the narrative is coherent and logical. By using discourse-organizing frames, authors can signal transitions, introduce key concepts, and establish the rationale for the study. Below is a discussion of the functions of these phrase frames in the Introduction section, with a focus on 4-word phrase frames only.

## 5.2 Phrase Frames of the Methods Section

### 5.2.1 Results and Discussion from the Analysis of Structural Categories

In this section, 30% of phrase frames were selected for inter-rater reliability check based on the stratified and random selection. They were coded independently by the researcher and an invited coder. The results showed a high consistency of the analysis (92.85% in verb-based phrase frames, 96.62% in other-content-word phrase frames, and 100% in function-word phrase frames) between the 2 coders in inter-rater agreement as illustrated in Table 5.25.

**Table 5.25 The Inter-Rater Agreement of Phrase Frames in the English Dentistry RA Methods Section from in the Structural Categories**

| Categories | Coded Unit | Agreed Codings | Different Codings | Agreement Percentage |
|---|---|---|---|---|
| Verb-based phrase frames | 28 | 26 | 2 | 92.85 |
| Other-content-word phrase frames | 89 | 86 | 3 | 96.62 |
| Function-word phrase frames | 15 | 15 | 0 | 100 |
| Total | 133 | 127 | | |

According to the structural categories of Gray and Biber (2013), the analysis revealed 3 types of phrase frames. In total, there were 127 phrase frames, including 26 in verb-based phrase frames, 86 in other-content-word phrase frames, and 15 in function-word phrase frames, in the two sub-disciplines of Dentistry, as illustrated in Figure 5.3. These findings show the popularity of other-content-word phrase frames in the English Dentistry RA Methods section, which was different from Ang and Tan (2019), Lu et al. (2018), and Golparvar and Barabadi (2020), who claimed the common use of function-word phrase frames in the English RA Methods sections.

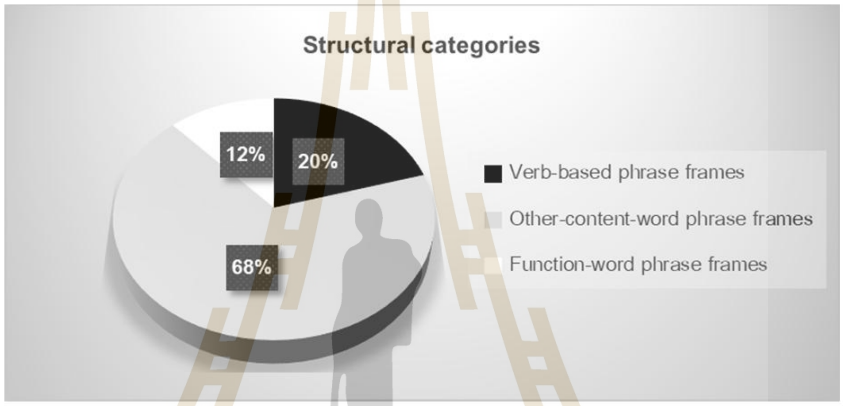



**Figure 5.3 Distribution of Phrase Frames in the Structural Categories in the English Dentistry RA Methods Sections**

#### 5.2.1.1 Verb-based Phrase Frames

In this type, a phrase frame consists of one or more verbs. The use of verb-based phrase frames in the English Dentistry RA Methods section suggests a focus on clarity, precision, and standardization in describing the experimental processes. These verb-driven structures often help convey actions or procedures in a straightforward, systematic manner, ensuring that the methods are clearly outlined for replication or further scrutiny.

For the frequency of this type of phrase frames, as illustrated in Table 5.26, a total of 443 occurrences of phrase frames were reported. There were 338 occurrences of phrase frames that were similar and 105 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 26 phrase frames with 383 occurrences in OMS and 401 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *was used to* * appeared most frequently, with 46 times in OMS and ODO.

**Table 5.26 A Summary of Phrase Frames in the Verb-based Category in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 46 | 46 | 46 | 46 | 0 |
| 2 | was * in the | 39 | 25 | 32 | 18 | 21 |
| 3 | * this study was | 36 | 36 | 36 | 36 | 0 |
| 4 | were * in the | 32 | 28 | 28 | 24 | 8 |
| 5 | was * statistically significant | 27 | 27 | 15 | 15 | 12 |
| 6 | are * in table | 25 | 25 | 25 | 25 | 0 |
| 7 | * was approved by | 21 | 21 | 21 | 21 | 0 |
| 8 | analyses were performed * | 17 | 11 | 17 | 11 | 6 |
| 9 | study was to * | 17 | 17 | 17 | 17 | 0 |
| 10 | the * group was | 16 | 11 | 11 | 6 | 10 |
| 11 | * study was approved | 16 | 16 | 16 | 16 | 0 |
| 12 | was * as a | 14 | 14 | 14 | 14 | 0 |
| 13 | was a significant * | 13 | 13 | 9 | 9 | 4 |
| 14 | was to * the | 13 | 13 | 13 | 13 | 0 |
| 15 | approved by the * | 13 | 3 | 13 | 3 | 10 |
| 16 | * used to compare | 13 | 13 | 13 | 13 | 0 |
| 17 | were * from the | 11 | 6 | 11 | 6 | 5 |
| 18 | was * to assess | 11 | 11 | 11 | 11 | 0 |
| 19 | was * in the | 10 | 2 | 10 | 1 | 9 |
| 20 | were used to * | 10 | 10 | 10 | 10 | 0 |
| 21 | analysis was * to | 9 | 9 | 9 | 9 | 0 |
| 22 | difference was * significant | 8 | 2 | 8 | 5 | 3 |
| 23 | the * side was | 7 | 7 | 4 | 0 | 7 |
| 24 | was * with the | 7 | 7 | 4 | 5 | 2 |
| 25 | were used * the | 6 | 6 | 4 | 4 | 2 |
| 26 | is * in table | 6 | 4 | 4 | 0 | 6 |
| | **Total** | **443** | **383** | **401** | **338** | **105** |

For the number of fillers of each phrase frame, as illustrated in Table 5.27, a total of 99 fillers appeared in 26 phrase frames. Specifically, the result also showed 79 fillers that were similar and 20 fillers that were different between the two sub-disciplines. There were 87 fillers in OMS and 89 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *was used to* * occurred most frequently in the data with 8 fillers in the two sub-disciplines. A total of 8 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.27 A Summary of Fillers of Phrase Frames in the Verb-based Category in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 8 | 8 | 8 | 8 | 0 |
| 2 | was * in the | 7 | 5 | 6 | 4 | 3 |
| 3 | were * in the | 6 | 5 | 5 | 4 | 2 |
| 4 | are * in table | 5 | 5 | 5 | 5 | 0 |
| 5 | the * group was | 4 | 3 | 3 | 2 | 2 |
| 6 | was * in the | 4 | 2 | 4 | 2 | 2 |

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 7 | was * statistically significant | 4 | 3 | 2 | 3 | 1 |
| 8 | was * as a | 4 | 4 | 4 | 4 | 0 |
| 9 | approved by the * | 4 | 2 | 4 | 2 | 2 |
| 10 | study was to * | 4 | 4 | 4 | 4 | 0 |
| 11 | * study was approved | 4 | 4 | 4 | 4 | 0 |
| 12 | * this study was | 3 | 3 | 3 | 3 | 0 |
| 13 | analyses were performed * | 3 | 2 | 3 | 2 | 1 |
| 14 | were used * the | 3 | 3 | 2 | 2 | 1 |
| 15 | difference was * significant | 3 | 2 | 3 | 2 | 1 |
| 16 | was a significant * | 3 | 4 | 3 | 3 | 0 |
| 17 | the * side was | 3 | 3 | 1 | 1 | 2 |
| 18 | were * from the | 3 | 2 | 3 | 2 | 1 |
| 19 | was to * the | 3 | 3 | 3 | 3 | 0 |
| 20 | was * to assess | 3 | 3 | 3 | 3 | 0 |
| 21 | was * with the | 3 | 3 | 2 | 2 | 1 |
| 22 | * was approved by | 3 | 3 | 3 | 3 | 0 |
| 23 | were used to * | 3 | 3 | 3 | 3 | 0 |
| 24 | analysis was * to | 3 | 3 | 3 | 3 | 0 |
| 25 | * used to compare | 3 | 3 | 3 | 3 | 0 |
| 26 | is * in table | 3 | 2 | 2 | 2 | 1 |
| | **Total** | **99** | **87** | **89** | **79** | **20** |

For an overview of the use of phrase frames in this type, Excerpts 5.23 and 5.24 below illustrate a phrase frame *was used to* * found in the RA Methods section in the two sub-disciplines of Dentistry.

**Excerpt 5.23:**

Cone-beam computed tomography (CBCT) **was used to evaluate** the efficacy of the scaffold, which has potential implications for future bone tissue engineering and regenerative applications (Aranaz et al., 2021). (OMS27)

**Excerpt 5.24:**

Logistic regression analysis **was used to evaluate** the effect of the intervention group on irregularity index scores over the 12-month study period adjusting for independent variables. (ODO16)

Taken together, the use on verb-based phrase frames in the RA Methods section implies that authors prioritize transparency and objectivity in communicating how the study was conducted. The use of verb-based phrase frames ensures that the procedures are described in an active and direct way, minimizing ambiguity. It also reflects the importance of reproducibility in scientific research, as these phrase frames offer clear guidance on how each step of the experiment was carried out (Lu et al., 2021a, 2021b). By using consistent and structured language,

authors help other researchers understand the exact actions involved in the study, facilitating the potential for replication and validation of the results.

**5.2.1.2 Other-content-word Phrase Frames**

For the other-content-word type, a phrase frame includes one or more nouns, adjectives, adverbs. This analysis identified 86 phrase frames in the two sub-disciplines. The other-content-word phrase frames help specify the characteristics of the materials, tools, conditions, and parameters involved in the study, contributing to a fuller understanding of the experimental process. This also indicates that the authors are emphasizing the context, scope, and specific attributes of their methodology, rather than focusing purely on the actions taken.

For the frequency of this type of phrase frames, as illustrated in Table 5.28, a total of 1342 occurrences of phrase frames were reported. There were 422 occurrences of phrase frames that were similar and 920 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 86 phrase frames with 763 occurrences in OMS and 991 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than in ODO. In this type, *in the *group* appeared most frequently, with 49 times in OMS and 156 times in ODO.

**Table 5.28 A Summary of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 205 | 49 | 156 | 0 | 205 |
| 2 | in the * area | 59 | 55 | 18 | 14 | 45 |
| 3 | * of this study | 46 | 26 | 46 | 26 | 20 |
| 4 | on the * side | 33 | 29 | 18 | 14 | 19 |
| 5 | * significant difference between | 30 | 30 | 30 | 30 | 0 |
| 6 | this study * to | 29 | 29 | 29 | 29 | 0 |
| 7 | * in this study | 29 | 29 | 29 | 29 | 0 |
| 8 | significant difference * the | 28 | 28 | 28 | 28 | 0 |
| 9 | * the two groups | 28 | 28 | 28 | 28 | 0 |
| 10 | the use of * | 24 | 19 | 13 | 13 | 11 |
| 11 | * difference between the | 23 | 23 | 23 | 23 | 0 |
| 12 | * the HPC line | 23 | 0 | 23 | 0 | 23 |
| 13 | * significant differences in | 22 | 22 | 22 | 22 | 0 |
| 14 | the * number of | 20 | 20 | 5 | 5 | 15 |
| 15 | of the * teeth | 20 | 0 | 20 | 0 | 20 |
| 16 | * titanium base abutments | 19 | 19 | 0 | 0 | 19 |
| 17 | the early * dentition | 19 | 0 | 19 | 0 | 19 |
| 18 | the * dental arch | 19 | 0 | 19 | 0 | 19 |
| 19 | satisfaction with * aesthetics | 18 | 2 | 13 | 0 | 18 |
| 20 | during the * period | 17 | 8 | 6 | 0 | 17 |
| 21 | central and lateral * | 17 | 0 | 17 | 0 | 17 |
| 22 | and satisfaction with * | 16 | 0 | 16 | 0 | 16 |
| 23 | of the mandibular * | 16 | 10 | 16 | 10 | 6 |
| 24 | in the * arch | 16 | 0 | 16 | 0 | 16 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 25 | * and lateral incisors | 16 | 0 | 16 | 0 | 16 |
| 26 | significant differences * the | 15 | 15 | 5 | 5 | 10 |
| 27 | statistically significant differences * | 15 | 8 | 15 | 8 | 7 |
| 28 | in the esthetic * | 15 | 15 | 0 | 0 | 15 |
| 29 | of the * lip | 15 | 15 | 6 | 6 | 9 |
| 30 | * the oral cavity | 15 | 15 | 10 | 10 | 5 |
| 31 | in the * analysis | 14 | 14 | 0 | 0 | 14 |
| 32 | * central and lateral | 14 | 0 | 14 | 0 | 14 |
| 33 | position of the * | 14 | 10 | 10 | 6 | 8 |
| 34 | * at the end | 13 | 9 | 1 | 0 | 13 |
| 35 | * the right side | 13 | 7 | 13 | 7 | 6 |
| 36 | * newly formed bone | 13 | 13 | 0 | 0 | 13 |
| 37 | at the same * | 12 | 0 | 12 | 0 | 12 |
| 38 | at the * time | 12 | 12 | 12 | 12 | 0 |
| 39 | a significant difference * | 12 | 12 | 12 | 12 | 0 |
| 40 | to the * plane | 12 | 12 | 8 | 2 | 10 |
| 41 | of the * population | 12 | 4 | 12 | 4 | 8 |
| 42 | the * strong anchorage | 12 | 0 | 12 | 0 | 12 |
| 43 | * between the groups | 11 | 1 | 11 | 1 | 10 |
| 44 | * the early permanent | 11 | 0 | 11 | 0 | 11 |
| 45 | the * and control | 11 | 5 | 11 | 5 | 6 |
| 46 | * the number of | 11 | 11 | 11 | 11 | 0 |
| 47 | * and control groups | 10 | 4 | 10 | 4 | 6 |
| 48 | * the facial midline | 10 | 0 | 10 | 0 | 10 |
| 49 | * of orthodontic treatment | 10 | 10 | 10 | 10 | 0 |
| 50 | bone * in the | 10 | 10 | 0 | 0 | 10 |
| 51 | * of gingival recession | 9 | 0 | 9 | 0 | 9 |
| 52 | * the level of | 9 | 9 | 5 | 5 | 4 |
| 53 | * committee of the | 9 | 5 | 9 | 5 | 4 |
| 54 | a * level of | 9 | 5 | 9 | 5 | 4 |
| 55 | difference between the * | 9 | 4 | 2 | 0 | 9 |
| 56 | abutments for the * | 9 | 9 | 0 | 0 | 9 |
| 57 | of the * cavity | 8 | 8 | 0 | 0 | 8 |
| 58 | * clinical crown height | 8 | 0 | 8 | 0 | 8 |
| 59 | of the included * | 8 | 8 | 0 | 0 | 8 |
| 60 | the * third molar | 8 | 8 | 8 | 8 | 0 |
| 61 | the * committee of | 7 | 2 | 7 | 2 | 5 |
| 62 | abutment for the * | 7 | 7 | 0 | 0 | 7 |
| 63 | * of the study | 7 | 2 | 7 | 2 | 5 |
| 64 | of the * bone | 7 | 7 | 1 | 1 | 6 |
| 65 | by the * committee | 7 | 2 | 7 | 2 | 5 |
| 66 | of the cystic * | 7 | 7 | 0 | 0 | 7 |
| 67 | * dental implant failure | 7 | 7 | 0 | 0 | 7 |
| 68 | the * position of | 7 | 0 | 7 | 0 | 7 |
| 69 | reliability of the * | 7 | 7 | 7 | 7 | 0 |
| 70 | * patients with a | 6 | 6 | 6 | 6 | 0 |
| 71 | of * alveolar ridge | 6 | 1 | 6 | 1 | 5 |
| 72 | * for patients with | 6 | 2 | 1 | 0 | 6 |
| 73 | * incisors and canines | 6 | 0 | 6 | 0 | 6 |
| 74 | in order to * | 5 | 1 | 5 | 1 | 4 |
| 75 | vertical position of * | 5 | 0 | 5 | 0 | 5 |
| 76 | the time of * | 5 | 5 | 1 | 1 | 4 |
| 77 | number of * with | 5 | 5 | 1 | 1 | 4 |
| 78 | a high * of | 5 | 1 | 5 | 1 | 4 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 79 | in the * region | 5 | 1 | 1 | 0 | 5 |
| 80 | * of the cutting | 5 | 5 | 0 | 0 | 5 |
| 81 | by the institutional * | 5 | 5 | 5 | 0 | 5 |
| 82 | * the observation period | 5 | 1 | 1 | 0 | 5 |
| 83 | the * sample size | 5 | 5 | 5 | 0 | 5 |
| 84 | * of the anterior | 5 | 0 | 5 | 0 | 5 |
| 85 | face-to-face interaction with * | 5 | 0 | 5 | 0 | 5 |
| 86 | first or second * | 5 | 0 | 5 | 0 | 5 |
| | **Total** | **1342** | **763** | **991** | **422** | **920** |

For the number of fillers of each phrase frame, as illustrated in Table 5.29, a total of 304 fillers appeared in 86 phrase frames. Specifically, the results also showed 172 fillers that were similar and 132 fillers that were different between the two sub-disciplines. There were 218 fillers in OMS and 240 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *in the * group* occurred most frequently in the data with 18 fillers in the two sub-disciplines. There were 8 fillers in OMS and 11 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.29 A Summary of Number of Fillers of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 18 | 8 | 11 | 8 | 10 |
| 2 | in the * area | 9 | 8 | 4 | 3 | 6 |
| 3 | * of this study | 7 | 4 | 7 | 4 | 3 |
| 4 | on the * side | 6 | 5 | 4 | 3 | 3 |
| 5 | the use of * | 5 | 4 | 4 | 3 | 2 |
| 6 | during the * period | 5 | 3 | 3 | 1 | 4 |
| 7 | the * dental arch | 5 | 1 | 5 | 1 | 4 |
| 8 | the * number of | 4 | 4 | 2 | 2 | 2 |
| 9 | * between the groups | 4 | 2 | 4 | 2 | 2 |
| 10 | * significant difference between | 4 | 4 | 4 | 4 | 0 |
| 11 | a * level of | 4 | 3 | 4 | 3 | 1 |
| 12 | to the * plane | 4 | 3 | 3 | 2 | 2 |
| 13 | in the * arch | 4 | 1 | 4 | 1 | 3 |
| 14 | * titanium base abutment | 4 | 4 | 1 | 1 | 3 |
| 15 | position of the * | 4 | 2 | 3 | 2 | 2 |
| 16 | * titanium base abutments | 4 | 4 | 1 | 1 | 3 |
| 17 | the * strong anchorage | 4 | 1 | 4 | 2 | 2 |
| 18 | bone * in the | 4 | 4 | 1 | 1 | 3 |
| 19 | * the number of | 4 | 4 | 4 | 4 | 0 |
| 20 | * in this study | 3 | 3 | 3 | 3 | 0 |
| 21 | the * committee of | 3 | 2 | 3 | 2 | 1 |
| 22 | * of gingival recession | 3 | 1 | 3 | 1 | 2 |
| 23 | of the * teeth | 3 | 1 | 3 | 1 | 2 |
| 24 | * the level of | 3 | 3 | 2 | 2 | 1 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 25 | * committee of the | 3 | 2 | 3 | 2 | 1 |
| 26 | and satisfaction with * | 3 | 1 | 3 | 1 | 2 |
| 27 | vertical position of * | 3 | 1 | 3 | 1 | 2 |
| 28 | the time of * | 3 | 3 | 2 | 2 | 1 |
| 29 | number of * with | 3 | 3 | 2 | 2 | 1 |
| 30 | * and control groups | 3 | 2 | 3 | 2 | 1 |
| 31 | abutment for the * | 3 | 3 | 1 | 1 | 2 |
| 32 | * patients with a | 3 | 3 | 3 | 3 | 0 |
| 33 | * of the study | 3 | 2 | 3 | 2 | 1 |
| 34 | at the same * | 3 | 1 | 3 | 1 | 2 |
| 35 | a high * of | 3 | 2 | 3 | 2 | 1 |
| 36 | of * alveolar ridge | 3 | 2 | 3 | 2 | 1 |
| 37 | at the * time | 3 | 3 | 3 | 3 | 0 |
| 38 | significant difference * the | 3 | 3 | 3 | 3 | 0 |
| 39 | * difference between the | 3 | 3 | 3 | 3 | 0 |
| 40 | * significant differences in | 3 | 3 | 3 | 3 | 0 |
| 41 | * for patients with | 3 | 2 | 2 | 2 | 1 |
| 42 | significant differences * the | 3 | 3 | 2 | 2 | 1 |
| 43 | statistically significant differences * | 3 | 2 | 3 | 2 | 1 |
| 44 | a significant difference * | 3 | 3 | 3 | 3 | 0 |
| 45 | difference between the * | 3 | 2 | 2 | 2 | 1 |
| 46 | in the esthetic * | 3 | 3 | 1 | 3 | 0 |
| 47 | of the * cavity | 3 | 3 | 1 | 1 | 2 |
| 48 | in the * region | 3 | 2 | 2 | 2 | 1 |
| 49 | is * in table | 3 | 2 | 2 | 2 | 1 |
| 50 | in order to * | 3 | 2 | 3 | 2 | 1 |
| 51 | of the * bone | 3 | 3 | 2 | 2 | 1 |
| 52 | of the * lip | 3 | 3 | 2 | 2 | 1 |
| 53 | * the facial midline | 3 | 1 | 3 | 1 | 2 |
| 54 | * of orthodontic treatment | 3 | 3 | 3 | 3 | 0 |
| 55 | * at the end | 3 | 2 | 2 | 2 | 1 |
| 56 | * of the cutting | 3 | 3 | 1 | 1 | 2 |
| 57 | by the * committee | 3 | 2 | 3 | 2 | 1 |
| 58 | by the institutional * | 3 | 3 | 3 | 3 | 0 |
| 59 | * the observation period | 3 | 2 | 2 | 2 | 1 |
| 60 | of the mandibular * | 3 | 2 | 3 | 2 | 1 |
| 61 | * the right side | 3 | 2 | 3 | 2 | 1 |
| 62 | * the oral cavity | 3 | 3 | 2 | 2 | 1 |
| 63 | in the * analysis | 3 | 3 | 1 | 1 | 2 |
| 64 | of the * population | 3 | 2 | 3 | 2 | 1 |
| 65 | * the early permanent | 3 | 1 | 3 | 1 | 2 |
| 66 | * newly formed bone | 3 | 3 | 1 | 1 | 2 |
| 67 | * the HPC line | 3 | 1 | 3 | 1 | 2 |
| 68 | satisfaction with * aesthetics | 3 | 2 | 2 | 2 | 1 |
| 69 | the * sample size | 3 | 3 | 3 | 3 | 0 |
| 70 | this study * to | 3 | 3 | 3 | 3 | 0 |
| 71 | of the cystic * | 3 | 3 | 1 | 1 | 2 |
| 72 | of the included * | 3 | 3 | 1 | 1 | 2 |
| 73 | * dental implant failure | 3 | 3 | 1 | 1 | 2 |
| 74 | central and lateral * | 3 | 1 | 3 | 1 | 2 |
| 75 | * and lateral incisors | 3 | 1 | 3 | 1 | 2 |
| 76 | * of the anterior | 3 | 1 | 3 | 1 | 2 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 77 | the * position of | 3 | 1 | 3 | 1 | 2 |
| 78 | face-to-face interaction with * | 3 | 1 | 3 | 1 | 2 |
| 79 | * central and lateral | 3 | 1 | 3 | 1 | 2 |
| 80 | reliability of the * | 3 | 3 | 3 | 3 | 0 |
| 81 | abutments for the * | 3 | 3 | 1 | 1 | 2 |
| 82 | the * third molar | 3 | 3 | 3 | 3 | 0 |
| 83 | first or second * | 3 | 1 | 3 | 1 | 2 |
| 84 | the early * dentition | 3 | 1 | 3 | 1 | 2 |
| 85 | the * and control | 3 | 2 | 3 | 2 | 1 |
| 86 | * the two groups | 3 | 3 | 3 | 3 | 0 |
| | **Total** | **304** | **218** | **240** | **172** | **132** |

For an overview of the use of phrase frames in this type, Excerpts 5.25 and 5.26 below illustrate a phrase frame found in the RA Methods section in the two sub-disciplines of Dentistry.

**Excerpt 5.25:**

Similar results were obtained in our study: compared with the control group, the Class II group, which included all female subjects, had a gradual but significantly lower increase in lip closing force **during the study period**. (OMS28)

**Excerpt 5.26:**

According to our previous study on adherence to instructions and fluctuation of force magnitude in CHG therapy (49), children in the L group used the device **during the study period** over 9 hours a day and in the H group for less than 8 hours. (ODO25)

Taken together, the use of these phrase frames in the Methods section implies that the researchers aim to provide a comprehensive and precise description of the study design, which is important for ensuring the clarity and reproducibility of the research. It also highlights a focus on providing rich detail about the materials, participant characteristics, experimental conditions, and any other factors that might influence the results. By using other-content words, authors can give readers a clearer picture of the study's setup, ensuring that the research is transparent, rigorous, and replicable. This approach is especially important in Dentistry, where specific materials, instruments, or conditions can significantly affect outcomes.

**5.2.1.3 Function-word Phrase Frames**

In this sub-type, phrase frames include only function words such as prepositions, determiners, conjunctions, pronouns, and complementisers. These phrase frames in the Methods section serve to organize and connect the main content of the sentence, helping to establish relationships between different elements of the

study and making the description of the methods more cohesive and structured. These function-word phrase frames also help clarify the sequencing of events, relationships between variables, and the overall organization of the experimental process.

For the frequency of this type of phrase frames, as illustrated in Table 5.30, a total of 643 occurrences of phrase frames were reported. There were 468 occurrences of phrase frames that were similar and 175 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 15 phrase frames with 524 occurrences in OMS and 574 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *the * of the* appeared most frequently, with 208 times in OMS and 204 times in ODO.

**Table 5.30 A Summary of Phrase Frames in the Function-word Category in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 229 | 208 | 204 | 184 | 45 |
| 2 | at the * of | 99 | 24 | 99 | 24 | 75 |
| 3 | in the * of | 62 | 58 | 62 | 58 | 4 |
| 4 | the * of this | 50 | 50 | 27 | 27 | 23 |
| 5 | the * between the | 33 | 33 | 33 | 33 | 0 |
| 6 | with the * of | 31 | 31 | 27 | 31 | 0 |
| 7 | in * with the | 27 | 27 | 27 | 27 | 0 |
| 8 | of the * and | 25 | 11 | 17 | 11 | 14 |
| 9 | to the * of | 20 | 20 | 20 | 20 | 0 |
| 10 | with * to the | 15 | 15 | 15 | 15 | 0 |
| 11 | on the * of | 15 | 15 | 10 | 10 | 5 |
| 12 | * with and without | 14 | 9 | 14 | 9 | 5 |
| 13 | and the * of | 11 | 11 | 11 | 11 | 0 |
| 14 | by the * of | 6 | 6 | 6 | 6 | 0 |
| 15 | with a * of | 6 | 6 | 2 | 2 | 4 |
| | **Total** | **643** | **524** | **574** | **468** | **175** |

For the number of fillers of each phrase frame, as illustrated in Table 5.31, a total of 75 fillers appeared in 15 phrase frames. Specifically, the result also showed 52 fillers that were similar and 23 fillers that were different between the two sub-disciplines. There were 62 fillers in OMS and 64 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *the * of the* occurred most frequently in the data with 30 fillers in the two sub-disciplines. A total of 25 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.31 A Summary of Number of Fillers of Phrase Frames in the Function-word Category in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 30 | 25 | 25 | 20 | 10 |
| 2 | in the * of | 9 | 8 | 9 | 8 | 1 |
| 3 | the * of this | 5 | 5 | 3 | 3 | 2 |
| 4 | with the * of | 5 | 5 | 4 | 4 | 1 |
| 5 | at the * of | 4 | 1 | 4 | 1 | 3 |
| 6 | the * between the | 4 | 4 | 4 | 4 | 0 |
| 7 | of the * and | 4 | 1 | 3 | 1 | 3 |
| 8 | in * with the | 3 | 3 | 3 | 3 | 0 |
| 9 | to the * of | 3 | 3 | 3 | 3 | 0 |
| 10 | and the * of | 2 | 2 | 2 | 2 | 0 |
| 11 | on the * of | 2 | 2 | 1 | 1 | 1 |
| 12 | with * to the | 1 | 1 | 1 | 1 | 0 |
| 13 | * with and without | 1 | 0 | 1 | 0 | 1 |
| 14 | by the * of | 1 | 1 | 1 | 1 | 0 |
| 15 | with a * of | 1 | 1 | 0 | 0 | 1 |
| | **Total** | **75** | **62** | **64** | **52** | **23** |

For an overview of the use of phrase frames in this type, Excerpts 5.27 and 5.28 below illustrate a phrase frame *the results of* * found in the RA Methods section in the two sub-disciplines of Dentistry.

**Excerpt 5.27:**

**The results of** the amount of calcium content measured by EDS on the surface of the implant are presented in Fig 1g. (OMS2)

**Excerpt 5.28:**

**The results of the** present study indicate that in increased vertical facial height, a 1.5 mm vertical height difference between the central and lateral incisor was found to be more attractive by orthodontists, whereas a 1-mm vertical difference was found to be more attractive by prosthodontists. (ODO7)

Taken together, the frequent use of function-word phrase frames in the English Dentistry RA Methods section suggests that authors carefully structure the Methods section to ensure that the research steps are logically presented and easy to follow. It also implies that the researchers are concerned with making their methodology transparent and understandable, as function words help in forming clear connections between various components of the study (e.g., the materials used, the procedures followed, or the specific conditions under which experiments took place). The frequent use of phrase frames enhances the reproducibility of the study, as

readers and other researchers can clearly understand how different elements of the study are linked and how the research process unfolds.

### 5.2.2 Results and Discussion from the Analysis of Functional Categories

In this section, 30% of phrase frames were selected for inter-rater reliability based on the stratified and random selection. They were coded independently by the researcher and an invited coder. The results showed the high consistency of the analysis (94.00% in referential phrase frames, 100% stance phrase frames, and 100% in discourse organizing phrase frames) between 2 the coders in inter-rater agreement as illustrated in Table 5.32.

**Table 5.32 The Inter-Rater Agreement of Phrase Frames in the Functional Categories**

| Categories | Coded Unit | Agreed Codings | Different Codings | Agreement Percentage |
|---|---|---|---|---|
| Referential phrase frames | 94 | 100 | 6 | 94.00 |
| Stance phrase frames | 8 | 8 | 0 | 100 |
| Discourse organizing phrase frames | 19 | 19 | 0 | 100 |
| **Total** | 228 | 127 | | |

The findings showed that analyzing functional categories of phrase frames plays a crucial role in understanding how language is structured and used within specific contexts (Golparvar & Barabadi, 2020). Three types of phrase frames were identified in the functional categories: referential, stance, and discourse organizing. Out of 127 phrase frames, 100 were classified as referential, 8 as stance, and 19 as discourse organizing, as illustrated in Figure 5.4. The referential type of phrase frames was the most frequently used in the current study, which was the same findings as Biber et al. (2004), Lu et al. (2018), Golparvar & Barabadi (2020), and Ren (2021).

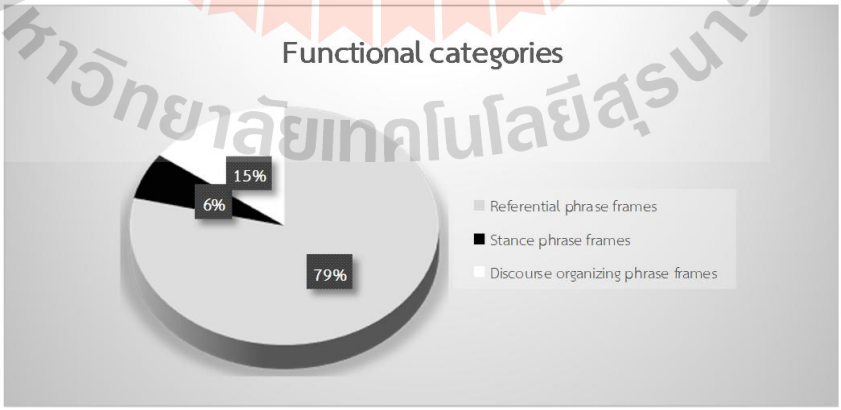



**Figure 5.3 Distribution of Phrase Frames in the Functional Categories in the English Dentistry RA Methods Sections**

#### 5.2.2.1 Referential Phrase Frames

In the English Dentistry RA Methods section, the use of referential phrase frames implies a structured and standardized approach to describing the research procedures, materials, and methodologies. These frames help ensure that the study is presented in a clear and organized manner, making it easy for readers to understand the process and replicate the study if needed. By using specific and consistent phrases, authors can refer to actions, materials, and techniques in a uniform way. This consistency in language allows readers to easily follow the methodology and ensures transparency in the research process.

Referential phrase frames are classified into 5 types, i.e., specification of attributes, identification and focus, contrast and comparison, deictics and locatives, and vagueness markers (Simpson-Vlach & Ellis, 2010). Notably, phrase frames in vagueness markers were not found in the current study. The absence of phrase frames in vagueness markers was due to the rare use in academic writing (Simpson-Vlach & Ellis, 2010; Lu et al., 2018). Among them, 21 phrase frames were identified in specification of attributes, 7 in identification and focus, 19 in contrast and comparison, and 53 in deictics and locatives, as illustrated in Table 5.33.

**Table 5.33 A Summary of Different Types of Phrase Frames in the Structural Category**

| Length | Specification of Attributes | Identification and Focus | Contrast and Comparison | Deictics and Locatives | Vagueness Markers | Total |
|---|---|---|---|---|---|---|
| Four words | 21 | 7 | 19 | 53 | 0 | 100 |

#### 5.3.1.1 Specification of Attributes

In this type, phrase frames convey clarity, precision, and organization of the research to ensure that the study is communicated in a way that is logically organized, well-defined, and easy for the readers to follow (Walcott, 2021).

For the frequency of this type of phrase frames, as illustrated in Table 5.34, a total of 680 occurrences of phrase frames were reported. There were 432 occurrences of phrase frames that were similar and 260 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 21 phrase frames with 516 occurrences in OMS and 590 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *the * of the* appeared most frequently, with 208 times in OMS and 204 times in ODO.

**Table 5.34 A Summary of Frequency of Phrase frames in Specification of Attributes in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 229 | 208 | 204 | 184 | 45 |
| 2 | at the * of | 99 | 24 | 99 | 24 | 75 |
| 3 | in the * of | 62 | 58 | 62 | 58 | 4 |
| 4 | the * of this | 50 | 50 | 27 | 27 | 23 |
| 5 | the * between the | 33 | 33 | 33 | 33 | 0 |
| 6 | in * with the | 27 | 27 | 27 | 27 | 0 |
| 7 | the use of * | 24 | 19 | 13 | 13 | 11 |
| 8 | the * number of | 20 | 20 | 5 | 5 | 15 |
| 9 | to the * of | 20 | 20 | 20 | 20 | 0 |
| 10 | of the * teeth | 20 | 0 | 20 | 0 | 23 |
| 11 | and satisfaction with * | 16 | 0 | 16 | 0 | 19 |
| 12 | with * to the | 15 | 15 | 15 | 15 | 0 |
| 13 | and the * of | 11 | 11 | 11 | 11 | 0 |
| 14 | * of gingival recession | 9 | 0 | 9 | 0 | 12 |
| 15 | * the level of | 9 | 9 | 5 | 5 | 4 |
| 16 | * committee of the | 9 | 5 | 9 | 5 | 4 |
| 17 | the * committee of | 7 | 2 | 7 | 2 | 5 |
| 18 | vertical position of * | 5 | 0 | 5 | 0 | 8 |
| 19 | the time of * | 5 | 5 | 1 | 1 | 4 |
| 20 | number of * with | 5 | 5 | 1 | 1 | 4 |
| 21 | * and control groups | 5 | 5 | 1 | 1 | 4 |
| | **Total** | **680** | **516** | **590** | **432** | **260** |

For the number of fillers of each phrase frame, as illustrated in Table 5.35, a total of 76 fillers appeared in 21 phrase frames. Specifically, the result also showed 46 fillers that were similar and 34 fillers that were different between the two sub-disciplines. There were 59 fillers in OMS and 63 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *the * of the* occurred most frequently in the data with 30 fillers in the two sub-disciplines. A total of 25 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.35 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines**

| No. | P-frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 30 | 25 | 25 | 20 | 10 |
| 2 | in the * of | 9 | 8 | 9 | 8 | 1 |
| 3 | the * of this | 5 | 5 | 3 | 3 | 2 |
| 4 | at the * of | 4 | 1 | 4 | 1 | 3 |
| 5 | the * between the | 4 | 4 | 4 | 4 | 0 |
| 6 | the use of * | 3 | 2 | 2 | 1 | 2 |
| 7 | in * with the | 3 | 3 | 3 | 3 | 0 |
| 8 | to the * of | 3 | 3 | 3 | 3 | 0 |

| No. | P-frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 9 | the * number of | 2 | 2 | 0 | 0 | 2 |
| 10 | and the * of | 2 | 2 | 2 | 2 | 0 |
| 11 | the * committee of | 1 | 0 | 1 | 0 | 1 |
| 12 | * of gingival recession | 1 | 0 | 1 | 0 | 2 |
| 13 | with * to the | 1 | 1 | 1 | 1 | 0 |
| 14 | of the * teeth | 1 | 0 | 1 | 0 | 2 |
| 15 | * the level of | 1 | 1 | 0 | 0 | 1 |
| 16 | * committee of the | 1 | 0 | 1 | 0 | 1 |
| 17 | and satisfaction with * | 1 | 0 | 1 | 0 | 2 |
| 18 | vertical position of * | 1 | 0 | 1 | 0 | 2 |
| 19 | the time of * | 1 | 1 | 0 | 0 | 1 |
| 20 | number of * with | 1 | 1 | 0 | 0 | 1 |
| 21 | * and control groups | 1 | 0 | 1 | 0 | 1 |
| | **Total** | **76** | **59** | **63** | **46** | **34** |

To get an overview about the use of phrase frames in this type, Excerpts 5.29 and 5.30 below illustrate a phrase frame *the * of the* found in the RA Methods section in the two sub-disciplines of Dentistry.

**Exceprt 5.29**:

**The results of the** multivariate analysis are presented as the odds ratio (OR) and 95% confidence interval (CI). (OMS18)

**Exceprt 5.30**:

This is a standard statistical process in geometric morphometrics in order to be able to interpret **the results of the** data analyses. (ODO24)

### 5.3.1.2 Identification and Focus

Phrase frames in identification and fous are used to investigate and emphasize specific elements, concepts, or issues that are central to the research. These phrase frames help to direct the reader's attention to key aspects of the study and define important terms or topics. They serve to highlight what is being discussed, examined, or addressed in a particular section of the article.

For the frequency of this type of phrase frames, as illustrated in Table 5.36, a total of 102 occurrences of phrase frames were reported. There were 72 occurrences of phrase frames that were similar and 30 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 7 phrase frames with 81 occurrences in OMS and 93 occurrences in ODO were identified in the two sub-disciplines, which shows the more use of phrase frames in OMS than the ones in ODO. In this type, ** this study was* appeared most frequently, with 36 times in OMS and ODO.

**Table 5.36 Summary of Frequency of Phrase Frames in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * this study was | 36 | 36 | 36 | 36 | 0 |
| 2 | analyses were performed * | 17 | 11 | 17 | 11 | 6 |
| 3 | the * group was | 16 | 11 | 11 | 6 | 10 |
| 4 | * with and without | 14 | 9 | 14 | 9 | 5 |
| 5 | * of the study | 7 | 2 | 7 | 2 | 5 |
| 6 | * patients with a | 6 | 6 | 6 | 6 | 0 |
| 7 | were used * the | 6 | 6 | 2 | 2 | 4 |
| | **Total** | **102** | **81** | **93** | **72** | **30** |

For the number of fillers of each phrase frame, as illustrated in Table 5.37, a total of 22 fillers appeared in 7 phrase frames. Specifically, the result also showed 16 fillers that were similar and 6 fillers that were different between the two sub-disciplines. There were 18 fillers in OMS and 20 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *the * group was* occurred most frequently in the data with 4 fillers in the two sub-disciplines. A total of 3 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.37 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * group was | 4 | 3 | 3 | 2 | 2 |
| 2 | * this study was | 3 | 3 | 3 | 3 | 0 |
| 3 | * patients with a | 3 | 3 | 3 | 3 | 0 |
| 4 | analyses were performed * | 3 | 2 | 3 | 2 | 1 |
| 5 | were used * the | 3 | 3 | 2 | 2 | 1 |
| 6 | * of the study | 3 | 2 | 3 | 2 | 1 |
| 7 | * with and without | 3 | 2 | 3 | 2 | 1 |
| | **Total** | **22** | **18** | **20** | **16** | **6** |

To get an overview about the use of phrase frames in this type, Excerpts 5.31 and 5.32 below illustrate a phrase frame ** there was no* found in the RA Methods section in the two sub-disciplines of Dentistry.

**Excerpt 5.31:**

However, in the maxillary All-on-4 treatment concept (Nobel Biocare), it has been found **that there was no** significant difference in cumulative survival rate between implants inserted with < 30-Ncm torque or 30- to 50-Ncm torque. (OMS2)

มหาวิทยาลัยเทคโนโลยีสุรนารี

**Excerpt 5.32:**

The lack of significant increase in lower incisor inclination suggested **that there was no** dentoalveolar compensation in the skeletal correction of Class II malocclusion (3, 8). (ODO21)

### 5.3.1.3 Contrast and Comparison

Phrase frames in contrast and comparison are used to highlight differences, similarities, or relationships between ideas, theories, findings, or concepts. These phrase frames help convey how one element in the research relates to, differs from, or aligns with another. They are essential for illustrating how the current study compares with previous research, and how different variables or groups are contrasted.

For the frequency of this type of phrase frames, as illustrated in Table 5.38, a total of 273 occurrences of phrase frames were reported. There were 175 occurrences of phrase frames that were similar and 98 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 19 phrase frames with 207 occurrences in OMS and 235 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than the ones in ODO. In this type, ** significant difference between* appeared most frequently, with 30 times in OMS and ODO.

**Table 5.38 A Summary of Frequency of Phrase Frames in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * significant difference between | 30 | 30 | 30 | 30 | 0 |
| 2 | significant difference * the | 28 | 28 | 28 | 28 | 0 |
| 3 | was * statistically significant | 27 | 27 | 15 | 15 | 12 |
| 4 | * difference between the | 23 | 23 | 23 | 23 | 0 |
| 5 | * significant differences in | 22 | 22 | 22 | 22 | 0 |
| 6 | * between the groups | 11 | 1 | 11 | 1 | 10 |
| 7 | significant differences * the | 15 | 15 | 5 | 5 | 10 |
| 8 | statistically significant differences * | 15 | 8 | 15 | 8 | 7 |
| 9 | was a significant * | 13 | 13 | 9 | 9 | 4 |
| 10 | at the same * | 12 | 0 | 12 | 0 | 12 |
| 11 | at the * time | 12 | 12 | 12 | 12 | 0 |
| 12 | a significant difference * | 12 | 12 | 12 | 12 | 0 |
| 13 | was * in the | 10 | 1 | 10 | 1 | 9 |
| 14 | a * level of | 9 | 5 | 9 | 5 | 4 |
| 15 | difference between the * | 9 | 4 | 2 | 0 | 9 |
| 16 | difference was * significant | 8 | 2 | 8 | 2 | 6 |
| 17 | of * alveolar ridge | 6 | 1 | 6 | 1 | 5 |
| 18 | * for patients with | 6 | 2 | 1 | 0 | 6 |
| 19 | a high * of | 5 | 1 | 5 | 1 | 4 |
| | **Total** | **273** | **207** | **235** | **175** | **98** |

For the number of fillers of each phrase frame, as illustrated in Table 5.39, a total of 60 fillers appeared in 19 phrase frames. Specifically, the result also showed 45 fillers that were similar and 15 fillers that were different between the two sub-disciplines. There were 49 fillers in OMS and 56 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *was ** 

*in the* occurred most frequently in the data with 4 fillers in the two sub-disciplines. There were 2 fillers of this phrase frame in OMS and 4 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.39 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 4 | 2 | 4 | 2 | 2 |
| 2 | * significant difference between | 4 | 4 | 4 | 4 | 0 |
| 3 | was * statistically significant | 4 | 4 | 3 | 2 | 2 |
| 4 | a * level of | 4 | 3 | 4 | 3 | 1 |
| 5 | at the same * | 3 | 1 | 3 | 1 | 2 |
| 6 | difference was * significant | 3 | 2 | 3 | 2 | 1 |
| 7 | a high * of | 3 | 2 | 3 | 2 | 1 |
| 8 | was a significant * | 3 | 4 | 3 | 3 | 0 |
| 9 | of * alveolar ridge | 3 | 2 | 3 | 2 | 1 |
| 10 | at the * time | 3 | 3 | 3 | 3 | 0 |
| 11 | significant difference * the | 3 | 3 | 3 | 3 | 0 |
| 12 | * difference between the | 3 | 3 | 3 | 3 | 0 |
| 13 | * significant differences in | 3 | 3 | 3 | 3 | 0 |
| 14 | * for patients with | 3 | 2 | 2 | 2 | 1 |
| 15 | significant differences * the | 3 | 3 | 2 | 2 | 1 |
| 16 | statistically significant differences * | 3 | 2 | 3 | 2 | 1 |
| 17 | a significant difference * | 3 | 3 | 3 | 3 | 0 |
| 18 | difference between the * | 3 | 2 | 2 | 2 | 1 |
| 19 | * between the groups | 2 | 1 | 2 | 1 | 1 |
| | **Total** | **60** | **49** | **56** | **45** | **15** |

To get an overview about the use of phrase frames in this type, Excerpts 5.33 and 5.34 below illustrate a phrase frame *were * likely to* found in the RA Methods section in the two sub-disciplines of Dentistry.

**Excerpt 5.33:**

Compared to controls, cases **were more likely to** have smoked in their lifetime (18% vs 11.5%, P = .009), more likely to have higher prevalence of IBD (1.5% vs 0.02%, P = .059), and more likely to consume PPIs within 6 months of the implant surgery (40.0% vs 32.5%, P = .028). (OMS10)

**Excerpt 5.34:**

Those in clear aligners **were more likely to** be interested in using teledentistry, with 27% agreeing or strongly agreeing, compared with 18% of those in braces (P 5 0.0429). (ODO18)

#### 5.3.1.4 Deictics and Locatives

Phrase frames in deictics and locatives are used to indicate specific references in time, space, or context. They help guide the reader through the structure

of the research, identify relationships between various parts of the paper, and situate information in relation to the content being discussed. These devices are essential for providing clarity and precision in academic writing.

For the frequency of this type of phrase frames, as illustrated in Table 5.40, a total of 862 occurrences of phrase frames were reported. There were 139 occurrences of phrase frames that were similar and 723 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 53 phrase frames with 433 occurrences in OMS and 564 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than the ones in OMS. In this type, *in the * group* appeared most frequently, with 49 times in OMS and 156 in ODO.

**Table 5.40 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 205 | 49 | 156 | 0 | 205 |
| 2 | in the * area | 59 | 55 | 18 | 14 | 45 |
| 3 | on the * side | 33 | 29 | 18 | 14 | 19 |
| 4 | * the two groups | 28 | 28 | 28 | 28 | 0 |
| 5 | * the HPC line | 23 | 0 | 23 | 0 | 23 |
| 6 | * titanium base abutments | 19 | 19 | 0 | 0 | 19 |
| 7 | the early * dentition | 19 | 0 | 19 | 0 | 19 |
| 8 | the * dental arch | 19 | 0 | 19 | 0 | 19 |
| 9 | satisfaction with * aesthetics | 18 | 2 | 13 | 0 | 18 |
| 10 | during the * period | 17 | 8 | 6 | 0 | 17 |
| 11 | central and lateral * | 17 | 0 | 17 | 0 | 17 |
| 12 | of the mandibular * | 16 | 10 | 16 | 10 | 6 |
| 13 | in the * arch | 16 | 0 | 16 | 0 | 16 |
| 14 | * and lateral incisors | 16 | 0 | 16 | 0 | 16 |
| 15 | in the esthetic * | 15 | 15 | 0 | 0 | 15 |
| 16 | of the * lip | 15 | 15 | 6 | 6 | 9 |
| 17 | * the oral cavity | 15 | 15 | 10 | 10 | 5 |
| 18 | in the * analysis | 14 | 14 | 0 | 0 | 14 |
| 19 | * central and lateral | 14 | 0 | 14 | 0 | 14 |
| 20 | position of the * | 14 | 10 | 10 | 6 | 8 |
| 21 | * at the end | 13 | 9 | 1 | 0 | 13 |
| 22 | * the right side | 13 | 7 | 13 | 7 | 6 |
| 23 | * newly formed bone | 13 | 13 | 0 | 0 | 13 |
| 24 | to the * plane | 12 | 12 | 8 | 2 | 10 |
| 25 | of the * population | 12 | 4 | 12 | 4 | 8 |
| 26 | the * strong anchorage | 12 | 0 | 12 | 0 | 12 |
| 27 | * the early permanent | 11 | 0 | 11 | 0 | 11 |
| 28 | the * and control | 11 | 5 | 11 | 5 | 6 |
| 29 | * the facial midline | 10 | 0 | 10 | 0 | 10 |
| 30 | * of orthodontic treatment | 10 | 10 | 10 | 10 | 0 |
| 31 | abutments for the * | 9 | 9 | 0 | 0 | 9 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 32 | abutment for the * | 7 | 7 | 0 | 0 | 7 |
| 33 | of the * cavity | 8 | 8 | 0 | 0 | 8 |
| 34 | * clinical crown height | 8 | 0 | 8 | 0 | 8 |
| 35 | of the included * | 8 | 8 | 0 | 0 | 8 |
| 36 | the * third molar | 8 | 8 | 8 | 8 | 0 |
| 37 | of the * bone | 7 | 7 | 1 | 1 | 6 |
| 38 | by the * committee | 7 | 2 | 7 | 2 | 5 |
| 39 | of the cystic * | 7 | 7 | 0 | 0 | 7 |
| 40 | the * side was | 7 | 7 | 0 | 0 | 7 |
| 41 | * dental implant failure | 7 | 7 | 0 | 0 | 7 |
| 42 | the * position of | 7 | 0 | 7 | 0 | 7 |
| 43 | reliability of the * | 7 | 7 | 7 | 7 | 0 |
| 44 | * incisors and canines | 6 | 0 | 6 | 0 | 6 |
| 45 | in the * region | 5 | 1 | 1 | 0 | 5 |
| 46 | * of the cutting | 5 | 5 | 0 | 0 | 5 |
| 47 | by the institutional * | 5 | 5 | 5 | 5 | 0 |
| 48 | * the observation period | 5 | 1 | 1 | 0 | 5 |
| 49 | the * sample size | 5 | 5 | 5 | 0 | 5 |
| 50 | * of the anterior | 5 | 0 | 5 | 0 | 5 |
| 51 | face-to-face interaction with * | 5 | 0 | 5 | 0 | 5 |
| 52 | first or second * | 5 | 0 | 5 | 0 | 5 |
| 53 | bone * in the | 10 | 10 | 0 | 0 | 10 |
| | **Total** | **862** | **433** | **564** | **139** | **723** |

For the number of fillers of each phrase frame, as illustrated in Table 5.41, a total of 193 fillers appeared in 53 phrase frames. Specifically, the result also showed 86 fillers that were similar and 107 fillers that were different between the two sub-disciplines. There were 131 fillers in OMS and 140 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *in the * group* occurred most frequently in the data with 18 fillers in the two sub-disciplines. In this phrase frame, there were 8 fillers in OMS and 11 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.41 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 18 | 8 | 11 | 1 | 17 |
| 2 | in the * area | 9 | 8 | 4 | 3 | 6 |
| 3 | on the * side | 6 | 5 | 4 | 3 | 3 |
| 4 | during the * period | 5 | 3 | 3 | 1 | 4 |
| 5 | the * dental arch | 5 | 1 | 5 | 1 | 4 |
| 6 | to the * plane | 4 | 3 | 3 | 2 | 2 |
| 7 | in the * arch | 4 | 1 | 4 | 1 | 3 |
| 8 | position of the * | 4 | 2 | 3 | 2 | 2 |
| 9 | * titanium base abutments | 4 | 4 | 1 | 1 | 3 |
| 10 | the * strong anchorage | 4 | 1 | 4 | 2 | 2 |

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 11 | bone * in the | 4 | 4 | 1 | 1 | 3 |
| 12 | in the esthetic * | 3 | 3 | 1 | 3 | 0 |
| 13 | of the * cavity | 3 | 3 | 1 | 1 | 2 |
| 14 | in the * region | 3 | 2 | 2 | 2 | 1 |
| 15 | of the * bone | 3 | 3 | 2 | 2 | 1 |
| 16 | of the * lip | 3 | 3 | 2 | 2 | 1 |
| 17 | * the facial midline | 3 | 1 | 3 | 1 | 2 |
| 18 | * of orthodontic treatment | 3 | 3 | 3 | 3 | 0 |
| 19 | * at the end | 3 | 2 | 2 | 2 | 1 |
| 20 | * of the cutting | 3 | 3 | 1 | 1 | 2 |
| 21 | by the * committee | 3 | 2 | 3 | 2 | 1 |
| 22 | by the institutional * | 3 | 3 | 3 | 3 | 0 |
| 23 | * the right side | 3 | 2 | 3 | 2 | 1 |
| 24 | * the observation period | 3 | 2 | 2 | 2 | 1 |
| 25 | of the mandibular * | 3 | 2 | 3 | 2 | 1 |
| 26 | * the oral cavity | 3 | 3 | 2 | 2 | 1 |
| 27 | in the * analysis | 3 | 3 | 1 | 1 | 2 |
| 28 | of the * population | 3 | 2 | 3 | 2 | 1 |
| 29 | * the early permanent | 3 | 1 | 3 | 1 | 2 |
| 30 | * newly formed bone | 3 | 3 | 1 | 1 | 2 |
| 31 | * clinical crown height | 3 | 1 | 3 | 1 | 2 |
| 32 | * the HPC line | 3 | 1 | 3 | 1 | 2 |
| 33 | satisfaction with * aesthetics | 3 | 2 | 2 | 2 | 1 |
| 34 | the * sample size | 3 | 3 | 3 | 3 | 0 |
| 35 | of the cystic * | 3 | 3 | 1 | 1 | 2 |
| 36 | of the included * | 3 | 3 | 1 | 1 | 2 |
| 37 | the * side was | 3 | 3 | 1 | 1 | 2 |
| 38 | * dental implant failure | 3 | 3 | 1 | 1 | 2 |
| 39 | central and lateral * | 3 | 1 | 3 | 1 | 2 |
| 40 | * incisors and canines | 3 | 1 | 3 | 1 | 2 |
| 41 | * and lateral incisors | 3 | 1 | 3 | 1 | 2 |
| 42 | * of the anterior | 3 | 1 | 3 | 1 | 2 |
| 43 | the * position of | 3 | 1 | 3 | 1 | 2 |
| 44 | face-to-face interaction with * | 3 | 1 | 3 | 1 | 2 |
| 45 | * central and lateral | 3 | 1 | 3 | 1 | 2 |
| 46 | reliability of the * | 3 | 3 | 3 | 3 | 0 |
| 47 | abutments for the * | 3 | 3 | 1 | 1 | 2 |
| 48 | abutment for the * | 3 | 3 | 1 | 1 | 2 |
| 49 | the * third molar | 3 | 3 | 3 | 3 | 0 |
| 50 | first or second * | 3 | 1 | 3 | 1 | 2 |
| 51 | the early * dentition | 3 | 1 | 3 | 1 | 2 |
| 52 | the * and control | 3 | 2 | 3 | 2 | 1 |
| 53 | * the two groups | 3 | 3 | 3 | 3 | 0 |
| | **Total** | **193** | **131** | **140** | **86** | **107** |

To get an overview about the use of phrase frames in this type, Excerpts 5.35 and 5.36 below illustrate a phrase frame *in the * group* found in the RA Methods section in the two sub-disciplines of Dentistry.

มหาวิทยาลัยเทคโนโลยีสุรนารี

**Excerpt 5.35:**

Similarly, the mean difference in linear vertical bone height palatally was 1.43 ± 1.04 mm **in the control group** and 0.35 ± 0.3 mm in the test group. (OMS27)

**Excerpt 5.36:**

For AL and AP assessment, the results showed that there were significant differences between the three examined groups: these were lesser in the unilateral and bilateral groups than **in the control group** ($p<0.001$). (ODO6)

Taken together, the use of referential phrase frames in the English Dentistry Methods section is vital for maintaining clarity and replicability in scientific writing. It helps to break down complex procedures into easily digestible steps, ensuring that other researchers can replicate or build upon the work. These phrases also contribute to a formal, technical tone that is required in scientific discourse. By adhering to these standardized expressions, the researchers ensure that their study is described accurately and comprehensively, fostering reliability and consistency in the scientific community. Besides, the use of referential phrase frames enhances the precision and transparency of the research, making it more accessible to other professionals in the field.

#### 5.2.2.2 Stance Phrase Frames

In the English Dentistry RAs, the use of stance phrase frames implies the author's position or attitude toward the research procedures and decisions made during the study. These phrases reflect how the author frames or justifies the choices they made regarding the methodology, providing insights into the rationale behind certain techniques or materials used. Stance phrases help convey the author's level of confidence, certainty, or caution in presenting their methods and findings.

In this type, phrase frames are classified into 6 types, i.e., hedges, epistemic, obligation and directive, ability and possibility, and evaluation, and intention/volition, prediction (Simpson-Vlach & Ellis, 2010). However, the findings revealed that only hedges were found in the current study.

For the frequency of this type of phrase frames, as illustrated in Table 5.42, a total of 148 occurrences of phrase frames were reported. There were 109 occurrences of phrase frames that were similar and 39 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 8 phrase frames with 125 occurrences in OMS and 132 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than the ones in ODO. In this

type, *was * in the* appeared most frequently, with 25 times in OMS and 32 times in ODO.

**Table 5.42 A Summary of Frequency of Phrase Frames in Epistemic in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 39 | 25 | 32 | 18 | 21 |
| 2 | were * in the | 32 | 28 | 28 | 24 | 8 |
| 3 | * was approved by | 21 | 21 | 21 | 21 | 0 |
| 4 | was * as a | 14 | 14 | 14 | 14 | 0 |
| 5 | was to * the | 13 | 13 | 13 | 13 | 0 |
| 6 | were * from the | 11 | 6 | 11 | 6 | 5 |
| 7 | was * to assess | 11 | 11 | 11 | 11 | 0 |
| 8 | was * with the | 7 | 7 | 2 | 2 | 5 |
| | **Total** | **148** | **125** | **132** | **109** | **39** |

For the number of fillers of each phrase frame, as illustrated in Table 5.43, a total of 32 fillers appeared in 8 phrase frames. Specifically, the result also showed 25 fillers that were similar and 7 fillers that were different between the two sub-disciplines. There were 28 fillers in OMS and 29 fillers in ODO, which shows the less use of fillers than the ones in ODO. The fillers of the phrase frame *was * in the* occurred most frequently in the data with 7 fillers in the two sub-disciplines. In this phrase frame, there were 5 fillers in OMS and 6 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.43 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 7 | 5 | 6 | 4 | 3 |
| 2 | were * in the | 6 | 5 | 5 | 4 | 2 |
| 3 | was * as a | 4 | 4 | 4 | 4 | 0 |
| 4 | were * from the | 3 | 2 | 3 | 2 | 1 |
| 5 | was to * the | 3 | 3 | 3 | 3 | 0 |
| 6 | was * to assess | 3 | 3 | 3 | 3 | 0 |
| 7 | was * with the | 3 | 3 | 2 | 2 | 1 |
| 8 | * was approved by | 3 | 3 | 3 | 3 | 0 |
| | **Total** | **32** | **28** | **29** | **25** | **7** |

To get an overview about the use of phrase frames in this type, Excerpts 5.37 and 5.38 below illustrate a phrase frame *be * by the* found in the RA Methods section in the two sub-disciplines of Dentistry.

**Excerpt 5.37:**

The results of the present study provide longer follow-up when compared to the study by LeBlanc et al., and could **be explained by the** effect of the TLA, since the anterior oral CTC are associated with the placement of the tongue. (OMS30)

**Excerpt 5.38:**

The differences in the accuracy of torque and linear intra-arch measurements can **be explained by the** different root morphology of the various tooth groups analysed (single-rooted teeth are easier to move than the multi-rooted teeth) [29] and by the different bone anatomy of the various arch sectors [30]. (ODO10)

Taken together, the use of stance phrase frames adds a layer of academic formality and transparency to the English Dentistry RAs Methods section, allowing the authors to express their reasoning behind specific methodological decisions. By employing such language, authors can indicate their awareness of the broader context of their research and the factors influencing their methodological choices. Besides, stance phrase frames provide clarity about the researcher's perspective, helping readers understand not only what was done, but also why certain decisions were made.

**5.2.2.3 Discourse Organizing Phrase Frames**

In the English Dentistry RA Methods section, the use of discourse organizing phrase frames implies a strategy to structure and guide the flow of information in a clear and logical manner. These frames help to organize the content, making it easier for readers to follow the sequence of the study's procedures. Discourse organizing phrase frames act as signposts, signaling transitions between different stages or aspects of the methodology, such as the design, sample collection, or data analysis.

Phrase frames in this type help organize the content, making the article easier for readers to follow by clearly marking relationships between ideas, sections, and arguments (Sinclair & Mauranen 2006; Bondi, 2010; Walcott, 2021; Chen & Zhang, 2025). In the discourse organizing phrase frames, there are 4 sub-types, i.e. metadiscourse and textual reference, topic introduction and focus, topic elaboration, and discourse markers (Simpson-Vlach & Ellis, 2010). However, only 3 in metadiscourse and textual reference, 10 in topic elaboration, and 6 in discourse markers were found in the two sub-disciplines of Dentistry. No phrase frames were found in topic introduction and focus, as illustrated in Table 5.44.

**Table 5.44 A Summary of Different Types of Phrase Frames in the Discourse Organizing Phrase Frames**

| Length | Metadiscourse and textual reference | Topic introduction and focus | Topic elaboration | Discourse markers | Total |
|---|---|---|---|---|---|
| Four words | 3 | 0 | 10 | 6 | 19 |

#### 5.3.3.1 Metadiscourse and Textual Reference

Phrase frames in metadiscourse and textual reference are used to help structure the text and guide the reader through the argument, showing relationships between ideas, sections, and sources. These phrase frames contribute to the clarity, coherence, and organization of the RAs, ensuring that the readers understand the flow of the argument and how various pieces of information are interconnected.

For the frequency of this type of phrase frames, as illustrated in Table 5.45, a total of 44 occurrences of phrase frames were reported. There were 28 occurrences of phrase frames that were similar and 16 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 3 phrase frames with 32 occurrences in OMS and 42 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than the ones in ODO. In this type, *are * in table* appeared most frequently, with 25 times in OMS and ODO.

**Table 5.45 A Summary of Frequency of Phrase Frames in Metadiscourse and Textual reference in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | are * in table | 25 | 25 | 25 | 25 | 0 |
| 2 | approved by the * | 13 | 3 | 13 | 3 | 10 |
| 3 | is * in table | 6 | 4 | 4 | 0 | 6 |
| | **Total** | **44** | **32** | **42** | **28** | **16** |

For the number of fillers of each phrase frame, as illustrated in Table 5.46, a total of 12 fillers appeared in 3 phrase frames. Specifically, the result also showed 6 fillers that were similar and 3 fillers that were different between the two sub-disciplines. There were 9 fillers in OMS and 11 fillers in ODO, which shows the less use of fillers than the ones in ODO. The fillers of the phrase frame *are * in the* occurred most frequently in the data with 5 fillers in the two sub-disciplines. In this phrase frame, there were 5 fillers in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.46 A Summary of Number of Fillers in Metadiscourse and Textual Reference in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | are * in table | 5 | 5 | 5 | 5 | 0 |
| 2 | approved by the * | 4 | 2 | 4 | 2 | 2 |
| 3 | is * in table | 3 | 2 | 2 | 2 | 1 |
| | **Total** | **12** | **9** | **11** | **6** | **3** |

To get an overview about the use of phrase frames in this type, Excerpts 5.39 and 5.40 below illustrate phrase frame ** shown in table* found in the RA Methods section in the two sub-disciplines of Dentistry.

**Excerpt 5.39:**

All patients underwent curettage surgical treatment. Patients with systemic diseases or with insufficient spiral CT images or with incomplete histopathological or other clinical data were excluded from the study. The basic information of the patients **is shown in Table** 1. (OMS26)

**Excerpt 5.40:**

**As shown in Table** 1, the vertical position of the maxillary central incisor was changed (intruded or extruded) with 0.5 mm increments according to the reference gingival line between the central incisor and canine, which resulted in five images for each woman in a fullface view, yielding a total of 15 images. (ODO7)

### 5.3.3.2 Topic Elaboration

Phrase frames in topic elaboration used to clarify a particular topic or concept introduced in RA sections. These phrase frames help develop the discussion around a key point or subject, providing more detail, offering examples, explaining significance, or elaborating on relationships between ideas. The purpose of topic elaboration is to ensure that the reader fully understands the importance of the topic, its context, and how it connects to other ideas in the study.

For the frequency of this type of phrase frames, as illustrated in Table 5.47, a total of 220 occurrences of phrase frames were reported. There were 196 occurrences of phrase frames that were similar and 24 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 10 phrase frames with 196 occurrences in OMS and 220 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than the ones in ODO. In this type, ** of this study* appeared most frequently, with 26 times in OMS and 46 times in ODO.

**Table 5.47 A Summary of Frequency of Phrase Frames in Topic Elaboration in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * of this study | 46 | 26 | 46 | 26 | 20 |
| 2 | was used to * | 46 | 46 | 46 | 46 | 0 |
| 3 | this study * to | 29 | 29 | 29 | 29 | 0 |
| 4 | * in this study | 29 | 29 | 29 | 29 | 0 |
| 5 | study was to * | 17 | 17 | 17 | 17 | 0 |
| 6 | * study was approved | 16 | 16 | 16 | 16 | 0 |
| 7 | * used to compare | 13 | 13 | 13 | 13 | 0 |
| 8 | were used to * | 10 | 10 | 10 | 10 | 0 |
| 9 | analysis was * to | 9 | 9 | 9 | 9 | 0 |
| 10 | in order to * | 5 | 1 | 5 | 1 | 4 |
| | **Total** | **220** | **196** | **220** | **196** | **24** |

For the number of fillers of each phrase frame, as illustrated in Table 5.48, a total of 41 fillers appeared in 10 phrase frames. Specifically, the result also showed 37 fillers that were similar and 4 fillers that were different between the two sub-disciplines. There were 37 fillers in OMS and 41 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *was used to* * occurred most frequently in the data with 8 fillers in the two sub-disciplines. A total of 8 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.48 A Summary of Number of Fillers in Topic Elaboration in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 8 | 8 | 8 | 8 | 0 |
| 2 | * of this study | 7 | 4 | 7 | 4 | 3 |
| 3 | study was to * | 4 | 4 | 4 | 4 | 0 |
| 4 | * study was approved | 4 | 4 | 4 | 4 | 0 |
| 5 | in order to * | 3 | 2 | 3 | 2 | 1 |
| 6 | were used to * | 3 | 3 | 3 | 3 | 0 |
| 7 | analysis was * to | 3 | 3 | 3 | 3 | 0 |
| 8 | * used to compare | 3 | 3 | 3 | 3 | 0 |
| 9 | this study * to | 3 | 3 | 3 | 3 | 0 |
| 10 | * in this study | 3 | 3 | 3 | 3 | 0 |
| | **Total** | **41** | **37** | **41** | **37** | **4** |

To get an overview about the use of phrase frames in this type, Excerpts 5.41 and 5.42 below illustrate a phrase frame *in order to* * found in the RA Methods section in the two sub-disciplines of Dentistry.

**Excerpt 5.41:**

The cutting guides were designed with an arch **in order to provide** a better fit to the mandible, thereby minimizing the degrees of freedom in placement. (OMS11)

**Excerpt 5.42:**

Also, eight additional cephalometric variables were digitized for each patient at T1, T2, and T3 **in order to provide** data on the dento-skeletal correction obtained (Figures 1 and 2). (ODO21)

#### 5.3.3.3 Discourse Markers

Phrase frames in discourse markers are used to manage the flow of information, signal relationships between ideas, and guide the reader through the RA sections. These markers help organize the content and clarify the relationships between different arguments or ideas. Phrase frames in discourse markers act as cues that guide the reader on how to interpret the information in the RAs, indicating connections, transitions, emphasis, contrast, or the introduction of new points.

For the frequency of this type of phrase frames, as illustrated in Table 5.49, a total of 94 occurrences of phrase frames were reported. There were 67 occurrences of phrase frames that were similar and 27 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 6 phrase frames with 80 occurrences in OMS and 73 occurrences in ODO were identified in the two sub-disciplines, which shows the more use of phrase frames in OMS than the ones in ODO. In this type, *with the * of* appeared most frequently, with 31 times in OMS and 27 times in ODO.

**Table 5.49 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | with the * of | 31 | 31 | 27 | 27 | 4 |
| 2 | of the * and | 25 | 11 | 17 | 11 | 14 |
| 3 | on the * of | 15 | 15 | 10 | 10 | 5 |
| 4 | * the number of | 11 | 11 | 11 | 11 | 0 |
| 5 | by the * of | 6 | 6 | 6 | 6 | 0 |
| 6 | with a * of | 6 | 6 | 2 | 2 | 4 |
| | **Total** | **94** | **80** | **73** | **67** | **27** |

For the number of fillers of each phrase frame, as illustrated in Table 5.50, a total of 27 fillers appeared in 6 phrase frames. Specifically, the result also showed 22 fillers that were similar and 5 fillers that were different between the two sub-disciplines. There were 24 fillers in OMS and ODO, which shows the equal use of

fillers in the two sub-disciplines. The fillers of the phrase frame *with the * of* occurred most frequently in the data with 7 fillers in the two sub-disciplines. In this phrase frame, there were 7 fillers in OMS and 6 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.50 A Summary of Number of Fillers in Discourse Markers in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | with the * of | 7 | 7 | 6 | 6 | 1 |
| 2 | of the * and | 6 | 3 | 5 | 3 | 3 |
| 3 | on the * of | 4 | 4 | 3 | 3 | 1 |
| 4 | * the number of | 4 | 4 | 4 | 4 | 0 |
| 5 | by the * of | 3 | 3 | 3 | 3 | 0 |
| 6 | with a * of | 3 | 3 | 3 | 3 | 0 |
| | **Total** | **27** | **24** | **24** | **22** | **5** |

To get an overview about the use of phrase frames in this type, Excerpts 5.43 and 5.44 below illustrate a phrase frame *with the * of* found in the RA Methods section in the two sub-disciplines of Dentistry.

**Excerpt 5.43:**

In the present study, it was observed that the residual graft particles were in contact with the newly formed bone after 10 weeks. The integration of residual graft particles with newly formed bone was consistent **with the results of** previous studies.6,25 (OMS3)

**Excerpt 5.44:**

This accords **with the results of** shortterm studies that compared the effects of orthodontic treatment with and without extractions (15,16,27). (ODO27)

Taken together, the use of discourse organizing phrase frames in the English Dentistry RA Methods section also reflects the importance of clarity and logical progression in scientific writing (Cheng & Zhang, 2025). These phrase frames help break down complex procedures into manageable parts, creating a smoother reading experience and reducing the cognitive load on the reader. They are essential for enhancing the transparency of the research process and ensuring that other researchers can replicate or assess the methodology with ease. Besides, discourse organizing phrase frames contribute to the overall clarity, coherence, and logical structure of the Methods section, ensuring that the research is both comprehensible and accessible to the academic community.

## 5.3 Phrase Frames of the Results Section

### 5.3.1 Results and Discussion of Phrase Frames in the English Dentistry RA Results Sections from the Analysis of Structural Categories

In this section, 30% of phrase frames were selected for inter-rater reliability based on the stratified and random selection. They were coded independently by the researcher and an invited coder. The results showed a high consistency of the analysis (90.90% in verb-based phrase frames, 95.69% in other-content-word phrase frames, 100% in function-word phrase frames) between the 2 coders in inter-rater agreement as illustrated in Table 5.51.

**Table 5.51 The Inter-Rater Agreement of Phrase Frames in the English Dentistry RA Results Section in the Structural Categories**

| Categories | Coded Unit | Agreed Codings | Different Codings | Agreement Percentage |
|---|---|---|---|---|
| Verb-based phrase frames | 44 | 40 | 4 | 90.90 |
| Other-content-word phrase frames | 93 | 88 | 4 | 95.69 |
| Function-word phrase frames | 19 | 19 | 0 | 100 |
| Total | 151 | 147 | | |

According to the structural categories of Gray and Biber (2013), the analysis revealed 3 types of phrase frames. In total, there were 147 phrase frames, including 40 in verb-based phrase frames, 88 in other-content-word phrase frames, and 19 in function-word phrase frames, in the two sub-disciplines of Dentistry, as illustrated in Figure 5.5. These findings show the popularity of other-content-word phrase frames in the English Dentistry RA Results section.

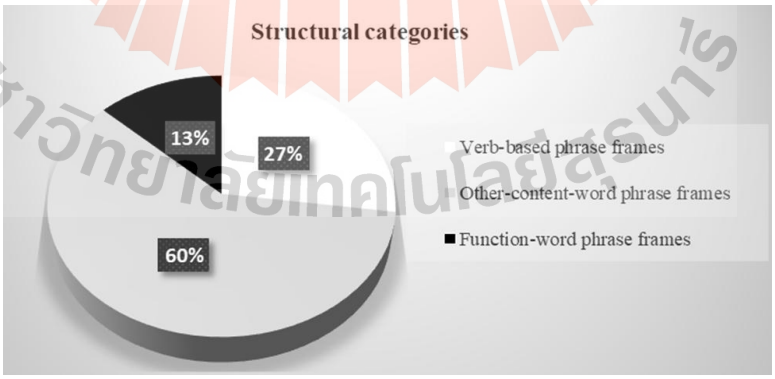



**Figure 5.4 Distribution of Phrase Frames in the English Dentistry RA Results Sections from the Structural Categories**

#### 5.3.1.1 Verb-based Phrase Frames

Verb-based phrase frames are essential tools for conveying research findings clearly and objectively (Gray and Biber, 2013). In the RA Results section in general, these frames help describe the actions or processes that led to the observed outcomes. By using these standardized verbs, authors can present the results of their studies in a way that is precise and free from personal interpretation, ensuring that the focus remains on the data itself rather than subjective analysis.

For the frequency of this type of phrase frames, as illustrated in Table 5.52, a total of 1248 occurrences of phrase frames were reported. There were 1069 occurrences of phrase frames that were similar and 179 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 40 phrase frames with 1130 occurrences in OMS and 1187 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *was used to* * appeared most frequently, with 61 times in OMS and ODO, which indicates a similarity between the two sub-disciplines of Dentistry.

**Table 5.52 A Summary of Phrase Frames in the Verb-based Category in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 61 | 61 | 61 | 61 | 0 |
| 2 | there was no * | 58 | 58 | 58 | 58 | 0 |
| 3 | was * in the | 54 | 40 | 47 | 33 | 21 |
| 4 | * this study was | 51 | 51 | 51 | 51 | 0 |
| 5 | were * in the | 47 | 43 | 43 | 39 | 8 |
| 6 | was * statistically significant | 42 | 42 | 30 | 30 | 12 |
| 7 | are * in table | 40 | 40 | 40 | 40 | 0 |
| 8 | was no significant * | 38 | 38 | 31 | 31 | 7 |
| 9 | be * to the | 36 | 36 | 36 | 36 | 0 |
| 10 | * found in the | 33 | 23 | 33 | 23 | 10 |
| 11 | was significantly * than | 32 | 32 | 32 | 32 | 0 |
| 12 | the * group was | 31 | 26 | 26 | 21 | 10 |
| 13 | * difference was found | 31 | 31 | 31 | 31 | 0 |
| 14 | significant differences were * | 30 | 19 | 30 | 19 | 11 |
| 15 | * significant differences were | 29 | 19 | 29 | 19 | 10 |
| 16 | was * as a | 29 | 29 | 29 | 29 | 0 |
| 17 | * shown in table | 29 | 24 | 29 | 24 | 5 |
| 18 | tipping of the * | 28 | 12 | 28 | 12 | 16 |
| 19 | was a significant * | 28 | 28 | 24 | 24 | 4 |
| 20 | no significant difference * | 28 | 28 | 28 | 28 | 0 |
| 21 | * used to compare | 28 | 28 | 28 | 28 | 0 |
| 22 | was significantly greater * | 27 | 27 | 27 | 27 | 0 |
| 23 | it has been * | 27 | 27 | 27 | 27 | 0 |
| 24 | compared with the * | 27 | 27 | 27 | 27 | 0 |
| 25 | * tipping of the | 26 | 12 | 26 | 12 | 14 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 26 | differences were found * | 26 | 26 | 26 | 26 | 0 |
| 27 | were * from the | 26 | 21 | 26 | 21 | 5 |
| 28 | was * to assess | 26 | 26 | 26 | 26 | 0 |
| 29 | was * in the | 25 | 16 | 25 | 16 | 9 |
| 30 | were * between the | 25 | 25 | 25 | 25 | 0 |
| 31 | has been * that | 25 | 25 | 25 | 25 | 0 |
| 32 | were used to * | 25 | 25 | 25 | 25 | 0 |
| 33 | differences were * between | 24 | 24 | 24 | 24 | 0 |
| 34 | analysis was * to | 24 | 24 | 24 | 24 | 0 |
| 35 | were * likely to | 23 | 19 | 23 | 19 | 4 |
| 36 | difference was * significant | 23 | 17 | 23 | 17 | 6 |
| 37 | * there was no | 22 | 22 | 18 | 18 | 4 |
| 38 | the * side was | 22 | 22 | 12 | 12 | 10 |
| 39 | were used * the | 21 | 21 | 17 | 17 | 4 |
| 40 | is * in table | 21 | 16 | 17 | 12 | 9 |
| | **Total** | **1248** | **1130** | **1187** | **1069** | **179** |

For the number of fillers of each phrase frame, as illustrated in Table 5.53, a total of 225 fillers appeared in 40 phrase frames. Specifically, the result also showed 196 fillers that were similar and 29 fillers that were different between the two sub-disciplines. There were 205 fillers in OMS and 215 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *was used to* * occurred most frequently in the data with 10 fillers in the two sub-disciplines. A total of 10 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.53 A Summary of Fillers of Phrase Frames in the Verb-based Category in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 10 | 10 | 10 | 10 | 0 |
| 2 | was * in the | 9 | 7 | 8 | 6 | 3 |
| 3 | were * in the | 8 | 7 | 7 | 6 | 2 |
| 4 | tipping of the * | 7 | 3 | 7 | 3 | 4 |
| 5 | are * in table | 7 | 7 | 7 | 7 | 0 |
| 6 | the * group was | 6 | 5 | 5 | 4 | 2 |
| 7 | * tipping of the | 6 | 3 | 6 | 3 | 3 |
| 8 | was significantly * than | 6 | 6 | 6 | 6 | 0 |
| 9 | was * in the | 6 | 4 | 6 | 4 | 2 |
| 10 | no significant difference * | 4 | 4 | 4 | 4 | 0 |
| 11 | there was no * | 6 | 6 | 6 | 6 | 0 |
| 12 | was * statistically significant | 6 | 5 | 4 | 5 | 1 |
| 13 | be * to the | 6 | 6 | 6 | 6 | 0 |
| 14 | was * as a | 6 | 6 | 6 | 6 | 0 |
| 15 | * found in the | 6 | 5 | 6 | 5 | 1 |
| 16 | * shown in table | 6 | 5 | 6 | 5 | 1 |
| 17 | * there was no | 5 | 5 | 4 | 4 | 1 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 18 | * this study was | 5 | 5 | 5 | 5 | 0 |
| 19 | were used * the | 5 | 5 | 4 | 4 | 1 |
| 20 | were * likely to | 5 | 4 | 5 | 4 | 1 |
| 21 | difference was * significant | 5 | 4 | 5 | 4 | 1 |
| 22 | was significantly greater * | 5 | 5 | 5 | 5 | 0 |
| 23 | * difference was found | 5 | 5 | 5 | 5 | 0 |
| 24 | was a significant * | 5 | 6 | 5 | 5 | 0 |
| 25 | differences were found * | 5 | 5 | 5 | 5 | 0 |
| 26 | was no significant * | 5 | 5 | 4 | 4 | 1 |
| 27 | significant differences were * | 5 | 4 | 5 | 4 | 1 |
| 28 | * significant differences were | 5 | 4 | 5 | 4 | 1 |
| 29 | differences were * between | 5 | 5 | 5 | 5 | 0 |
| 30 | the * side was | 5 | 5 | 3 | 3 | 2 |
| 31 | it has been * | 5 | 5 | 5 | 5 | 0 |
| 32 | be * by the | 5 | 5 | 5 | 5 | 0 |
| 33 | were * from the | 5 | 4 | 5 | 4 | 1 |
| 34 | were * between the | 5 | 5 | 5 | 5 | 0 |
| 35 | was * to assess | 5 | 5 | 5 | 5 | 0 |
| 36 | has been * that | 5 | 5 | 5 | 5 | 0 |
| 37 | compared with the * | 5 | 5 | 5 | 5 | 0 |
| 38 | were used to * | 5 | 5 | 5 | 5 | 0 |
| 39 | analysis was * to | 5 | 5 | 5 | 5 | 0 |
| 40 | * used to compare | 5 | 5 | 5 | 5 | 0 |
| | **Total** | **225** | **205** | **215** | **196** | **29** |

For an overview of the use of phrase frames in this type, Excerpts 5.45 and 5.46 below illustrate a phrase frame *were * in the* found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.45:**

Subjects who met the inclusion and exclusion criteria (Fig. 1) **were included in the** retrospective study cohort, which contained BMS with no mandibular setbacks, performed by two surgeons (J.T. and J.I.) in 2012-2014. (OMS25)

**Excerpt 5.46:**

Finally, 628 patients **were included in the** study after the exclusion of 69 patients who were not under active treatment, and the medical records were reviewed for data extraction independently by 2 researchers (J.X. and Y.L.X.) before integration into the final database used for analysis. (ODO15)

In conclusion, verb-based phrase frames are vital for ensuring the clarity, precision, and objectivity of the Results section. They help establish logical connections between variables and guide the reader through the data in a structured manner. By using these frames consistently, researchers can effectively communicate

their findings, maintaining both transparency and coherence, which is crucial for the reader's understanding of the research outcomes.

**5.3.1.2 Other-content-word Phrase Frames**

Other-content-word phrase frames (such as nouns, adjectives, or adverbs) also play a significant role in presenting research findings with clarity and precision (Gray & Biber, 2013). In the RA Results section in general, nouns help specify the type of result being observed, while adjectives provide further context about the intensity or degree of the observed effects. By incorporating these phrase frames, authors can offer a more detailed description of their findings, ensuring that the reader understands not just what occurred, but the magnitude and relevance of the results.

For the frequency of this type of phrase frames, as illustrated in Table 5.54, a total of 2916 occurrences of phrase frames were reported. There were 1723 occurrences of phrase frames that were similar and 1193 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 89 phrase frames with 2306 occurrences in OMS and 2337 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *in the *group* appeared most frequently, with 64 times in OMS and 171 times in ODO.

**Table 5.54 A Summary of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 220 | 64 | 171 | 12 | 208 |
| 2 | in the * study | 131 | 131 | 24 | 24 | 107 |
| 3 | in the * area | 74 | 70 | 33 | 29 | 45 |
| 4 | * soft tissue recession | 57 | 53 | 16 | 12 | 45 |
| 5 | there * no significant | 56 | 56 | 56 | 56 | 0 |
| 6 | no significant * between | 48 | 48 | 48 | 48 | 0 |
| 7 | on the * side | 48 | 44 | 33 | 29 | 19 |
| 8 | * significant difference between | 45 | 45 | 45 | 45 | 0 |
| 9 | * in this study | 44 | 44 | 44 | 44 | 0 |
| 10 | no significant differences * | 43 | 43 | 43 | 43 | 0 |
| 11 | significant difference * the | 43 | 43 | 43 | 43 | 0 |
| 12 | * the two groups | 43 | 43 | 43 | 43 | 0 |
| 13 | no significant difference * | 42 | 42 | 42 | 42 | 0 |
| 14 | the use of * | 39 | 34 | 28 | 28 | 11 |
| 15 | * significant difference in | 38 | 38 | 31 | 31 | 7 |
| 16 | * the HPC line | 38 | 12 | 38 | 12 | 26 |
| 17 | * significant differences in | 37 | 37 | 37 | 37 | 0 |
| 18 | a significant * in | 36 | 36 | 29 | 29 | 7 |
| 19 | the * number of | 35 | 35 | 20 | 20 | 15 |
| 20 | of the * teeth | 35 | 12 | 35 | 12 | 23 |
| 21 | * titanium base abutments | 34 | 34 | 12 | 12 | 22 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 22 | the * dental arch | 34 | 12 | 34 | 12 | 22 |
| 23 | satisfaction with * aesthetics | 33 | 17 | 28 | 12 | 21 |
| 24 | * one of the | 32 | 32 | 32 | 32 | 0 |
| 25 | during the * period | 32 | 23 | 21 | 12 | 20 |
| 26 | * titanium base abutment | 32 | 32 | 12 | 12 | 20 |
| 27 | central and lateral * | 32 | 12 | 32 | 12 | 20 |
| 28 | and satisfaction with * | 31 | 12 | 31 | 12 | 19 |
| 29 | in the * arch | 31 | 12 | 31 | 12 | 19 |
| 30 | * and lateral incisors | 31 | 12 | 31 | 12 | 19 |
| 31 | * significant correlation between | 30 | 30 | 24 | 24 | 6 |
| 32 | * statistically significant difference | 30 | 30 | 12 | 12 | 18 |
| 33 | significant differences * the | 30 | 30 | 20 | 20 | 10 |
| 34 | statistically significant differences * | 30 | 23 | 30 | 23 | 7 |
| 35 | of the * lip | 30 | 30 | 21 | 21 | 9 |
| 36 | in the * analysis | 29 | 29 | 12 | 12 | 17 |
| 37 | position of the * | 29 | 25 | 25 | 21 | 8 |
| 38 | the quality of * | 29 | 24 | 17 | 12 | 17 |
| 39 | be * by the | 28 | 28 | 28 | 28 | 0 |
| 40 | * at the end | 28 | 24 | 16 | 12 | 16 |
| 41 | * the right side | 28 | 22 | 28 | 22 | 6 |
| 42 | the lower * teeth | 28 | 12 | 28 | 12 | 16 |
| 43 | a significant * between | 27 | 27 | 21 | 21 | 6 |
| 44 | * differences between the | 27 | 27 | 27 | 27 | 0 |
| 45 | a significant difference * | 27 | 27 | 27 | 27 | 0 |
| 46 | to the * plane | 27 | 27 | 23 | 17 | 10 |
| 47 | of the * population | 27 | 19 | 27 | 19 | 8 |
| 48 | the * strong anchorage | 27 | 12 | 27 | 12 | 15 |
| 49 | * between the groups | 26 | 16 | 26 | 16 | 10 |
| 50 | * the early permanent | 26 | 12 | 26 | 12 | 14 |
| 51 | the * and control | 26 | 20 | 26 | 20 | 6 |
| 52 | the number of * | 25 | 25 | 17 | 17 | 8 |
| 53 | * and control groups | 25 | 19 | 25 | 19 | 6 |
| 54 | a * risk of | 25 | 25 | 25 | 25 | 0 |
| 55 | of the * second | 25 | 12 | 25 | 12 | 13 |
| 56 | * the facial midline | 25 | 12 | 25 | 12 | 13 |
| 57 | bone * in the | 25 | 25 | 12 | 12 | 13 |
| 58 | * of gingival recession | 24 | 12 | 24 | 12 | 12 |
| 59 | * the level of | 24 | 24 | 20 | 20 | 4 |
| 60 | a * level of | 24 | 20 | 24 | 20 | 4 |
| 61 | * between the two | 24 | 24 | 19 | 19 | 5 |
| 62 | difference between the * | 24 | 19 | 17 | 12 | 12 |
| 63 | * facial vertical height | 24 | 12 | 24 | 12 | 12 |
| 64 | of the maxillary * | 24 | 12 | 24 | 12 | 12 |
| 65 | abutments for the * | 24 | 24 | 12 | 12 | 12 |
| 66 | the * central incisors | 24 | 24 | 24 | 24 | 0 |
| 67 | of the * cavity | 23 | 23 | 12 | 12 | 11 |
| 68 | of the included * | 23 | 23 | 12 | 12 | 11 |
| 69 | and soft tissue * | 23 | 12 | 23 | 12 | 11 |
| 70 | the * posterior teeth | 23 | 12 | 23 | 12 | 11 |
| 71 | * of the study | 22 | 17 | 22 | 17 | 5 |
| 72 | significantly greater * the | 22 | 12 | 22 | 12 | 10 |
| 73 | of the * bone | 22 | 22 | 16 | 16 | 6 |

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 74 | difference was not * | 22 | 22 | 12 | 12 | 10 |
| 75 | the * position of | 22 | 12 | 22 | 12 | 10 |
| 76 | this study * that | 21 | 21 | 21 | 21 | 0 |
| 77 | a * rate of | 21 | 21 | 16 | 16 | 5 |
| 78 | * for patients with | 21 | 17 | 16 | 12 | 9 |
| 79 | significantly between the * | 21 | 21 | 16 | 16 | 5 |
| 80 | * incisors and canines | 21 | 12 | 21 | 12 | 9 |
| 81 | the time of * | 20 | 20 | 16 | 16 | 4 |
| 82 | number of * with | 20 | 20 | 16 | 16 | 4 |
| 83 | a high * of | 20 | 16 | 20 | 16 | 4 |
| 84 | in the * region | 20 | 16 | 16 | 12 | 8 |
| 85 | * the parotid gland | 20 | 20 | 12 | 12 | 8 |
| 86 | * of the cutting | 20 | 20 | 12 | 12 | 8 |
| 87 | * of the anterior | 20 | 12 | 20 | 12 | 8 |
| 88 | * prevalence of root | 20 | 12 | 20 | 12 | 8 |
| 89 | face-to-face interaction with * | 20 | 12 | 20 | 12 | 8 |
| | **Total** | **2916** | **2306** | **2337** | **1723** | **1193** |

For the number of fillers of each phrase frame, as illustrated in Table 5.55, a total of 487 fillers appeared in 89 phrase frames. Specifically, the results also showed 347 fillers that were similar and 140 fillers that were different between the two sub-disciplines. There were 400 fillers in OMS and 418 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *in the * group* occurred most frequently in the data with 20 fillers in the two sub-disciplines. There were 10 fillers in OMS and 13 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.55 A Summary of Number of Fillers of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 20 | 10 | 13 | 10 | 10 |
| 2 | in the * area | 11 | 10 | 6 | 5 | 6 |
| 3 | on the * side | 8 | 7 | 6 | 5 | 3 |
| 4 | the use of * | 7 | 6 | 6 | 5 | 2 |
| 5 | a significant * in | 7 | 7 | 6 | 6 | 1 |
| 6 | during the * period | 7 | 5 | 5 | 3 | 4 |
| 7 | the * dental arch | 7 | 3 | 7 | 3 | 4 |
| 8 | the * number of | 6 | 6 | 4 | 4 | 2 |
| 9 | * between the groups | 6 | 4 | 6 | 4 | 2 |
| 10 | no significant * between | 6 | 6 | 6 | 6 | 0 |
| 11 | * significant difference between | 6 | 6 | 6 | 6 | 0 |
| 12 | no significant differences * | 6 | 6 | 6 | 6 | 0 |
| 13 | * significant difference in | 6 | 6 | 5 | 6 | 0 |
| 14 | a * level of | 6 | 5 | 6 | 5 | 1 |
| 15 | of the * second | 5 | 3 | 5 | 3 | 2 |
| 16 | of the maxillary * | 6 | 3 | 6 | 3 | 3 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 17 | to the * plane | 6 | 5 | 5 | 4 | 2 |
| 18 | in the * arch | 6 | 3 | 6 | 3 | 3 |
| 19 | * titanium base abutment | 6 | 6 | 3 | 3 | 3 |
| 20 | position of the * | 6 | 4 | 5 | 4 | 2 |
| 21 | * titanium base abutments | 6 | 6 | 3 | 3 | 3 |
| 22 | the * strong anchorage | 6 | 3 | 6 | 4 | 2 |
| 23 | bone * in the | 6 | 6 | 3 | 3 | 3 |
| 24 | * in this study | 5 | 5 | 5 | 5 | 0 |
| 25 | * of gingival recession | 5 | 3 | 5 | 3 | 2 |
| 26 | of the * teeth | 5 | 3 | 5 | 3 | 2 |
| 27 | * the level of | 5 | 5 | 4 | 4 | 1 |
| 28 | the number of * | 5 | 5 | 4 | 4 | 1 |
| 29 | the time of * | 5 | 5 | 4 | 4 | 1 |
| 30 | number of * with | 5 | 5 | 4 | 4 | 1 |
| 31 | * and control groups | 5 | 4 | 5 | 4 | 1 |
| 32 | a * rate of | 5 | 5 | 4 | 4 | 1 |
| 33 | * of the study | 5 | 4 | 5 | 4 | 1 |
| 34 | a high * of | 5 | 4 | 5 | 4 | 1 |
| 35 | a significant * between | 5 | 5 | 4 | 4 | 1 |
| 36 | * significant correlation between | 5 | 5 | 4 | 4 | 1 |
| 37 | no significant difference * | 5 | 5 | 5 | 5 | 0 |
| 38 | significant difference * the | 5 | 5 | 5 | 5 | 0 |
| 39 | * significant differences in | 5 | 5 | 5 | 5 | 0 |
| 40 | * for patients with | 5 | 4 | 4 | 4 | 1 |
| 41 | * statistically significant difference | 5 | 5 | 3 | 3 | 2 |
| 42 | significant differences * the | 5 | 5 | 4 | 4 | 1 |
| 43 | statistically significant differences * | 5 | 4 | 5 | 4 | 1 |
| 44 | * differences between the | 5 | 5 | 5 | 5 | 0 |
| 45 | a significant difference * | 5 | 5 | 5 | 5 | 0 |
| 46 | a * risk of | 5 | 5 | 5 | 5 | 0 |
| 47 | significantly between the * | 5 | 5 | 4 | 4 | 1 |
| 48 | significantly greater * the | 5 | 3 | 5 | 3 | 2 |
| 49 | * between the two | 5 | 5 | 4 | 4 | 1 |
| 50 | difference between the * | 5 | 4 | 4 | 4 | 1 |
| 51 | * facial vertical height | 5 | 3 | 5 | 3 | 2 |
| 52 | of the * cavity | 5 | 5 | 3 | 3 | 2 |
| 53 | in the * region | 5 | 4 | 4 | 4 | 1 |
| 54 | is * in table | 5 | 4 | 4 | 4 | 1 |
| 55 | * the parotid gland | 5 | 5 | 3 | 3 | 2 |
| 56 | of the * bone | 5 | 5 | 4 | 4 | 1 |
| 57 | of the * lip | 5 | 5 | 4 | 4 | 1 |
| 58 | * the facial midline | 5 | 3 | 5 | 3 | 2 |
| 59 | * at the end | 5 | 4 | 4 | 4 | 1 |
| 60 | * of the cutting | 5 | 5 | 3 | 3 | 2 |
| 61 | * the right side | 5 | 4 | 5 | 4 | 1 |
| 62 | in the * analysis | 5 | 5 | 3 | 3 | 2 |
| 63 | of the * population | 5 | 4 | 5 | 4 | 1 |
| 64 | * the early permanent | 5 | 3 | 5 | 3 | 2 |
| 65 | * the HPC line | 5 | 3 | 5 | 3 | 2 |
| 66 | satisfaction with * aesthetics | 5 | 4 | 4 | 4 | 1 |
| 67 | * one of the | 5 | 5 | 5 | 5 | 0 |
| 68 | there * no significant | 5 | 5 | 5 | 5 | 0 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 69 | this study * that | 5 | 5 | 5 | 5 | 0 |
| 70 | of the included * | 5 | 5 | 3 | 3 | 2 |
| 71 | difference was not * | 5 | 5 | 3 | 3 | 2 |
| 72 | central and lateral * | 5 | 3 | 5 | 3 | 2 |
| 73 | * incisors and canines | 5 | 3 | 5 | 3 | 2 |
| 74 | * and lateral incisors | 5 | 3 | 5 | 3 | 2 |
| 75 | * of the anterior | 5 | 3 | 5 | 3 | 2 |
| 76 | * prevalence of root | 5 | 3 | 5 | 3 | 2 |
| 77 | the * position of | 5 | 3 | 5 | 3 | 2 |
| 78 | face-to-face interaction with * | 5 | 3 | 5 | 3 | 2 |
| 79 | and soft tissue * | 5 | 3 | 5 | 3 | 2 |
| 80 | the * posterior teeth | 5 | 3 | 5 | 3 | 2 |
| 81 | the quality of * | 5 | 4 | 4 | 3 | 2 |
| 82 | abutments for the * | 5 | 5 | 3 | 3 | 2 |
| 83 | * soft tissue recession | 5 | 4 | 4 | 3 | 2 |
| 84 | the * central incisors | 5 | 3 | 5 | 3 | 2 |
| 85 | the lower * teeth | 5 | 3 | 5 | 3 | 2 |
| 86 | the * and control | 5 | 4 | 5 | 4 | 1 |
| 87 | * the two groups | 5 | 5 | 5 | 5 | 0 |
| 88 | in the * study | 5 | 5 | 4 | 4 | 1 |
| 89 | in this * study | 5 | 5 | 4 | 4 | 1 |
| | **Total** | **487** | **400** | **418** | **347** | **140** |

For an overview of the use of phrase frames in this type, Excerpts 5.47 and 5.48 below illustrate a phrase frames *satisfaction with * aesthetics* found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.47:**

The aim of this study was to investigate the gender-specific associations between dental aesthetics, OHRQoL, and **satisfaction with dental aesthetics** in an adult population. (ODO29)

**Excerpt 5.48:**

The correlation analysis showed that for both groups, the degree of **satisfaction with facial aesthetics** was not related to the reduction in AHI (without-deficiency group: r = −0.006, P = 0.987; with-deficiency group: r = 0.109, P = 0.647). (OMS20)

In conclusion, other-content-word phrase frames enhance the precision and depth of the Results section by helping authors describe their data in a more nuanced and comprehensive way. These phrases allow researchers to communicate not only the presence of certain findings but also their strength, significance, or variability. Through the effective use of these phrase frames, researchers can provide a more thorough and informative presentation of their results, ensuring the reader gains a clear and accurate understanding of the study's outcomes.

#### 5.3.1.3 Function-word Phrase Frames

Function-word phrase frames, which include prepositions, articles, conjunctions, and auxiliary verbs, play a critical role in organizing and connecting the results in a coherent manner (Gray & Biber, 2013). In the RA Results section, prepositions help establish relationships between variables, showing where or how certain effects or patterns occurred. Articles help introduce specific results or findings, creating clarity about what is being discussed. Auxiliary verbs work to link the main findings with their descriptions, contributing to the grammatical structure of the sentence and ensuring the results are properly conveyed in context.

For the frequency of this type of phrase frames, as illustrated in Table 5.56, a total of 930 occurrences of phrase frames were reported. There were 759 occurrences of phrase frames that were similar and 171 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 19 phrase frames with 804 occurrences in OMS and 872 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *the * of the* appeared most frequently, with 223 times in OMS and 219 times in ODO.

**Table 5.56 A Summary of Phrase Frames in the Function-word Category in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 244 | 223 | 219 | 199 | 45 |
| 2 | at the * of | 114 | 39 | 114 | 39 | 75 |
| 3 | in the * of | 77 | 73 | 77 | 73 | 4 |
| 4 | the * between the | 48 | 48 | 48 | 48 | 0 |
| 5 | with the * of | 46 | 46 | 42 | 46 | 0 |
| 6 | in * with the | 42 | 42 | 42 | 42 | 0 |
| 7 | in * to the | 41 | 41 | 41 | 41 | 0 |
| 8 | of the * and | 40 | 26 | 32 | 26 | 14 |
| 9 | to the * of | 35 | 35 | 35 | 35 | 0 |
| 10 | with * to the | 30 | 30 | 30 | 30 | 0 |
| 11 | on the * of | 30 | 30 | 25 | 25 | 5 |
| 12 | * with and without | 29 | 24 | 29 | 24 | 5 |
| 13 | and the * of | 26 | 26 | 26 | 26 | 0 |
| 14 | within the * of | 23 | 16 | 19 | 12 | 11 |
| 15 | that the * of | 22 | 22 | 22 | 22 | 0 |
| 16 | a * in the | 21 | 21 | 21 | 21 | 0 |
| 17 | by the * of | 21 | 21 | 21 | 21 | 0 |
| 18 | with a * of | 21 | 21 | 17 | 17 | 4 |
| 19 | and * of the | 20 | 20 | 12 | 12 | 8 |
| | **Total** | 930 | 804 | 872 | 759 | 171 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

For the number of fillers of each phrase frame, as illustrated in Table 5.57, a total of 152 fillers appeared in 19 phrase frames. Specifically, the result also showed 125 fillers that were similar and 27 fillers that were different between the two sub-disciplines. There were 138 fillers in OMS and 140 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *the * of the* occurred most frequently in the data with 34 fillers in the two sub-disciplines. A total of 29 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.57 A Summary of Number of Fillers of Phrase Frames in the Function-word Category in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 34 | 29 | 29 | 24 | 10 |
| 2 | in the * of | 13 | 12 | 13 | 12 | 1 |
| 3 | with the * of | 9 | 9 | 8 | 8 | 1 |
| 4 | at the * of | 8 | 5 | 8 | 5 | 3 |
| 5 | the * between the | 8 | 8 | 8 | 8 | 0 |
| 6 | of the * and | 8 | 5 | 7 | 5 | 3 |
| 7 | in * with the | 7 | 7 | 7 | 7 | 0 |
| 8 | to the * of | 7 | 7 | 7 | 7 | 0 |
| 9 | and the * of | 6 | 6 | 6 | 6 | 0 |
| 10 | on the * of | 6 | 6 | 5 | 5 | 1 |
| 11 | in * to the | 6 | 6 | 6 | 6 | 0 |
| 12 | with * to the | 5 | 5 | 5 | 5 | 0 |
| 13 | within the * of | 5 | 4 | 4 | 3 | 2 |
| 14 | a * in the | 5 | 5 | 5 | 5 | 0 |
| 15 | * with and without | 5 | 4 | 5 | 4 | 1 |
| 16 | and * of the | 5 | 5 | 3 | 3 | 2 |
| 17 | that the * of | 5 | 5 | 5 | 3 | 2 |
| 18 | by the * of | 5 | 5 | 5 | 5 | 0 |
| 19 | with a * of | 5 | 5 | 4 | 4 | 1 |
| | **Total** | **152** | **138** | **140** | **125** | **27** |

For an overview of the use of phrase frames in this type, Excerpts 5.49 and 5.50 below illustrate a phrase frame *at the * of* found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.49:**

In a clinical study using Integros Boneplus-xs for maxillary sinus augmentation, the residual graft was reported to be 31.8% **at the end of** 6.5 months of followup, and graft particles were still present at 8 months.28 (OMS3)

**Excerpt 5.50:**

**At the end of** the treatment, digital post-treatment models (T2) were acquired using the same Medit I500 intraoral scanner (iScan Medit, Seoul,

Korea), and the digital set-up models (T1) were extrapolated directly in STL format using the proprietary ELINE software. (ODO10)

In conclusion, function-word phrase frames are essential for providing structure and coherence in the Results section. They help ensure that the findings are connected logically, facilitating the flow of information. Through their use, writers can guide the reader from one piece of data to another while maintaining clarity in how the results are presented. Overall, these function-word frames contribute to the smooth communication of complex information, ensuring the research results are easily understood and interpreted.

### 5.3.2 Results and Discussion from the Analysis of Functional Categories

In this section, 30% of phrase frames were selected for inter-rater reliability based on the stratified and random selection. They were coded independently by the researcher and an invited coder. The results showed a high consistency of the analysis (94.67% in referential phrase frames, 100% stance phrase frames, and 100% in discourse organizing phrase frames) between the 2 coders in inter-rater agreement as illustrated in Table 5.58.

**Table 5.58 The Inter-Rater Agreement of Phrase Frames in the Functional Categories**

| Categories | Coded Unit | Agreed Codings | Different Codings | Agreement Percentage |
|---|---|---|---|---|
| Referential phrase frames | 127 | 119 | 8 | 93.70 |
| Stance phrase frames | 12 | 12 | 0 | 100 |
| Discourse organizing phrase frames | 15 | 15 | 0 | 100 |
| **Total** | 230 | 222 | | |

The findings showed that analyzing functional categories of phrase frames plays a crucial role in understanding how language is structured and used within specific contexts (Golparvar & Barabadi, 2020). Three types of phrase frames were identified in the functional categories: referential, stance, and discourse organizing. Out of 147 phrase frames, 119 were classified as referential, 12 as stance, and 15 as discourse organizing, as illustrated in Figure 5.6. The referential type of phrase frames was the most frequently used in the current study, which was the same findings as Biber et al. (2004), Lu et al. (2018), Golparvar & Barabadi (2020), and Ren (2021).

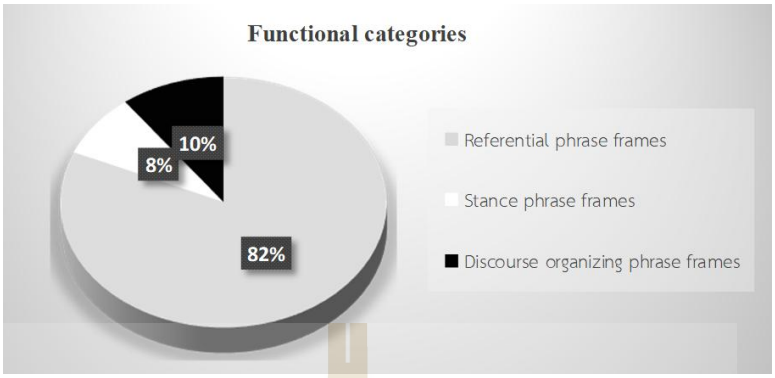



**Figure 5.5 Distribution of Phrase Frames in the Functional Categories in the English Dentistry RA Results Sections**

#### 5.3.2.1 Referential Phrase Frames

Referential phrase frames play an important role in helping the reader navigate the data and understand the relationships between various findings (Simpson-Vlach & Ellis, 2010). In the RA Results section, these frames refer back to previously presented figures, tables, or sections. These references are crucial for providing context, as they direct the reader to specific sources of data or results that support the claims being made. By using these referential phrases, authors can establish connections between their results and earlier discussions or visual aids, making the findings easier to interpret and verify.

They are classified into 5 types, i.e., specification of attributes, identification and focus, contrast and comparison, deictics and locatives, and vagueness markers (Simpson-Vlach & Ellis, 2010). Notably, phrase frames in vagueness markers were not found in the current study. The absence of phrase frames in vagueness markers was due to the rare use in academic writing (Simpson-Vlach & Ellis, 2010; Lu et al., 2018). In this type, 22 phrase frames were identified in specification of attributes, 7 in identification and focus, 41 in contrast and comparison, and 49 in deictics and locatives, as illustrated in Table 5.59.

**Table 5.59 A Summary of Different types of Phrase Frames in the Structural Category**

| Length | Specification of Attributes | Identification and Focus | Contrast and Comparison | Deictics and Locatives | Vagueness Markers | Total |
|---|---|---|---|---|---|---|
| Four words | 22 | 7 | 41 | 49 | 0 | 119 |

#### 5.3.1.1 Specification of Attributes

In the Results section, phrase frames in this type convey clarity, precision, and organization of the research to ensure that the study is communicated

in a way that is logically organized, well-defined, and easy for the readers to follow (Walcott, 2021).

For the frequency of this type of phrase frames, as illustrated in Table 5.60, a total of 1082 occurrences of phrase frames were reported. There were 734 occurrences of phrase frames that were similar and 348 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 22 phrase frames with 919 occurrences in OMS and 891 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *the * of the* appeared most frequently, with 223 times in OMS and 219 times in ODO.

**Table 5.60 A Summary of Frequency of Phrase Frames in Specification of Attributes in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 244 | 223 | 219 | 199 | 45 |
| 2 | in the * study | 131 | 131 | 24 | 24 | 107 |
| 3 | at the * of | 114 | 39 | 114 | 39 | 75 |
| 4 | in the * of | 77 | 73 | 77 | 73 | 4 |
| 5 | the * between the | 48 | 48 | 48 | 48 | 0 |
| 6 | in * with the | 42 | 42 | 42 | 42 | 0 |
| 7 | the use of * | 39 | 34 | 28 | 28 | 11 |
| 8 | the * number of | 35 | 35 | 20 | 20 | 15 |
| 9 | to the * of | 35 | 35 | 35 | 35 | 0 |
| 10 | of the * teeth | 35 | 12 | 35 | 12 | 23 |
| 11 | with * to the | 30 | 30 | 30 | 30 | 0 |
| 12 | tipping of the * | 28 | 12 | 28 | 12 | 16 |
| 13 | and the * of | 26 | 26 | 26 | 26 | 0 |
| 14 | the number of * | 25 | 25 | 17 | 17 | 8 |
| 15 | * of gingival recession | 24 | 12 | 24 | 12 | 12 |
| 16 | * the level of | 24 | 24 | 20 | 20 | 4 |
| 17 | within the * of | 23 | 16 | 19 | 12 | 11 |
| 18 | a * rate of | 21 | 21 | 16 | 16 | 5 |
| 19 | a * in the | 21 | 21 | 21 | 21 | 0 |
| 20 | the time of * | 20 | 20 | 16 | 16 | 4 |
| 21 | number of * with | 20 | 20 | 16 | 16 | 4 |
| 22 | * and control groups | 20 | 20 | 16 | 16 | 4 |
| | **Total** | **1082** | **919** | **891** | **734** | **348** |

For the number of fillers of each phrase frame, as illustrated in Table 5.61, a total of 163 fillers appeared in 30 phrase frames. Specifically, the result also showed 129 fillers that were similar and 34 fillers that were different between the two sub-disciplines. There were 143 fillers in OMS and 149 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *the * of the* occurred most frequently in the data with 34 fillers in the two sub-disciplines. A total

of 29 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.61 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 34 | 29 | 29 | 24 | 10 |
| 2 | in the * of | 13 | 12 | 13 | 12 | 1 |
| 3 | at the * of | 8 | 5 | 8 | 5 | 3 |
| 4 | the * between the | 8 | 8 | 8 | 8 | 0 |
| 5 | the use of * | 7 | 6 | 6 | 5 | 2 |
| 6 | in * with the | 7 | 7 | 7 | 7 | 0 |
| 7 | to the * of | 7 | 7 | 7 | 7 | 0 |
| 8 | tipping of the * | 7 | 3 | 7 | 3 | 4 |
| 9 | the * number of | 6 | 6 | 4 | 4 | 2 |
| 10 | and the * of | 6 | 6 | 6 | 6 | 0 |
| 11 | in the * study | 5 | 5 | 4 | 4 | 1 |
| 12 | * of gingival recession | 5 | 3 | 5 | 3 | 2 |
| 13 | with * to the | 5 | 5 | 5 | 5 | 0 |
| 14 | of the * teeth | 5 | 3 | 5 | 3 | 2 |
| 15 | * the level of | 5 | 5 | 4 | 4 | 1 |
| 16 | within the * of | 5 | 4 | 4 | 3 | 2 |
| 17 | the number of * | 5 | 5 | 4 | 4 | 1 |
| 18 | the time of * | 5 | 5 | 4 | 4 | 1 |
| 19 | number of * with | 5 | 5 | 4 | 4 | 1 |
| 20 | * and control groups | 5 | 4 | 5 | 4 | 1 |
| 21 | a * rate of | 5 | 5 | 5 | 5 | 0 |
| 22 | a * in the | 5 | 5 | 5 | 5 | 0 |
| | **Total** | **163** | **143** | **149** | **129** | **34** |

For an overview of the use of phrase frames in this type, Excerpts 5.51 and 5.52 below illustrate a phrase frame *the * of the* found in the RA Results section in the two sub-disciplines of Dentistry.

**Exceprt 5.51**:

**The results of the** multivariate analysis are presented as the odds ratio (OR) and 95% confidence interval (CI). (OMS18)

**Exceprt 5.52**:

This is a standard statistical process in geometric morphometrics in order to be able to interpret **the results of the** data analyses. (ODO24)

#### 5.3.1.2 Identification and Focus

In the Results section, phrase frames in identification and focus are used to identify and emphasize specific elements, concepts, or issues that are central to the research. These phrase frames help to direct the reader's attention to key

aspects of the study and define important terms or topics. They serve to highlight what is being discussed, examined, or addressed in a particular section of the article.

For the frequency of this type of phrase frames, as illustrated in Table 5.62, a total of 202 occurrences of phrase frames were reported. There were 160 occurrences of phrase frames that were similar and 42 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 7 phrase frames with 173 occurrences in OMS and 189 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in OMS than in ODO. In this type, ** this study was* appeared most frequently, with 51 times in OMS and ODO.

**Table 5.62 A Summary of Frequency of Phrase Frames in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * this study was | 51 | 51 | 51 | 51 | 0 |
| 2 | the * group was | 31 | 26 | 26 | 21 | 10 |
| 3 | * with and without | 29 | 24 | 29 | 24 | 5 |
| 4 | * tipping of the | 26 | 12 | 26 | 12 | 14 |
| 5 | * there was no | 22 | 22 | 18 | 18 | 4 |
| 6 | * of the study | 22 | 17 | 22 | 17 | 5 |
| 7 | were used * the | 21 | 21 | 17 | 17 | 4 |
| | **Total** | **202** | **173** | **189** | **160** | **42** |

For the number of fillers of each phrase frame, as illustrated in Table 5.63, a total of 37 fillers appeared in 7 phrase frames. Specifically, the result also showed 28 fillers that were similar and fillers that were different between the two sub-disciplines. There were 31 fillers in OMS and 34 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *the * group was* occurred most frequently in the data with 6 fillers in the two sub-disciplines. A total of 5 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.63 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * group was | 6 | 5 | 5 | 4 | 2 |
| 2 | * tipping of the | 6 | 3 | 6 | 3 | 3 |
| 3 | * there was no | 5 | 5 | 4 | 4 | 1 |
| 4 | * this study was | 5 | 5 | 5 | 5 | 0 |
| 5 | were used * the | 5 | 5 | 4 | 4 | 1 |
| 6 | * of the study | 5 | 4 | 5 | 4 | 1 |
| 7 | * with and without | 5 | 4 | 5 | 4 | 1 |
| | **Total** | **37** | **31** | **34** | **28** | **9** |

For an overview of the use of phrase frames in this type, Excerpts 5.53 and 5.54 below illustrate a phrase frame ** there was no* found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.53:**

However, in the maxillary All-on-4 treatment concept (Nobel Biocare), it has been found **that there was no** significant difference in cumulative survival rate between implants inserted with < 30-Ncm torque or 30- to 50-Ncm torque. (OMS2)

**Excerpt 5.54:**

The lack of significant increase in lower incisor inclination suggested **that there was no** dentoalveolar compensation in the skeletal correction of Class II malocclusion (3, 8). (ODO21)

#### 5.3.1.3 Contrast and Comparison

In the RA Results section, phrase frames in contrast and comparison are used to highlight differences, similarities, or relationships between ideas, theories, findings, or concepts. These phrase frames help convey how one element in the research relates to, differs from, or aligns with another. They are essential for illustrating how the current study compares with previous research, and how different variables or groups are contrasted.

For the frequency of this type of phrase frames, as illustrated in Table 5.64, a total of 1304 occurrences of phrase frames were reported. There were 1088 occurrences of phrase frames that were similar and 216 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 41 phrase frames with 1187 occurrences in OMS and 1144 occurrences in ODO were identified between the two sub-disciplines, which shows the more use of phrase frames than in ODO. In this type, *no significant difference ** appeared most frequently with 58 times in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.64 A Summary of Frequency of Phrase Frames in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | no significant difference * | 58 | 58 | 58 | 58 | 0 |
| 2 | there was no * | 58 | 58 | 57 | 58 | 0 |
| 3 | there * no significant | 56 | 56 | 55 | 56 | 0 |
| 4 | no significant * between | 48 | 27 | 26 | 27 | 21 |
| 5 | * significant difference between | 45 | 45 | 44 | 45 | 0 |
| 6 | no significant differences * | 43 | 43 | 42 | 43 | 0 |
| 7 | significant difference * the | 43 | 43 | 42 | 43 | 0 |
| 8 | was * statistically significant | 42 | 42 | 29 | 30 | 12 |

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | no significant difference * | 58 | 58 | 58 | 58 | 0 |
| 9 | * significant difference in | 38 | 38 | 30 | 31 | 7 |
| 10 | was no significant * | 38 | 38 | 30 | 31 | 7 |
| 11 | * significant differences in | 37 | 37 | 36 | 37 | 0 |
| 12 | a significant * in | 36 | 36 | 28 | 29 | 7 |
| 13 | was significantly * than | 32 | 32 | 31 | 32 | 0 |
| 14 | * one of the | 32 | 32 | 31 | 32 | 0 |
| 15 | * between the groups | 26 | 16 | 25 | 16 | 10 |
| 16 | * difference was found | 31 | 31 | 30 | 31 | 0 |
| 17 | * significant correlation between | 30 | 30 | 23 | 24 | 6 |
| 18 | * statistically significant difference | 30 | 30 | 11 | 12 | 18 |
| 19 | significant differences were * | 30 | 19 | 29 | 19 | 11 |
| 20 | significant differences * the | 30 | 30 | 19 | 20 | 10 |
| 21 | statistically significant differences * | 30 | 23 | 29 | 23 | 7 |
| 22 | * significant differences were | 29 | 19 | 28 | 19 | 10 |
| 23 | was a significant * | 28 | 28 | 23 | 24 | 4 |
| 24 | was significantly greater * | 27 | 27 | 26 | 27 | 0 |
| 25 | a significant * between | 27 | 27 | 20 | 21 | 6 |
| 26 | * differences between the | 27 | 27 | 26 | 27 | 0 |
| 27 | a significant difference * | 27 | 27 | 26 | 27 | 0 |
| 28 | differences were found * | 26 | 26 | 25 | 26 | 0 |
| 29 | was * in the | 25 | 16 | 24 | 16 | 9 |
| 30 | a * risk of | 25 | 25 | 24 | 25 | 0 |
| 31 | a * level of | 24 | 20 | 23 | 20 | 4 |
| 32 | * between the two | 24 | 24 | 18 | 19 | 5 |
| 33 | differences were * between | 24 | 24 | 23 | 24 | 0 |
| 34 | difference between the * | 24 | 19 | 16 | 12 | 12 |
| 35 | * facial vertical height | 24 | 12 | 23 | 12 | 12 |
| 36 | were * likely to | 23 | 19 | 22 | 19 | 4 |
| 37 | difference was * significant | 23 | 17 | 22 | 17 | 6 |
| 38 | significantly greater * the | 22 | 12 | 21 | 12 | 10 |
| 39 | * for patients with | 21 | 17 | 15 | 12 | 9 |
| 40 | significantly between the * | 21 | 21 | 15 | 16 | 5 |
| 41 | a high * of | 20 | 16 | 19 | 16 | 4 |
| | **Total** | **1304** | **1187** | **1144** | **1088** | **216** |

For the number of fillers of each phrase frame, as illustrated in Table 5.65, a total of 215 fillers appeared in 41 phrase frames. Specifically, the result also showed 188 fillers that were similar and 27 fillers that were different between the two sub-disciplines. There were 200 fillers in OMS and 161 fillers in ODO, which shows the more use of fillers in OMS than in ODO. The fillers of the phrase frame *a significant * in* occurred most frequently in the data with 7 fillers in the two sub-disciplines. There were 7 fillers of this phrase frame in OMS and in ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.65 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | a significant * in | 7 | 7 | 7 | 7 | 0 |
| 2 | was significantly * than | 6 | 6 | 5 | 6 | 0 |
| 3 | was * in the | 6 | 4 | 5 | 4 | 2 |
| 4 | no significant * between | 6 | 6 | 5 | 6 | 0 |
| 5 | there was no * | 6 | 6 | 5 | 6 | 0 |
| 6 | * significant difference between | 6 | 6 | 5 | 6 | 0 |
| 7 | no significant differences * | 6 | 6 | 5 | 6 | 0 |
| 8 | was * statistically significant | 6 | 6 | 4 | 4 | 2 |
| 9 | * significant difference in | 6 | 6 | 4 | 6 | 0 |
| 10 | a * level of | 6 | 5 | 5 | 5 | 1 |
| 11 | were * likely to | 5 | 4 | 4 | 4 | 1 |
| 12 | difference was * significant | 5 | 4 | 4 | 4 | 1 |
| 13 | was significantly greater * | 5 | 5 | 4 | 5 | 0 |
| 14 | a high * of | 5 | 4 | 4 | 4 | 1 |
| 15 | * one of the | 5 | 5 | 4 | 5 | 0 |
| 16 | a significant * between | 5 | 5 | 3 | 4 | 1 |
| 17 | * significant correlation between | 5 | 5 | 3 | 4 | 1 |
| 18 | * difference was found | 5 | 5 | 4 | 5 | 0 |
| 19 | was a significant * | 5 | 6 | 4 | 5 | 0 |
| 20 | differences were found * | 5 | 5 | 4 | 5 | 0 |
| 21 | no significant difference * | 5 | 5 | 4 | 5 | 0 |
| 22 | there * no significant | 5 | 5 | 4 | 5 | 0 |
| 23 | significant difference * the | 5 | 5 | 4 | 5 | 0 |
| 24 | was no significant * | 5 | 5 | 3 | 4 | 1 |
| 25 | * significant differences in | 5 | 5 | 4 | 5 | 0 |
| 26 | * for patients with | 5 | 4 | 3 | 4 | 1 |
| 27 | * statistically significant difference | 5 | 5 | 2 | 3 | 2 |
| 28 | significant differences were * | 5 | 4 | 4 | 4 | 1 |
| 29 | significant differences * the | 5 | 5 | 3 | 4 | 1 |
| 30 | statistically significant differences * | 5 | 4 | 4 | 4 | 1 |
| 31 | * differences between the | 5 | 5 | 4 | 5 | 0 |
| 32 | * significant differences were | 5 | 4 | 4 | 4 | 1 |
| 33 | a significant difference * | 5 | 5 | 4 | 5 | 0 |
| 34 | a * risk of | 5 | 5 | 4 | 5 | 0 |
| 35 | significantly between the * | 5 | 5 | 3 | 4 | 1 |
| 36 | significantly greater * the | 5 | 3 | 4 | 3 | 2 |
| 37 | * between the two | 5 | 5 | 3 | 4 | 1 |
| 38 | differences were * between | 5 | 5 | 4 | 5 | 0 |
| 39 | difference between the * | 5 | 4 | 3 | 4 | 1 |
| 40 | * facial vertical height | 5 | 3 | 4 | 3 | 2 |
| 41 | * between the groups | 4 | 3 | 3 | 3 | 1 |
| | **Total** | **215** | **200** | **162** | **188** | **27** |

For an overview of the use of phrase frames in this type, Excerpts 5.55 and 5.56 below illustrate a phrase frame *were * likely to* found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.55:**

Compared to controls, cases **were more likely to** have smoked in their lifetime (18% vs 11.5%, P = .009), more likely to have higher prevalence of IBD (1.5% vs 0.02%, P = .059), and more likely to consume PPIs within 6 months of the implant surgery (40.0% vs 32.5%, P = .028). (OMS10)

**Excerpt 5.56:**

Those in clear aligners **were more likely to** be interested in using teledentistry, with 27% agreeing or strongly agreeing, compared with 18% of those in braces (P 5 0.0429). (ODO18)

#### 5.3.1.4 Deictics and Locatives

In the RA Results section, phrase frames in deictics and locatives are used to indicate specific references in time, space, or context. They help guide the reader through the structure of the research, identify relationships between various parts of the paper, and situate information in relation to the content being discussed. These devices are essential for providing clarity and precision in academic writing.

For the frequency of this type of phrase frames, as illustrated in Table 5.66, a total of 1583 occurrences of phrase frames were reported. There were 727 occurrences of phrase frames that were similar and 856 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 49 phrase frames with 1099 occurrences in OMS and 1220 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than in OMS. In this type, *in the * group* appeared most frequently with 64 times in OMS and 171 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.66 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 220 | 64 | 171 | 12 | 208 |
| 2 | in the * area | 74 | 70 | 33 | 29 | 45 |
| 3 | * soft tissue recession | 57 | 53 | 16 | 12 | 45 |
| 4 | on the * side | 48 | 44 | 33 | 29 | 19 |
| 5 | * the two groups | 43 | 43 | 43 | 43 | 0 |
| 6 | * the HPC line | 38 | 12 | 38 | 12 | 26 |
| 7 | * titanium base abutments | 34 | 34 | 12 | 12 | 22 |
| 8 | the * dental arch | 34 | 12 | 34 | 12 | 22 |
| 9 | satisfaction with * aesthetics | 33 | 17 | 28 | 12 | 21 |
| 10 | during the * period | 32 | 23 | 21 | 12 | 20 |
| 11 | * titanium base abutment | 32 | 32 | 12 | 12 | 20 |
| 12 | central and lateral * | 32 | 12 | 32 | 12 | 20 |
| 13 | in the * arch | 31 | 12 | 31 | 12 | 19 |
| 14 | * and lateral incisors | 31 | 12 | 31 | 12 | 19 |

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 15 | of the * lip | 30 | 30 | 21 | 21 | 9 |
| 16 | in the * analysis | 29 | 29 | 12 | 12 | 17 |
| 17 | position of the * | 29 | 25 | 25 | 21 | 8 |
| 18 | the quality of * | 29 | 24 | 17 | 12 | 17 |
| 19 | * at the end | 28 | 24 | 16 | 12 | 16 |
| 20 | * the right side | 28 | 22 | 28 | 22 | 6 |
| 21 | the lower * teeth | 28 | 12 | 28 | 12 | 16 |
| 22 | to the * plane | 27 | 27 | 23 | 17 | 10 |
| 23 | of the * population | 27 | 19 | 27 | 19 | 8 |
| 24 | the * strong anchorage | 27 | 12 | 27 | 12 | 15 |
| 25 | * the early permanent | 26 | 12 | 26 | 12 | 14 |
| 26 | the * and control | 26 | 20 | 26 | 20 | 6 |
| 27 | of the * second | 25 | 12 | 25 | 12 | 13 |
| 28 | * the facial midline | 25 | 12 | 25 | 12 | 13 |
| 29 | of the maxillary * | 24 | 12 | 24 | 12 | 12 |
| 30 | abutments for the * | 24 | 24 | 12 | 12 | 12 |
| 31 | the * central incisors | 24 | 24 | 24 | 24 | 0 |
| 32 | of the * cavity | 23 | 23 | 12 | 12 | 11 |
| 33 | of the included * | 23 | 23 | 12 | 12 | 11 |
| 34 | and soft tissue * | 23 | 12 | 23 | 12 | 11 |
| 35 | the * posterior teeth | 23 | 12 | 23 | 12 | 11 |
| 36 | of the * bone | 22 | 22 | 16 | 16 | 6 |
| 37 | difference was not * | 22 | 22 | 12 | 12 | 10 |
| 38 | the * side was | 22 | 22 | 12 | 12 | 10 |
| 39 | the * position of | 22 | 12 | 22 | 12 | 10 |
| 40 | that the * of | 22 | 22 | 22 | 22 | 0 |
| 41 | * incisors and canines | 21 | 12 | 21 | 12 | 9 |
| 42 | in the * region | 20 | 16 | 16 | 12 | 8 |
| 43 | * the parotid gland | 20 | 20 | 12 | 12 | 8 |
| 44 | * of the cutting | 20 | 20 | 12 | 12 | 8 |
| 45 | * of the anterior | 20 | 12 | 20 | 12 | 8 |
| 46 | and * of the | 20 | 20 | 12 | 12 | 8 |
| 47 | * prevalence of root | 20 | 12 | 20 | 12 | 8 |
| 48 | face-to-face interaction with * | 20 | 12 | 20 | 12 | 8 |
| 49 | bone * in the | 25 | 25 | 12 | 12 | 13 |
| | **Total** | **1583** | **1099** | **1220** | **727** | **856** |

For the number of fillers of each phrase frame, as illustrated in Table 5.67, a total of 282 fillers appeared in 49 phrase frames. Specifically, the result also showed 164 fillers that were similar and 118 fillers that were different between the two sub-disciplines. There were 209 fillers in OMS and 229 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *in the * group* occurred most frequently in the data with 20 fillers in the two sub-disciplines. In this phrase frame, there were 8 fillers in OMS and 13 times in ODO, which indicates a difference between the two sub-disciplines.

Table 5.67 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 20 | 8 | 13 | 3 | 17 |
| 2 | in the * area | 11 | 8 | 6 | 5 | 6 |
| 3 | on the * side | 8 | 7 | 6 | 5 | 3 |
| 4 | during the * period | 7 | 5 | 5 | 3 | 4 |
| 5 | the * dental arch | 7 | 3 | 7 | 3 | 4 |
| 6 | of the * second | 6 | 3 | 5 | 3 | 3 |
| 7 | of the maxillary * | 6 | 3 | 6 | 3 | 3 |
| 8 | to the * plane | 6 | 5 | 5 | 4 | 2 |
| 9 | in the * arch | 6 | 3 | 6 | 3 | 3 |
| 10 | * titanium base abutment | 6 | 6 | 3 | 3 | 3 |
| 11 | position of the * | 6 | 4 | 5 | 4 | 2 |
| 12 | * titanium base abutments | 6 | 6 | 3 | 3 | 3 |
| 13 | the * strong anchorage | 6 | 3 | 6 | 4 | 2 |
| 14 | bone * in the | 6 | 6 | 3 | 3 | 3 |
| 15 | of the * cavity | 5 | 5 | 3 | 3 | 2 |
| 16 | in the * region | 5 | 4 | 4 | 4 | 1 |
| 17 | * the parotid gland | 5 | 5 | 3 | 3 | 2 |
| 18 | of the * bone | 5 | 5 | 4 | 4 | 1 |
| 19 | of the * lip | 5 | 5 | 4 | 4 | 1 |
| 20 | * the facial midline | 5 | 3 | 5 | 3 | 2 |
| 21 | * at the end | 5 | 4 | 4 | 4 | 1 |
| 22 | * of the cutting | 5 | 5 | 3 | 3 | 2 |
| 23 | * the right side | 5 | 4 | 5 | 4 | 1 |
| 24 | in the * analysis | 5 | 5 | 3 | 3 | 2 |
| 25 | of the * population | 5 | 4 | 5 | 4 | 1 |
| 26 | * the early permanent | 5 | 3 | 5 | 3 | 2 |
| 27 | * the HPC line | 5 | 3 | 5 | 3 | 2 |
| 28 | satisfaction with * aesthetics | 5 | 4 | 4 | 4 | 1 |
| 29 | of the included * | 5 | 5 | 3 | 3 | 2 |
| 30 | difference was not * | 5 | 5 | 3 | 3 | 2 |
| 31 | the * side was | 5 | 5 | 3 | 3 | 2 |
| 32 | central and lateral * | 5 | 3 | 5 | 3 | 2 |
| 33 | * incisors and canines | 5 | 3 | 5 | 3 | 2 |
| 34 | * and lateral incisors | 5 | 3 | 5 | 3 | 2 |
| 35 | * of the anterior | 5 | 3 | 5 | 3 | 2 |
| 36 | and * of the | 5 | 5 | 3 | 3 | 2 |
| 37 | * prevalence of root | 5 | 3 | 5 | 3 | 2 |
| 38 | the * position of | 5 | 3 | 5 | 3 | 2 |
| 39 | face-to-face interaction with * | 5 | 3 | 5 | 3 | 2 |
| 40 | and soft tissue * | 5 | 3 | 5 | 3 | 2 |
| 41 | the * posterior teeth | 5 | 3 | 5 | 3 | 2 |
| 42 | that the * of | 5 | 5 | 5 | 3 | 2 |
| 43 | the quality of * | 5 | 4 | 4 | 3 | 2 |
| 44 | abutments for the * | 5 | 5 | 3 | 3 | 2 |
| 45 | * soft tissue recession | 5 | 4 | 4 | 3 | 2 |
| 46 | the * central incisors | 5 | 3 | 5 | 3 | 2 |
| 47 | the lower * teeth | 5 | 3 | 5 | 3 | 2 |
| 48 | the * and control | 5 | 4 | 5 | 4 | 1 |
| 49 | * the two groups | 5 | 5 | 5 | 5 | 0 |
| | **Total** | **282** | **209** | **229** | **164** | **118** |

มหาวิทยาลัยเทคโนโลยีสุรนารี

For an overview of the use of phrase frames in this type, Excerpts 5.57 and 5.58 below illustrate a phrase frame *in the * group* found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.57:**

Similarly, the mean difference in linear vertical bone height palatally was 1.43 ± 1.04 mm **in the control group** and 0.35 ± 0.3 mm in the test group. (OMS27)

**Excerpt 5.58:**

For AL and AP assessment, the results showed that there were significant differences between the three examined groups: these were lesser in the unilateral and bilateral groups than **in the control group** ($p<0.001$). (ODO6)

In conclusion, referential phrase frames are vital in ensuring clarity and coherence in the Results section by guiding the reader through the data presentation. They provide a clear structure for referencing figures, tables, or previous sections, allowing for a more cohesive presentation of results. By effectively using referential phrases, authors can help readers follow the logical progression of their findings, ensuring that the results are both well-supported and easily understood in the context of the broader research.

#### 5.3.2.2 Stance Phrase Frames

Stance phrase frames play an important role in conveying the author's attitude toward the findings without directly interpreting them (Simpson-Vlach & Ellis, 2010). In the RA Results section, these frames express the author's stance or perspective on the results. While these phrases help convey a sense of confidence or uncertainty, they also maintain objectivity by leaving room for further discussion or exploration in later sections, such as the Discussion. Stance phrase frames are useful for subtly indicating the degree of certainty with which the author presents their findings, allowing for a balanced approach in reporting results.

In this type, phrase frames are classified into 6 types, i.e., hedges, epistemic, obligation and directive, ability and possibility, and evaluation, and intention/volition, prediction (Simpson-Vlach & Ellis, 2010). However, the findings revealed that only hedges and epistemic were found in the current study. Totally, 1 phrase frame were identified in hedges, 11 in epistemic, as illustrated in Table 5.68.

**Table 5.68 A Summary of Different Types of Phrase Frames in the Stance Phrase Frames**

| Length | Hedges | Epistemic | Obligation and directive | Ability and possibility | Evaluation | Intention/ volition | Total |
|---|---|---|---|---|---|---|---|
| Four words | 1 | 11 | 0 | 0 | 0 | 0 | 12 |

### 5.3.2.1 Hedges

In the RA Results section, hedges are used to present their findings in a way that is less absolute, acknowledging that the evidence or interpretation may not be conclusive or definitive (Hyland, 1996; Chen & Zhang, 2025). For the frequency of this type of phrase frames, as illustrated in Table 5.69, a total of 15 occurrences of phrase frames were reported. There were 15 occurrences of phrase frames that were similar between the two sub-disciplines. Specifically, 1 phrase frame with 15 occurrences in OMS and in ODO were identified in the two sub-disciplines, which shows the equal use of phrase frames in OMS and in ODO.

**Table 5.69 A Summary of Frequency of Phrase Frames in Hedges in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | it has been * | 15 | 15 | 15 | 15 | 0 |
| | **Total** | **15** | **15** | **15** | **15** | **0** |

For the number of fillers of each phrase frame, as illustrated in Table 5.70, a total of 5 fillers appeared in 1 phrase frame. Specifically, the result also showed 5 fillers that were similar between the two sub-disciplines. There were 5 fillers in OMS and in ODO, which shows the equal use of fillers in OMS and in ODO.

**Table 5.70 A Summary of Number of Fillers in Hedges in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | it has been * | 5 | 5 | 5 | 5 | 0 |
| | **Total** | **5** | **5** | **5** | **5** | **0** |

For an overview of the use of phrase frames in this type, Excerpts 5.59 and 5.60 below illustrate a phrase frame *it has been* * found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.59:**

**It has been well** established that maxillary implants are at a greater risk for implant failure compared to implants placed in the mandible due to the more complex anatomy of the maxilla. OMS11)

**Excerpt 5.60:**

**It has been demonstrated** that the lower posterior teeth are more prone to losing control, and the overcorrection strategies mentioned above should be strengthened in the lower posterior teeth. (ODO4)

### 5.3.2.2 Epistemic

In the RA Results section, phrase frames in epistemic aims to convey the author's understanding of the knowledge presented, the degree of confidence in their claims, and the provisional nature of their conclusions (Simpson-Vlach & Ellis, 2010). For the frequency of this type of phrase frames, as illustrated in Table 5.71, a total of 350 occurrences of phrase frames were reported. There were 306 occurrences of phrase frames that were similar and 44 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 11 phrase frames with 317 occurrences in OMS and 339 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in OMS than in ODO. In this type, *was * in the* appeared most frequently, with 40 times in OMS and 47 times in ODO, which shows a difference between the two sub-disciplines.

**Table 5.71 A Summary of Frequency of Phrase Frames in Epistemic in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 54 | 40 | 47 | 33 | 21 |
| 2 | were * in the | 47 | 43 | 43 | 39 | 8 |
| 3 | be * to the | 36 | 36 | 36 | 36 | 0 |
| 4 | * found in the | 33 | 23 | 33 | 23 | 10 |
| 5 | was * as a | 29 | 29 | 29 | 29 | 0 |
| 6 | be * by the | 28 | 28 | 28 | 28 | 0 |
| 7 | were * from the | 26 | 21 | 26 | 21 | 5 |
| 8 | was * to assess | 26 | 26 | 26 | 26 | 0 |
| 9 | were * between the | 25 | 25 | 25 | 25 | 0 |
| 10 | has been * that | 25 | 25 | 25 | 25 | 0 |
| 11 | this study * that | 21 | 21 | 21 | 21 | 0 |
| | **Total** | **350** | **317** | **339** | **306** | **44** |

For the number of fillers of each phrase frame, as illustrated in Table 5.72, a total of 65 fillers appeared in 11 phrase frames. Specifically, the result also showed 57 fillers that were similar and 8 fillers that were different between the two sub-disciplines. There were 59 fillers in OMS and 62 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *was * in the* occurred most frequently in the data with 9 fillers in the two sub-disciplines. In this

phrase frame, there were 7 fillers in OMS and in ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.72 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 9 | 7 | 7 | 6 | 3 |
| 2 | were * in the | 8 | 7 | 7 | 6 | 2 |
| 3 | be * to the | 6 | 6 | 6 | 6 | 0 |
| 4 | was * as a | 6 | 6 | 6 | 6 | 0 |
| 5 | * found in the | 6 | 5 | 6 | 5 | 1 |
| 6 | be * by the | 5 | 4 | 5 | 4 | 1 |
| 7 | were * from the | 5 | 4 | 5 | 4 | 1 |
| 8 | were * between the | 5 | 5 | 5 | 5 | 0 |
| 9 | was * to assess | 5 | 5 | 5 | 5 | 0 |
| 10 | has been * that | 5 | 5 | 5 | 5 | 0 |
| 11 | this study * that | 5 | 5 | 5 | 5 | 0 |
| | **Total** | **65** | **59** | **62** | **57** | **8** |

For an overview of the use of phrase frames in this type, Excerpts 5.61 and 5.62 below illustrate a phrase frame *be * by the* found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.61:**

The results of the present study provide longer follow-up when compared to the study by LeBlanc et al., and could **be explained by the** effect of the TLA, since the anterior oral CTC are associated with the placement of the tongue. (OMS30)

**Excerpt 5.62:**

The differences in the accuracy of torque and linear intra-arch measurements can **be explained by the** different root morphology of the various tooth groups analysed (single-rooted teeth are easier to move than the multi-rooted teeth) [29] and by the different bone anatomy of the various arch sectors [30]. (ODO10)

In conclusion, stance phrase frames help maintain a level of professionalism and objectivity in the Results section by providing a nuanced presentation of the findings (Lu et al., 2021a, 2021b). These phrases allow authors to express their interpretation or assessment of the data while still adhering to the conventions of academic writing, where conclusions are often drawn cautiously. By using stance phrases, authors ensure that their results are presented with the appropriate level of confidence or qualification, helping to set the stage for further analysis and interpretation in the subsequent sections of the paper.

#### 5.3.2.3 Discourse Organizing Phrase Frames

Discourse organizing phrase frames are essential for structuring and guiding the presentation of findings in a logical and coherent way (Simpson-Vlach & Ellis, 2010). In the RA Results section, these frames include phrases that help organize the sequence of results and indicate how different pieces of data relate to one another. Discourse organizing phrases ensure that the presentation of results flows smoothly, making it easier for the reader to follow the progression of findings and understand their significance. They serve as signposts, guiding the reader through the various stages of the results and clarifying how the information is connected.

In the discourse organizing phrase frames, there are 4 sub-types, i.e. metadiscourse and textual reference, topic introduction and focus, topic elaboration, and discourse markers (Simpson-Vlach & Ellis, 2010). However, only 5 in metadiscourse and textual reference, 16 in topic elaboration, and 11 in discourse markers were found in the two sub-disciplines of Dentistry. No phrase frames in topic introduction and focus were found, as illustrated in Table 5.73.

**Table 5.73 A Summary of Different Types of Phrase Frames in the Discourse Organizing Phrase Frames**

| Length | Metadiscourse and textual reference | Topic introduction and focus | Topic elaboration | Discourse markers | Total |
|---|---|---|---|---|---|
| Four words | 4 | 0 | 5 | 6 | 15 |

#### 5.3.3.1 Metadiscourse and Textual Reference

Phrase frames in metadiscourse and textual reference are used to help structure the text and guide the reader through the argument, showing relationships between ideas, sections, and sources in the RA Results sections. These phrase frames contribute to the clarity, coherence, and organization of the RAs, ensuring that the readers understand the flow of the argument and how various pieces of information are interconnected.

For the frequency of this type of phrase frames, as illustrated in Table 5.74, a total of 117 occurrences of phrase frames were reported. There were 103 occurrences of phrase frames that were similar and 14 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 4 phrase frames with 107 occurrences in OMS and 113 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in OMS than in ODO. In this type, *are * in table* appeared most frequently, with 40 times in OMS and ODO, which shows a similarity between the two sub-disciplines.

**Table 5.74 A Summary of Frequency of Phrase Frames in Metadiscourse and Textual Reference in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | are * in table | 40 | 40 | 40 | 40 | 0 |
| 2 | * shown in table | 29 | 24 | 29 | 24 | 5 |
| 3 | compared with the * | 27 | 27 | 27 | 27 | 0 |
| 4 | is * in table | 21 | 16 | 17 | 12 | 9 |
| | **Total** | **117** | **107** | **113** | **103** | **14** |

For the number of fillers of each phrase frame, as illustrated in Table 5.75, a total of 23 fillers *appeared* in 4 phrase frames. Specifically, the result also showed 21 fillers that were similar and 2 fillers that were different between the two sub-disciplines. There were 18 fillers in OMS and 23 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *are * in table* occurred most frequently in the data with 7 fillers in the two sub-disciplines. In this phrase frame, there were 7 fillers in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.75 A Summary of Number of Fillers in Metadiscourse and Textual Reference in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | are * in table | 7 | 7 | 7 | 7 | 0 |
| 2 | * shown in table | 6 | 4 | 6 | 5 | 1 |
| 3 | is * in table | 5 | 3 | 5 | 4 | 1 |
| 4 | compared with the * | 5 | 4 | 5 | 5 | 0 |
| | **Total** | **23** | **18** | **23** | **21** | **2** |

For an overview of the use of phrase frames in this type, Excerpts 5.63 and 5.64 below illustrate phrase frame ** shown in table* found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.63**:

All patients underwent curettage surgical treatment. Patients with systemic diseases or with insufficient spiral CT images or with incomplete histopathological or other clinical data were excluded from the study. The basic information of the patients **is shown in Table** 1. (OMS26)

**Excerpt 5.64**:

**As shown in Table** 1, the vertical position of the maxillary central incisor was changed (intruded or extruded) with 0.5 mm increments according to the reference gingival line between the central incisor and canine, which

resulted in five images for each woman in a fullface view, yielding a total of 15 images. (ODO7)

#### 5.3.3.2 Topic Elaboration

Phrase frames in topic elaboration are used to clarify a particular topic or concept introduced in RA Results sections. These phrase frames help develop the discussion around a key point or subject, providing more details, offering examples, explaining significance, or elaborating on relationships between ideas. The purpose of topic elaboration is to ensure that the reader fully understands the importance of the topic, its context, and how it connects to other ideas in the study.

For the frequency of this type of phrase frames, as illustrated in Table 5.76, a total of 182 occurrences of phrase frames were reported. All of which were similar between the two sub-disciplines. Specifically, 5 phrase frames with 182 occurrences in OMS and in ODO were identified in the two sub-disciplines, which shows the equal use of phrase frames in OMS and in ODO. In this type, ** of this study* appeared most frequently with 61 times in OMS and in ODO, which shows a similarity between the two sub-disciplines.

**Table 5.76 A Summary of Frequency of Phrase Frames in Topic Elaboration in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 61 | 61 | 61 | 61 | 0 |
| 2 | * in this study | 44 | 44 | 44 | 44 | 0 |
| 3 | * used to compare | 28 | 28 | 28 | 28 | 0 |
| 4 | were used to * | 25 | 25 | 25 | 25 | 0 |
| 5 | analysis was * to | 24 | 24 | 24 | 24 | 0 |
| | **Total** | **182** | **182** | **182** | **182** | **0** |

For the number of fillers of each phrase frame, as illustrated in Table 5.77, a total of 30 fillers appeared in 5 phrase frames. Specifically, the result also showed 30 fillers that were similar between the two sub-disciplines, which shows the equal use of fillers in OMS and in ODO. The fillers of the phrase frame *was used to ** occurred most frequently in the data with 10 fillers in the two sub-disciplines. A total of 10 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.77 A Summary of Number of Fillers in Topic Elaboration in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 10 | 10 | 10 | 10 | 0 |
| 2 | were used to * | 5 | 5 | 5 | 5 | 0 |
| 3 | analysis was * to | 5 | 5 | 5 | 5 | 0 |
| 4 | * used to compare | 5 | 5 | 5 | 5 | 0 |
| 5 | * in this study | 5 | 5 | 5 | 5 | 0 |
| | **Total** | **30** | **30** | **30** | **30** | **0** |

For an overview of the use of phrase frames in this type, Excerpts 5.65 and 5.66 below illustrate a phrase frame *were used to* * found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.65:**

Five aspects of the mandibular movement **were used to evaluate** Di: dysfunction of joint, jaw pain, decreased mandible movement, and muscle tenderness. (OMS22)

**Excerpt 5.66:**

Intraoral scan data **were used to refine** the bimaxillary dentition, further improving its precision. (ODO4)

### 5.3.3.3 Discourse Markers

Phrase frames in discourse markers are used to manage the flow of information, signal relationships between ideas, and guide the reader through the RA Results sections. These markers help organize the content and clarify the relationships between different arguments or ideas. Phrase frames in discourse markers act as cues that guide the reader on how to interpret the information in the RAs, indicating connections, transitions, emphasis, contrast, or the introduction of new points.

For the frequency of this type of phrase frames, as illustrated in Table 5.78, a total of 199 occurrences of phrase frames were reported. There were 170 occurrences of phrase frames that were similar and 29 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 6 phrase frames with 185 occurrences in OMS and 176 occurrences in ODO were identified in the two sub-disciplines, which shows the more use of phrase frames in OMS than in ODO. In this type, *with the * of* appeared most frequently with 46 times in OMS and 40 times in ODO, which indicates the difference between the two sub-disciplines of Dentistry.

**Table 5.78 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | with the * of | 46 | 46 | 40 | 40 | 6 |
| 2 | in * to the | 41 | 41 | 41 | 41 | 0 |
| 3 | of the * and | 40 | 26 | 32 | 26 | 14 |
| 4 | on the * of | 30 | 30 | 25 | 25 | 5 |
| 5 | by the * of | 21 | 21 | 21 | 21 | 0 |
| 6 | with a * of | 21 | 21 | 17 | 17 | 4 |
| | **Total** | **199** | **185** | **176** | **170** | **29** |

For the number of fillers of each phrase frame, as illustrated in Table 5.79, a total of 39 fillers appeared in 6 phrase frames. Specifically, the result also showed 30 fillers that were similar and 9 fillers that were different between the two sub-disciplines. There were 36 fillers in OMS and 29 fillers in ODO, which shows the less use of fillers in OMS than in ODO. The fillers of the phrase frame *with the * of* occurred most frequently in the data with 9 fillers in the two sub-disciplines. In this phrase frame, there were 9 fillers in OMS and 6 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.79 A Summary of Number of Fillers in Discourse Markers in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | with the * of | 9 | 9 | 6 | 5 | 4 |
| 2 | of the * and | 8 | 5 | 6 | 5 | 3 |
| 3 | on the * of | 6 | 6 | 4 | 4 | 2 |
| 4 | in * to the | 6 | 6 | 5 | 6 | 0 |
| 5 | by the * of | 5 | 5 | 4 | 5 | 0 |
| 6 | with a * of | 5 | 5 | 4 | 5 | 0 |
| | **Total** | **39** | **36** | **29** | **30** | **9** |

For an overview of the use of phrase frames in this type, Excerpts 5.67 and 5.68 below illustrate phrase frame *with the * of* found in the RA Results section in the two sub-disciplines of Dentistry.

**Excerpt 5.67:**

In the present study, it was observed that the residual graft particles were in contact with the newly formed bone after 10 weeks. The integration of residual graft particles with newly formed bone was consistent **with the results of** previous studies.6,25 (OMS3)

**Excerpt 5.68:**

This accords **with the results of** shortterm studies that compared the effects of orthodontic treatment with and without extractions (15,16,27). (ODO27)

In conclusion, discourse organizing phrase frames play a crucial role in enhancing the clarity and readability of the Results section. By using these frames, authors can effectively structure their presentation, ensuring that the data is presented in a logical order and that relationships between different findings are clear (Golparvar & Barabadi, 2020; Cheng & Zhang, 2025). This not only aids the reader's understanding but also strengthens the overall coherence of the research report. Ultimately, discourse organizing phrases help maintain a well-structured flow of information, making the results easier to interpret and evaluate.

## 5.4 Phrase Frames of the Discussion Section

### 5.4.1 Results and Discussion of Phrase Frames from the Analysis of Structural Categories

In this section, 30% of phrase frames were selected for inter-rater reliability check based on the stratified and random selection. They were coded independently by the researcher and an invited coder. The results showed a high consistency of the analysis (100% in verb-based phrase frames, 94.11% in other-content-word phrase frames, and 100% in function-word phrase frames) between the 2 coders in inter-rater agreement as illustrated in Table 5.80.

**Table 5.80 The Inter-Rater Agreement of Phrase Frames in the Dentistry English RA Discussion section in the Structural Categories**

| Categories | Coded Unit | Agreed Codings | Different Codings | Agreement Percentage |
|---|---|---|---|---|
| Verb-based phrase frames | 60 | 60 | 0 | 100 |
| Other-content-word phrase frames | 128 | 136 | 8 | 94.11 |
| Function-word phrase frames | 22 | 22 | 0 | 100 |
| Total | 226 | 218 | | |

According to the structural categories of Gray and Biber (2013), the analysis revealed 3 types of phrase frames. In total, there were 218 phrase frames, including 60 in verb-based phrase frames, 136 in other-content-word phrase frames, and 22 in function-word phrase frames, in the two sub-disciplines of Dentistry, as illustrated in Figure 5.7. These findings show the popularity of other-content-word phrase frames in the English Dentistry RA Discussion section.

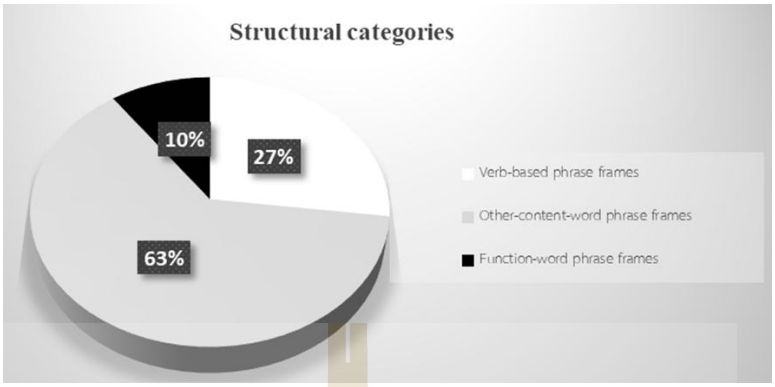



**Figure 5.6 Distribution of Phrase Frames in the Structural Categories in the English Dentistry RA Discussion Sections**

#### 5.4.1.1 Verb-based Phrase Frames

Verb-based phrase frames play a crucial role in interpreting the research findings and placing them within the broader context of the study (Gray & Biber, 2013). In the Discussion section in general, these phrase frames help authors present their interpretations of the results and explain their significance. They serve to connect the data with the hypotheses or research questions, guiding the reader through the reasoning process. Verb-based phrases in the RA Discussion section help highlight relationships between the results and existing literature, showing how the study's findings align with or challenge previous research.

There were 60 phrase frames in this type. For the frequency of this type of phrase frames, as illustrated in Table 5.81, a total of 2515 occurrences of phrase frames were reported. There were 2309 occurrences of phrase frames that were similar and 206 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 60 phrase frames with 2386 occurrences in OMS and 2438 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *was used to* * appeared most frequently, with 73 times in both OMS and ODO, which indicates a similarity between the two sub-disciplines of Dentistry.

**Table 5.81 A Summary of Phrase Frames in the Verb-based Category in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 73 | 73 | 73 | 73 | 0 |
| 2 | there was no * | 70 | 70 | 70 | 70 | 0 |
| 3 | was * in the | 66 | 52 | 59 | 45 | 21 |
| 4 | * this study was | 63 | 63 | 63 | 63 | 0 |
| 5 | were * in the | 59 | 55 | 55 | 51 | 8 |

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 6 | was * statistically significant | 54 | 54 | 42 | 42 | 12 |
| 7 | are * in table | 52 | 52 | 52 | 52 | 0 |
| 8 | was no significant * | 50 | 50 | 43 | 43 | 7 |
| 9 | * to evaluate the | 49 | 49 | 49 | 49 | 0 |
| 10 | be * to the | 48 | 48 | 48 | 48 | 0 |
| 11 | studies have * that | 47 | 47 | 47 | 47 | 0 |
| 12 | been * to be | 47 | 47 | 42 | 42 | 5 |
| 13 | has been * to | 46 | 46 | 46 | 46 | 0 |
| 14 | * found in the | 45 | 35 | 45 | 35 | 10 |
| 15 | analyses were performed * | 44 | 38 | 44 | 38 | 6 |
| 16 | was significantly * than | 44 | 44 | 44 | 44 | 0 |
| 17 | study was to * | 44 | 44 | 44 | 44 | 0 |
| 18 | the * group was | 43 | 38 | 38 | 33 | 10 |
| 19 | * difference was found | 43 | 43 | 43 | 43 | 0 |
| 20 | * to assess the | 43 | 43 | 43 | 43 | 0 |
| 21 | significant differences were * | 42 | 31 | 42 | 31 | 11 |
| 22 | have been * to | 42 | 42 | 42 | 42 | 0 |
| 23 | * significant differences were | 41 | 31 | 41 | 31 | 10 |
| 24 | was * as a | 41 | 41 | 41 | 41 | 0 |
| 25 | * shown in table | 41 | 36 | 41 | 36 | 5 |
| 26 | tipping of the * | 40 | 24 | 40 | 24 | 16 |
| 27 | was a significant * | 40 | 40 | 36 | 36 | 4 |
| 28 | no significant difference * | 40 | 40 | 40 | 40 | 0 |
| 29 | was to * the | 40 | 40 | 40 | 40 | 0 |
| 30 | * used to compare | 40 | 40 | 40 | 40 | 0 |
| 31 | was significantly greater * | 39 | 39 | 39 | 39 | 0 |
| 32 | * be explained by | 39 | 39 | 39 | 39 | 0 |
| 33 | it has been * | 39 | 39 | 39 | 39 | 0 |
| 34 | compared with the * | 39 | 39 | 39 | 39 | 0 |
| 35 | * tipping of the | 38 | 24 | 38 | 24 | 14 |
| 36 | differences were found * | 38 | 38 | 38 | 38 | 0 |
| 37 | compared * the control | 38 | 33 | 38 | 33 | 5 |
| 38 | were * from the | 38 | 33 | 38 | 33 | 5 |
| 39 | was * to assess | 38 | 38 | 38 | 38 | 0 |
| 40 | was * in the | 37 | 28 | 37 | 28 | 9 |
| 41 | could be * to | 37 | 37 | 37 | 37 | 0 |
| 42 | were * between the | 37 | 37 | 37 | 37 | 0 |
| 43 | has been * that | 37 | 37 | 37 | 37 | 0 |
| 44 | were used to * | 37 | 37 | 37 | 37 | 0 |
| 45 | differences were * between | 36 | 36 | 36 | 36 | 0 |
| 46 | analysis was * to | 36 | 36 | 36 | 36 | 0 |
| 47 | were * likely to | 35 | 31 | 35 | 31 | 4 |
| 48 | difference was * significant | 35 | 29 | 35 | 29 | 6 |
| 49 | * be attributed to | 35 | 35 | 35 | 35 | 0 |
| 50 | it is * that | 35 | 35 | 29 | 29 | 6 |
| 51 | aimed to * the | 35 | 35 | 35 | 35 | 0 |
| 52 | * there was no | 34 | 34 | 30 | 30 | 4 |
| 53 | the * side was | 34 | 34 | 24 | 24 | 10 |
| 54 | may be * to | 34 | 34 | 34 | 34 | 0 |
| 55 | was * with the | 34 | 34 | 29 | 29 | 5 |
| 56 | were used * the | 33 | 33 | 29 | 29 | 4 |
| 57 | previous studies have * | 33 | 33 | 33 | 33 | 0 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 58 | have * that the | 33 | 33 | 33 | 33 | 0 |
| 59 | is * in table | 33 | 28 | 29 | 24 | 9 |
| 60 | have been reported * | 32 | 32 | 32 | 32 | 0 |
| | **Total** | **2515** | **2386** | **2438** | **2309** | **206** |

For the number of fillers of each phrase frame, as illustrated in Table 5.82, a total of 276 fillers appeared in 60 phrase frames. Specifically, the result also showed 242 fillers that were similar and 34 fillers that were different between the two sub-disciplines. There were 254 fillers in OMS and 263 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *was used to* * occurred most frequently in the data with 9 fillers between the two sub-disciplines. A total of 9 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.82 A Summary of Fillers of Phrase Frames in the Verb-based Category in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 9 | 9 | 9 | 9 | 0 |
| 2 | was * in the | 8 | 6 | 7 | 5 | 3 |
| 3 | * to assess the | 8 | 8 | 8 | 8 | 0 |
| 4 | were * in the | 7 | 6 | 6 | 5 | 2 |
| 5 | tipping of the * | 6 | 2 | 6 | 2 | 4 |
| 6 | are * in table | 6 | 6 | 6 | 6 | 0 |
| 7 | the * group was | 5 | 4 | 4 | 3 | 2 |
| 8 | * tipping of the | 5 | 2 | 5 | 2 | 3 |
| 9 | was significantly * than | 5 | 5 | 5 | 5 | 0 |
| 10 | was * in the | 5 | 3 | 5 | 3 | 2 |
| 11 | no significant difference * | 3 | 3 | 3 | 3 | 0 |
| 12 | there was no * | 5 | 5 | 5 | 5 | 0 |
| 13 | was * statistically significant | 5 | 4 | 3 | 4 | 1 |
| 14 | * be explained by | 5 | 5 | 5 | 5 | 0 |
| 15 | has been * to | 5 | 5 | 5 | 5 | 0 |
| 16 | be * to the | 5 | 5 | 5 | 5 | 0 |
| 17 | have been * to | 5 | 5 | 5 | 5 | 0 |
| 18 | was * as a | 5 | 5 | 5 | 5 | 0 |
| 19 | studies have * that | 5 | 5 | 5 | 5 | 0 |
| 20 | been * to be | 5 | 5 | 4 | 4 | 1 |
| 21 | * found in the | 5 | 4 | 5 | 4 | 1 |
| 22 | * shown in table | 5 | 4 | 5 | 4 | 1 |
| 23 | * to evaluate the | 5 | 5 | 5 | 5 | 0 |
| 24 | study was to * | 5 | 5 | 5 | 5 | 0 |
| 25 | * there was no | 4 | 4 | 3 | 3 | 1 |
| 26 | * this study was | 4 | 4 | 4 | 4 | 0 |
| 27 | analyses were performed * | 4 | 3 | 4 | 3 | 1 |
| 28 | have been reported * | 4 | 4 | 4 | 4 | 0 |
| 29 | were used * the | 4 | 4 | 3 | 3 | 1 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 30 | were * likely to | 4 | 3 | 4 | 3 | 1 |
| 31 | difference was * significant | 4 | 3 | 4 | 3 | 1 |
| 32 | was significantly greater * | 4 | 4 | 4 | 4 | 0 |
| 33 | * difference was found | 4 | 4 | 4 | 4 | 0 |
| 34 | was a significant * | 4 | 5 | 4 | 4 | 0 |
| 35 | differences were found * | 4 | 4 | 4 | 4 | 0 |
| 36 | was no significant * | 4 | 4 | 3 | 3 | 1 |
| 37 | significant differences were * | 4 | 3 | 4 | 3 | 1 |
| 38 | * significant differences were | 4 | 3 | 4 | 3 | 1 |
| 39 | compared * the control | 4 | 3 | 4 | 3 | 1 |
| 40 | differences were * between | 4 | 4 | 4 | 4 | 0 |
| 41 | the * side was | 4 | 4 | 2 | 2 | 2 |
| 42 | * be attributed to | 4 | 4 | 4 | 4 | 0 |
| 43 | may be * to | 4 | 4 | 4 | 4 | 0 |
| 44 | could be * to | 4 | 4 | 4 | 4 | 0 |
| 45 | it has been * | 4 | 4 | 4 | 4 | 0 |
| 46 | be * by the | 4 | 4 | 4 | 4 | 0 |
| 47 | it is * that | 4 | 4 | 3 | 3 | 1 |
| 48 | were * from the | 4 | 3 | 4 | 3 | 1 |
| 49 | were * between the | 4 | 4 | 4 | 4 | 0 |
| 50 | was to * the | 4 | 4 | 4 | 4 | 0 |
| 51 | was * to assess | 4 | 4 | 4 | 4 | 0 |
| 52 | was * with the | 4 | 4 | 3 | 3 | 1 |
| 53 | has been * that | 4 | 4 | 4 | 4 | 0 |
| 54 | previous studies have * | 4 | 4 | 4 | 4 | 0 |
| 55 | have * that the | 4 | 4 | 4 | 4 | 0 |
| 56 | compared with the * | 4 | 4 | 4 | 4 | 0 |
| 57 | aimed to * the | 4 | 4 | 4 | 4 | 0 |
| 58 | were used to * | 4 | 4 | 4 | 4 | 0 |
| 59 | analysis was * to | 4 | 4 | 4 | 4 | 0 |
| 60 | * used to compare | 4 | 4 | 4 | 4 | 0 |
| | **Total** | **276** | **254** | **263** | **242** | **34** |

For an overview of the use of phrase frames in this type, Excerpts 5.69 and 5.70 below illustrate a phrase frame *are * in table* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.69:**

Debonding results per group and per titanium base abutment design **are presented in Tables** 1 and 2, respectively. (OMS4)

**Excerpt 5.70:**

The results of the demographic variable comparisons **are presented in Table** 2. (OD7)

In conclusion, verb-based phrase frames in the Discussion section are vital for linking the results to broader theoretical or practical implications. These phrases allow authors to communicate the meaning of their findings in relation to the

existing body of knowledge, drawing connections or proposing explanations. By using verbs to interpret the results, researchers can present their conclusions in a clear, logical manner, ensuring that their insights are framed within the context of their research objectives. This contributes to a more nuanced and comprehensive discussion of the study's outcomes.

#### 5.4.1.2 Other-content-word Phrase Frames

Other-content-word phrase frames, such as nouns, adjectives, and adverbs, help to refine and clarify the interpretation of research findings (Gray & Biber, 2013; Golparvar & Barabadi, 2020). In the Discussion section in general, nouns provide a framework for discussing the underlying patterns or concepts revealed by the data. Adjectives help qualify the results, giving readers a sense of their importance or impact. Adverbs further modify the interpretation of the findings, indicating the extent or certainty of the observed effects. These frames help to convey the nuances of the results, allowing the author to present their conclusions with precision.

For the frequency of this type of phrase frames, as illustrated in Table 5.83, a total of 5904 occurrences of phrase frames were reported. There were 4388 occurrences of phrase frames that were similar and 1516 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 136 phrase frames with 5059 occurrences in OMS and 5237 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *in the *group* appeared most frequently, with 76 times in OMS and 183 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.83 A Summary of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 232 | 76 | 183 | 24 | 208 |
| 2 | in the * study | 143 | 143 | 36 | 36 | 107 |
| 3 | in the * area | 86 | 82 | 45 | 41 | 45 |
| 4 | * of this study | 73 | 53 | 73 | 53 | 20 |
| 5 | * soft tissue recession | 69 | 65 | 28 | 24 | 45 |
| 6 | there * no significant | 68 | 68 | 68 | 68 | 0 |
| 7 | no significant * between | 60 | 60 | 60 | 60 | 0 |
| 8 | on the * side | 60 | 56 | 45 | 41 | 19 |
| 9 | * significant difference between | 57 | 57 | 57 | 57 | 0 |
| 10 | this study * to | 56 | 56 | 56 | 56 | 0 |
| 11 | * in this study | 56 | 56 | 56 | 56 | 0 |
| 12 | no significant differences * | 55 | 55 | 55 | 55 | 0 |
| 13 | significant difference * the | 55 | 55 | 55 | 55 | 0 |
| 14 | * the two groups | 55 | 55 | 55 | 55 | 0 |
| 15 | no significant difference * | 54 | 54 | 54 | 54 | 0 |
| 16 | the use of * | 51 | 46 | 40 | 40 | 11 |
| 17 | * significant difference in | 50 | 50 | 43 | 43 | 7 |

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 18 | * difference between the | 50 | 50 | 50 | 50 | 0 |
| 19 | * the HPC line | 50 | 24 | 50 | 24 | 26 |
| 20 | * significant differences in | 49 | 49 | 49 | 49 | 0 |
| 21 | a significant * in | 48 | 48 | 41 | 41 | 7 |
| 22 | the * number of | 47 | 47 | 32 | 32 | 15 |
| 23 | of the * teeth | 47 | 24 | 47 | 24 | 23 |
| 24 | * titanium base abutments | 46 | 46 | 24 | 24 | 22 |
| 25 | the early * dentition | 46 | 24 | 46 | 24 | 22 |
| 26 | the * dental arch | 46 | 24 | 46 | 24 | 22 |
| 27 | one of the * | 45 | 45 | 45 | 45 | 0 |
| 28 | satisfaction with * aesthetics | 45 | 29 | 40 | 24 | 21 |
| 29 | * one of the | 44 | 44 | 44 | 44 | 0 |
| 30 | during the * period | 44 | 35 | 33 | 24 | 20 |
| 31 | * titanium base abutment | 44 | 44 | 24 | 24 | 20 |
| 32 | central and lateral * | 44 | 24 | 44 | 24 | 20 |
| 33 | and satisfaction with * | 43 | 24 | 43 | 24 | 19 |
| 34 | of the mandibular * | 43 | 37 | 43 | 37 | 6 |
| 35 | in the * arch | 43 | 24 | 43 | 24 | 19 |
| 36 | * and lateral incisors | 43 | 24 | 43 | 24 | 19 |
| 37 | * significant correlation between | 42 | 42 | 36 | 36 | 6 |
| 38 | * statistically significant difference | 42 | 42 | 24 | 24 | 18 |
| 39 | significant differences * the | 42 | 42 | 32 | 32 | 10 |
| 40 | statistically significant differences * | 42 | 35 | 42 | 35 | 7 |
| 41 | in the esthetic * | 42 | 42 | 24 | 24 | 18 |
| 42 | of the * lip | 42 | 42 | 33 | 33 | 9 |
| 43 | * the oral cavity | 42 | 42 | 37 | 37 | 5 |
| 44 | the * anterior teeth | 42 | 24 | 42 | 24 | 18 |
| 45 | a higher * of | 41 | 37 | 41 | 37 | 4 |
| 46 | in the * analysis | 41 | 41 | 24 | 24 | 17 |
| 47 | * central and lateral | 41 | 24 | 41 | 24 | 17 |
| 48 | position of the * | 41 | 37 | 37 | 33 | 8 |
| 49 | the quality of * | 41 | 36 | 29 | 24 | 17 |
| 50 | results of * study | 41 | 41 | 41 | 41 | 0 |
| 51 | be * by the | 40 | 40 | 40 | 40 | 0 |
| 52 | * be due to | 40 | 40 | 33 | 33 | 7 |
| 53 | * at the end | 40 | 36 | 28 | 24 | 16 |
| 54 | * the right side | 40 | 34 | 40 | 34 | 6 |
| 55 | * newly formed bone | 40 | 40 | 24 | 24 | 16 |
| 56 | the lower * teeth | 40 | 24 | 40 | 24 | 16 |
| 57 | at the same * | 39 | 24 | 39 | 24 | 15 |
| 58 | * more likely to | 39 | 28 | 39 | 28 | 11 |
| 59 | a significant * between | 39 | 39 | 33 | 33 | 6 |
| 60 | at the * time | 39 | 39 | 39 | 39 | 0 |
| 61 | * differences between the | 39 | 39 | 39 | 39 | 0 |
| 62 | a significant difference * | 39 | 39 | 39 | 39 | 0 |
| 63 | to the * plane | 39 | 39 | 35 | 29 | 10 |
| 64 | of the * population | 39 | 31 | 39 | 31 | 8 |
| 65 | the mixed dentition * | 39 | 24 | 39 | 24 | 15 |
| 66 | the * strong anchorage | 39 | 24 | 39 | 24 | 15 |
| 67 | * between the groups | 38 | 28 | 38 | 28 | 10 |
| 68 | * the early permanent | 38 | 24 | 38 | 24 | 14 |
| 69 | * maxillary central incisors | 38 | 24 | 38 | 24 | 14 |
| 70 | * the treatment of | 38 | 38 | 38 | 38 | 0 |
| 71 | the * and control | 38 | 32 | 38 | 32 | 6 |
| 72 | * the results of | 38 | 38 | 38 | 38 | 0 |
| 73 | * the number of | 38 | 38 | 38 | 38 | 0 |
| 74 | the number of * | 37 | 37 | 29 | 29 | 8 |
| 75 | * and control groups | 37 | 31 | 37 | 31 | 6 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 76 | a * risk of | 37 | 37 | 37 | 37 | 0 |
| 77 | of the * second | 37 | 24 | 37 | 24 | 13 |
| 78 | * the facial midline | 37 | 24 | 37 | 24 | 13 |
| 79 | * orthodontic treatment | 37 | 37 | 37 | 37 | 0 |
| 80 | bone * in the | 37 | 37 | 24 | 24 | 13 |
| 81 | study * to evaluate | 37 | 37 | 37 | 37 | 0 |
| 82 | * of gingival recession | 36 | 24 | 36 | 24 | 12 |
| 83 | * the level of | 36 | 36 | 32 | 32 | 4 |
| 84 | * the presence of | 36 | 36 | 36 | 36 | 0 |
| 85 | * the range of | 36 | 29 | 36 | 29 | 7 |
| 86 | a * level of | 36 | 32 | 36 | 32 | 4 |
| 87 | * between the two | 36 | 36 | 31 | 31 | 5 |
| 88 | difference between the * | 36 | 31 | 29 | 24 | 12 |
| 89 | * facial vertical height | 36 | 24 | 36 | 24 | 12 |
| 90 | of the maxillary * | 36 | 24 | 36 | 24 | 12 |
| 91 | abutments for the * | 36 | 36 | 24 | 24 | 12 |
| 92 | the * central incisors | 36 | 36 | 36 | 36 | 0 |
| 93 | of the * cavity | 35 | 35 | 24 | 24 | 11 |
| 94 | * clinical crown height | 35 | 24 | 35 | 24 | 11 |
| 95 | of the included * | 35 | 35 | 24 | 24 | 11 |
| 96 | and soft tissue * | 35 | 24 | 35 | 24 | 11 |
| 97 | the * posterior teeth | 35 | 24 | 35 | 24 | 11 |
| 98 | the * third molar | 35 | 35 | 35 | 35 | 0 |
| 99 | limitations of * study | 35 | 35 | 35 | 35 | 0 |
| 100 | abutment for the * | 34 | 34 | 24 | 24 | 10 |
| 101 | * of the study | 34 | 29 | 34 | 29 | 5 |
| 102 | significantly greater * the | 34 | 24 | 34 | 24 | 10 |
| 103 | of the * bone | 34 | 34 | 28 | 28 | 6 |
| 104 | distal * of the | 34 | 24 | 34 | 24 | 10 |
| 105 | of the cystic * | 34 | 34 | 24 | 24 | 10 |
| 106 | difference was not * | 34 | 34 | 24 | 24 | 10 |
| 107 | * dental implant failure | 34 | 34 | 24 | 24 | 10 |
| 108 | the * position of | 34 | 24 | 34 | 24 | 10 |
| 109 | reliability of the * | 34 | 34 | 34 | 34 | 0 |
| 110 | this study * that | 33 | 33 | 33 | 33 | 0 |
| 111 | a * rate of | 33 | 33 | 28 | 28 | 5 |
| 112 | an increase * the | 33 | 29 | 33 | 29 | 4 |
| 113 | * patients with a | 33 | 33 | 33 | 33 | 0 |
| 114 | of * alveolar ridge | 33 | 28 | 33 | 28 | 5 |
| 115 | * for patients with | 33 | 29 | 28 | 24 | 9 |
| 116 | significantly between the * | 33 | 33 | 28 | 28 | 5 |
| 117 | * the risk of | 33 | 33 | 33 | 33 | 0 |
| 118 | * incisors and canines | 33 | 24 | 33 | 24 | 9 |
| 119 | * the fact that | 33 | 33 | 33 | 33 | 0 |
| 120 | in order to * | 32 | 28 | 32 | 28 | 4 |
| 121 | * larger in the | 32 | 24 | 32 | 24 | 8 |
| 122 | vertical position of * | 32 | 24 | 32 | 24 | 8 |
| 123 | the time of * | 32 | 32 | 28 | 28 | 4 |
| 124 | number of * with | 32 | 32 | 28 | 28 | 4 |
| 125 | a high * of | 32 | 28 | 32 | 28 | 4 |
| 126 | in the * region | 32 | 28 | 28 | 24 | 8 |
| 127 | in the parotid * | 32 | 32 | 24 | 24 | 8 |
| 128 | in the anterior * | 32 | 24 | 32 | 24 | 8 |
| 129 | * the parotid gland | 32 | 32 | 24 | 24 | 8 |
| 130 | * the maxillary anterior | 32 | 24 | 32 | 24 | 8 |
| 131 | * of the cutting | 32 | 32 | 24 | 24 | 8 |
| 132 | by the institutional * | 32 | 32 | 32 | 32 | 0 |
| 133 | * the observation period | 32 | 28 | 28 | 24 | 8 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 134 | * physiologic tooth mobility | 32 | 24 | 32 | 24 | 8 |
| 135 | the * sample size | 32 | 32 | 32 | 32 | 0 |
| 136 | * of the anterior | 32 | 24 | 32 | 24 | 8 |
| | **Total** | **5904** | **5059** | **5237** | **4388** | **1516** |

For the number of fillers of each phrase frame, as illustrated in Table 5.84, a total of 619 fillers appeared in 136 phrase frames. Specifically, the results also showed 421 fillers that were similar and 198 fillers that were different between the two sub-disciplines. There were 486 fillers in OMS and 529 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *in the * group* occurred most frequently in the data with 19 fillers in the two sub-disciplines. There were 9 fillers in OMS and 12 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.84 A Summary of Number of Fillers of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 19 | 9 | 12 | 9 | 10 |
| 2 | in the * area | 10 | 9 | 5 | 4 | 6 |
| 3 | * of this study | 8 | 5 | 8 | 5 | 3 |
| 4 | in the parotid * | 7 | 4 | 2 | 2 | 5 |
| 5 | on the * side | 7 | 6 | 5 | 4 | 3 |
| 6 | the use of * | 6 | 5 | 5 | 4 | 2 |
| 7 | * be due to | 6 | 5 | 2 | 4 | 2 |
| 8 | a significant * in | 6 | 6 | 5 | 5 | 1 |
| 9 | during the * period | 6 | 4 | 4 | 2 | 4 |
| 10 | the * dental arch | 6 | 2 | 6 | 2 | 4 |
| 11 | the * number of | 5 | 5 | 3 | 3 | 2 |
| 12 | a higher * of | 5 | 4 | 5 | 4 | 1 |
| 13 | * between the groups | 5 | 3 | 5 | 3 | 2 |
| 14 | * more likely to | 5 | 3 | 5 | 3 | 2 |
| 15 | no significant * between | 5 | 5 | 5 | 5 | 0 |
| 16 | * significant difference between | 5 | 5 | 5 | 5 | 0 |
| 17 | no significant differences * | 5 | 5 | 5 | 5 | 0 |
| 18 | * significant difference in | 5 | 5 | 4 | 5 | 0 |
| 19 | a * level of | 5 | 4 | 5 | 4 | 1 |
| 20 | of the * second | 4 | 2 | 4 | 2 | 2 |
| 21 | of the maxillary * | 5 | 2 | 5 | 2 | 3 |
| 22 | to the * plane | 5 | 4 | 4 | 3 | 2 |
| 23 | in the * arch | 5 | 2 | 5 | 2 | 3 |
| 24 | * titanium base abutment | 5 | 5 | 2 | 2 | 3 |
| 25 | position of the * | 5 | 3 | 4 | 3 | 2 |
| 26 | * titanium base abutments | 5 | 5 | 2 | 2 | 3 |
| 27 | the * strong anchorage | 5 | 2 | 5 | 3 | 2 |
| 28 | bone * in the | 5 | 5 | 2 | 2 | 3 |
| 29 | * the number of | 5 | 5 | 5 | 5 | 0 |
| 30 | * in this study | 4 | 4 | 4 | 4 | 0 |
| 31 | * of gingival recession | 4 | 2 | 4 | 2 | 2 |
| 32 | of the * teeth | 4 | 2 | 4 | 2 | 2 |
| 33 | * the level of | 4 | 4 | 3 | 3 | 1 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 34 | * the presence of | 4 | 4 | 4 | 4 | 0 |
| 35 | * the range of | 4 | 3 | 4 | 3 | 1 |
| 36 | the number of * | 4 | 4 | 3 | 3 | 1 |
| 37 | and satisfaction with * | 4 | 2 | 4 | 2 | 2 |
| 38 | vertical position of * | 4 | 2 | 4 | 2 | 2 |
| 39 | the time of * | 4 | 4 | 3 | 3 | 1 |
| 40 | number of * with | 4 | 4 | 3 | 3 | 1 |
| 41 | * and control groups | 4 | 3 | 4 | 3 | 1 |
| 42 | a * rate of | 4 | 4 | 3 | 3 | 1 |
| 43 | an increase * the | 4 | 3 | 4 | 3 | 1 |
| 44 | abutment for the * | 4 | 4 | 2 | 2 | 2 |
| 45 | * patients with a | 4 | 4 | 4 | 4 | 0 |
| 46 | * of the study | 4 | 3 | 4 | 3 | 1 |
| 47 | at the same * | 4 | 2 | 4 | 2 | 2 |
| 48 | a high * of | 4 | 3 | 4 | 3 | 1 |
| 49 | one of the * | 4 | 4 | 4 | 4 | 0 |
| 50 | a significant * between | 4 | 4 | 3 | 3 | 1 |
| 51 | * significant correlation between | 4 | 4 | 3 | 3 | 1 |
| 52 | of * alveolar ridge | 4 | 3 | 4 | 3 | 1 |
| 53 | at the * time | 4 | 4 | 4 | 4 | 0 |
| 54 | no significant difference * | 4 | 4 | 4 | 4 | 0 |
| 55 | significant difference * the | 4 | 4 | 4 | 4 | 0 |
| 56 | * difference between the | 4 | 4 | 4 | 4 | 0 |
| 57 | * significant differences in | 4 | 4 | 4 | 4 | 0 |
| 58 | * for patients with | 4 | 3 | 3 | 3 | 1 |
| 59 | * statistically significant difference | 4 | 4 | 2 | 2 | 2 |
| 60 | significant differences * the | 4 | 4 | 3 | 3 | 1 |
| 61 | statistically significant differences * | 4 | 3 | 4 | 3 | 1 |
| 62 | * differences between the | 4 | 4 | 4 | 4 | 0 |
| 63 | a significant difference * | 4 | 4 | 4 | 4 | 0 |
| 64 | a * risk of | 4 | 4 | 4 | 4 | 0 |
| 65 | significantly between the * | 4 | 4 | 3 | 3 | 1 |
| 66 | * the risk of | 4 | 4 | 4 | 4 | 0 |
| 67 | significantly greater * the | 4 | 2 | 4 | 2 | 2 |
| 68 | * larger in the | 4 | 2 | 4 | 2 | 2 |
| 69 | * between the two | 4 | 4 | 3 | 3 | 1 |
| 70 | difference between the * | 4 | 3 | 3 | 3 | 1 |
| 71 | * facial vertical height | 4 | 2 | 4 | 2 | 2 |
| 72 | in the esthetic * | 4 | 4 | 2 | 4 | 0 |
| 73 | of the * cavity | 4 | 4 | 2 | 2 | 2 |
| 74 | in the * region | 4 | 3 | 3 | 3 | 1 |
| 75 | is * in table | 4 | 3 | 3 | 3 | 1 |
| 76 | in order to * | 4 | 3 | 4 | 3 | 1 |
| 77 | in the anterior * | 4 | 2 | 4 | 2 | 2 |
| 78 | * the parotid gland | 4 | 4 | 2 | 2 | 2 |
| 79 | of the * bone | 4 | 4 | 3 | 3 | 1 |
| 80 | of the * lip | 4 | 4 | 3 | 3 | 1 |
| 81 | * the maxillary anterior | 4 | 2 | 4 | 2 | 2 |
| 82 | * the facial midline | 4 | 2 | 4 | 2 | 2 |
| 83 | * orthodontic treatment | 4 | 4 | 4 | 4 | 0 |
| 84 | * at the end | 4 | 3 | 3 | 3 | 1 |
| 85 | * of the cutting | 4 | 4 | 2 | 2 | 2 |
| 86 | by the institutional * | 4 | 4 | 4 | 4 | 0 |
| 87 | * the observation period | 4 | 3 | 3 | 3 | 1 |
| 88 | of the mandibular * | 4 | 3 | 4 | 3 | 1 |
| 89 | * the right side | 4 | 3 | 4 | 3 | 1 |
| 90 | * the oral cavity | 4 | 4 | 3 | 3 | 1 |
| 91 | in the * analysis | 4 | 4 | 2 | 2 | 2 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 92 | of the * population | 4 | 3 | 4 | 3 | 1 |
| 93 | * the early permanent | 4 | 2 | 4 | 2 | 2 |
| 94 | * maxillary central incisors | 4 | 2 | 4 | 2 | 2 |
| 95 | * the treatment of | 4 | 4 | 4 | 4 | 0 |
| 96 | * physiologic tooth mobility | 4 | 2 | 4 | 2 | 2 |
| 97 | * newly formed bone | 4 | 4 | 2 | 2 | 2 |
| 98 | * clinical crown height | 4 | 2 | 4 | 2 | 2 |
| 99 | * the HPC line | 4 | 2 | 4 | 2 | 2 |
| 100 | satisfaction with * aesthetics | 4 | 3 | 3 | 3 | 1 |
| 101 | the * sample size | 4 | 4 | 4 | 4 | 0 |
| 102 | * one of the | 4 | 4 | 4 | 4 | 0 |
| 103 | this study * to | 4 | 4 | 4 | 4 | 0 |
| 104 | there * no significant | 4 | 4 | 4 | 4 | 0 |
| 105 | this study * that | 4 | 4 | 4 | 4 | 0 |
| 106 | distal * of the | 4 | 2 | 4 | 2 | 2 |
| 107 | of the cystic * | 4 | 4 | 2 | 2 | 2 |
| 108 | of the included * | 4 | 4 | 2 | 2 | 2 |
| 109 | difference was not * | 4 | 4 | 2 | 2 | 2 |
| 110 | * dental implant failure | 4 | 4 | 2 | 2 | 2 |
| 111 | central and lateral * | 4 | 2 | 4 | 2 | 2 |
| 112 | * incisors and canines | 4 | 2 | 4 | 2 | 2 |
| 113 | * and lateral incisors | 4 | 2 | 4 | 2 | 2 |
| 114 | * of the anterior | 4 | 2 | 4 | 2 | 2 |
| 115 | * prevalence of root | 4 | 2 | 4 | 2 | 2 |
| 116 | the * position of | 4 | 2 | 4 | 2 | 2 |
| 117 | face-to-face interaction with * | 4 | 2 | 4 | 2 | 2 |
| 118 | and soft tissue * | 4 | 2 | 4 | 2 | 2 |
| 119 | the * posterior teeth | 4 | 2 | 4 | 2 | 2 |
| 120 | the * anterior teeth | 4 | 2 | 4 | 2 | 2 |
| 121 | * central and lateral | 4 | 2 | 4 | 2 | 2 |
| 122 | reliability of the * | 4 | 4 | 4 | 4 | 0 |
| 123 | the mixed dentition * | 4 | 2 | 4 | 2 | 2 |
| 124 | the quality of * | 4 | 3 | 3 | 2 | 2 |
| 125 | abutments for the * | 4 | 4 | 2 | 2 | 2 |
| 126 | * soft tissue recession | 4 | 3 | 3 | 2 | 2 |
| 127 | the * central incisors | 4 | 2 | 4 | 2 | 2 |
| 128 | the * third molar | 4 | 4 | 4 | 4 | 0 |
| 129 | first or second * | 4 | 2 | 4 | 2 | 2 |
| 130 | the early * dentition | 4 | 2 | 4 | 2 | 2 |
| 131 | the lower * teeth | 4 | 2 | 4 | 2 | 2 |
| 132 | the * and control | 4 | 3 | 4 | 3 | 1 |
| 133 | * the two groups | 4 | 4 | 4 | 4 | 0 |
| 134 | in the * study | 4 | 4 | 3 | 3 | 1 |
| 135 | results of * study | 4 | 4 | 4 | 4 | 0 |
| 136 | study * to evaluate | 4 | 4 | 4 | 4 | 0 |
| | **Total** | **619** | **486** | **529** | **421** | **198** |

For an overview of the use of phrase frames in this type, Excerpts 5.71 and 5.72 below illustrate a phrase frame ** of this study* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.71:**

Also, another **limitation of this study** was that only survival rates were obtained due to the impossibility of gathering the necessary data to report the success rates. (OMS5)

มหาวิทยาลัยเทคโนโลยีสุรนารี

**Excerpt 5.72:**

The **limitation of this study** is the lack of information on diet and parafunctional habits, factors that could have influenced anterior teeth wear. (ODO8)

In conclusion, other-content-word phrase frames are instrumental in expressing the complexity and significance of the findings in the RA Discussion section. They provide a means for the author to qualify, contextualize, and elaborate on the results, offering a clearer picture of their implications. By using these phrases effectively, writers can create a more detailed and insightful interpretation of their findings, contributing to a deeper understanding of the research and its place within the broader field.

Taken together, other-content-word phrase frames in the Discussion section are essential for interpreting the findings, comparing results with previous literature, acknowledging limitations, and suggesting future research or clinical applications. These frames help the author structure their interpretation of the study results in a clear, transparent, and logically coherent manner (Golparvar & Barabadi, 2020; Lu et al., 2021a, 2021b). They ensure that the discussion stays focused on the implications of the research, while also providing a balanced perspective by addressing limitations and proposing next steps for the field. Such frames contribute to the scientific rigor and clinical relevance of research articles in Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, which aim to advance both knowledge and practice in these fields.

#### 5.4.1.3 Function-word Phrase Frames

Function-word phrase frames, such as prepositions, articles, conjunctions, and auxiliary verbs, play an essential role in connecting ideas, structuring arguments, and clarifying relationships between findings (Gray & Biber, 2013). In the Discussion section in general, prepositions help to establish causality or context, linking specific results to broader conclusions. Articles help to introduce particular findings or concepts, ensuring specificity. Conjunctions serve to transition between different points, indicating contrast, cause, or consequence. Auxiliary verbs allow for the expression of possibility or recommendation, helping to present conclusions that acknowledge uncertainty or potential areas for further research.

For the frequency of this type of phrase frames, as illustrated in Table 5.85, a total of 1313 occurrences of phrase frames were reported. There were 1113 occurrences of phrase frames that were similar and 200 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 22 phrase frames

with 1181 occurrences in OMS and 1212 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *the * of the* appeared most frequently, with 235 times in OMS and 211 times in ODO, which indicates a difference between two sub-disciplines.

**Table 5.85 A Summary of Phrase Frames in the Function-word Category in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 256 | 235 | 211 | 211 | 45 |
| 2 | at the * of | 126 | 51 | 126 | 51 | 75 |
| 3 | in the * of | 89 | 85 | 89 | 85 | 4 |
| 4 | the * of this | 77 | 77 | 54 | 54 | 23 |
| 5 | the * between the | 60 | 60 | 60 | 60 | 0 |
| 6 | with the * of | 58 | 58 | 54 | 58 | 0 |
| 7 | in * with the | 54 | 54 | 54 | 54 | 0 |
| 8 | in * to the | 53 | 53 | 53 | 53 | 0 |
| 9 | of the * and | 52 | 38 | 44 | 38 | 14 |
| 10 | to the * of | 47 | 47 | 47 | 47 | 0 |
| 11 | with * to the | 42 | 42 | 42 | 42 | 0 |
| 12 | on the * of | 42 | 42 | 37 | 37 | 5 |
| 13 | * with and without | 41 | 36 | 41 | 36 | 5 |
| 14 | than * of the | 41 | 41 | 41 | 41 | 0 |
| 15 | and the * of | 38 | 38 | 38 | 38 | 0 |
| 16 | the * of our | 37 | 31 | 37 | 31 | 6 |
| 17 | within the * of | 35 | 28 | 31 | 24 | 11 |
| 18 | that the * of | 34 | 34 | 34 | 34 | 0 |
| 19 | a * in the | 33 | 33 | 33 | 33 | 0 |
| 20 | by the * of | 33 | 33 | 33 | 33 | 0 |
| 21 | with a * of | 33 | 33 | 29 | 29 | 4 |
| 22 | and * of the | 32 | 32 | 24 | 24 | 8 |
| | **Total** | **1313** | **1181** | **1212** | **1113** | **200** |

For the number of fillers of each phrase frame, as illustrated in Table 5.86, a total of 149 fillers appeared in 22 phrase frames. Specifically, the result also showed 119 fillers that were similar and 30 fillers that were different between the two sub-disciplines. There were 134 fillers in OMS and in ODO, which shows the equal use of fillers in OMS and in ODO. The fillers of the phrase frame *the * of the* occurred most frequently in the data with 33 fillers in the two sub-disciplines. A total of 28 fillers of this phrase frame were found in OMS and in ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.86 A Summary of Number of Fillers of Phrase Frames in the Function-word Category in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 33 | 28 | 28 | 23 | 10 |
| 2 | in the * of | 12 | 11 | 11 | 11 | 1 |
| 3 | the * of this | 8 | 8 | 6 | 6 | 2 |
| 4 | with the * of | 8 | 8 | 7 | 7 | 1 |
| 5 | at the * of | 7 | 4 | 7 | 4 | 3 |
| 6 | the * between the | 7 | 7 | 7 | 7 | 0 |
| 7 | of the * and | 7 | 4 | 6 | 4 | 3 |
| 8 | in * with the | 6 | 6 | 6 | 6 | 0 |
| 9 | to the * of | 6 | 6 | 6 | 6 | 0 |
| 10 | and the * of | 5 | 5 | 5 | 5 | 0 |
| 11 | on the * of | 5 | 5 | 4 | 4 | 1 |
| 12 | in * to the | 5 | 5 | 5 | 5 | 0 |
| 13 | with * to the | 4 | 4 | 4 | 4 | 0 |
| 14 | within the * of | 4 | 3 | 3 | 2 | 2 |
| 15 | a * in the | 4 | 4 | 4 | 4 | 0 |
| 16 | * with and without | 4 | 3 | 4 | 3 | 1 |
| 17 | than * of the | 4 | 4 | 4 | 4 | 0 |
| 18 | and * of the | 4 | 4 | 2 | 2 | 2 |
| 19 | the * of our | 4 | 3 | 4 | 3 | 1 |
| 20 | that the * of | 4 | 4 | 4 | 2 | 2 |
| 21 | by the * of | 4 | 4 | 4 | 4 | 0 |
| 22 | with a * of | 4 | 4 | 3 | 3 | 1 |
| | **Total** | **149** | **134** | **134** | **119** | **30** |

For an overview of the use of phrase frames in this type, Excerpts 5.73 and 5.74 below illustrate a phrase frame *in the * of* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.73:**

Thus, proper management of the facial nerve is an important procedure **in the treatment of** parotid SCC. (OMS13)

**Excerpt 5.74:**

Among patients with OEs, the possibility of retreating to the last step was higher **in the treatment of** patients in stage 3 than those in stage 2 and stage 1. (ODO15)

Taken together, in the Discussion section of research articles in OMS and ODO, function-word phrase frames are vital tools for interpreting the study's findings, comparing them to previous research, explaining the implications of the results, and suggesting future research directions (Golparvar & Barabadi, 2020; Cheng & Zhang, 2025). The Discussion is where the author connects the study's outcomes to the broader field, offering insights into their significance, limitations, and potential

clinical applications. Function-word phrase frames help to organize the interpretation, highlight relationships, and maintain clarity in communicating the broader implications of the research.

### 5.4.2 Results and Discussion from the Analysis of Functional Categories

In this section, 30% of phrase frames were selected for inter-rater reliability based on the stratified and random selection. They were coded independently by the researcher and an invited coder. The results showed a high consistency of the analysis (95.18% in referential phrase frames, 100% stance phrase frames, and 100% in discourse organizing phrase frames) between the 2 coders in inter-rater agreement as illustrated in Table 5.87.

**Table 5.87 The Inter-Rater Agreement of Phrase Frames in the Functional Categories**

| Categories | Coded Unit | Agreed Codings | Different Codings | Agreement Percentage |
|---|---|---|---|---|
| Referential phrase frames | 158 | 166 | 9 | 95.18 |
| Stance phrase frames | 26 | 26 | 0 | 100 |
| Discourse organizing phrase frames | 26 | 26 | 0 | 100 |
| **Total** | 228 | 218 | | |

The findings showed that analyzing functional categories of phrase frames plays a crucial role in understanding how language is structured and used within specific contexts (Golparvar & Barabadi, 2020). Three types of phrase frames were identified in the functional categories: referential, stance, and discourse organizing. Out of 218 phrase frames, 166 were classified as referential, 26 as stance, and 26 as discourse organizing, as illustrated in Figure 5.8. The referential type of phrase frames was the most frequently used in the current study, which was the same findings as Biber et al. (2004), Lu et al. (2018), Golparvar and Barabadi (2020), and Ren (2021).

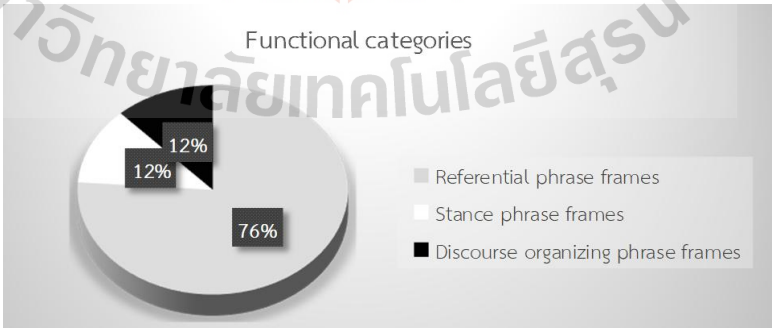



**Figure 5.7 Distribution of Phrase Frames in the Functional Categories in the English Dentistry RA Discussion Sections**

#### 5.4.2.1 Referential Phrase Frames

Referential phrase frames are used to refer to specific concepts, ideas, studies, or data that have been previously mentioned or are relevant within the context of the article (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020). In the RA Discussion section, they allow the authors to reference and relate different pieces of information, whether it is pointing back to earlier sections of the article, citing past research, explaining results, or making comparisons. They are classified into 5 types, i.e., specification of attributes, identification and focus, contrast and comparison, deictics and locatives, and vagueness markers (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020). Notably, phrase frames in vagueness markers were not found in the current study. Such absence could be due to the rare use in academic writing (Simpson-Vlach & Ellis, 2010; Lu et al., 2018). In this type, 28 phrase frames were identified in specification of attributes, 11 in identification and focus, 52 in contrast and comparison, and 75 in deictics and locatives, as illustrated in Table 5.88.

**Table 5.88 A Summary of Different Types of Phrase Frames in the Structural Category**

| Length | Specification of Attributes | Identification and Focus | Contrast and Comparison | Deictics and Locatives | Vagueness Markers | Total |
|---|---|---|---|---|---|---|
| Four words | 28 | 11 | 52 | 75 | 0 | 166 |

#### 5.3.1.1 Specification of Attributes

In this type, phrase frames convey clarity, precision, and organization of the research to ensure that the study is communicated in a way that is logically organized, well-defined, and easy for the readers to follow (Walcott, 2021).

For the frequency of this type of phrase frames, as illustrated in Table 5.89, a total of 1603 occurrences of phrase frames were reported. There were 1194 occurrences of phrase frames that were similar and 409 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 28 phrase frames with 1402 occurrences in OMS and 1369 occurrences in ODO were identified between the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *the * of the* appeared most frequently, with 235 times in OMS and 211 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.89 A Summary of Frequency of Phrase Frames in Specification of Attributes in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 256 | 235 | 211 | 211 | 45 |
| 2 | in the * study | 143 | 143 | 36 | 36 | 107 |
| 3 | at the * of | 126 | 51 | 126 | 51 | 75 |
| 4 | in the * of | 89 | 85 | 89 | 85 | 4 |
| 5 | the * of this | 77 | 77 | 54 | 54 | 23 |
| 6 | the * between the | 60 | 60 | 60 | 60 | 0 |
| 7 | in * with the | 54 | 54 | 54 | 54 | 0 |
| 8 | the use of * | 51 | 46 | 40 | 40 | 11 |
| 9 | the * number of | 47 | 47 | 32 | 32 | 15 |
| 10 | to the * of | 47 | 47 | 47 | 47 | 0 |
| 11 | of the * teeth | 47 | 24 | 47 | 24 | 23 |
| 12 | and satisfaction with * | 43 | 24 | 43 | 24 | 19 |
| 13 | with * to the | 42 | 42 | 42 | 42 | 0 |
| 14 | tipping of the * | 40 | 24 | 40 | 24 | 16 |
| 15 | and the * of | 38 | 38 | 38 | 38 | 0 |
| 16 | the number of * | 37 | 37 | 29 | 29 | 8 |
| 17 | * of gingival recession | 36 | 24 | 36 | 24 | 12 |
| 18 | * the level of | 36 | 36 | 32 | 32 | 4 |
| 19 | * the presence of | 36 | 36 | 36 | 36 | 0 |
| 20 | * the range of | 36 | 29 | 36 | 29 | 7 |
| 21 | within the * of | 35 | 28 | 31 | 24 | 11 |
| 22 | a * rate of | 33 | 33 | 28 | 28 | 5 |
| 23 | a * in the | 33 | 33 | 33 | 33 | 0 |
| 24 | an increase * the | 33 | 29 | 33 | 29 | 4 |
| 25 | vertical position of * | 32 | 24 | 32 | 24 | 8 |
| 26 | the time of * | 32 | 32 | 28 | 28 | 4 |
| 27 | number of * with | 32 | 32 | 28 | 28 | 4 |
| 28 | * and control groups | 32 | 32 | 28 | 28 | 4 |
| | **Total** | **1603** | **1402** | **1369** | **1194** | **409** |

For the number of fillers of each phrase frame, as illustrated in Table 5.90, a total of 169 fillers appeared in 28 phrase frames. Specifically, the result also showed 127 fillers that were similar and 42 fillers that were different between the two sub-disciplines. There were 143 fillers in OMS and 153 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *the * of the* occurred most frequently in the data with 31 fillers in the two sub-disciplines. A total of 28 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.90 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 33 | 28 | 28 | 23 | 10 |
| 2 | in the * of | 12 | 11 | 12 | 11 | 1 |
| 3 | the * of this | 8 | 8 | 6 | 6 | 2 |
| 4 | at the * of | 7 | 4 | 7 | 4 | 3 |
| 5 | the * between the | 7 | 7 | 7 | 7 | 0 |

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 6 | the use of * | 6 | 5 | 5 | 4 | 2 |
| 7 | in * with the | 6 | 6 | 6 | 6 | 0 |
| 8 | to the * of | 6 | 6 | 6 | 6 | 0 |
| 9 | tipping of the * | 6 | 2 | 6 | 2 | 4 |
| 10 | the * number of | 5 | 5 | 3 | 3 | 2 |
| 11 | and the * of | 5 | 5 | 5 | 5 | 0 |
| 12 | in the * study | 4 | 4 | 3 | 3 | 1 |
| 13 | * of gingival recession | 4 | 2 | 4 | 2 | 2 |
| 14 | with * to the | 4 | 4 | 4 | 4 | 0 |
| 15 | of the * teeth | 4 | 2 | 4 | 2 | 2 |
| 16 | * the level of | 4 | 4 | 3 | 3 | 1 |
| 17 | * the presence of | 4 | 4 | 4 | 4 | 0 |
| 18 | * the range of | 4 | 3 | 4 | 3 | 1 |
| 19 | within the * of | 4 | 3 | 3 | 2 | 2 |
| 20 | the number of * | 4 | 4 | 3 | 3 | 1 |
| 21 | and satisfaction with * | 4 | 2 | 4 | 2 | 2 |
| 22 | vertical position of * | 4 | 2 | 4 | 2 | 2 |
| 23 | the time of * | 4 | 4 | 3 | 3 | 1 |
| 24 | number of * with | 4 | 4 | 3 | 3 | 1 |
| 25 | * and control groups | 4 | 3 | 4 | 3 | 1 |
| 26 | a * rate of | 4 | 4 | 4 | 4 | 0 |
| 27 | a * in the | 4 | 4 | 4 | 4 | 0 |
| 28 | an increase * the | 4 | 3 | 4 | 3 | 1 |
| | **Total** | **169** | **143** | **153** | **127** | **42** |

For an overview of the use of phrase frames in this type, Excerpts 5.75 and 5.76 below illustrate a phrase frame *the * of the* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Exceprt 5.75**:

**The results of the** multivariate analysis are presented as the odds ratio (OR) and 95% confidence interval (CI). (OMS18)

**Exceprt 5.76**:

This is a standard statistical process in geometric morphometrics in order to be able to interpret **the results of the** data analyses. (ODO24)

### 5.3.1.2 Identification and Focus

Phrase frames in identification and focus are used to identify and emphasize specific elements, concepts, or issues that are central to the research. These phrase frames help to direct the reader's attention to key aspects of the study and define important terms or topics. They serve to highlight what is being discussed, examined, or addressed in a particular section of the article.

For the frequency of this type of phrase frames, as illustrated in Table 5.91, a total of 436 occurrences of phrase frames were reported. There were 371 occurrences of phrase frames that were similar and 65 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 11 phrase frames with 406 occurrences in OMS and in ODO were identified in the two sub-disciplines,

which shows the more use of phrase frames in OMS than the ones in ODO. In this type, ** this study was* appeared most frequently, with 63 times in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.91 A Summary of Frequency of Phrase Frames in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * this study was | 63 | 63 | 63 | 63 | 0 |
| 2 | analyses were performed * | 44 | 37 | 44 | 38 | 6 |
| 3 | the * group was | 43 | 38 | 38 | 33 | 10 |
| 4 | titanium base abutments * | 41 | 47 | 24 | 24 | 17 |
| 5 | * with and without | 41 | 36 | 41 | 36 | 5 |
| 6 | * tipping of the | 38 | 24 | 38 | 24 | 14 |
| 7 | * there was no | 34 | 34 | 30 | 30 | 4 |
| 8 | * of the study | 34 | 29 | 34 | 29 | 5 |
| 9 | * patients with a | 33 | 33 | 33 | 33 | 0 |
| 10 | were used * the | 33 | 33 | 29 | 29 | 4 |
| 11 | have been reported * | 32 | 32 | 32 | 32 | 0 |
| | **Total** | **436** | **406** | **406** | **371** | **65** |

For the number of fillers of each phrase frame, as illustrated in Table 5.92, a total of 46 fillers appeared in 11 phrase frames. Specifically, the result also showed 34 fillers that were similar and 12 fillers that were different between the two sub-disciplines. There were 40 fillers in OMS and in ODO, which shows the equal use of fillers in OMS and ODO. The fillers of the phrase frame *the * group was* occurred most frequently in the data with 5 fillers in the two sub-disciplines. A total of 4 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.92 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * group was | 5 | 4 | 4 | 3 | 2 |
| 2 | * tipping of the | 5 | 2 | 4 | 2 | 3 |
| 3 | * there was no | 4 | 4 | 3 | 3 | 1 |
| 4 | * this study was | 4 | 4 | 4 | 4 | 0 |
| 5 | * patients with a | 4 | 4 | 4 | 4 | 0 |
| 6 | analyses were performed * | 4 | 3 | 4 | 3 | 1 |
| 7 | have been reported * | 4 | 4 | 4 | 4 | 0 |
| 8 | were used * the | 4 | 4 | 3 | 3 | 1 |
| 9 | * of the study | 4 | 3 | 4 | 3 | 1 |
| 10 | titanium base abutments * | 4 | 5 | 2 | 2 | 2 |
| 11 | * with and without | 4 | 3 | 4 | 3 | 1 |
| | **Total** | **46** | **40** | **40** | **34** | **12** |

มหาวิทยาลัยเทคโนโลยีสุรนารี

For an overview of the use of phrase frames in this type, Excerpts 5.77 and 5.78 below illustrate phrase frame ** there was no* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.77:**

However, in the maxillary All-on-4 treatment concept (Nobel Biocare), it has been found **that there was no** significant difference in cumulative survival rate between implants inserted with < 30-Ncm torque or 30- to 50-Ncm torque. (OMS2)

**Excerpt 5.78:**

The lack of significant increase in lower incisor inclination suggested **that there was no** dentoalveolar compensation in the skeletal correction of Class II malocclusion (3, 8). (ODO21)

#### 5.3.1.3 Contrast and Comparison

Phrase frames in contrast and comparison are used to highlight differences, similarities, or relationships between ideas, theories, findings, or concepts. These phrase frames help convey how one element in the research relates to, differs from, or aligns with another. They are essential for illustrating how the current study compares with previous research, and how different variables or groups are contrasted.

For the frequency of this type of phrase frames, as illustrated in Table 5.93, a total of 2226 occurrences of phrase frames were reported. There were 1962 occurrences of phrase frames that were similar and 264 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 52 phrase frames with 2061 occurrences in OMS and 2106 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than the ones in ODO. In this type, *no significant difference ** appeared most frequently, with 70 times in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.93 A Summary of Frequency of Phrase Frames in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | no significant difference * | 70 | 70 | 70 | 70 | 0 |
| 2 | there was no * | 70 | 70 | 70 | 70 | 0 |
| 3 | there * no significant | 68 | 68 | 68 | 68 | 0 |
| 4 | no significant * between | 60 | 39 | 39 | 39 | 21 |
| 5 | * significant difference between | 57 | 57 | 57 | 57 | 0 |
| 6 | no significant differences * | 55 | 55 | 55 | 55 | 0 |
| 7 | significant difference * the | 55 | 55 | 55 | 55 | 0 |
| 8 | was * statistically significant | 54 | 54 | 42 | 42 | 12 |
| 9 | * significant difference in | 50 | 50 | 43 | 43 | 7 |
| 10 | was no significant * | 50 | 50 | 43 | 43 | 7 |
| 11 | * difference between the | 50 | 50 | 50 | 50 | 0 |

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 12 | * significant differences in | 49 | 49 | 49 | 49 | 0 |
| 13 | a significant * in | 48 | 48 | 41 | 41 | 7 |
| 14 | one of the * | 45 | 45 | 45 | 45 | 0 |
| 15 | was significantly * than | 44 | 44 | 44 | 44 | 0 |
| 16 | * one of the | 44 | 44 | 44 | 44 | 0 |
| 17 | * between the groups | 38 | 28 | 38 | 28 | 10 |
| 18 | * difference was found | 43 | 43 | 43 | 43 | 0 |
| 19 | * significant correlation between | 42 | 42 | 36 | 36 | 6 |
| 20 | * statistically significant difference | 42 | 42 | 24 | 24 | 18 |
| 21 | significant differences were * | 42 | 31 | 42 | 31 | 11 |
| 22 | significant differences * the | 42 | 42 | 32 | 32 | 10 |
| 23 | statistically significant differences * | 42 | 35 | 42 | 35 | 7 |
| 24 | a higher * of | 41 | 37 | 41 | 37 | 4 |
| 25 | than * of the | 41 | 41 | 41 | 41 | 0 |
| 26 | * significant differences were | 41 | 31 | 41 | 31 | 10 |
| 27 | was a significant * | 40 | 40 | 36 | 36 | 4 |
| 28 | * more likely to | 39 | 28 | 39 | 28 | 11 |
| 29 | at the same * | 39 | 24 | 39 | 24 | 15 |
| 30 | was significantly greater * | 39 | 39 | 39 | 39 | 0 |
| 31 | a significant * between | 39 | 39 | 33 | 33 | 6 |
| 32 | at the * time | 39 | 39 | 39 | 39 | 0 |
| 33 | * differences between the | 39 | 39 | 39 | 39 | 0 |
| 34 | a significant difference * | 39 | 39 | 39 | 39 | 0 |
| 35 | differences were found * | 38 | 38 | 38 | 38 | 0 |
| 36 | compared * the control | 38 | 33 | 38 | 33 | 5 |
| 37 | was * in the | 37 | 28 | 37 | 28 | 9 |
| 38 | a * risk of | 37 | 37 | 37 | 37 | 0 |
| 39 | a * level of | 36 | 32 | 36 | 32 | 4 |
| 40 | * between the two | 36 | 36 | 31 | 31 | 5 |
| 41 | differences were * between | 36 | 36 | 36 | 36 | 0 |
| 42 | difference between the * | 36 | 31 | 29 | 24 | 12 |
| 43 | * facial vertical height | 36 | 24 | 36 | 24 | 12 |
| 44 | were * likely to | 35 | 31 | 35 | 31 | 4 |
| 45 | difference was * significant | 35 | 29 | 35 | 29 | 6 |
| 46 | significantly greater * the | 34 | 24 | 34 | 24 | 10 |
| 47 | of * alveolar ridge | 33 | 28 | 33 | 28 | 5 |
| 48 | * for patients with | 33 | 29 | 28 | 24 | 9 |
| 49 | significantly between the * | 33 | 33 | 28 | 28 | 5 |
| 50 | * the risk of | 33 | 33 | 33 | 33 | 0 |
| 51 | a high * of | 32 | 28 | 32 | 28 | 4 |
| 52 | * larger in the | 32 | 24 | 32 | 24 | 8 |
| | **Total** | **2226** | **2061** | **2106** | **1962** | **264** |

For the number of fillers of each phrase frame, as illustrated in Table 5.94, a total of 220 fillers appeared in 52 phrase frames. Specifically, the result also showed 184 fillers that were similar and 36 fillers that were different between the two sub-disciplines. There were 196 fillers in OMS and 208 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *a significant * in* occurred most frequently in the data with 6 fillers in the two sub-

disciplines. There were 6 fillers of this phrase frame in OMS and in ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.94 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | a significant * in | 6 | 6 | 6 | 5 | 1 |
| 2 | * more likely to | 5 | 3 | 5 | 3 | 2 |
| 3 | a higher * of | 5 | 4 | 5 | 4 | 1 |
| 4 | was significantly * than | 5 | 5 | 5 | 5 | 0 |
| 5 | was * in the | 5 | 3 | 5 | 3 | 2 |
| 6 | no significant * between | 5 | 5 | 5 | 5 | 0 |
| 7 | there was no * | 5 | 5 | 5 | 5 | 0 |
| 8 | * significant difference between | 5 | 5 | 5 | 5 | 0 |
| 9 | no significant differences * | 5 | 5 | 5 | 5 | 0 |
| 10 | was * statistically significant | 5 | 5 | 4 | 3 | 2 |
| 11 | * significant difference in | 5 | 5 | 4 | 5 | 0 |
| 12 | a * level of | 5 | 4 | 5 | 4 | 1 |
| 13 | at the same * | 4 | 2 | 4 | 2 | 2 |
| 14 | were * likely to | 4 | 3 | 4 | 3 | 1 |
| 15 | difference was * significant | 4 | 3 | 4 | 3 | 1 |
| 16 | was significantly greater * | 4 | 4 | 4 | 4 | 0 |
| 17 | a high * of | 4 | 3 | 4 | 3 | 1 |
| 18 | * larger in the | 4 | 2 | 4 | 2 | 2 |
| 19 | one of the * | 4 | 4 | 4 | 4 | 0 |
| 20 | * one of the | 4 | 4 | 4 | 4 | 0 |
| 21 | a significant * between | 4 | 4 | 3 | 3 | 1 |
| 22 | * significant correlation between | 4 | 4 | 3 | 3 | 1 |
| 23 | * difference was found | 4 | 4 | 4 | 4 | 0 |
| 24 | than * of the | 4 | 4 | 4 | 4 | 0 |
| 25 | was a significant * | 4 | 5 | 4 | 4 | 0 |
| 26 | of * alveolar ridge | 4 | 3 | 4 | 3 | 1 |
| 27 | at the * time | 4 | 4 | 4 | 4 | 0 |
| 28 | differences were found * | 4 | 4 | 4 | 4 | 0 |
| 29 | no significant difference * | 4 | 4 | 4 | 4 | 0 |
| 30 | there * no significant | 4 | 4 | 4 | 4 | 0 |
| 31 | significant difference * the | 4 | 4 | 4 | 4 | 0 |
| 32 | was no significant * | 4 | 4 | 3 | 3 | 1 |
| 33 | * difference between the | 4 | 4 | 4 | 4 | 0 |
| 34 | * significant differences in | 4 | 4 | 4 | 4 | 0 |
| 35 | * for patients with | 4 | 3 | 3 | 3 | 1 |
| 36 | * statistically significant difference | 4 | 4 | 2 | 2 | 2 |
| 37 | significant differences were * | 4 | 3 | 4 | 3 | 1 |
| 38 | significant differences * the | 4 | 4 | 3 | 3 | 1 |
| 39 | statistically significant differences * | 4 | 3 | 4 | 3 | 1 |
| 40 | * differences between the | 4 | 4 | 4 | 4 | 0 |
| 41 | * significant differences were | 4 | 3 | 4 | 3 | 1 |
| 42 | a significant difference * | 4 | 4 | 4 | 4 | 0 |
| 43 | compared * the control | 4 | 3 | 4 | 3 | 1 |
| 44 | a * risk of | 4 | 4 | 4 | 4 | 0 |
| 45 | significantly between the * | 4 | 4 | 3 | 3 | 1 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 46 | * the risk of | 4 | 4 | 4 | 4 | 0 |
| 47 | significantly greater * the | 4 | 2 | 4 | 2 | 2 |
| 48 | * between the two | 4 | 4 | 3 | 3 | 1 |
| 49 | differences were * between | 4 | 4 | 4 | 4 | 0 |
| 50 | difference between the * | 4 | 3 | 3 | 3 | 1 |
| 51 | * facial vertical height | 4 | 2 | 4 | 2 | 2 |
| 52 | * between the groups | 3 | 2 | 3 | 2 | 1 |
| | **Total** | **220** | **196** | **208** | **184** | **36** |

For an overview of the use of phrase frames in this type, Excerpts 5.79 and 5.80 below illustrate phrase frame *were * likely to* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.79:**

Compared to controls, cases **were more likely to** have smoked in their lifetime (18% vs 11.5%, P = .009), more likely to have higher prevalence of IBD (1.5% vs 0.02%, P = .059), and more likely to consume PPIs within 6 months of the implant surgery (40.0% vs 32.5%, P = .028). (OMS10)

**Excerpt 5.80:**

Those in clear aligners **were more likely to** be interested in using teledentistry, with 27% agreeing or strongly agreeing, compared with 18% of those in braces (P 5 0.0429). (ODO18)

#### 5.3.1.4 Deictics and Locatives

Phrase frames in deictics and locatives are used to indicate specific references in time, space, or context. They help guide the reader through the structure of the research, identify relationships between various parts of the paper, and situate information in relation to the content being discussed. These devices are essential for providing clarity and precision in academic writing.

For the frequency of this type of phrase frames, as illustrated in Table 5.95, a total of 3114 occurrences of phrase frames were reported. There were 2022 occurrences of phrase frames that were similar and 1092 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 75 phrase frames with 2475 occurrences in OMS and 2670 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than the ones in OMS. In this type, *in the * group* appeared most frequently, with 76 times in OMS and 183 in ODO, which indicates a difference between the two sub-disciplines.

Table 5.95 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 232 | 76 | 183 | 24 | 208 |
| 2 | in the * area | 86 | 82 | 45 | 41 | 45 |
| 3 | * soft tissue recession | 69 | 65 | 28 | 24 | 45 |
| 4 | on the * side | 60 | 56 | 45 | 41 | 19 |
| 5 | * the two groups | 55 | 55 | 55 | 55 | 0 |
| 6 | * the HPC line | 50 | 24 | 50 | 24 | 26 |
| 7 | * titanium base abutments | 46 | 46 | 24 | 24 | 22 |
| 8 | the early * dentition | 46 | 24 | 46 | 24 | 22 |
| 9 | the * dental arch | 46 | 24 | 46 | 24 | 22 |
| 10 | satisfaction with * aesthetics | 45 | 29 | 40 | 24 | 21 |
| 11 | during the * period | 44 | 35 | 33 | 24 | 20 |
| 12 | * titanium base abutment | 44 | 44 | 24 | 24 | 20 |
| 13 | central and lateral * | 44 | 24 | 44 | 24 | 20 |
| 14 | of the mandibular * | 43 | 37 | 43 | 37 | 6 |
| 15 | in the * arch | 43 | 24 | 43 | 24 | 19 |
| 16 | * and lateral incisors | 43 | 24 | 43 | 24 | 19 |
| 17 | in the esthetic * | 42 | 42 | 24 | 24 | 18 |
| 18 | of the * lip | 42 | 42 | 33 | 33 | 9 |
| 19 | * the oral cavity | 42 | 42 | 37 | 37 | 5 |
| 20 | the * anterior teeth | 42 | 24 | 42 | 24 | 18 |
| 21 | in the * analysis | 41 | 41 | 24 | 24 | 17 |
| 22 | * central and lateral | 41 | 24 | 41 | 24 | 17 |
| 23 | position of the * | 41 | 37 | 37 | 33 | 8 |
| 24 | the quality of * | 41 | 36 | 29 | 24 | 17 |
| 25 | * at the end | 40 | 36 | 28 | 24 | 16 |
| 26 | * the right side | 40 | 34 | 40 | 34 | 6 |
| 27 | * newly formed bone | 40 | 40 | 24 | 24 | 16 |
| 28 | the lower * teeth | 40 | 24 | 40 | 24 | 16 |
| 29 | to the * plane | 39 | 39 | 35 | 29 | 10 |
| 30 | of the * population | 39 | 31 | 39 | 31 | 8 |
| 31 | the mixed dentition * | 39 | 24 | 39 | 24 | 15 |
| 32 | the * strong anchorage | 39 | 24 | 39 | 24 | 15 |
| 33 | * the early permanent | 38 | 24 | 38 | 24 | 14 |
| 34 | * maxillary central incisors | 38 | 24 | 38 | 24 | 14 |
| 35 | the * and control | 38 | 32 | 38 | 32 | 6 |
| 36 | of the * second | 37 | 24 | 37 | 24 | 13 |
| 37 | * the facial midline | 37 | 24 | 37 | 24 | 13 |
| 38 | * orthodontic treatment | 37 | 37 | 37 | 37 | 0 |
| 39 | the * of our | 37 | 31 | 37 | 31 | 6 |
| 40 | of the maxillary * | 36 | 24 | 36 | 24 | 12 |
| 41 | abutments for the * | 36 | 36 | 24 | 24 | 12 |
| 42 | abutment for the * | 34 | 34 | 24 | 24 | 10 |
| 43 | the * central incisors | 36 | 36 | 36 | 36 | 0 |
| 44 | of the * cavity | 35 | 35 | 24 | 24 | 11 |
| 45 | * clinical crown height | 35 | 24 | 35 | 24 | 11 |
| 46 | of the included * | 35 | 35 | 24 | 24 | 11 |
| 47 | and soft tissue * | 35 | 24 | 35 | 24 | 11 |
| 48 | the * posterior teeth | 35 | 24 | 35 | 24 | 11 |
| 49 | the * third molar | 35 | 35 | 35 | 35 | 0 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 50 | of the * bone | 34 | 34 | 28 | 28 | 6 |
| 51 | distal * of the | 34 | 24 | 34 | 24 | 10 |
| 52 | of the cystic * | 34 | 34 | 24 | 24 | 10 |
| 53 | difference was not * | 34 | 34 | 24 | 24 | 10 |
| 54 | the * side was | 34 | 34 | 24 | 24 | 10 |
| 55 | * dental implant failure | 34 | 34 | 24 | 24 | 10 |
| 56 | the * position of | 34 | 24 | 34 | 24 | 10 |
| 57 | that the * of | 34 | 34 | 34 | 34 | 0 |
| 58 | reliability of the * | 34 | 34 | 34 | 34 | 0 |
| 59 | * incisors and canines | 33 | 24 | 33 | 24 | 9 |
| 60 | in the * region | 32 | 28 | 28 | 24 | 8 |
| 61 | in the parotid * | 32 | 32 | 24 | 24 | 8 |
| 62 | in the anterior * | 32 | 24 | 32 | 24 | 8 |
| 63 | * the parotid gland | 32 | 32 | 24 | 24 | 8 |
| 64 | * the maxillary anterior | 32 | 24 | 32 | 24 | 8 |
| 65 | * of the cutting | 32 | 32 | 24 | 24 | 8 |
| 66 | by the institutional * | 32 | 32 | 32 | 32 | 0 |
| 67 | * the observation period | 32 | 28 | 28 | 24 | 8 |
| 68 | * physiologic tooth mobility | 32 | 24 | 32 | 24 | 8 |
| 69 | the * sample size | 32 | 32 | 32 | 32 | 0 |
| 70 | * of the anterior | 32 | 24 | 32 | 24 | 8 |
| 71 | and * of the | 32 | 32 | 24 | 24 | 8 |
| 72 | * prevalence of root | 32 | 24 | 32 | 24 | 8 |
| 73 | face-to-face interaction with * | 32 | 24 | 32 | 24 | 8 |
| 74 | first or second * | 32 | 24 | 32 | 24 | 8 |
| 75 | bone * in the | 37 | 37 | 24 | 24 | 13 |
| | **Total** | **3114** | **2475** | **2670** | **2022** | **1092** |

For the number of fillers of each phrase frame, as illustrated in Table 5.96, a total of 340 fillers appeared in 75 phrase frames. Specifically, the result also showed 183 fillers that were similar and 157 fillers that were different between the two sub-disciplines. There were 243 fillers in OMS and 270 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *in the * group* occurred most frequently in the data with 17 fillers in the two sub-disciplines. In this phrase frame, there were 7 fillers in OMS and 14 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.96 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 19 | 7 | 14 | 2 | 17 |
| 2 | in the * area | 10 | 9 | 5 | 4 | 6 |
| 3 | in the parotid * | 7 | 4 | 2 | 2 | 5 |
| 4 | on the * side | 7 | 6 | 5 | 4 | 3 |
| 5 | during the * period | 6 | 4 | 4 | 2 | 4 |
| 6 | the * dental arch | 6 | 2 | 6 | 2 | 4 |

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 7 | of the * second | 5 | 2 | 4 | 2 | 3 |
| 8 | of the maxillary * | 5 | 2 | 5 | 2 | 3 |
| 9 | to the * plane | 5 | 4 | 4 | 3 | 2 |
| 10 | in the * arch | 5 | 2 | 5 | 2 | 3 |
| 11 | * titanium base abutment | 5 | 5 | 2 | 2 | 3 |
| 12 | position of the * | 5 | 3 | 4 | 3 | 2 |
| 13 | * titanium base abutments | 5 | 5 | 2 | 2 | 3 |
| 14 | the * strong anchorage | 5 | 2 | 5 | 3 | 2 |
| 15 | bone * in the | 5 | 5 | 2 | 2 | 3 |
| 16 | in the esthetic * | 4 | 4 | 2 | 4 | 0 |
| 17 | of the * cavity | 4 | 4 | 2 | 2 | 2 |
| 18 | in the * region | 4 | 3 | 3 | 3 | 1 |
| 19 | in the anterior * | 4 | 2 | 4 | 2 | 2 |
| 20 | * the parotid gland | 4 | 4 | 2 | 2 | 2 |
| 21 | of the * bone | 4 | 4 | 3 | 3 | 1 |
| 22 | of the * lip | 4 | 4 | 3 | 3 | 1 |
| 23 | * the maxillary anterior | 4 | 2 | 4 | 2 | 2 |
| 24 | * the facial midline | 4 | 2 | 4 | 2 | 2 |
| 25 | * orthodontic treatment | 4 | 4 | 4 | 4 | 0 |
| 26 | * at the end | 4 | 3 | 3 | 3 | 1 |
| 27 | * of the cutting | 4 | 4 | 2 | 2 | 2 |
| 28 | by the institutional * | 4 | 4 | 4 | 4 | 0 |
| 29 | * the right side | 4 | 3 | 4 | 3 | 1 |
| 30 | * the observation period | 4 | 3 | 3 | 3 | 1 |
| 31 | of the mandibular * | 4 | 3 | 4 | 3 | 1 |
| 32 | * the oral cavity | 4 | 4 | 3 | 3 | 1 |
| 33 | in the * analysis | 4 | 4 | 2 | 2 | 2 |
| 34 | of the * population | 4 | 3 | 4 | 3 | 1 |
| 35 | * the early permanent | 4 | 2 | 4 | 2 | 2 |
| 36 | * maxillary central incisors | 4 | 2 | 4 | 2 | 2 |
| 37 | * physiologic tooth mobility | 4 | 2 | 4 | 2 | 2 |
| 38 | * newly formed bone | 4 | 4 | 2 | 2 | 2 |
| 39 | * clinical crown height | 4 | 2 | 4 | 2 | 2 |
| 40 | * the HPC line | 4 | 2 | 4 | 2 | 2 |
| 41 | satisfaction with * aesthetics | 4 | 3 | 3 | 3 | 1 |
| 42 | the * sample size | 4 | 4 | 4 | 4 | 0 |
| 43 | distal * of the | 4 | 2 | 4 | 2 | 2 |
| 44 | of the cystic * | 4 | 4 | 2 | 2 | 2 |
| 45 | of the included * | 4 | 4 | 2 | 2 | 2 |
| 46 | difference was not * | 4 | 4 | 2 | 2 | 2 |
| 47 | the * side was | 4 | 4 | 2 | 2 | 2 |
| 48 | * dental implant failure | 4 | 4 | 2 | 2 | 2 |
| 49 | central and lateral * | 4 | 2 | 4 | 2 | 2 |
| 50 | * incisors and canines | 4 | 2 | 4 | 2 | 2 |
| 51 | * and lateral incisors | 4 | 2 | 4 | 2 | 2 |
| 52 | * of the anterior | 4 | 2 | 4 | 2 | 2 |
| 53 | and * of the | 4 | 4 | 2 | 2 | 2 |
| 54 | * prevalence of root | 4 | 2 | 4 | 2 | 2 |
| 55 | the * position of | 4 | 2 | 4 | 2 | 2 |
| 56 | face-to-face interaction with * | 4 | 2 | 4 | 2 | 2 |
| 57 | the * of our | 4 | 3 | 4 | 3 | 1 |
| 58 | and soft tissue * | 4 | 2 | 4 | 2 | 2 |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 59 | the * posterior teeth | 4 | 2 | 4 | 2 | 2 |
| 60 | the * anterior teeth | 4 | 2 | 4 | 2 | 2 |
| 61 | that the * of | 4 | 4 | 4 | 2 | 2 |
| 62 | * central and lateral | 4 | 2 | 4 | 2 | 2 |
| 63 | reliability of the * | 4 | 4 | 4 | 4 | 0 |
| 64 | the mixed dentition * | 4 | 2 | 4 | 2 | 2 |
| 65 | the quality of * | 4 | 3 | 3 | 2 | 2 |
| 66 | abutments for the * | 4 | 4 | 2 | 2 | 2 |
| 67 | abutment for the * | 4 | 4 | 2 | 2 | 2 |
| 68 | * soft tissue recession | 4 | 3 | 3 | 2 | 2 |
| 69 | the * central incisors | 4 | 2 | 4 | 2 | 2 |
| 70 | the * third molar | 4 | 4 | 4 | 4 | 0 |
| 71 | first or second * | 4 | 2 | 4 | 2 | 2 |
| 72 | the early * dentition | 4 | 2 | 4 | 2 | 2 |
| 73 | the lower * teeth | 4 | 2 | 4 | 2 | 2 |
| 74 | the * and control | 4 | 3 | 4 | 3 | 1 |
| 75 | * the two groups | 4 | 4 | 4 | 4 | 0 |
| | **Total** | **340** | **241** | **272** | **183** | **157** |

For an overview of the use of phrase frames in this type, Excerpts 5.81 and 5.82 below illustrate a phrase frame *in the * group* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.81:**

Similarly, the mean difference in linear vertical bone height palatally was 1.43 ± 1.04 mm **in the control group** and 0.35 ± 0.3 mm in the test group. (OMS27)

**Excerpt 5.82:**

For AL and AP assessment, the results showed that there were significant differences between the three examined groups: these were lesser in the unilateral and bilateral groups than **in the control group** ($p<0.001$). (ODO6)

In conclusion, function-word phrase frames are crucial for organizing and expressing nuanced interpretations in the Discussion section (Gray & Biber, 2013; Cheng & Zhang, 2025). They help connect various elements of the argument, ensuring that the author's ideas flow logically and that relationships between results, hypotheses, and prior research are clearly outlined. By using these function-word frames effectively, authors can present their interpretations in a coherent and structured way, maintaining a balanced tone that reflects the complexity of their findings while guiding the reader through the analysis.

#### 5.4.2.2 Stance Phrase Frames

Stance phrase frames in this type are important for expressing the author's evaluation or interpretation of the research findings (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020; Lu el a., 2021a; 2021b). In the Discussion section, these frames allow the authors to convey their stance regarding the significance of the findings and how confident they are in their conclusions. Stance phrases help to indicate the level of certainty or uncertainty about the results, offering a balanced approach where conclusions are drawn cautiously.

In this type, phrase frames are classified into 6 types, i.e., hedges, epistemic, obligation and directive, ability and possibility, and evaluation, and intention/volition, prediction (Simpson-Vlach & Ellis, 2010). However, the findings of the current study revealed that only hedges and epistemic were found in the current study. Totally, 7 phrase frames were identified in hedges and 19 in epistemic, as illustrated in Table 5.97.

**Table 5.97 A Summary of Different Types of Phrase Frames in the Stance Phrase Frames**

| Length | Hedges | Epistemic | Obligation and directive | Ability and possibility | Evaluation | Intention/ volition | Total |
|---|---|---|---|---|---|---|---|
| Four words | 7 | 19 | 0 | 0 | 0 | 0 | 26 |

#### 5.3.2.1 Hedges

Hedges are used to present their findings in a way that is less absolute, acknowledging that the evidence or interpretation may not be conclusive or definitive (Hyland, 1996; Chen & Zhang, 2025). For the frequency of this type of phrase frames, as illustrated in Table 5.98, a total of 270 occurrences of phrase frames were reported. There were 263 occurrences of phrase frames that were similar and 7 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 7 phrase frames with 270 occurrences in OMS and 263 occurrences in ODO were identified in the two sub-disciplines, which shows the more use of phrase frames in OMS than the ones in ODO. In this type, *has been* to* appeared most frequently, with 46 times in OMS and ODO, which indicates a similarity between two sub-disciplines.

**Table 5.98 A Summary of Frequency of Phrase frames in Hedges in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | has been * to | 46 | 46 | 46 | 46 | 0 |
| 2 | * be due to | 40 | 40 | 33 | 33 | 7 |
| 3 | * be explained by | 39 | 39 | 39 | 39 | 0 |
| 4 | it has been * | 39 | 39 | 39 | 39 | 0 |
| 5 | could be * to | 37 | 37 | 37 | 37 | 0 |
| 6 | * be attributed to | 35 | 35 | 35 | 35 | 0 |
| 7 | may be * to | 34 | 34 | 34 | 34 | 0 |
| | **Total** | **270** | **270** | **263** | **263** | **7** |

For the number of fillers of each phrase frame, as illustrated in Table 5.99, a total of 32 fillers appeared in 7 phrase frames. Specifically, the result also showed 30 fillers that were similar and 2 fillers that were different between the two sub-disciplines. There were 32 fillers in OMS and 26 fillers in ODO, which shows the more use of fillers in OMS than the ones in ODO. The fillers of the phrase frame ** be due to* occurred most frequently in the data with 6 fillers in OMS. A total of 6 fillers of this phrase frame were found in OMS, which indicates a difference between the two sub-disciplines.

**Table 5.99 A Summary of Number of Fillers in Hedges in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * be due to | 6 | 6 | 0 | 4 | 2 |
| 2 | * be explained by | 5 | 5 | 5 | 5 | 0 |
| 3 | has been * to | 5 | 5 | 5 | 5 | 0 |
| 4 | * be attributed to | 4 | 4 | 4 | 4 | 0 |
| 5 | may be * to | 4 | 4 | 4 | 4 | 0 |
| 6 | could be * to | 4 | 4 | 4 | 4 | 0 |
| 7 | it has been * | 4 | 4 | 4 | 4 | 0 |
| | **Total** | **32** | **32** | **26** | **30** | **2** |

For an overview of the use of phrase frames in this type, Excerpts 5.83 and 5.84 below illustrate a phrase frame *could be * to* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.83:**

The lower resistance found in subgroup C2 compared with subgroup C1 **could be due to** the difference of zirconia thickness between premolar and molar crowns and the titanium base abutment design. (OMS4)

**Excerpt 5.84:**

The reason for this diference **could be due to** the lower sensitivity of LCR compared to nasoendoscopy, with a reported pooled sensitivity of 86% in children [7]. (ODO9)

#### 5.3.2.2 Epistemic

Phrase frames in epistemic aims to convey the author's understanding of the knowledge presented, the degree of confidence in their claims, and the provisional nature of their conclusions (Simpson-Vlach & Ellis, 2010). For the frequency of this type of phrase frames, as illustrated in Table 5.100, a total of 793 occurrences of phrase frames were reported. There were 738 occurrences of phrase frames that were similar and 55 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 19 phrase frames with 760 occurrences in OMS and 771 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in OMS than the ones in ODO. In this type, *was * in the* appeared most frequently, with 52 times in OMS and 59 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.100 A Summary of Frequency of Phrase Frames in Epistemic in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 66 | 52 | 59 | 45 | 21 |
| 2 | were * in the | 59 | 55 | 55 | 51 | 8 |
| 3 | be * to the | 48 | 48 | 48 | 48 | 0 |
| 4 | studies have * that | 47 | 47 | 47 | 47 | 0 |
| 5 | been * to be | 47 | 47 | 47 | 47 | 0 |
| 6 | * found in the | 45 | 35 | 45 | 35 | 10 |
| 7 | have been * to | 42 | 42 | 42 | 42 | 0 |
| 8 | was * as a | 41 | 41 | 41 | 41 | 0 |
| 9 | be * by the | 40 | 40 | 40 | 40 | 0 |
| 10 | was to * the | 40 | 40 | 40 | 40 | 0 |
| 11 | were * from the | 38 | 33 | 38 | 33 | 5 |
| 12 | was * to assess | 38 | 38 | 38 | 38 | 0 |
| 13 | were * between the | 37 | 37 | 37 | 37 | 0 |
| 14 | has been * that | 37 | 37 | 37 | 37 | 0 |
| 15 | it is * that | 35 | 35 | 29 | 29 | 6 |
| 16 | was * with the | 34 | 34 | 29 | 29 | 5 |
| 17 | previous studies have * | 33 | 33 | 33 | 33 | 0 |
| 18 | have * that the | 33 | 33 | 33 | 33 | 0 |
| 19 | this study * that | 33 | 33 | 33 | 33 | 0 |
| | **Total** | **793** | **760** | **771** | **738** | **55** |

For the number of fillers of each phrase frame, as illustrated in Table 5.101, a total of 89 fillers appeared in 19 phrase frames. Specifically, the result also showed 78 fillers that were similar and 11 fillers that were different between the two sub-disciplines. There were 83 fillers in OMS and in ODO, which shows the equal use of fillers in OMS and in ODO. The fillers of the phrase frame *was * in the* occurred most frequently in the data with 8 fillers in the two sub-disciplines. In this phrase

frame, there were 6 fillers in OMS and in ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.101 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 8 | 6 | 6 | 5 | 3 |
| 2 | were * in the | 7 | 6 | 6 | 5 | 2 |
| 3 | be * to the | 5 | 5 | 5 | 5 | 0 |
| 4 | have been * to | 5 | 5 | 5 | 5 | 0 |
| 5 | was * as a | 5 | 5 | 5 | 5 | 0 |
| 6 | studies have * that | 5 | 5 | 5 | 5 | 0 |
| 7 | been * to be | 5 | 5 | 4 | 4 | 1 |
| 8 | * found in the | 5 | 4 | 5 | 4 | 1 |
| 9 | be * by the | 4 | 3 | 4 | 3 | 1 |
| 10 | it is * that | 4 | 4 | 3 | 3 | 1 |
| 11 | were * from the | 4 | 3 | 4 | 3 | 1 |
| 12 | were * between the | 4 | 4 | 4 | 4 | 0 |
| 13 | was to * the | 4 | 4 | 4 | 4 | 0 |
| 14 | was * to assess | 4 | 4 | 4 | 4 | 0 |
| 15 | was * with the | 4 | 4 | 3 | 3 | 1 |
| 16 | has been * that | 4 | 4 | 4 | 4 | 0 |
| 17 | previous studies have * | 4 | 4 | 4 | 4 | 0 |
| 18 | have * that the | 4 | 4 | 4 | 4 | 0 |
| 19 | this study * that | 4 | 4 | 4 | 4 | 0 |
| | **Total** | **89** | **83** | **83** | **78** | **11** |

For an overview of the use of phrase frames in this type, Excerpts 5.85 and 5.86 below illustrate a phrase frame *be * by the* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.85:**

The results of the present study provide longer follow-up when compared to the study by LeBlanc et al., and could **be explained by the** effect of the TLA, since the anterior oral CTC are associated with the placement of the tongue. (OMS30)

**Excerpt 5.86:**

The differences in the accuracy of torque and linear intra-arch measurements can **be explained by the** different root morphology of the various tooth groups analysed (single-rooted teeth are easier to move than the multi-rooted teeth) [29] and by the different bone anatomy of the various arch sectors [30]. (ODO10)

In conclusion, stance phrase frames in the Discussion section provide a way for authors to present their interpretations while maintaining academic

objectivity, which is consistent to the previous studies (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020; Cheng & Zhang, 2025). These phrases allow researchers to express the strength or caution with which they present their conclusions, ensuring that readers understand the level of certainty attached to the findings. By using stance phrases effectively, writers can navigate complex interpretations and suggest areas for future research without overstating their conclusions, fostering a more thoughtful and nuanced discussion of the research outcomes.

**5.4.2.3 Discourse Organizing Phrase Frames**

Discourse organizing phrase frames in this type are essential for structuring the argument and guiding the reader through the logical flow of ideas (Simpson-Vlach & Ellis, 2010). In the Discussion section, these phrase frames help organize the presentation of the results, making it easier for the reader to follow the sequence of interpretations, explanations, and comparisons. They signal the introduction of new points or additional supporting evidence. They are also used to introduce contrasting or conflicting evidence, allowing the author to address limitations, alternative interpretations, or areas where the findings may differ from previous research.

In the discourse organizing phrase frames, there are 4 sub-types, i.e. metadiscourse and textual reference, topic introduction and focus, topic elaboration, and discourse markers (Simpson-Vlach & Ellis, 2010). However, only 15 in topic elaboration, and 11 in discourse markers were found in the two sub-disciplines of Dentistry. No phrase frames were found in topic introduction and focus, as illustrated in Table 5.102.

**Table 5.102 A Summary of Different Types of Phrase Frames in the Discourse Organizing Phrase Frames**

| Length | Metadiscourse and textual reference | Topic introduction and focus | Topic elaboration | Discourse markers | Total |
|---|---|---|---|---|---|
| Four words | 0 | 0 | 15 | 11 | 26 |

Phrase frames in topic elaboration are used to clarify a particular topic or concept introduced in RA Discussion sections. These phrase frames help develop the discussion around a key point or subject, providing more detail, offering examples, explaining significance, or elaborating on relationships between ideas. The purpose of topic elaboration is to ensure that the reader fully understands the importance of the topic, its context, and how it connects to other ideas in the study.

For the frequency of this type of phrase frames, as illustrated in Table 5.103, a total of 687 occurrences of phrase frames were reported. There were 663 occurrences of phrase frames that were similar and 24 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 15 phrase frames with 663 occurrences in OMS and 687 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames OMS than the ones in ODO. In this type, ** of this study* appeared most frequently, with 53 times in OMS and 73 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.103 A Summary of Frequency of Phrase Frames in Topic elaboration in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * of this study | 73 | 53 | 73 | 53 | 20 |
| 2 | was used to * | 73 | 73 | 73 | 73 | 0 |
| 3 | this study * to | 56 | 56 | 56 | 56 | 0 |
| 4 | * in this study | 56 | 56 | 56 | 56 | 0 |
| 5 | * to evaluate the | 49 | 49 | 49 | 49 | 0 |
| 6 | study was to * | 44 | 44 | 44 | 44 | 0 |
| 7 | * to assess the | 43 | 43 | 43 | 43 | 0 |
| 8 | results of * study | 41 | 41 | 41 | 41 | 0 |
| 9 | * used to compare | 40 | 40 | 40 | 40 | 0 |
| 10 | were used to * | 37 | 37 | 37 | 37 | 0 |
| 11 | analysis was * to | 36 | 36 | 36 | 36 | 0 |
| 12 | aimed to * the | 35 | 35 | 35 | 35 | 0 |
| 13 | limitations of * study | 35 | 35 | 35 | 35 | 0 |
| 14 | in order to * | 32 | 28 | 32 | 28 | 4 |
| 15 | study * to evaluate | 37 | 37 | 37 | 37 | 0 |
| | **Total** | **687** | **663** | **687** | **663** | **24** |

For the number of fillers of each phrase frame, as illustrated in Table 5.104, a total of 75 fillers appeared in 15 phrase frames. Specifically, the result also showed 71 fillers that were similar and 4 fillers that were different between the two sub-disciplines. There were 71 fillers in OMS and 75 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *was used to ** occurred most frequently in the data with 9 fillers in the two sub-disciplines. A total of 9 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.104 A Summary of Number of Fillers in Topic elaboration in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was used to * | 9 | 9 | 9 | 9 | 0 |
| 2 | * to assess the | 8 | 8 | 8 | 8 | 0 |
| 3 | * of this study | 8 | 5 | 8 | 5 | 3 |
| 4 | * to evaluate the | 5 | 5 | 5 | 5 | 0 |
| 5 | study was to * | 5 | 5 | 5 | 5 | 0 |
| 6 | in order to * | 4 | 3 | 4 | 3 | 1 |
| 7 | aimed to * the | 4 | 4 | 4 | 4 | 0 |
| 8 | were used to * | 4 | 4 | 4 | 4 | 0 |
| 9 | analysis was * to | 4 | 4 | 4 | 4 | 0 |
| 10 | * used to compare | 4 | 4 | 4 | 4 | 0 |
| 11 | this study * to | 4 | 4 | 4 | 4 | 0 |
| 12 | * in this study | 4 | 4 | 4 | 4 | 0 |
| 13 | results of * study | 4 | 4 | 4 | 4 | 0 |
| 14 | limitations of * study | 4 | 4 | 4 | 4 | 0 |
| 15 | study * to evaluate | 4 | 4 | 4 | 4 | 0 |
| | **Total** | **75** | **71** | **75** | **71** | **4** |

For an overview of the use of phrase frames in this type, Excerpts 87 and 88 below illustrate a phrase frame *in order to* * found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 87:**

The cutting guides were designed with an arch **in order to provide** a better fit to the mandible, thereby minimizing the degrees of freedom in placement. (OMS11)

**Excerpt 88:**

Also, eight additional cephalometric variables were digitized for each patient at T1, T2, and T3 **in order to provide** data on the dento-skeletal correction obtained (Figures 1 and 2). (ODO21)

### 5.3.3.3 Discourse Markers

Phrase frames in discourse markers are used to manage the flow of information, signal relationships between ideas, and guide the reader through the RA sections (Cunningham, 2017; He et al., 2021). These markers help organize the content and clarify the relationships between different arguments or ideas. Phrase frames in discourse markers act as cues that guide the reader on how to interpret the information in the RAs, indicating connections, transitions, emphasis, contrast, or the introduction of new points.

For the frequency of this type of phrase frames, as illustrated in Table 5.105, a total of 450 occurrences of phrase frames were reported. There were 423

occurrences of phrase frames that were similar and 27 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 11 phrase frames with 436 occurrences in OMS and 409 occurrences in ODO were identified in the two sub-disciplines, which shows the more use of phrase frames in OMS than the ones in ODO. In this type, *with the * of* appeared most frequently, with 58 times in OMS and 34 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.105 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | with the * of | 58 | 58 | 34 | 54 | 4 |
| 2 | in * to the | 53 | 53 | 53 | 53 | 0 |
| 3 | of the * and | 52 | 38 | 44 | 38 | 14 |
| 4 | on the * of | 42 | 42 | 37 | 37 | 5 |
| 5 | * the results of | 38 | 38 | 38 | 38 | 0 |
| 6 | * the treatment of | 38 | 38 | 38 | 38 | 0 |
| 7 | * the number of | 38 | 38 | 38 | 38 | 0 |
| 8 | by the * of | 33 | 33 | 33 | 33 | 0 |
| 9 | with a * of | 33 | 33 | 29 | 29 | 4 |
| 10 | * the fact that | 33 | 33 | 33 | 33 | 0 |
| 11 | * the type of | 32 | 32 | 32 | 32 | 0 |
| | **Total** | **450** | **436** | **409** | **423** | **27** |

For the number of fillers of each phrase frame, as illustrated in Table 5.106, a total of 54 fillers appeared in 11 phrase frames. Specifically, the result also showed 49 fillers that were similar and 5 fillers that were different between the two sub-disciplines. There were 51 fillers in OMS and in ODO, which shows the equal use of fillers in OMS and ODO. The fillers of the phrase frame *with the * of* occurred most frequently in the data with 8 fillers in the two sub-disciplines. In this phrase frame, there were 8 fillers in OMS and in ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.106 A Summary of Number of Fillers in Discourse markers in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | with the * of | 8 | 8 | 8 | 7 | 1 |
| 2 | of the * and | 7 | 4 | 5 | 4 | 3 |
| 3 | on the * of | 5 | 5 | 4 | 4 | 1 |
| 4 | * the number of | 5 | 5 | 5 | 5 | 0 |
| 5 | in * to the | 5 | 5 | 5 | 5 | 0 |
| 6 | * the results of | 4 | 4 | 4 | 4 | 0 |
| 7 | * the treatment of | 4 | 4 | 4 | 4 | 0 |
| 8 | * the type of | 4 | 4 | 4 | 4 | 0 |
| 9 | by the * of | 4 | 4 | 4 | 4 | 0 |

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 10 | with a * of | 4 | 4 | 4 | 4 | 0 |
| 11 | * the fact that | 4 | 4 | 4 | 4 | 0 |
| | **Total** | **54** | **51** | **51** | **49** | **5** |

For an overview of the use of phrase frames in this type, Excerpts 5.89 and 5.90 below illustrate a phrase frame *with the * of* found in the RA Discussion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.89:**

In the present study, it was observed that the residual graft particles were in contact with the newly formed bone after 10 weeks. The integration of residual graft particles with newly formed bone was consistent **with the results of** previous studies.6,25 (OMS3)

**Excerpt 5.90:**

This accords **with the results of** shortterm studies that compared the effects of orthodontic treatment with and without extractions (15,16,27). (ODO27)

In conclusion, discourse organizing phrase frames play a crucial role in maintaining coherence and clarity in the Discussion section (Chang & Zhang, 2025). These phrases help structure the argument by providing clear signposts that guide the reader through the analysis, ensuring that each point is clearly connected and logically sequenced. By using discourse organizing frames, authors can effectively present a balanced and well-structured interpretation of their findings, making it easier for the reader to understand how the results fit into the broader context of the research and contribute to the existing body of knowledge.

## 5.5 Phrase Frames of the Conclusion Section

### 5.5.1 Results and Discussion of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Structural Categories

In this section, 30% of phrase frames were selected for inter-rater reliability based on the stratified and random selection. They were coded independently by the researcher and an invited coder. The results showed a high consistency of the analysis (100% in verb-based phrase frames, in other-content-word phrase frames, and function-word phrase frames) between the 2 coders in inter-rater agreement as illustrated in Table 5.107.

**Table 5.107 The Inter-Rater Agreement of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Structural Categories**

| Categories | Coded Unit | Agreed Codings | Different Codings | Agreement Percentage |
|---|---|---|---|---|
| Verb-based phrase frames | 6 | 6 | 0 | |
| Other-content-word phrase frames | 34 | 34 | 0 | 100 |
| Function-word phrase frames | 8 | 8 | 0 | |
| **Total** | 48 | 48 | | |

According to the structural categories of Gray and Biber (2013), the analysis revealed 3 types of phrase frames. In total, there were 48 phrase frames, including 6 in verb-based phrase frames, 34 in other-content-word phrase frames, and 8 in function-word phrase frames, in the two sub-disciplines of Dentistry, as illustrated in Figure 5.9. These findings show the popularity of other-content-word phrase frames in the English Dentistry RA Conclusion section.

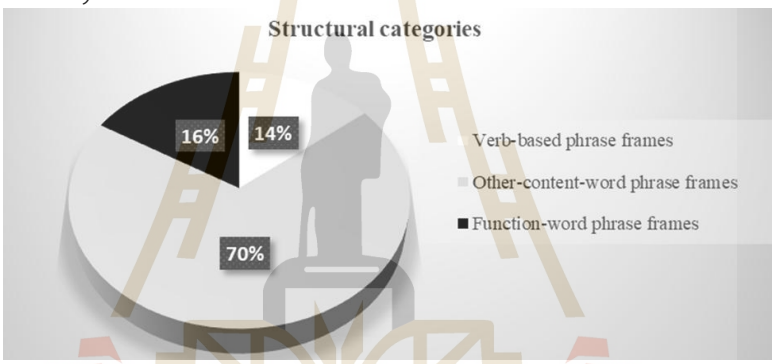



**Figure 5.8 Distribution of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Structural Categories**

#### 5.5.1.1 Verb-based Phrase Frames

Verb-based phrase frames are key to summarizing the study's outcomes and emphasizing the broader implications of the findings (Gray & Biber, 2013; Lu et al., 2021a, 2021b). In the RA Conclusion section in general, these frames typically use verbs to convey the significance of the results in a concise and clear manner. They help the authors frame the overall conclusions of the research and connect the results to the initial hypothesis or research questions. Verb-based phrases in the Conclusion section help synthesize the main findings and offer an authoritative summary, directing the reader to the most critical takeaways from the study.

For the frequency of this type of phrase frames, as illustrated in Table 5.108, a total of 76 occurrences of phrase frames were identified. There were 53 occurrences of phrase frames that were similar and 23 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 6 phrase frames with

60 occurrences in OMS and 69 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *there was no** appeared most frequently, with 31 times in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.108 A Summary of Phrase frames in the Verb-based Category in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | there was no * | 31 | 31 | 31 | 31 | 0 |
| 2 | was * in the | 27 | 13 | 20 | 6 | 21 |
| 3 | * found in the | 6 | 4 | 6 | 4 | 2 |
| 4 | was * as a | 4 | 4 | 4 | 4 | 0 |
| 5 | no significant difference * | 4 | 4 | 4 | 4 | 0 |
| 6 | it is * that | 4 | 4 | 4 | 4 | 0 |
| | **Total** | **76** | **60** | **69** | **53** | **23** |

For the number of fillers of each phrase frame, as illustrated in Table 5.109, a total of 18 fillers appeared in 6 phrase frames. Specifically, the result also showed 13 fillers that were similar and 5 fillers that were different between the two sub-disciplines. There were 16 fillers in OMS and in ODO, which shows the equal use of fillers between the two sub-disciplines. The fillers of the phrase frame *was * in the* occurred most frequently in the data with 6 fillers in the two sub-disciplines. A total of 5 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.109 A Summary of Fillers of Phrase Frames in the Verb-based Category in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 6 | 5 | 5 | 3 | 3 |
| 2 | no significant difference * | 1 | 1 | 1 | 1 | 0 |
| 3 | there was no * | 3 | 3 | 3 | 3 | 0 |
| 4 | was * as a | 3 | 3 | 3 | 3 | 0 |
| 5 | * found in the | 3 | 2 | 3 | 2 | 1 |
| 6 | it is * that | 2 | 2 | 1 | 1 | 1 |
| | **Total** | **18** | **16** | **16** | **13** | **5** |

For an overview of the use of phrase frames in this type, Excerpts 5.91 and 5.92 below illustrate a phrase frame *there was no * * found in the RA Conclusion section in the two sub-disciplines of Dentistry.

**Excerpt 5.91:**

However, **there was no significant** difference between these two methods in terms of new bone formation. (OMS3)

**Excerpt 5.92:**

**There was no significant** difference between the groups in terms of stability and periodontal outcomes. (ODO16)

In conclusion, verb-based phrase frames in the Conclusion section are essential for presenting the study's overall impact and providing a final interpretation of the results. They allow the author to succinctly communicate the significance of their findings, while also suggesting implications for future research or practical applications. By using these verb-based phrases effectively, writers can ensure that their conclusions are presented clearly and confidently, reinforcing the relevance and contribution of the study to the broader academic field.

**5.5.1.2 Other-content-word Phrase Frames**

Other-content-word phrase frames, such as nouns, adjectives, and adverbs, are important for highlighting the significance and broader implications of the research findings (Gray & Biber, 2013; Lu et al., 2021a, 2021b). In the RA Conclusion section in general, nouns help frame the key outcomes and contributions of the study. Adjectives qualify the findings, indicating their impact or importance in the context of the field. Adverbs help to reinforce the degree to which the results support the conclusions. These frames allow the authors to present their conclusions in a more nuanced and comprehensive way, emphasizing the study's contribution to knowledge.

For the frequency of this type of phrase frames, as illustrated in Table 5.110, a total of 468 occurrences of phrase frames were reported. There were 193 occurrences of phrase frames that were similar and 275 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 34 phrase frames with 275 occurrences in OMS and 285 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *in the *group* appeared most frequently, with 37 times in OMS and 64 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.110 A Summary of Phrase frames in the Other-content-word Category in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 83 | 37 | 64 | 17 | 66 |
| 2 | in the * area | 47 | 43 | 6 | 2 | 45 |
| 3 | * of this study | 34 | 14 | 34 | 14 | 20 |
| 4 | * soft tissue recession | 30 | 26 | 11 | 15 | 15 |
| 5 | no significant * between | 21 | 21 | 21 | 21 | 0 |
| 6 | * significant difference between | 18 | 18 | 18 | 18 | 0 |
| 7 | * in this study | 17 | 17 | 17 | 17 | 0 |
| 8 | no significant differences * | 16 | 16 | 16 | 16 | 0 |

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 9 | no significant difference * | 15 | 15 | 15 | 15 | 0 |
| 10 | * the HPC line | 12 | 12 | 11 | 7 | 5 |
| 11 | a significant * in | 12 | 12 | 2 | 7 | 5 |
| 12 | the * dental arch | 11 | 0 | 7 | 0 | 11 |
| 13 | one of the * | 11 | 6 | 6 | 6 | 5 |
| 14 | and satisfaction with * | 10 | 0 | 4 | 0 | 10 |
| 15 | in the * arch | 10 | 0 | 4 | 0 | 10 |
| 16 | * and lateral incisors | 10 | 0 | 4 | 0 | 10 |
| 17 | the * anterior teeth | 9 | 0 | 4 | 0 | 9 |
| 18 | a higher * of | 8 | 5 | 4 | 5 | 3 |
| 19 | results of * study | 8 | 5 | 4 | 5 | 3 |
| 20 | of the * population | 8 | 5 | 0 | 5 | 3 |
| 21 | the * strong anchorage | 8 | 0 | 0 | 5 | 3 |
| 22 | a * risk of | 7 | 5 | 3 | 0 | 7 |
| 23 | of the * second | 7 | 0 | 3 | 5 | 2 |
| 24 | * of gingival recession | 6 | 0 | 3 | 5 | 1 |
| 25 | difference between the * | 6 | 5 | 3 | 0 | 6 |
| 26 | * facial vertical height | 6 | 0 | 3 | 0 | 6 |
| 27 | the * central incisors | 6 | 5 | 3 | 0 | 6 |
| 28 | the * posterior teeth | 6 | 0 | 3 | 0 | 6 |
| 29 | * of the study | 5 | 4 | 2 | 4 | 1 |
| 30 | * incisors and canines | 5 | 0 | 2 | 0 | 5 |
| 31 | the * sample size | 4 | 4 | 2 | 4 | 0 |
| 32 | * of the anterior | 4 | 0 | 2 | 0 | 4 |
| 33 | face-to-face interaction with * | 4 | 0 | 2 | 0 | 4 |
| 34 | first or second * | 4 | 0 | 2 | 0 | 4 |
| | **Total** | **468** | **275** | **285** | **193** | **275** |

For the number of fillers of each phrase frame, as illustrated in Table 5.111, a total of 103 fillers appeared in 34 phrase frames. Specifically, the results also showed 42 fillers that were similar and 68 fillers that were different between the two sub-disciplines. There were 48 fillers in OMS and in ODO, which shows the equal use of fillers between the two sub-disciplines. The fillers of the phrase frame *in the * group* occurred most frequently in the data with 17 fillers in the two sub-disciplines. There were 7 fillers in OMS and 10 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.111 A Summary of Number of Fillers of Phrase Frames in the Other-content-word Category in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 17 | 7 | 10 | 7 | 17 |
| 2 | in the * area | 8 | 7 | 3 | 2 | 6 |
| 3 | * of this study | 6 | 3 | 6 | 3 | 3 |
| 4 | a significant * in | 4 | 4 | 3 | 3 | 1 |
| 5 | the * dental arch | 4 | 0 | 4 | 0 | 4 |
| 6 | a higher * of | 3 | 2 | 3 | 2 | 1 |

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 7 | no significant * between | 3 | 3 | 3 | 3 | 0 |
| 8 | * significant difference between | 3 | 3 | 3 | 3 | 0 |
| 9 | no significant differences * | 3 | 3 | 3 | 3 | 0 |
| 10 | of the * second | 2 | 0 | 2 | 0 | 2 |
| 11 | in the * arch | 3 | 0 | 3 | 0 | 3 |
| 12 | the * strong anchorage | 3 | 0 | 3 | 1 | 2 |
| 13 | * in this study | 2 | 2 | 2 | 2 | 0 |
| 14 | * of gingival recession | 2 | 0 | 2 | 0 | 2 |
| 15 | and satisfaction with * | 2 | 0 | 2 | 0 | 2 |
| 16 | * of the study | 2 | 1 | 2 | 1 | 1 |
| 17 | one of the * | 2 | 2 | 2 | 2 | 0 |
| 18 | no significant difference * | 2 | 2 | 2 | 2 | 0 |
| 19 | a * risk of | 2 | 2 | 2 | 2 | 0 |
| 20 | difference between the * | 2 | 1 | 1 | 1 | 1 |
| 21 | * facial vertical height | 2 | 0 | 2 | 0 | 2 |
| 22 | of the * population | 2 | 1 | 2 | 1 | 1 |
| 23 | * the HPC line | 2 | 0 | 2 | 0 | 2 |
| 24 | the * sample size | 2 | 2 | 2 | 2 | 0 |
| 25 | * incisors and canines | 2 | 0 | 2 | 0 | 2 |
| 26 | * and lateral incisors | 2 | 0 | 2 | 0 | 2 |
| 27 | * of the anterior | 2 | 0 | 2 | 0 | 2 |
| 28 | face-to-face interaction with * | 2 | 0 | 2 | 0 | 2 |
| 29 | the * posterior teeth | 2 | 0 | 2 | 0 | 2 |
| 30 | the * anterior teeth | 2 | 0 | 2 | 0 | 2 |
| 31 | * soft tissue recession | 2 | 1 | 1 | 0 | 2 |
| 32 | the * central incisors | 2 | 0 | 2 | 0 | 2 |
| 33 | first or second * | 2 | 0 | 2 | 0 | 2 |
| 34 | results of * study | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **103** | **48** | **88** | **42** | **68** |

For an overview of the use of phrase frames in this type, Excerpts 5.93 and 5.94 below illustrate a phrase frame *no significant difference* * found in the RA Conclusion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.93:**

However, **there was no significant** difference between these two methods in terms of new bone formation. (OMS3)

**Excerpt 5.94:**

**There was no significant** difference between the groups in terms of stability and periodontal outcomes. (ODO16)

In conclusion, other-content-word phrase frames are essential for providing depth and clarity in the Conclusion section. They help the authors communicate the significance, relevance, and potential impact of the research findings, while also acknowledging any limitations or areas for further exploration. By effectively using these frames, authors can present their conclusions in a precise, focused manner,

ensuring that the main takeaways are conveyed with the appropriate emphasis and relevance to the broader academic community.

**5.5.1.3 Function-word Phrase Frames**

Function-word phrase frames, including prepositions, articles, conjunctions, and auxiliary verbs, play a vital role in connecting and structuring the final summary of the research (Gray & Biber, 2013; Lu et al., 2021a; 2021b). In the RA Conclusion section in general, prepositions help establish the context or reasoning behind the conclusions drawn from the findings. Articles ensure specificity when referring to particular aspects of the study, while conjunctions help to logically link the findings to their broader implications. Auxiliary verbs are used to suggest potential actions, future research directions, or recommendations, helping to express possibility or necessity in the conclusion.

For the frequency of this type of phrase frames, as illustrated in Table 5.112, a total of 270 occurrences of phrase frames were reported. There were 156 occurrences of phrase frames that were similar and 114 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 8 phrase frames with 177 occurrences in OMS and 187 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *the * of the* appeared most frequently, with 61 times in OMS and37 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.112 A Summary of Phrase frames in the Function-word Category in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 82 | 61 | 37 | 37 | 45 |
| 2 | at the * of | 77 | 24 | 53 | 24 | 53 |
| 3 | in the * of | 40 | 32 | 36 | 38 | 2 |
| 4 | the * of this | 28 | 24 | 27 | 27 | 1 |
| 5 | on the * of | 15 | 15 | 10 | 10 | 5 |
| 6 | than * of the | 14 | 14 | 14 | 14 | 0 |
| 7 | within the * of | 8 | 1 | 4 | 0 | 8 |
| 8 | a * in the | 6 | 6 | 6 | 6 | 0 |
| | **Total** | **270** | **177** | **187** | **156** | **114** |

For the number of fillers of each phrase frame, as illustrated in Table 5.113, a total of 52 fillers appeared in 8 phrase frames. Specifically, the result also showed 33 fillers that were similar and 19 fillers that were different between the two sub-disciplines. There were 42 fillers in OMS and in ODO, which shows the equal use of fillers between the two sub-disciplines. The fillers of the phrase frame *the * of the*

occurred most frequently in the data with 22 fillers in the two sub-disciplines. A total of 17 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.113 A Summary of Number of Fillers of Phrase Frames in the Function-word Category in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 22 | 17 | 17 | 12 | 10 |
| 2 | in the * of | 10 | 9 | 9 | 9 | 1 |
| 3 | the * of this | 6 | 6 | 4 | 4 | 2 |
| 4 | at the * of | 5 | 2 | 5 | 2 | 3 |
| 5 | on the * of | 3 | 3 | 2 | 2 | 1 |
| 6 | within the * of | 2 | 1 | 1 | 0 | 2 |
| 7 | a * in the | 2 | 2 | 2 | 2 | 0 |
| 8 | than * of the | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **52** | **42** | **42** | **33** | **19** |

For an overview of the use of phrase frames in this type, Excerpts 5.95 and 5.96 below illustrate a phrase frame *the * of this* found in the RA Conclusion section in the two sub-disciplines of Dentistry.

**Excerpt 95:**

**The results of this** study should be interpreted with caution due to the limitations inherent in retrospective studies. (OMS5)

**Excerpt 96:**

**The results of this** study show significant sexual dimorphism in facial profile among middle-aged adults and, thus, we are able to accept the initial study hypothesis. (ODO24)

In conclusion, function-word phrase frames are essential for maintaining clarity and cohesion in the Conclusion section. They guide the reader through the final synthesis of the research findings, linking different points and emphasizing the implications of the study. By using these function-word phrases effectively, writers can ensure that their conclusions are logically organized, well-supported, and presented in a manner that clearly reflects the broader significance and potential future directions of the research.

### 5.5.2 Results and Discussion of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Functional Categories

In this section, 30% of phrase frames were selected for inter-rater reliability based on the stratified and random selection. They were coded independently by the researcher and an invited coder. The results showed a high consistency of the analysis

(94.67% in referential phrase frames, 100% stance phrase frames, and 100% in discourse organizing phrase frames) between the 2 coders in inter-rater agreement as illustrated in Table 5.114.

**Table 5.114 The Inter-Rater Agreement of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Functional Categories**

| Categories | Coded Unit | Agreed Codings | Different Codings | Agreement Percentage |
|---|---|---|---|---|
| Referential phrase frames | 40 | 40 | | |
| Stance phrase frames | 4 | 4 | 0 | 100 |
| Discourse organizing phrase frames | 4 | 4 | | |
| Total | 48 | 48 | | |

The findings showed that analyzing functional categories of phrase frames plays a crucial role in understanding how language is structured and used within specific contexts (Golparvar & Barabadi, 2020). Three types of phrase frames were identified in the functional categories: referential, stance, and discourse organizing. Out of 48 phrase frames, 40 were classified as referential, 4 as stance, and 4 as discourse organizing, as illustrated in Figure 5.10. The referential type of phrase frames was the most frequently used in the current study, which was the same findings as Biber et al. (2004), Lu et al. (2018), Golparvar and Barabadi (2020), and Ren (2021).

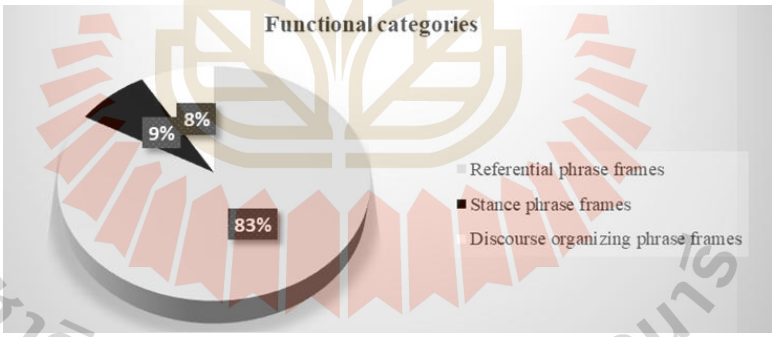



**Figure 5.9 Distribution of Phrase Frames in the English Dentistry RA Conclusion Sections from the Analysis of Functional Categories**

### 5.5.2.1 Referential Phrase Frames

Referential phrase frames are crucial for connecting the research findings to specific sources, previous sections, or broader implications markers (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020). In the RA Conclusion section, these frames often refer back to key results or concepts presented earlier in the paper. Such references help reinforce the conclusions by linking them directly to the data,

methods, or theories discussed throughout the study. They allow the authors to remind the reader of the evidence that supports their final conclusions.

Referential phrase frames are classified into 5 types, i.e., specification of attributes, identification and focus, contrast and comparison, deictics and locatives, and vagueness markers (Simpson-Vlach & Ellis, 2010). Notably, phrase frames in vagueness markers were not found in the current study. The absence was due to the rare use in academic writing (Simpson-Vlach & Ellis, 2010; Lu et al., 2018). Among these phrase frames, 30 phrase frames were identified in specification of attributes, 12 in identification and focus, 52 in contrast and comparison, and 77 in deictics and locatives, as illustrated in Table 5.115.

**Table 5.115 A Summary of Different types of Phrase Frames in the Structural Category**

| Length | Specification of Attributes | Identification and Focus | Contrast and Comparison | Deictics and Locatives | Vagueness Markers | Total |
|---|---|---|---|---|---|---|
| Four words | 8 | 1 | 13 | 18 | 0 | 40 |

#### 5.3.1.1 Specification of Attributes

In this type, phrase frames convey clarity, precision, and organization of the research to ensure that the study is communicated in a way that is logically organized, well-defined, and easy for the readers to follow (Walcott, 2021).

For the frequency of this type of phrase frames, as illustrated in Table 5.116, a total of 233 occurrences of phrase frames were reported. There were 118 occurrences of phrase frames that were similar and 115 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 8 phrase frames with 145 occurrences in OMS and 201 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in the verb-based type in OMS. In this type, *the * of the* appeared most frequently, with 61 times in OMS and 57 times in ODO.

**Table 5.116 A Summary of Frequency of Phrase frames in Specification of Attributes in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 82 | 61 | 57 | 37 | 45 |
| 2 | at the * of | 42 | 27 | 42 | 27 | 15 |
| 3 | in the * of | 35 | 21 | 35 | 25 | 10 |
| 4 | the * of this | 23 | 23 | 20 | 20 | 3 |
| 5 | and satisfaction with * | 19 | 0 | 19 | 0 | 19 |
| 6 | * of gingival recession | 12 | 0 | 12 | 0 | 12 |
| 7 | within the * of | 11 | 4 | 7 | 0 | 11 |
| 8 | a * in the | 9 | 9 | 9 | 9 | 0 |
| | **Total** | **233** | **145** | **201** | **118** | **115** |

For the number of fillers of each phrase frame, as illustrated in Table 5.117, a total of 50 fillers appeared in 8 phrase frames. Specifically, the result also showed 28 fillers that were similar and 22 fillers that were different between the two sub-disciplines. There were 36 fillers in OMS and 42 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *the * of the* occurred most frequently in the data with 31 fillers in the two sub-disciplines. A total of 16 fillers of this phrase frame were found in OMS and ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.117 A Summary of Number of Fillers in Specification of Attributes in the Two Sub-disciplines**

| No. | P-frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | the * of the | 21 | 16 | 16 | 11 | 10 |
| 2 | in the * of | 10 | 9 | 10 | 9 | 1 |
| 3 | the * of this | 6 | 6 | 4 | 4 | 2 |
| 4 | at the * of | 5 | 2 | 5 | 2 | 3 |
| 5 | * of gingival recession | 2 | 0 | 2 | 0 | 2 |
| 6 | within the * of | 2 | 1 | 1 | 0 | 2 |
| 7 | and satisfaction with * | 2 | 0 | 2 | 0 | 2 |
| 8 | a * in the | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **50** | **36** | **42** | **28** | **22** |

For an overview of the use of phrase frames in this type, Excerpts 5.97 and 5.98 below illustrate a phrase frame *the * of the* between the two sub-disciplines of Dentistry.

**Excerpt 5.97**:

**The results of the** multivariate analysis are presented as the odds ratio (OR) and 95% confidence interval (CI). (OMS18)

**Excerpt 5.98**:

This is a standard statistical process in geometric morphometrics in order to be able to interpret **the results of the** data analyses. (ODO24)

### 5.3.1.2 Identification and Focus

Phrase frames in identification and fous are used to identify and emphasize specific elements, concepts, or issues that are central to the research. These phrase frames help to direct the reader's attention to key aspects of the study and define important terms or topics. They serve to highlight what is being discussed, examined, or addressed in a particular section of the article.

For the frequency of this type of phrase frames, as illustrated in Table 5.118, a total of 10 occurrences of phrase frames were reported. There were 5

occurrences of phrase frames that were similar and 5 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 1 phrase frame with 5 occurrences in OMS and 10 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames in OMS than the ones in ODO.

**Table 5.118 A Summary of Frequency of Phrase frames in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * of the study | 10 | 5 | 10 | 5 | 5 |
| | **Total** | **10** | **5** | **10** | **5** | **5** |

For the number of fillers of each phrase frame, as illustrated in Table 5.119, a total of 2 fillers appeared in only 1 phrase frame. Specifically, the result also showed 2 fillers that was similar between the two sub-disciplines. There were 2 fillers in OMS and in ODO, which shows the equal use of fillers in OMS and ODO.

**Table 5.119 A Summary of Number of Fillers in Identification and Focus in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * of the study | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **2** | **2** | **2** | **2** | **0** |

For an overview of the use of phrase frames in this type, Excerpts 5.99 and 5.100 below illustrate a phrase frame ** of this study* between the two sub-disciplines of Dentistry.

**Excerpt 5.99:**

The **results of this study** should be interpreted with caution due to the limitations inherent in retrospective studies. (OMS5)

**Excerpt 5.100:**

The **results of this study** revealed that OHRQoL scores among preschoolers aged 2 to 5 years are not affected by primary dentition malocclusion. (ODO1)

**5.3.1.3 Contrast and Comparison**

Phrase frames in contrast and comparison are used to highlight differences, similarities, or relationships between ideas, theories, findings, or concepts. These phrase frames help convey how one element in the research relates to, differs

from, or aligns with another. They are essential for illustrating how the current study compares with previous research, and how different variables or groups are contrasted.

For the frequency of this type of phrase frames, as illustrated in Table 5.120, a total of 150 occurrences of phrase frames were reported. There were 131 occurrences of phrase frames that were similar and 19 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 13 phrase frames with 145 occurrences in OMS and 168 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than the ones in ODO. In this type, *no significant difference* * appeared most frequently, with 26 times in OMS and ODO.

**Table 5.120 A Summary of Frequency of Phrase frames in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | no significant difference * | 26 | 26 | 26 | 26 | 0 |
| 2 | there was no * | 26 | 26 | 26 | 26 | 0 |
| 3 | no significant * between | 16 | 15 | 15 | 15 | 1 |
| 4 | * significant difference between | 13 | 13 | 13 | 13 | 0 |
| 5 | no significant differences * | 11 | 11 | 11 | 11 | 0 |
| 6 | a significant * in | 11 | 7 | 10 | 8 | 3 |
| 7 | one of the * | 11 | 11 | 11 | 8 | 3 |
| 8 | a higher * of | 7 | 5 | 6 | 7 | 0 |
| 9 | than * of the | 7 | 7 | 7 | 7 | 0 |
| 10 | was * in the | 6 | 4 | 13 | 4 | 2 |
| 11 | a * risk of | 6 | 13 | 13 | 6 | 0 |
| 12 | difference between the * | 5 | 7 | 5 | 0 | 5 |
| 13 | * facial vertical height | 5 | 0 | 12 | 0 | 5 |
| | **Total** | **150** | **145** | **168** | **131** | **19** |

For the number of fillers of each phrase frame, as illustrated in Table 5.121, a total of 34 fillers appeared in 13 phrase frames. Specifically, the result also showed 27 fillers that were similar and 7 fillers that were different between the two sub-disciplines. There were 28 fillers in OMS and 33 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *a significant * in* occurred most frequently in the data with 4 fillers in the two sub-disciplines. There were 4 fillers of this phrase frame in OMS and in ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.121 A Summary of Number of Fillers in Contrast and Comparison in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | a significant * in | 4 | 4 | 4 | 3 | 1 |
| 2 | a higher * of | 3 | 2 | 3 | 2 | 1 |
| 3 | was * in the | 3 | 1 | 3 | 1 | 2 |
| 4 | no significant * between | 3 | 3 | 3 | 3 | 0 |
| 5 | there was no * | 3 | 3 | 3 | 3 | 0 |
| 6 | * significant difference between | 3 | 3 | 3 | 3 | 0 |
| 7 | no significant differences * | 3 | 3 | 3 | 3 | 0 |
| 8 | one of the * | 2 | 2 | 2 | 2 | 0 |
| 9 | than * of the | 2 | 2 | 2 | 2 | 0 |
| 10 | no significant difference * | 2 | 2 | 2 | 2 | 0 |
| 11 | a * risk of | 2 | 2 | 2 | 2 | 0 |
| 12 | difference between the * | 2 | 1 | 1 | 1 | 1 |
| 13 | * facial vertical height | 2 | 0 | 2 | 0 | 2 |
| | **Total** | **34** | **28** | **33** | **27** | **7** |

For an overview of the use of phrase frames in this type, Excerpts 5.101 and 5.102 below illustrate a phrase frame *a significant * in* found in the RA Conclusion section between the two sub-disciplines of Dentistry.

**Excerpt 5.101:**

There was **a significant difference in** the mean vertical gap for all groups at each calculation point on each implant. (OMS1)

**Excerpt 5.102:**

There was **a significant reduction in** orthodontic extraction space size in the short- and long-term stages, with a significantly greater reduction in the mandibular arch. (ODO20)

### 5.3.1.4 Deictics and Locatives

Phrase frames in deictics and locatives are used to indicate specific references in time, space, or context. They help guide the reader through the structure of the research, identify relationships between various parts of the paper, and situate information in relation to the content being discussed. These devices are essential for providing clarity and precision in academic writing.

For the frequency of this type of phrase frames, as illustrated in Table 5.122, a total of 231 occurrences of phrase frames were reported. There were 30 occurrences of phrase frames that were similar and 201 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 18 phrase frames with 115 occurrences in OMS and 151 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames than the ones in OMS. In

this type, *in the * group* appeared most frequently, with 52 times in OMS and 9 in ODO, which shows a difference between the two sub-disciplines.

**Table 5.122 A Summary of Frequency of Phrase Frames in Deictics and Locatives in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 58 | 52 | 9 | 0 | 58 |
| 2 | in the * area | 42 | 28 | 11 | 17 | 25 |
| 3 | * soft tissue recession | 35 | 21 | 35 | 0 | 35 |
| 4 | * the HPC line | 16 | 0 | 16 | 0 | 16 |
| 5 | the * dental arch | 12 | 0 | 12 | 0 | 12 |
| 6 | in the * arch | 9 | 0 | 9 | 0 | 9 |
| 7 | * and lateral incisors | 9 | 0 | 9 | 0 | 9 |
| 8 | the * anterior teeth | 8 | 0 | 8 | 0 | 8 |
| 9 | of the * population | 5 | 2 | 5 | 5 | 0 |
| 10 | the * strong anchorage | 5 | 0 | 5 | 0 | 5 |
| 11 | of the * second | 4 | 0 | 4 | 0 | 4 |
| 12 | the * central incisors | 4 | 4 | 4 | 4 | 0 |
| 13 | the * posterior teeth | 4 | 0 | 4 | 0 | 4 |
| 14 | * incisors and canines | 4 | 0 | 4 | 0 | 4 |
| 15 | the * sample size | 4 | 8 | 4 | 4 | 0 |
| 16 | * of the anterior | 4 | 0 | 4 | 0 | 4 |
| 17 | face-to-face interaction with * | 4 | 0 | 4 | 0 | 4 |
| 18 | first or second * | 4 | 0 | 4 | 0 | 4 |
| | **Total** | **231** | **115** | **151** | **30** | **201** |

For the number of fillers of each phrase frame, as illustrated in Table 5.123, a total of 57 fillers appeared in 13 phrase frames. Specifically, the result also showed 6 fillers that were similar and 51 fillers that were different between the two sub-disciplines. There were 18 fillers in OMS and 48 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *in the * group* occurred most frequently in the data with 12 fillers in the two sub-disciplines. In this phrase frame, there were 7 fillers in OMS and 10 times in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.123 A Summary of Number of Fillers in Deictics and Locatives in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | in the * group | 12 | 7 | 10 | 0 | 12 |
| 2 | in the * area | 8 | 7 | 3 | 2 | 6 |
| 3 | the * dental arch | 4 | 0 | 4 | 0 | 4 |
| 4 | of the * second | 3 | 0 | 2 | 0 | 3 |
| 5 | in the * arch | 3 | 0 | 3 | 0 | 3 |
| 6 | the * strong anchorage | 3 | 0 | 3 | 1 | 2 |
| 7 | of the * population | 2 | 1 | 2 | 1 | 1 |
| 8 | * the HPC line | 2 | 0 | 2 | 0 | 2 |
| 9 | the * sample size | 2 | 2 | 2 | 2 | 0 |
| 10 | * incisors and canines | 2 | 0 | 2 | 0 | 2 |

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 11 | * and lateral incisors | 2 | 0 | 2 | 0 | 2 |
| 12 | * of the anterior | 2 | 0 | 2 | 0 | 2 |
| 13 | face-to-face interaction with * | 2 | 0 | 2 | 0 | 2 |
| 14 | the * posterior teeth | 2 | 0 | 2 | 0 | 2 |
| 15 | the * anterior teeth | 2 | 0 | 2 | 0 | 2 |
| 16 | * soft tissue recession | 2 | 1 | 1 | 0 | 2 |
| 17 | the * central incisors | 2 | 0 | 2 | 0 | 2 |
| 18 | first or second * | 2 | 0 | 2 | 0 | 2 |
| | **Total** | **57** | **18** | **48** | **6** | **51** |

For an overview of the use of phrase frames in this type, Excerpts 5.103 and 5.104 below illustrate the phrase frame *in the * area* between the two sub-disciplines.

**Excerpt 5.103:**

Therefore, accurate postoperative evaluation of the efficacy of curettage is particularly important to predict the bone regeneration level **in the lesion area**, functional recovery, and postoperative recurrence (OMS24)

**Excerpt 5.104:**

Crowding in the lower arch can be relieved by tip - ping lower incisors labially, increasing the inter-canine distance, enhancing the mandibular arch width **in the posterior area**, and uprighting mandibular first molars (ODO6)

In conclusion, referential phrase frames in the Conclusion section provide a necessary link between the results, earlier discussions, and the final interpretations. They help ensure that the conclusions are grounded in the findings presented throughout the paper and reinforce the overall coherence of the study. By using referential phrases effectively, authors can remind the reader of key elements of the study, ensuring that the conclusion is both well-supported and clearly connected to the research's core findings and arguments.

**5.5.2.2 Stance Phrase Frames**

Stance phrase frames play an important role in conveying the author's perspective on the significance of the research findings (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020). In the RA Conclusion section, these frames help to express the author's evaluation and certainty regarding the results and their broader implications. They help assert the main conclusions drawn from the research while indicating the strength of the findings. Stance phrases are crucial for expressing the author's confidence in the research outcomes and presenting them in a manner that shows their relevance to the broader academic field.

In this type, phrase frames are classified into 6 types, i.e., hedges, epistemic, obligation and directive, ability and possibility, and evaluation, and intention/volition, prediction (Simpson-Vlach & Ellis, 2010). However, the findings revealed that only 4 phrase frames of hedges were found in the current study, as illustrated in Table 5.124.

**Table 5.124 A Summary of Different Types of Phrase Frames in the Stance Phrase Frames**

| Length | Hedges | Epistemic | Obligation and directive | Ability and possibility | Evaluation | Intention/ volition | Total |
|---|---|---|---|---|---|---|---|
| Four words | 0 | 4 | 0 | 0 | 0 | 0 | 4 |

Phrase frames in epistemic aims to convey the author's understanding of the knowledge presented, the degree of confidence in their claims, and the provisional nature of their conclusions (Simpson-Vlach & Ellis, 2010).

For the frequency of this type of phrase frames, as illustrated in Table 5.125, a total of 54 occurrences of phrase frames were reported. There were 18 occurrences of phrase frames that were similar and 36 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 4 phrase frames with 33 occurrences in OMS and in ODO were identified in the two sub-disciplines, which shows the equal use of phrase frames in OMS than the ones in ODO. In this type, *was * in the* appeared most frequently, with 13 times in OMS and 20 times in ODO.

**Table 5.125 A Summary of Frequency of Phrase frames in Epistemic in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 27 | 13 | 20 | 6 | 21 |
| 2 | * found in the | 11 | 9 | 7 | 6 | 5 |
| 3 | was * as a | 9 | 7 | 3 | 3 | 6 |
| 4 | it is * that | 7 | 4 | 3 | 3 | 4 |
| | **Total** | **54** | **33** | **33** | **18** | **36** |

For the number of fillers of each phrase frame, as illustrated in Table 5.126, a total of 14 fillers appeared in 4 phrase frames. Specifically, the result also showed 9 fillers that were similar and 5 fillers that were different between the two sub-disciplines. There were 12 fillers in OMS and in ODO, which shows the equal use of fillers in OMS than the ones in ODO. The fillers of the phrase frame *was * in the* occurred most frequently in the data with 6 fillers in the two sub-disciplines. In this

phrase frame, there were 5 fillers in OMS and in ODO, which indicates a similarity between the two sub-disciplines.

**Table 5.126 A Summary of Number of Fillers in Epistemic in the Two Sub-disciplines**

| No. | Phrase frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | was * in the | 6 | 5 | 5 | 3 | 3 |
| 2 | was * as a | 3 | 3 | 3 | 3 | 0 |
| 3 | * found in the | 3 | 2 | 3 | 2 | 1 |
| 4 | it is * that | 2 | 2 | 1 | 1 | 1 |
| | **Total** | **14** | **12** | **12** | **9** | **5** |

For an overview of the use of phrase frames in this type, Excerpts 5.105 and 5.106 below illustrate a phrase frame *be * by the* found in the RA Conclusion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.105:**

The results of the present study provide longer follow-up when compared to the study by LeBlanc et al., and could **be explained by the** effect of the TLA, since the anterior oral CTC are associated with the placement of the tongue. (OMS30)

**Excerpt 5.106:**

The differences in the accuracy of torque and linear intra-arch measurements can **be explained by the** different root morphology of the various tooth groups analysed (single-rooted teeth are easier to move than the multi-rooted teeth) [29] and by the different bone anatomy of the various arch sectors [30]. (ODO10)

In conclusion, stance phrase frames in the Conclusion section are essential for clearly articulating the author's final interpretation and emphasis of the research findings. These phrases help to assert the significance of the study's outcomes and their potential implications, offering a sense of certainty or suggestive interpretation. By using stance frames, authors can effectively communicate their level of confidence in the results, ensuring that the conclusions are presented in a decisive, yet balanced, manner that guides future research or practice in the field.

**5.5.2.3 Discourse Organizing Phrase Frames**

Discourse organizing phrase frames play a key role in structuring the final summary and providing a clear, cohesive wrap-up of the study (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020). In the RA Conclusion section, thrase frames help signal the transition to the conclusion, guiding the reader toward the final

interpretation of the findings. These frames create a logical progression, indicating that the author is synthesizing the results and drawing overall conclusions. They provide a clear signal to the reader that the study is coming to a close and that the most important insights will be summarized.

In the discourse organizing phrase frames, there are 4 sub-types, i.e. metadiscourse and textual reference, topic introduction and focus, topic elaboration, and discourse markers (Simpson-Vlach & Ellis, 2010; Golparvar & Barabadi, 2020). However, only 3 in topic elaboration, and 1 in discourse markers were found in the two sub-disciplines of Dentistry. No phrase frames were found in metadiscourse and textual reference and topic introduction and focus, as illustrated in Table 5.127.

**Table 5.127 A Summary of Different Types of Phrase Frames in the Discourse Organizing Phrase Frames**

| Length | Metadiscourse and textual reference | Topic introduction and focus | Topic elaboration | Discourse markers | Total |
|---|---|---|---|---|---|
| Four words | 0 | 0 | 3 | 1 | 4 |

#### 5.5.2.3.1 Topic Elaboration

Phrase frames in topic elaboration used to clarify a particular topic or concept introduced in RA sections. These phrase frames help develop the discussion around a key point or subject, providing more detail, offering examples, explaining significance, or elaborating on relationships between ideas. The purpose of topic elaboration is to ensure that the reader fully understands the importance of the topic, its context, and how it connects to other ideas in the study.

For the frequency of this type of phrase frames, as illustrated in Table 5.128, a total of 46 occurrences of phrase frames were reported. There were 28 occurrences of phrase frames that were similar and 18 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 3 phrase frames with 28 occurrences in OMS and 43 occurrences in ODO were identified in the two sub-disciplines, which shows the less use of phrase frames OMS than the ones in ODO. In this type, ** of this study* appeared most frequently, with 9 times in OMS and 24 times in ODO.

**Table 5.128 A Summary of Frequency of Phrase frames in Topic elaboration in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * of this study | 24 | 9 | 24 | 9 | 15 |
| 2 | * in this study | 20 | 17 | 17 | 17 | 3 |
| 3 | results of * study | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **46** | **28** | **43** | **28** | **18** |

For the number of fillers of each phrase frame, as illustrated in Table 5.129, a total of 10 fillers appeared in 3 phrase frames. Specifically, the result also showed 7 fillers that were similar and 3 fillers that were different between the two sub-disciplines. There were 7 fillers in OMS and 10 fillers in ODO, which shows the less use of fillers in OMS than the ones in ODO. The fillers of the phrase frame ** of this study* occurred most frequently in the data with 6 fillers in the two sub-disciplines. A total of 3 fillers of this phrase frame were found in OMS and 6 fillers in ODO, which indicates a difference between the two sub-disciplines.

**Table 5.129 A Summary of Number of Fillers in Topic elaboration in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | * of this study | 6 | 3 | 6 | 3 | 3 |
| 2 | * in this study | 2 | 2 | 2 | 2 | 0 |
| 3 | results of * study | 2 | 2 | 2 | 2 | 0 |
| | **Total** | **10** | **7** | **10** | **7** | **3** |

For an overview of the use of phrase frames in this type, Excerpts 5.107 and 5.108 below illustrate a phrase frame ** in this study* found in the RA Conclusion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.107:**

No association could be **found in this study** between the implant design and the failure rate. (OMS5)

**Excerpt 5.108:**

However, overall, there were no statistically significant gender **differences in this study**. (ODO5)

#### 5.5.2.3.2 Discourse Markers

Phrase frames in discourse markers are used to manage the flow of information, signal relationships between ideas, and guide the reader through the RA sections. These markers help organize the content and clarify the relationships between different arguments or ideas. Phrase frames in discourse markers act as cues that guide the reader on how to interpret the information in the RAs, indicating connections, transitions, emphasis, contrast, or the introduction of new points.

For the frequency of this type of phrase frames, as illustrated in Table 5.130, a total of 7 occurrences of phrase frames were reported. There were 2 occurrences of phrase frames that were similar and 5 occurrences of phrase frames that were different between the two sub-disciplines. Specifically, 1

phrase frame with 7 occurrences in OMS and 2 occurrences in ODO were identified in the two sub-disciplines, which shows the more use of phrase frames in OMS than the ones in ODO.

**Table 5.130 A Summary of Frequency of Phrase Frames in Discourse Markers in the Two Sub-disciplines**

| No. | Phrase Frames | Frequency | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | on the * of | 7 | 7 | 2 | 2 | 5 |
| | **Total** | **7** | **7** | **2** | **2** | **5** |

For the number of fillers of each phrase frame, as illustrated in Table 5.131, a total of 3 fillers appeared in 1 phrase frame. Specifically, the result also showed 3 fillers that were similar between the two sub-disciplines. There were 3 fillers in OMS and in ODO, which shows the equal use of fillers in OMS and ODO.

**Table 5.131 A Summary of Number of Fillers in Discourse markers in the Two Sub-disciplines**

| No. | Phrase Frames | Fillers | Sub-disciplines | | Similarities | Differences |
|---|---|---|---|---|---|---|
| | | | OMS | ODO | | |
| 1 | on the * of | 3 | 3 | 3 | 3 | 0 |
| | **Total** | **3** | **3** | **3** | **3** | **0** |

For an overview of the use of phrase frames in this type, Excerpts 5.109 and 5.110 below illustrate a phrase frame *on the * of* found in the RA Conclusion sections in the two sub-disciplines of Dentistry.

**Excerpt 5.109:**
It was revealed that inaccuracies in conventional casting procedures, while rare, may be seen depending **on the skill of** the dental technician. (OMS1)

**Excerpt 5.110:**
However, it has no impact **on the quality of** life of the children neither they family. (ODO1)

In conclusion, discourse organizing phrase frames are essential for ensuring that the Conclusion section is well-structured and easy to follow (Gol. They guide the reader through the final points and ensure a smooth transition from the main body of the research to the concluding remarks. By using these frames effectively, authors can clearly communicate the significance of their findings while

providing a logical, cohesive end to the study that emphasizes key takeaways and suggests potential future research or practical applications.

## 5.6 Chapter Summary

This chapter provided a summary of phrase frames of English RA sections in the two sub-disciplines of Dentistry. Based on the frameworks of Gray and Biber (2013) in the structural categories as well as Simpson-Vlach and Ellis (2010) in the functional categories, the phrase frames were found in all the moves and steps of the English RA sections in these two sub-disciplines. The findings from this chapter showed the answers for Research Question 2 in the current study. In the next chapter, the results and discussion of a contrastive analysis of move-step structure and phrase frames between the two sub-disciplines of Dentistry will be reported.

มหาวิทยาลัยเทคโนโลยีสุรนารี

# CHAPTER 6
# RESULTS AND DISCUSSION OF A CONTRASTIVE ANALYSIS OF MOVE-STEP STRUCTURE AND PHRASE FRAMES FOR THE DENTISTRY RA SECTIONS

This chapter presents and discusses the findings of the contrastive analysis conducted on the move-step structures and phrase frames used in different RA sections from two sub-disciplines of Dentistry. The analysis is structured into four main sections: the first outlines the similarities in move-step structure between the two sub-disciplines, followed by an exploration of their differences. The third section highlights the shared patterns in phrase frame usage, while the final section delves into the distinct phraseological choices observed between the sub-disciplines. Through this structured comparison, the chapter aims to reveal both the rhetorical and lexical conventions that characterize academic writing within the field of Dentistry, offering insights into sub-disciplinary variations and commonality.

## 6.1 An Overview of Similarities and Differences of Move-step Structure and Phrase Frames between the Two Sub-disciplines

Table 6.1 Below Presents Similarities and Differences of Move-step Structure between the Two Sub-disciplines in the Current Study.

**Table 6.1 Below Presents Similarities and Differences of Move-step Structure between the Two Sub-disciplines in the Current Study**

| | OMS | ODO | |
|---|---|---|---|
| **Status** | **Introduction** | | **Status** |
| Obl. | Move 1: *Announcing the importance of the field* | Move 1: *Announcing the importance of the field* | Obl. |
| Opt. | M1S1: *Claiming the centrality of the topic* | M1S1: *Claiming the centrality of the topic* | |
| Con. | M1S2: *Making topic generalizations* | M1S2: *Making topic generalizations* | Con. |
| Con | M1S3: *Reviewing previous research* | M1S3: *Reviewing previous research* | Con. |
| Con. | *M1S4: *Generalizations from previous studies* | *M1S4: *Generalizations from previous studies* | Con. |
| Con. | Move 2: *Preparing for the present study* | Move 2: *Preparing for the present study* | Con. |
| Opt. | M2S1: *Indicating a gap* | M2S1: *Indicating a gap* | Opt. |
| Opt. | M2S2: *Showing the problems* | M2S2: *Showing the problems* | Opt. |
| Opt. | M2S3: *Presenting positive justification* | M2S3: *Presenting positive justification* | Con. |
| Obl. | Move 3: *Introducing the present study* | Move 3: *Introducing the present study* | Con. |
| Con. | M3S1: *Stating purpose(s)* | M3S1: *Stating purpose(s)* | Con. |
| Opt. | *M3S2: *Presenting hypotheses* | *M3S2: *Presenting hypotheses* | Opt. |
| Opt. | *M3S3: *Introducing methods* | *M3S3: *Introducing methods* | Opt. |
| | | *M3S4: *Stating the value of present research* | Opt. |

| | | | |
|---|---|---|---|
| | **Methods** | | |
| Obl. | **Move 4: *Describing data-collection procedure*** | **Move 4: *Describing data-collection procedure*** | Obl. |
| Con. | M4S1: *Ethical considerations* | M4S1: *Ethical considerations* | Con. |
| Con. | M4S2: *Indicating the data* | M4S2: *Indicating the data* | Con. |
| Con. | M4S3: *Indicating criteria for data collection* | M4S3: *Indicating criteria for data collection* | Con. |
| Obl. | **Move 5: *Describing experimental procedures*** | **Move 5: *Describing experimental procedures*** | Obl. |
| | M5S1: *Defining variables* | M5S1: *Defining variables* | Opt. |
| Con. | M5S2: *Recounting methods/ experimental process* | M5S2: *Recounting methods/ experimental process* | Con. |
| | *M5S3: *Indicating criteria for success.* | *M5S3: *Indicating criteria for success.* | Opt. |
| Obl. | **Move 6: *Describing data-analysis procedures*** | **Move 6: *Describing data-analysis procedures*** | Con. |
| Opt. | M6S1: *Indicating process of data classification.* | M6S1: *Indicating process of data classification.* | Opt. |
| Opt. | M6S2: *Recounting analytical instrument/procedure* | M6S2: *Recounting analytical instrument/procedure* | Con. |
| Con. | M6S3: *Indicating modification to instrument/procedure* | M6S3: *Indicating modification to instrument/ procedure* | Con. |
| Con. | *M6S4: *Indicating statistical significance* | *M6S4: *Indicating statistical significance* | Con. |
| | **Results** | | |
| Con. | ***Move 7: *Indicating data characteristics*** | ***Move 7: *Indicating data characteristics*** | Opt. |
| Con. | **Move 8: *Reporting the findings*** | **Move 8: *Reporting the findings*** | Con. |
| Con. | M8S1: *Stating the outcomes* | M8S1: *Stating the outcomes* | Con. |
| Con. | M8S2: *Stating figures or tables* | M8S2: *Stating figures or tables* | Opt. |
| Opt. | M8S3: *Reviewing/comparing to previous work* | | |
| Con. | **Move 9: *Stating comments on the results*** | **Move 9: *Stating comments on the results*** | Con. |
| Opt. | *M9S1: *Comparing the experimental and control group* | *M9S1: *Comparing the experimental and control group* | Con. |
| Opt. | *M9S2: *Indicating statistical tests* | *M9S2: *Indicating statistical tests* | Opt. |
| Con. | M9S3: *Making generalizations or interpretations of the results* | M9S3: *Making generalizations or interpretations of the results* | Opt. |
| | **Discussion** | | |
| Opt. | ***Move 10: *Indicating aims of study*** | ***Move 10: *Indicating aims of study*** | Opt. |
| **Obl.** | **Move 11: *Highlighting research Outcomes*** | **Move 11: *Highlighting research Outcomes*** | **Obl.** |
| **Obl.** | M11S1: *Stating outcomes* | M11S1: *Stating outcomes* | **Obl.** |
| Con. | M11S2: *Interpreting the outcome* | M11S2: *Interpreting the outcome* | Con. |
| Con. | M11S3: *Indicating significance of the outcome* | M11S3: *Indicating significance of the outcome* | Opt. |
| **Obl.** | M11S4: *Contrasting present and previous outcomes* | M11S4: *Contrasting present and previous outcomes* | **Obl.** |
| Con. | **Move 12: *Stating limitations of the study*** | **Move 12: *Stating limitations of the study*** | Con. |
| Con. | M12S1: *Limitations about the findings* | M12S1: *Limitations about the findings* | Opt. |
| Opt. | M12S2: *Limitations about the methodology* | M12S2: *Limitations about the methodology* | Con. |
| Opt. | M12S3: *Limitations about the claims made* | M12S3: *Limitations about the claims made* | Opt. |
| Opt. | **Move 13: *Stating research conclusions*** | **Move 13: *Stating research conclusions*** | Opt. |
| Opt. | *M13S1: *Evaluating the study* | *M13S1: *Evaluating the study* | Opt. |
| Opt. | *M13S2: *Deductions from the research* | *M13S2: *Deductions from the research* | Opt. |
| Opt. | M13S3: *Stating future studies* | | |
| | **Conclusion** | | |
| **Obl.** | **Move 14: *Summarizing the main findings*** | **Move 14: *Summarizing the main findings*** | **Con.** |

*** Notes**:

- Move or step with * means a new move or step identified in the two sub-disciplines of Dentistry.
- Abbreviations are Obl. (Obligatory), Con. (Conventional), and Opt. (Optional).

The present study revealed both similarities and differences in rhetorical moves, steps, structural patterns, and phrase frame usage across the two sub-disciplines. Notable similarities emerged in M1S3 of the Introduction, Moves 4 and 5 of the Methods, M8S1 in the Results, Moves 11 and 12 in the Discussion, and Move 14 in the

Conclusion. These shared patterns reflect the conventional structure of academic writing, which progresses from background to conclusion in a standardized manner.

Both corpora showed frequent use of phrase frames in the Introduction, Methods, Results, and Discussion sections. Phrase frame counts included 17 in the Introduction, 48 in the Methods, 42 in the Results, and 47 in the Discussion. This consistent usage suggests a shared dependence on formulaic language to clearly communicate complex academic content.

However, variations were observed in the organization and realization of certain rhetorical steps. In the Introduction, OMS employed M2S3 and M3S3, while ODO utilized M2S2 and M3S2, indicating differing approaches to contextualizing the research. Differences were also noted in the Methods (M4S2, M4S3 in ODO), the Results (Moves 6 and 7), and the Discussion (Move 10). The Conclusion, however, remained structurally consistent across both sub-disciplines, suggesting its standardized role in academic discourse.

Additionally, phrase frame frequency was higher in ODO compared to OMS in all sections of the research articles. For instance, ODO contained 258 phrase frames in both the Introduction and Results sections, significantly exceeding OMS. This may indicate a more formulaic and convention-driven writing style in ODO, potentially reflecting greater lexical sophistication. Overall, the findings emphasize both structural stability in academic genres and rhetorical variation shaped by disciplinary expectations.

### 6.2 Similarities of Move-step Structure between the two Sub-disciplines of Dentistry

In the RA Introduction section, a key similarity between OMS and ODO research articles lies in their shared rhetorical strategy in Move 1, particularly in M1S3: *Reviewing previous research*. Both sub-disciplines consistently employ this step to announce the importance of the field and position their research within the broader scientific context. This indicates that, regardless of their specific sub-disciplinary focus, both OMS and ODO value grounding their work in established literature and acknowledging the existing body of knowledge. This shared emphasis aligns with the findings of Samraj (2005), Ozturk (2007), Kanoksilapatham (2015), Alsharif (2022), and Xuo (2025), who argued that while the realization of moves may vary across disciplines, certain foundational steps, such as the review of prior research, remain central to academic writing. Thus, this commonality underscores the importance of situating new research

within ongoing scholarly conversations, a practice that enhances credibility and scholarly engagement across both fields.

In the RA Methods section, both OMS and ODO research articles demonstrate a shared emphasis on methodological transparency and scientific rigor, particularly in the use of Move 4: *Describing data collection* and Move 5: *Describing experimental procedures*. These moves are frequently employed in both sub-disciplines, signaling a collective commitment to ensuring the reliability and replicability of research outcomes. By clearly outlining procedural steps and criteria for data collection, authors in both fields aim to enhance the credibility of their findings. This emphasis aligns with the observations of Samraj (2005), Kanoksilapatham (2015), and Xuo (2025) that genre structures in academic writing evolve to reflect the practical needs and epistemological commitments of their respective disciplines. The prominence of these moves in both OMS and ODO indicates that methodological rigor is a shared value potentially across Dentistry sub-disciplines, particularly in research that is clinical or laboratory-based. This shared practice of articulating clear and detailed methodologies marks a convergence in rhetorical priorities, distinguishing the current study from previous analyses which may have underemphasized this common ground.

In the RA Results section, both OMS and ODO RAs employ Move 8*: Reporting findings* as a central rhetorical strategy, reflecting a shared understanding of the importance of clearly presenting research outcomes. Specifically, both sub-disciplines make frequent use of M8S1: *Stating the outcomes*, which underlines a mutual commitment to transparency in communicating results. However, despite this shared structural move, significant sub-disciplinary variation emerges in how these findings are framed. OMS RAs tend to generalize their results and emphasize broader interpretations and clinical implications, while ODO RAs more often focus on detailed comparisons between experimental and control groups. This difference supports the claims of Samraj (2005), Li and Pramoolsook (2015), Alsharif (2022), and Xuo (2025) that genre structures are shaped by the epistemological goals and practices of specific disciplines. Such divergence illustrates how the reporting of findings is adapted to serve the distinct research purposes of each sub-discipline: OMS, with its clinical orientation, favors broader applicability, whereas ODO, with a more experimental focus, emphasizes internal comparisons and methodological precision.

In the RA Discussion section, both OMS and ODO RAs consistently utilize Move 11: *Highlighting research outcomes*, reflecting a shared emphasis on clearly communicating the significance of findings. However, the framing of these outcomes reveals important sub-disciplinary distinctions. OMS RAs typically emphasize the

clinical implications of their results, drawing direct connections between research findings and practical applications in surgical or treatment contexts. In contrast, ODO RAs tend to highlight theoretical and experimental contributions, often focusing on innovations in materials, methodologies, or laboratory findings. This variation illustrates how sub-disciplinary objectives shape rhetorical choices, supporting the arguments from Samraj (2005), Shooshtari and Jalilifar (2012), and Li et al. (2015) that sub-disciplinary differences influence not only structural features of academic writing but also the functional relationships between moves.

In a similar vein, both OMS and ODO RAs make use of Move 12: *Discussing limitations*, yet again diverge in terms of focus and rhetorical emphasis. OMS articles generally frame limitations in relation to clinical applicability, often addressing challenges in generalizing findings to broader patient populations or procedural settings. In contrast, ODO articles tend to approach limitations through a methodological lens, critically reflecting on aspects such as experimental design, sample size, or measurement accuracy. These differences underscore how sub-disciplinary orientations influence the interpretive lens through which research is evaluated. While the structure of Move 12 may be shared, the purpose and perspective it serves are tailored to the distinct research priorities of each field, further affirming the views from Samraj (2005) and Kanoksilapatham (2015), Alsharif (2022), and Xuo (2025) that the move are dynamically shaped by sub-disciplinary contexts.

In the RA Conclusion section, a notable similarity between the two sub-disciplines research articles is the consistent presence of Move 14: *Summarizing the main findings*. This move serves a fundamental communicative function: it provides readers with a concise synthesis of the study's key outcomes, reinforcing the relevance and implications of the research. The prominence of this move in both OMS and ODO articles suggests that despite their methodological and thematic differences, the two sub-disciplines share a common structured expectation to consolidate research findings at the end of the article. Therefore, the consistent use of Move 14 between both sub-disciplines highlights a shared rhetorical practice in Dentistry research writing. It reflects a sub-disciplinary consensus on the importance of synthesizing results for both clinical application and theoretical development, thus reinforcing the integrity and communicative clarity of research conclusions in Dentistry.

## 6.3 Differences of Move-step Structure between the Two Sub-disciplines of Dentistry

In the RA Introduction section, despite their shared rhetorical foundations, OMS and ODO research articles diverge significantly in how they justify their research and structure their methodological sections. In Move 2, OMS RAs tend to employ M2S3: *Presenting positive justification*, emphasizing the clinical relevance, practical applications, and benefits of their studies. In contrast, ODO RAs more frequently use M2S2: *Showing the problems*, focusing on identifying gaps or shortcomings in existing research. This distinction reflects differing sub-disciplinary priorities: OMS highlights the potential contributions and improvements to clinical practice, while ODO centers its justification on addressing unresolved problems or theoretical issues. These patterns support the assertions of Samraj (2005), Ozturk (2007), and Li and Pramoolsook (2015), and Alsharif (2022) that rhetorical structures evolve in response to the specific communicative goals of each discipline.

Similarly, differences are evident in Move 3, where OMS and ODO prioritize different aspects of methodological presentation. OMS RAs typically utilize M3S3: *Introducing methods/equipment*, reflecting the field's emphasis on surgical techniques and detailed procedural descriptions. ODO RAs, on the other hand, favor M3S2: *Presenting hypotheses*, suggesting a stronger alignment with hypothesis-driven inquiry and experimental design. These rhetorical choices reveal how genre conventions adapt to serve the specific epistemological and practical needs of each sub-discipline. Together, these findings highlight not only the structural differences in research article composition between OMS and ODO but also underscore the importance of tailoring rhetorical strategies to sub-disciplinary expectations.

In the RA Methods section, despite similarities in rhetorical structure, OMS and ODO RAs exhibit notable differences in the specific phrase frames used to realize common moves, reflecting deeper sub-disciplinary variations. For example, while both fields use Move 4 and Move 5, OMS tends to favor M4S2: *Indicating the data*, emphasizing the types of data collected, whereas ODO more frequently uses M4S3: *Indicating criteria for data collection*, suggesting a greater focus on selection criteria and methodological precision. Likewise, while both employ Move 6: *Indicating modifications to instruments/procedures*, the phraseological choices diverge, revealing unique methodological and epistemological concerns within each sub-discipline. These variations are consistent with Samraj (2005), Li et al. (2015), Alsharif (2022), and Xuo (2025) who argue that sub-disciplinary writing is shaped not just by broad genre structures but by finer-grained rhetorical preferences. Furthermore, Samraj (2005)

emphasized that such distinctions reflect the interplay between genre and sub-disciplinary objectives, with phrase frame choices revealing how academic writing adapts to serve specific research aims. This dynamic relationship between genre structure and sub-disciplinary goals represents a key and novel finding of the current study, underscoring the need for genre analyses to account for sub-disciplinary nuance in both structure and language use.

In the RA Results section, beyond the presentation of findings, notable differences also appear in the emphasis placed on data characteristics, particularly through the use of Move 7*: Indicating data characteristics*. OMS RAs demonstrate a stronger focus on the granularity of data. This heightened attention reflects the clinical demands of OMS, where detailed data about patient outcomes, surgical procedures, and treatment variables are crucial for informing practice. In contrast, ODO RAs show relatively less emphasis on this move, possibly due to a more controlled, experimental research design that centers on comparing predefined variables. This contrast reinforces the assertions of Samraj's (2005), Li and Pramoolsook (2015), Alsharif (2022), and Xuo (2025) that academic writing structures evolve in response to sub-disciplinary needs and objectives. The focus on detailed data in OMS highlights how genre conventions adapt to prioritize information most relevant to clinical decision-making and real-world application, whereas ODO's comparatively narrower use reflects its orientation toward experimental validity and controlled comparison.

In the RA Discussion section, a key distinction between OMS and ODO research articles lies in their treatment of research context and details, particularly through Move 10: *Providing background information or contextualization*. OMS RAs demonstrate a greater emphasis on detailed contextualization. This reflects the clinical nature of OMS research, where a comprehensive understanding of patient scenarios, procedural context, and practical relevance is crucial. In contrast, ODO, with its experimental orientation, presents a more streamlined contextualization focused on research design rather than clinical setting. This difference illustrates how genre conventions are shaped by the communicative goals and practical needs of each sub-discipline, aligning with the assertions of Samraj (2005), Shooshtari and Jalilifar (2012), Li and Pramoolsook (2015), Alsharif (2022), and Xuo (2025) that academic writing evolves to reflect sub-disciplinary priorities. The current study's findings highlight that even when the same moves are used, the density, detail, and linguistic realization of these moves vary significantly between fields. This contributes a novel insight to genre studies in Dentistry, emphasizing how academic writing adapts not just structurally but also linguistically to suit the demands of the research context.

## 6.4 Similarities of Phrase Frames between the Two Sub-disciplines of Dentistry

### 6.4.1 Results and Discussion in the RA Introduction Section

**Table 6.2 A Summary of Similar Phrase Frames in the Introduction Section between the Two Sub-disciplines**

| A List of Similar Phrase Frames between the Two Sub-disciplines in the Introduction Section | | | |
|---|---|---|---|
| *** one of the (as, most)** | the * between the (relationship) | was to * the (investigate) | aim to * the (evaluate) |
| **aimed to * the (assess)** | * to evaluate the (was) | * to evaluate the (aim) | study was to * (investigate) |
| **study was to * (compare)** | the aim of * (aim) | the * of this (purpose) | the * of this (objective) |
| *** of this study (aim)** | * of this study (purpose) | * of this study (objective) | study was to * (evaluate) |
| **and this study * to (aimed)** | | | |

In this section, 17 phrase frames were found similarly between the two sub-disciplines, as presented in Table 6.2. These phrase frames reveal a high degree of structured and lexical convergence between the two sub-disciplines. The recurring phrase frames, such as ** of the most (one)*, *aimed to * the (assess)*, *the * of this study (aim)*, and *study was to * (investigate)*, are commonly used to announce research purposes, highlight study objectives, and situate the research within existing scholarly discourse. Their prevalence in both sub-disciplines suggests that authors adhere to widely accepted academic conventions for introducing scientific inquiries, regardless of sub-disciplinary variation. This supports prior research (e.g., Samraj, 2005; Lu et al., 2021c) that argues for the stability of certain rhetorical structures in academic genres, particularly in the Introduction section, where moves like establishing a territory, identifying a niche, and presenting the present work are central across disciplines.

Moreover, the use of similar phrase frames indicates a shared sub-disciplinary commitment to clarity and formalized academic presentation, especially in articulating study goals (Lu et al., 2021a, 2021b). This lexical uniformity may reflect broader institutional or editorial expectations within Dentistry research communities, which often favor formulaic language to promote accessibility and uniformity in scholarly communication. While OMS and ODO may differ in their research focus and methodology, the convergence in introductory phraseology highlights a common communicative function: to clearly convey the purpose, scope, and relevance of the study. These findings suggest that, at least in the early rhetorical stages of a research article, genre conventions take precedence over sub-disciplinary distinctions, reinforcing the standardized nature of scientific writing in health-related fields.

### 6.4.2 Results and Discussion in the Methods Section

The findings showed that there were 48 phrase frames similarly found between the two sub-disciplines of Dentistry, as presented in Table 6.3.

**Table 6.3 A Summary of Similar Phrase Frames in the Methods Section between the Two Sub-disciplines**

| A List of Similar Phrase Frames between the Two Sub-disciplines in the Methods Section | | | |
|---|---|---|---|
| *** was approved by (study)** | approved by the * (institutional) | * study was approved (retrospective, the, this) | the * committee of (ethics) |
| **the * committee of (ethical)** | in the * of (department) | * committee of the (ethics) | * committee of the (ethical) |
| *** was approved by (study)** | approved by the * (institutional) | included in * study (the) | * in this study (used) |
| **was performed * (with)** | the * group was (control) | * in this study (included) | was * as a (defined) |
| **in order to * (provide)** | * in this study (included) | the * of the (end) | the *of the (reliability) |
| **analyses were performed * (using)** | analyses were performed * (with) | used to * the (compare) | was used to * (evaluate) |
| **was used to * (determine)** | analysis was * to (used) | was performed * (using) | used to * the (evaluate) |
| **was used to * (evaluate)** | was used to * (compare) | * used to compare (were) | used to * the (evaluate) |
| **used to * the (compare)** | was used to * (evaluate) | was used to * (compare) | were used to * (assess) |
| **analysis was * to (performed)** | * used to compare (was) | * used to compare (were) | the * of the (results) |
| **analyses were performed * (using)** | was * statistically significant (considered) | was used to * (assess) | was used to * (determine) |
| **analysis was * to (used)** | the * between the (correlation) | | |

To be more specific, the identification of 48 shared phrase frames in the Methods sections of OMS and ODO RAs reveals a striking degree of structured standardization in how research is presented in these sub-disciplines. This consistency is particularly notable in phrase frames related to ethical approval, such as *was approved by (study)*, *approved by the * (institutional)*, *study was approved (retrospective, the, this)*, *the * committee of (ethics)*, *the * committee of (ethical)*, *committee of the (ethics)*, and *committee of the (ethical)*. These phrase frames reflect the essential role of ethical compliance in clinical and experimental research and demonstrate that both sub-disciplines follow institutional norms that require clear, formulaic reporting of ethical clearance procedures. Such lexical repetition ensures clarity and legal accountability, and aligns with broader academic expectations for transparency in research involving human subjects or clinical intervention.

In addition to ethical considerations, the phrase frames identified also illustrate how both OMS and ODO report the research setting and participant inclusion. Frames such as *in the * of (department)*, *included in * study (the)*, *in this study (included)*, and *in this study (used)* reveal a consistent pattern for situating the study within a particular institutional context and defining participant involvement. The recurrence of *in this study* across multiple phrase frames reinforces the importance of anchoring the methodological narrative in a clearly delineated scope. Similarly, the phrase *the * group was (control)* indicates shared strategies for identifying study groups, particularly in experimental or comparative research designs. This uniformity in participant-related reporting further supports Samraj's (2005) argument that sub-

disciplinary writing conventions evolve to meet the communicative needs of scientific communities, especially in fields where replicability is paramount.

A substantial portion of the shared phrase frames also relates to data analysis and statistical procedures. Frames such as *analyses were performed * (using)*, *analyses were performed * (with)*, *was used to * (evaluate)*, *was used to * (compare)*, *was used to * (determine)*, *used to * the (evaluate)*, *used to * the (compare)*, *used to compare (were)*, *used to compare (was)*, *were used to * (assess)*, *analysis was * to (used)*, and *analysis was * to (performed)* indicate a standardized way of reporting analytical tools and procedures. This repetition underscores the importance of methodological rigor and clarity when explaining how data are processed and interpreted. Furthermore, the consistent use of *was * statistically significant (considered)* reveals a shared threshold for interpreting the validity of findings, highlighting the role of statistical significance as a critical evaluative measure in both sub-disciplines.

Phrase frames such as *was * as a (defined)*, *in order to * (provide)*, and *the * of the (end)* or *the * of the (reliability)* demonstrate the use of clear rhetorical strategies to define variables, explain procedural goals, and report study integrity. These frames serve important discursive functions-they help establish the precision of the methods used and ensure that readers understand the rationale behind each methodological choice. Additionally, *the * between the (correlation)* points to shared methods of relational analysis, further suggesting that statistical conventions are uniformly applied across OMS and ODO despite differing research foci.

In sum, the recurrence of these phrase frames across both fields indicates that the Methods section is shaped more by genre conventions and institutional expectations than by sub-disciplinary differences. Even though OMS often deals with surgical and clinical procedures and ODO focuses more on restorative materials and techniques, both rely on a highly similar rhetorical toolkit to describe methodology. This convergence reinforces the claim that scientific writing in dentistry is bound by overarching norms that prioritize reproducibility, ethical transparency, and methodological clarity. It also affirms Samraj's (2005) theory that genre structures are flexible enough to accommodate sub-disciplinary variation in content, while still adhering to stable rhetorical patterns that fulfill shared communicative purposes.

### 6.4.3 Results and Discussion in the Results Section

The findings showed that there were 42 phrase frames similarly found between the two sub-disciplines of Dentistry, as presented in Table 6.4.

**Table 6.4 A Summary of Similar Phrase Frames in the Results Section between the Two Sub-disciplines**

| A List of Similar Phrase Frames between the Two Sub-disciplines in the Results Section | | | |
|---|---|---|---|
| were * in this study (included) | the average * of (average) | significant difference * the (between) | significant * between the (difference) |
| * statistically significant difference (no) | there was no * (significant) | statistically significant difference * (in) | * tipping of the (mesial) |
| significant * was found (difference) | * difference was found (no) | there was no * (statistically) | there * no significant (were) |
| significant differences were * (observed) | no significant differences * (were) | was * in the (found) | were * between the (observed) |
| compared with the * (control) | compared with the * (other) | the * of the (end) | the * of the (size) |
| the * of the (height) | with * to the (respect) | * significant differences in (no) | * significant differences in (statistically) |
| statistically significant differences * (in) | significant * was found (difference) | was a significant * (difference) | there was * significant (no) |
| there * no significant (no) | was * statistically significant (no) | no significant * were (differences) | the * of the (results) |
| in * with the (comparison) | * and control groups (experimental) | a significant * between (correlation) | significantly between the * (groups) |
| * significant correlation between (no) | significant * between the (difference) | significant difference * the (between) | a significant * in (difference) |
| significantly between the * (groups). | | | |

The presence of 42 shared phrase frames in the Results sections of OMS and ODO RAs reveals a strong degree of lexical and rhetorical standardization in the way findings are reported across these two sub-disciplines. These phrase frames, such as *significant difference * the (between)*, *significant * between the (difference)*, *statistically significant difference * (in)*, and *no significant differences * (were)*, reflect the conventional strategies used to emphasize statistical outcomes. The repetition of such phrase frames highlights the central role of statistical significance in scientific argumentation, serving as a marker of the reliability and relevance of the findings. Whether authors are reporting the presence or absence of statistical differences, these formulaic phrase frames help standardize the presentation of quantitative data, aligning with genre norms that value clarity, objectivity, and comparability.

Additionally, many of the shared phrase frames, such as *was * in the (found)*, *significant differences were * (observed)*, and *there * no significant (were)*, demonstrate a consistent use of impersonal, passive constructions that focus attention on the data rather than the researcher. This rhetorical style is a common feature in scientific writing, designed to maintain objectivity and reduce authorial bias. By emphasizing results over interpretation, these phrase frames allow both OMS and ODO researchers to present their findings in a manner that prioritizes neutrality and scientific rigor. Moreover, the phrase *in this study (included)* reinforces the localized context of the results, ensuring that findings are clearly attributed to the current investigation while distinguishing them from broader literature.

The recurrence of specific phrase frames such as *the * of the (results)*, *the * of the (end)*, *the * of the (size)*, and *the * of the (height)* suggests that both sub-disciplines also share a lexical repertoire for describing measurements and observed

variables. These phrase frames serve a descriptive function, offering precise quantitative information that is critical for comparison, reproducibility, and further meta-analytic work. Similarly, the use of frames like *compared with the * (control)* and *compared with the * (other)* reveals a shared emphasis on comparative analysis, a foundational component of experimental and clinical research in both OMS and ODO.

Interestingly, several of the shared frames relate to correlation and group comparisons, such as *a significant * between (correlation)*, *significantly between the * (groups)*, and *significant correlation between (no)*. These phrase frames underscore the analytical similarity in how both fields examine relationships between variables, treatment outcomes, or patient characteristics. Despite differences in subject matter, OMS often focusing on surgical procedures and ODO on restorative materials or cavity preparation techniques, their reliance on similar frames for statistical interpretation shows a unified approach to validating and explaining findings.

Finally, the repeated use of negation in phrase frames like *there was no * (significant)*, *no significant * were (differences)*, and *was * statistically significant (no)* illustrates a careful rhetorical balance in reporting both positive and null results. Such balanced reporting is critical in research integrity, especially in fields where clinical applications rely on comprehensive understanding of both effective and non-effective outcomes.

In sum, the consistent use of these 42 phrase frames suggests that the Results sections in both OMS and ODO conform to shared sub-disciplinary expectations that prioritize objectivity, clarity, and statistical precision. These shared rhetorical patterns serve not only to report findings, but also to meet the broader communicative goals of the scientific community, namely, reproducibility, peer comprehension, and clinical or experimental relevance. As Samraj (2005) emphasized, while academic writing varies by discipline, certain moves and linguistic forms become stabilized across fields that share methodological and epistemological foundations, as demonstrated in this study of Dentistry research writing.

**6.4.4 Results and Discussion in the Discussion Section**

The findings showed that there were 47 phrase frames similarly found between the two sub-disciplines of Dentistry, as illustrated in Table 6.5.

**Table 6.5 A Summary of Similar Phrase Frames in the Discussion Section between the Two Sub-disciplines**

| A List of Similar Phrase Frames in the Discussion Section between the Two Sub-disciplines | | | |
|---|---|---|---|
| **that there was * (no)** | was a significant * (difference) | there was no *(significant) | there was * difference (no) |
| **was not * significant (statistically)** | it has been * (reported) | be * by the (explained) | be * to the (due) |
| **in the * of (absence)** | at the * of (time) | * the presence of (and) | * patients with a (in) |
| **significant * in the (difference)** | of the * lip (upper) | in the * study (present) | in the * study (current) |
| *** in this study (used)** | there was no *(significant) | be * to the (due) | * patients with a (for) |
| **in this study * (was)** | have been * to (reported) | * in this study (used) | there was * significant (no) |
| **compared * the control (with)** | * be explained by (can) | it has been * (reported) | has been * to (shown) |
| **be * by the (explained)** | previous studies have * (reported) | previous studies have * (demonstrated) | * in this study (included) |
| **the * of the (results)** | the * of the (size) | the * of the (region) | the * of this (results) |
| **the use of * (the)** | the use of * (a) | the * between the (distance) | the * of the (time) |
| **in * with a (patients)** | significant * in the (difference) | * significant difference in (no) | of the * lip (upper) |
| *** this study was (of)** | the * of the (use) | the use of * (the) | that the * of (use) |
| **limitations of * study (this)** | limitations of * study (the) | the * of the (limitations) | |

To be more specific, the identification of 47 shared phrase frames in the Discussion sections of research articles in OMS and ODO underscores a strong rhetorical convergence in how researchers across these sub-disciplines interpret, contextualize, and evaluate their findings. Phrase frames such as *that there was * (no)*, *there was no * (significant)*, *was a significant * (difference)*, and *was not * significant (statistically)* illustrate the common emphasis placed on summarizing statistical outcomes and reflecting on their implications. These phrase frames help authors state results with clarity, acknowledging both the presence and absence of significant findings in a neutral, scientific tone. Their repetition suggests a shared rhetorical strategy for ensuring that claims are grounded in evidence, supporting Samraj's (2005) observation that genre moves, such as summarizing results and stating implications-are common across scientific disciplines, even as their sub-disciplinary focus may differ.

A notable set of shared phrase frames-such as *it has been * (reported)*, *previous studies have * (reported)*, *previous studies have * (demonstrated)*, *has been * to (shown)*, and *have been * to (reported)*-shows how both OMS and ODO articles rely heavily on literature integration to support interpretation. These phrase frames function to align the current study's findings with or against established knowledge, reinforcing credibility and situating new contributions within the wider academic discourse. Their prevalence suggests that both sub-disciplines view the Discussion section as a space for rhetorical positioning, where authors strategically build upon past findings to construct scientific legitimacy.

In addition to statistical and comparative discussion, phrase frames such as *be * by the (explained)*, *be * to the (due)*, and *can * be explained by* reflect a shared move to interpret results and offer causal reasoning. This linguistic pattern allows authors to propose plausible explanations for observed outcomes, drawing on methodological factors, clinical variability, or contextual nuances. Similarly, frames like

*compared * the control (with)* and *significant * in the (difference)* show that comparative reasoning remains central to both fields, whether comparing treatment groups, anatomical variations, or procedural outcomes. These rhetorical functions are foundational in scientific explanation, bridging the gap between raw findings and their implications.

Phrase frames like *the * of the (results)*, *the * of the (size)*, *the * of the (region)*, *the * of the (use)*, and *the * of the (time)* demonstrate the descriptive emphasis placed on specifying variables, sample characteristics, or clinical parameters. Their use reflects an effort to maintain precision while discussing the scope and nature of the findings. Additionally, temporal and contextual frames such as *in the * study (present)*, *in the * study (current)*, and *in this study * (was)* reinforce the anchoring of results to the present research context, a necessary rhetorical step in distinguishing the study's contributions from prior work.

The inclusion of evaluative frames related to limitations, such as *limitations of * study (this)*, *limitations of * study (the)*, and *the * of the (limitations)*, demonstrates that both OMS and ODO researchers engage in the genre-expected move of acknowledging research constraints. This rhetorical practice enhances credibility by showing critical awareness of methodological or contextual weaknesses, thereby strengthening the reliability of the conclusions drawn. Similarly, frames like *the use of * (the)* and *that the * of (use)* suggest a shared focus on discussing clinical or procedural applications, especially relevant in practice-oriented fields like dentistry.

Overall, these shared phrase frames in the Discussion section point to a rhetorical and structural uniformity that transcends sub-disciplinary boundaries. While the clinical or experimental focus of OMS and ODO may differ, the linguistic strategies used to summarize results, interpret findings, integrate literature, and discuss limitations are largely consistent. This suggests that the rhetorical demands of the Discussion section, including justifying results, aligning them with existing knowledge, and acknowledging boundaries, are shaped more by the communicative function of the genre than by sub-disciplinary specificity. These findings reinforce the argument that academic writing conventions evolve in response to shared epistemological and institutional norms, supporting Samraj's (2005) and Cheng and Zhang's (2025) view of genre as a socially situated but cross-disciplinary construct.

**6.4.5 Results and Discussion in the Conclusion Section**

The presence of only 3 shared phrase frames in the Conclusion sections, including *the * of this (results)*, *no significant difference * (between)*, and *significant difference between * (the)*, suggests a more concise and possibly more discipline-

specific rhetorical approach compared to the Introduction, Methods, Results, and Discussion sections of the RAs. Despite the limited overlap, these phrase frames still reflect essential communicative functions common to both OMS and ODO: summarizing key findings and emphasizing statistical outcomes. The frame *the * of this (results)* enables authors to restate the central outcomes of their studies, often serving as a final evaluative statement that reinforces the study's contribution. Meanwhile, *no significant difference * (between)* and *significant difference between * (the)* are crucial for highlighting comparative conclusions, especially when the study involves control and experimental groups.

These phrase frames confirm that, even in the concluding remarks, both sub-disciplines adhere to a shared academic convention of reaffirming the study's findings with clarity and precision. However, the limited number of shared frames may indicate greater variability in how authors in OMS and ODO choose to craft their concluding statements, potentially reflecting differences in audience expectations, clinical implications, or sub-disciplinary writing cultures. This finding supports Samraj's (2005) view that while genre structures can be stable across disciplines, the realization of moves may vary in scope and lexical choice depending on the sub-disciplinary context and communicative purpose.

## 6.5 Differences of Phrase Frames between The Two Sub-disciplines of Dentistry

### 6.5.1 Results and Discussion in the Introduction section

#### 6.4.1.1 Oral and Maxillofacial Surgery

**Table 6.6 A Summary of Phrase Frames in the English OMS Introduction Section**

| A List of Phrase Frames in the English OMS Introduction Section | | | |
|---|---|---|---|
| **be * by the (affected)** | in the * of (number) | the number of * (implants) | one of the * (most) |
| **in the * zone (esthetic)** | of the * gland (parotid) | by the * of (type) | in the * of (number) |
| **by the * of (type)** | used to * the (assess) | the * of the position) | the * of the (stability) |
| **the * of the (root)** | the * of the (location) | the * of the (length) | the * of the (introduction) |
| **of the * teeth (anterior)** | at the * of (level) | at the * of (level) | the number of * (implants) |
| **the relationship between * (the)** | at the * time (same) | a high * of (level) | one of the * (most) |
| **at the same * (time)** | a * level of (high) | in the * area (esthetic) | * at the end (spaces) |
| **for the * of (treatment)** | early dental implant * (failure) | the * dentition phase (mixed) | * soft tissue recession (midfacial) |
| *** titanium base abutments (the)** | the * dental arch (upper) | the * dental arch (mandibular) | for the * of (treatment) |
| **of the * and (maxilla)** | of the * and (patient) | * of the mandibular (tipping) | have been * to (reported) |
| **can be * by (explained)** | it has been * (reported) | it has been * (suggested) | be * by the (affected) |
| **it is * that (known)** | have been * to (used) | have been * to (reported) | studies have * that (reported) |
| **studies have * that (demonstrated)** | been * to be (shown) | been * to be (reported) | has been *that (reported) |
| **in order to * (assess)** | used to * the (assess) | the * of the (end) | the * of the (position) |
| **the * of the (root)** | the * of the (length) | the * of the (introduction) | the use of * (adjunctive) |
| **the * number of (total)** | * of gingival recession (frequency) | with * to the (regard) | in * with the (line) |
| **in the * of (treatment)** | in the * of (range) | in the * of (absence) | in the * of (range) |
| **the number of * (patients)** | * position of the (vertical) | a * rate of (recurrence) | an * in the (increase) |
| **at the same * (level)** | a * risk of (higher) | a * risk of (high) | one of the * (main) |

| A List of Phrase Frames in the English OMS Introduction Section | | | |
|---|---|---|---|
| of the * ridge (alveolar) | at the * time (same) | no significant * between (differences) | a * risk of (high) |
| increase the *of (risk) | in the * area (lesion) | on the * side (left) | in the * area (esthetic) |
| in the * region (anterior) | in the * region (anterior) | of the * bone (buccal) | on the * side (left) |
| of the * population (general) | of the * incisors (mandibular) | of the * cavity (oral) | the * central incisors (maxillary) |
| for the *of (treatment) | in the * region (anterior) | the * crown height (clinical) | * dental implant failure (early) |
| * incisors and canines (lateral) | * incisors and canines (central) | and * of the (floor) | the * position of (vertical) |
| that the * of (use) | the quality of * (life) | * soft tissue recession (midfacial) | the * central incisors (maxillary) |
| first or second * (permanent) | first or second * (molars) | for the * of (treatment) | * the type of (by) |
| by the * of (type) | with a * of (history) | of the * and (mandible) | have been * in (reported) |
| it has been * (reported) | has been * to (reported) | be * by the (affected) | has been * that (reported) |
| the * of the (aim) | * of gingival recession (frequency) | in the * of (treatment) | in the * gland (parotid) |
| in the * region (anterior) | in the * gland (parotid) | of the * incisors mandibular) | in the * region (anterior) |
| the * of root (prevalence) | the * third molar (impacted) | first or second * (molars) | of the * and (mandible) |
| * tipping of the (distal) | has been * to (found) | the * of the (results) | of the * teeth (anterior) |
| in the * region (anterior) | of the * anterior (maxillary) | * of the anterior (changes) | and soft tissue * (profile) |
| have been * to (reported) | * tipping of the (distal) | be * by the (affected) | have been * to (reported) |
| be * by the (affected) | the * of the (use) | the * of the (base) | the * of the (use) |
| the * number of (total) | in the * of (number) | a * in the (reduction) | in * with a (patients) |
| distal * of the (tipping) | * tipping of the (distal) | one of the * (most) | * tipping of the (distal) |
| the * position of (vertical) | the * third molar (impacted) | the * mixed dentition (early) | the * dental arch (maxillary) |
| in the * of (number) | has been * to (found) | in order to * (provide) | the * of the (position) |
| the * of the (stability) | the * of the (reliability) | the * of the (height) | in the * of (range) |
| to the * of (best) | in the * of (range) | within the * of (range) | an * of the (increase) |
| abutment for the * (prosthesis) | abutment for the * (crown) | titanium base abutment * (for) | at the same * (time) |
| a * level of (high) | at the * time (same) | a * risk of (higher) | a high * of (level) |
| of the * cavity (cystic) | of the * cavity (oral) | * physiologic tooth mobility (of) | * titanium base abutment (cylindrical) |
| of the * cavity (cystic) | position of the * (maxillary) | abutments for the * (crown) | the titanium base * (abutments) |
| of the * and (upper) | of the * and (patient) | * of the mandibular (tipping) | was to * the (evaluate) |
| study was to * (evaluate) | the * of the (effect) | the aim of * (aim) | and the * of (effect) |
| with * to the (respect) | in the * of (level) | the * between the (relationship) | and satisfaction with * (dental) |
| of the * second (upper) | in the * zone (esthetic) | in the * region (posterior) | in the parotid * (gland) |
| in the * gland (parotid) | of the * anterior (maxillary) | * the observation period (during) | during the * period (observation) |
| of * central incisors (maxillary) | in the * region (posterior) | satisfaction with * aesthetics (dental) | and * of the (stability) |
| and soft tissue * (changes) | * soft tissue recession (midfacial) | first or second * (permanent) | bone * in the (graft) |
| of the * and (maxilla) | the * of the (design) | the * of the (age) | the * of this (limitations) |
| * position of maxillary (vertical) | * significant difference between (a) | * difference between the (significant) | significant difference between * (the) |
| significant * between the (difference) | no significant * in (differences) | a significant * between (difference) | of maxillary central * (incisors) |
| used to * the (evaluate | was used to * (evaluate | was used to * (determine | was * to determine (used |
| * used to determine (was) | in * with the (line) | the correlation between * (the) | at the * time (same) |
| * of the cutting (position) | position of the * (cutting) | vertical position of * (maxillary) | of maxillary central * (incisors) |
| the * position of (vertical) | | | |

As illustrated in Table 6.6, the identification of 237 unique phrase frames in the OMS RA Introduction sections highlights the discipline's emphasis on detailed anatomical, clinical, and procedural specificity. A notable feature of these phrase frames is their frequent reference to specific anatomical structures and clinical conditions, such as *the * of the (root)* and *the * of the (gland)*. This specificity underscores the discipline's commitment to detailing the anatomical focus of the study, ensuring clarity and precision in the research context. Additionally, phrase frames like *in the * of (number)* and *the number of * (implants)* indicate a strong emphasis on quantitative data, reflecting OMS's reliance on numerical evidence to support clinical findings.

The recurrent use of phrase frames such as *have been * to (reported)* and *it has been * (reported)* suggests a pattern of referencing existing literature to contextualize new findings. This practice aligns with the academic convention of situating new research within the framework of established knowledge, thereby reinforcing the study's relevance and contribution to the field. Furthermore, the use of passive constructions, as seen in *was * to determine (used)* and *was used to * the (evaluate)*, reflects a formal academic tone, which is characteristic of scientific writing.

The prevalence of these phrase frames in OMS research articles indicates a discipline-specific writing style that prioritizes anatomical precision, quantitative analysis, and a strong connection to existing literature. This approach not only facilitates clear communication within the field but also ensures that new research is grounded in a well-established scientific context.

In contrast, the absence of these specific phrase frames in ODO research articles may suggest differences in sub-disciplinary focus and writing conventions. While OMS emphasizes detailed anatomical and clinical specificity, ODO may adopt a different approach, potentially focusing more on procedural techniques or patient outcomes. These variations highlight the diverse rhetorical strategies employed across Dentistry sub-disciplines to convey research findings effectively.

In summary, the unique phrase frames identified in OMS research articles reflect the discipline's emphasis on anatomical detail, quantitative analysis, and integration with existing literature (Samraj, 2005; Ozturk, 2007; Lu et al., 2021a, 2021b). These characteristics contribute to a writing style that is precise, formal, and deeply rooted in the scientific context of OMS.

#### 6.4.1.2 Orthodontics and Dentofacial Orthopedics

**Table 6.7 A Summary of Phrase Frames in the English ODO Introduction Section**

| A List of Phrase Frames in the English ODO Introduction Section | | | |
|---|---|---|---|
| **be * by the (affected)** | in the * of (number) | the number of * (implants) | one of the * (most) |
| **in the * zone (esthetic)** | of the * gland (parotid) | by the * of (type) | in the * of (number) |
| **by the * of (type)** | used to * the (assess) | the * of the (position) | the * of the (stability) |
| **the * of the (root)** | the * of the (location) | the * of the (length) | the * of the (introduction) |
| **of the * teeth (anterior)** | at the * of (level) | at the * of (level) | the number of * (implants) |
| **the relationship between * (the)** | at the * time (same) | a high * of (level) | one of the * (most) |
| **at the same * (time)** | a * level of (high) | in the * area (esthetic) | * at the end (spaces) |
| **for the * of (treatment)** | early dental implant * (failure) | the * dentition phase (mixed) | * soft tissue recession (midfacial) |
| *** titanium base abutments (the)** | the * dental arch (upper) | the * dental arch (mandibular) | for the * of (treatment) |
| **of the * and (maxilla)** | of the * and (patient) | * of the mandibular (tipping) | have been * to (reported) |
| *** one of the (as)** | can be * by (explained) | it has been * (reported) | it has been * (suggested) |
| **be * by the (affected)** | it is * that (known) | have been * to (used) | have been * to (reported) |
| **studies have * that (reported)** | studies have * that (demonstrated) | been * to be (shown) | been * to be (reported) |
| **has been * that (reported)** | in order to * (assess) | used to * the (assess) | the * of the (end) |
| **the * of the (position)** | the * of the (root) | the * of the (length) | the * of the (introduction) |
| **the use of * (adjunctive)** | the * number of (total) | * of gingival recession (frequency) | with * to the (regard) |
| **in * with the (line)** | in the * of (treatment) | in the * of (range) | in the * of (absence) |

| A List of Phrase Frames in the English ODO Introduction Section | | | |
|---|---|---|---|
| in the * of (range) | the number of * (patients) | the * between the (relationship) | * position of the (vertical) |
| a * rate of (recurrence) | an * in the (increase) | at the same * (level) | a * risk of (higher) |
| a * risk of (high) | one of the * (most) | one of the * (main) | of the * ridge (alveolar) |
| at the * time (same) | no significant * between (differences) | a * risk of (high) | increase the *of (risk) |
| in the * area (lesion) | on the * side (left) | in the * area (esthetic) | in the * region (anterior) |
| in the * region (anterior) | of the * bone (buccal) | on the * side (left) | of the * population (general) |
| of the * incisors (mandibular) | of the * cavity (oral) | the * central incisors (maxillary) | for the *of (treatment) |
| in the * region (anterior) | the * crown height (clinical) | * dental implant failure (early) | * incisors and canines (lateral) |
| * incisors and canines (central) | and * of the (floor) | the * position of (vertical) | that the * of (use) |
| the quality of * (life) | * soft tissue recession (midfacial) | the * central incisors (maxillary) | first or second * (permanent) |
| first or second * (molars) | for the * of (treatment) | * the type of (by) | by the * of (type) |
| with a * of (history) | of the * and (mandible) | have been * in (reported) | it has been * (reported) |
| has been * to (reported) | be * by the (affected) | has been * that (reported) | the * of the (aim) |
| * of gingival recession (frequency) | in the * of (treatment) | in the * gland (parotid) | in the * region (anterior) |
| in the * gland (parotid) | of the * incisors (mandibular) | in the * region (anterior) | the * of root (prevalence) |
| the * third molar (impacted) | first or second * (molars) | of the * and (mandible) | * tipping of the (distal) |
| has been * to (found) | the * of the (results) | of the * teeth (anterior) | in the * region (anterior) |
| of the * anterior (maxillary) | * of the anterior (changes) | and soft tissue * (profile) | have been * to (reported) |
| * tipping of the (distal) | be * by the (affected) | have been * to (reported) | be * by the (affected) |
| the * of the (use) | the * of the (base) | the * of the (use) | the * number of (total) |
| in the * of (number) | a * in the (reduction) | in * with a (patients) | distal * of the (tipping) |
| * tipping of the (distal) | one of the *(most) | * tipping of the (distal) | the * position of (vertical) |
| the * third molar (impacted) | the * mixed dentition (early) | the * dental arch (maxillary) | in the * of (number) |
| has been * to (found) | in order to * (provide) | the * of the (position) | the * of the (stability) |
| the * of the (reliability) | the * of the (height) | in the * of (range) | to the * of (best) |
| in the * of (range) | within the * of (range) | an * of the (increase) | abutment for the * (prosthesis) |
| abutment for the * (crown) | titanium base abutment * (for) | at the same * (time) | a * level of (high) |
| at the * time (same) | a * risk of (higher) | a high * of (level) | of the * cavity (cystic) |
| of the * cavity (oral) | * physiologic tooth mobility (of) | * titanium base abutment (cylindrical) | of the * cavity cystic |
| position of the * (maxillary) | abutments for the * (crown) | the titanium base * (abutments) | of the * and (upper) |
| of the * and (patient) | * of the mandibular (tipping) | was to * the (investigate) | was to * the (evaluate) |
| aimed to * the (evaluate) | aimed to * the (assess) | * to evaluate the (was) | * to evaluate the (aimed) |
| study was to * (investigate) | study was to * (evaluate) | study was to * (compare) | the * of the (effect) |
| the aim of * (aim) | the * of this (purpose) | the * of this (objective) | and the * of (effect) |
| with * to the (respect) | in the * of (level) | the * between the (relationship) | and satisfaction with * (dental) |
| of the * second (upper) | in the * zone (esthetic) | in the * region (posterior) | in the parotid * (gland) |
| in the * gland (parotid) | of the * anterior (maxillary) | * the observation period (during) | during the * period (observation) |
| of * central incisors (maxillary) | in the * region (posterior) | satisfaction with * aesthetics (dental) | and * of the (stability) |
| and soft tissue * (changes) | * soft tissue recession (midfacial) | first or second * (permanent) | bone * in the (graft) |
| * of this study (aim) | * of this study (purpose) | * of this study (objective) | study was to * (evaluate) |
| of the * and (maxilla) | the * of the (design) | the * of the (age) | the * of this (limitations) |
| * position of maxillary (vertical) | * significant difference between (a) | * difference between the (significant) | significant difference between * (the) |
| significant * between the (difference) | no significant * in (differences) | a significant * between (difference) | of maxillary central * (incisors) |
| used to * the (evaluate) | was used to * (evaluate) | was used to * (determine) | was * to determine (used) |
| * used to determine (was) | this study * to (aimed) | in * with the (line) | the correlation between * (the) |
| at the * time (same) | * of the cutting (position) | position of the * (cutting) | vertical position of * (maxillary) |
| of maxillary central * (incisors) | the * position of (vertical) | | |

As presented in Table 6.7, the findings showed 258 phrase frames that appeared in the English ODO Introduction section only. This prevalence of specific phrase frames reflects distinctive rhetorical and sub-disciplinary strategies aimed at establishing the context, significance, and aims of the research. The phrase frames identified, such as *be * by the (affected), in the * of (number)*, and *the number of * (implants)*, illustrate a strong tendency in ODO writing to foreground quantification, anatomical specificity, and procedural clarity. These frames assist in setting a precise

clinical or experimental context, which is essential for both the reproducibility of research and the establishment of its relevance.

Many of the phrase frames, including *in the * zone (esthetic), the * of the (position)*, and *of the * teeth (anterior)*, demonstrate a recurring focus on spatial and anatomical localization. This specificity reflects the visual, measurement-based nature of orthodontic and dentofacial orthopedics research, which often requires clear references to craniofacial landmarks, tooth positioning, and surgical zones. Similarly, phrase frames such as *the * dentition phase (mixed)* and *early dental implant * (failure)* indicate a common thematic concern with developmental stages and clinical outcomes, underscoring the applied orientation of this sub-discipline.

The use of evaluative structures like *used to * the (assess), have been * to (reported)*, and *can be * by (explained),* highlights the genre's commitment to building on prior knowledge while framing the research purpose. These structures allow authors to signal methodological continuity or contrast with earlier work, in line with Swales's (1990) rhetorical structure for the RA Introduction section (Move 2: *Establishing a niche*; Move 3: *Occupying the niche*). Moreover, phrase frames like *studies have * that (demonstrated)* or *been * to be (reported)* show a strong reliance on citation as a rhetorical tool to legitimize the study's aims and to situate the research within ongoing academic conversations.

There is also a marked presence of phrase frames denoting frequency, measurement, and clinical significance, such as *a high * of (level), the * number of (total)*, and *with * to the (regard)*. These constructions reflect the data-driven, outcome-oriented nature of ODO research, where numerical evidence plays a central role in justifying treatment decisions or technological innovations. Additionally, the recurrence of frames like *in the * of (treatment), the relationship between * (the)*, and *for the * of (treatment)* reinforces the practical goals of much ODO scholarship, where the impact on clinical protocols or therapeutic efficacy is paramount.

In summary, the phrase frames identified in the ODO Introduction sections serve not only as syntactic scaffolds for information but also as markers of sub-disciplinary identity. Their frequency and specificity highlight the clinical, evaluative, and methodological priorities of the field. The data confirm that phraseological patterns are not arbitrary but are closely tied to genre functions and sub-disciplinary expectations, as noted by scholars such as Samraj (2005), Ozturk (2007), and Lu et al., (2021a, 2021b). These frames, therefore, do more than filling space because they enact the epistemological and communicative practices of orthodontic and dentofacial orthopedics discourse as well.

## 6.5.2. Results and Discussion in the Methods section

### 6.5.2.1 Oral and Maxillofacial Surgery

Table 6.8 A Summary of Phrase Frames in the English OMS Methods Section

| Phrase Frames in the English OMS Methods Section | | | |
|---|---|---|---|
| * this study was (in) | was * in the (performed) | * was approved by (study) | approved by the * (institutional) |
| * study was approved (this) | * study was approved (the) | * study was approved (retrospective) | the * committee of (ethics) |
| the * committee of (ethical) | in * with the (accordance) | in the * of (department) | * committee of the (ethics) |
| * committee of the (ethical) | * dental implant failure (early) | was performed * (in) | was performed * (using) |
| * this study was (in) | the * side was (non-fracture) | was * in the (performed) | was * in the (used) |
| were * from the (excluded) | * used as a (was) | * was approved by (study) | approved by the * (institutional) |
| in order to * (provide) | * study was approved (this) | included in * study (the) | the * of the (use) |
| in * with the (accordance) | in the * of (department) | * distance between the (the) | the time of * (surgery) |
| * for the prosthesis (abutment) | abutment for the * (crown) | titanium base abutment * (for) | in the * region (posterior) |
| * orthodontic treatment (of) | * of the cutting (position) | in the * region (posterior | cylindrical titanium base * (abutment) |
| of the cystic * (lesions) | * of the cutting (position) | bone * in the (graft) | on the * of (results) |
| was * in (performed) | in * study was (this) | * in this study (used) | * in this study (included) |
| was * in the (performed) | were * from the (excluded) | was * as a (defined) | is * in table (shown) |
| used to * the (assess) | was * to assess (used) | * in this study (included) | the * of the (length) |
| the * of the (time) | the * of a (use) | the use of * (adjunctive) | in the * of (department) |
| to the * of (lack) | the * of the (time) | * patients with a (for) | * in this study (included) |
| in the * group (SFA) | in the esthetic * (area) | in the esthetic * (zone) | * the oral cavity (of) |
| * the observation period (during) | during the * period (retention) | of the * cavity (oral) | was performed * (with) |
| was performed * (using) | was * with the (performed) | in * with the (accordance) | * titanium base abutments (the) |
| with the * of (aid) | and the * of (number) | of the * and (mandible) | was performed * (in) |
| was performed * (with) | was performed * (using) | the * group was (control) | * in this study (used) |
| * in this study (included) | was * as a (defined) | was * with the (performed) | in order to * (provide) |
| used to * the (calculate) | was used to * (calculate) | * in this study (included) | the * of the (end) |
| the * of the (position) | the *of the (reliability) | the * of the (root) | the * of the (location) |
| in the *of (range) | the time of * (surgery) | abutment for the * (crown) | * in this study (included) |
| at the * time (same) | * for patients with (recommended) | in the * area (lesion) | of the * lip (lower) |
| * newly formed bone (the) | of the included * (cases) | reliability of the * (cephalometric) | abutments for the * (prosthesis) |
| the * third molar (impacted) | * titanium base abutments (cylindrical) | the titanium base * (abutments) | bone * in the (regeneration) |
| of the * and (mandible) | were * in the (used) | * in this study (used) | * in this study (included) |
| were * in the (used) | were *from the (excluded) | was used to * (assess) | used to * the (assess) |
| was used to * (assess) | was used to * (determine) | * in the study (included) | the * of the (reliability) |
| abutment for the * (crown) | * in this study (included) | titanium base abutment * (for) | of the * ridge (alveolar) |
| of the * cavity (cystic) | during the * period (observation) | * newly formed bone (of) | titanium base abutment (cylindrical) |
| of the cystic * (cavity) | of the cystic * (lesions) | abutments for the * (prosthesis) | abutments for the * (crown) |
| conical titanium base * (abutments) | analyses were performed * (using) | analyses were performed * (with) | was * statistically significant (considered) |
| was * in the (performed) | are * in table (listed) | used to * the (evaluate) | used to * the (compare) |
| was used to * (evaluate) | was used to * (determine) | analysis was * to (used) | * used to compare (were) |
| in the * group (ABX) | * newly formed bone (of) | with the * of (aid) | was performed * (using) |
| were * for the (used) | was * to assess (performed) | was * with the (performed) | used to * the (assess) |
| used to * the (compare) | was used to * (evaluate) | was used to * (compare) | were used to * (assess) |
| analysis was * to (used) | analysis was * to (performed) | * used to compare (was) | * used to compare (were) |
| and the * of (number) | and the * of (number) | in the * group (ABX) | during the * period (study) |
| * newly formed bone (of) | * newly formed bone (the) | * the two groups (in) | with the * of (goal) |
| with a * of (total) | were used * the (for) | was * statistically significant (considered) | the * side was ( non-fracture) |
| * used as a (was) | was * to assess (performed) | used to * the (assess) | used to * the (evaluate) |
| used to * the (compare) | used to * the (calculate) | was used to * (evaluate) | was used to * (compare) |
| was used to * (calculate) | were used to * (assess) | analysis was * to (performed) | * used to compare (was) |
| * used to compare (were) | the * of the (results) | the * between the (correlation) | * patients with a (in) |
| a * level of (significance) | of the * bone (buccal) | in the * analysis (univariate) | * newly formed bone (the) |
| the * sample size (total) | reliability of the * (cephalometric) | analyses were performed * (using) | difference was * significant (statistically) |
| was * statistically significant (considered) | used to * the (assess) | was used to * (assess) | was used to * (determine) |
| analysis was * to (used) | the * of the (analysis) | the * between the (correlation) | in the * analysis (multivariate) |

As illustrated in Table 6.8, the present analysis identified 205 phrase frames used exclusively in the Methods sections of OMS research articles. These phrase frames reflect highly formulaic language that authors employ to conform to sub-disciplinary conventions and enhance clarity, precision, and reproducibility in methodological descriptions. The high frequency of such patterns supports prior findings that scientific discourse, particularly in Methods sections, relies heavily on recurring linguistic structures to describe procedures, approvals, and experimental setups consistently.

A significant proportion of the phrase frames centered around ethical approval and procedural execution, such as *study was approved*, *was performed in*, and *approved by the institutional*. These patterns underscore the importance placed on ethical compliance and methodological transparency in clinical and surgical research. The recurrence of phrase frames like *in accordance with* and *committee of ethics* further emphasizes the need to align research practices with established ethical standards.

Another common cluster in phrase frames is related to technical descriptions of materials and procedures, such as *titanium base abutment*, *bone graft*, and *cutting position*. These phrase frames not only reflect the specialized vocabulary of the field but also suggest a shared rhetorical strategy for detailing surgical techniques and interventions. Such standardized phrasing facilitates peer comprehension and comparison across studies, which is crucial in evidence-based medical research.

Interestingly, certain phrase frames occurred in slightly varied lexical forms, such as *committee of the ethics* and *committee of ethical*, indicating some degree of flexibility in phrase structure while still adhering to recognizable sub-disciplinary conventions. Additionally, the recurrence of patterns like *in the posterior region* and *for the prosthesis abutment* points to domain-specific spatial and functional descriptors essential in OMS.

Overall, the reliance on phrase frames in the Methods section reflects both linguistic economy and the need for precision in scientific communication. These findings contribute to a deeper understanding of the phrase frames that characterize scientific writing in Dentistry sub-disciplines. They may also inform the development of academic writing tools, genre-specific corpora, or English for Specific Purposes (ESP) instruction aimed at non-native researchers entering the field.

### 6.4.2.2 Orthodontics and Dentofacial Orthopedics

**Table 6.9 A Summary of Phrase Frames in the English ODO Methods Section**

| A List of Phrase Frames in the English ODO Methods Section | | | |
|---|---|---|---|
| * in this study (used) | were * from the (obtained) | * was approved by (study) | * was approved by (protocol) |
| approved by the * (institutional) | approved by the * (ethics) | approved by the * (ethical) | * study was approved (this) |
| * study was approved (the) | * study was approved (retrospective) | the * committee of (ethics) | the * committee of (ethical) |
| in the * of (department) | * committee of the (ethics) | * committee of the (ethical) | by the * committee (ethics) |
| by the * committee (ethical) | by the institutional * (review) | by the institutional * (ethics) | the * sample size (total) |
| on the * of (basis) | were * from the (obtained) | * was approved by (study) | * was approved by (protocol) |
| approved by the * (institutional) | used to * the (calculate) | was used to * (calculate) | included in * study (the) |
| and the * of (presence) | * mesial alveolar ridge (of) | in the * group (extraction) | of the mandibular * (incisors) |
| the * sample size (total) | the early * dentition (permanent) | * in this study (used) | was * in the (observed) |
| were * in the (included) | were * from the (obtained) | approved by the * (institutional) | * study was approved (this) |
| the * of this (purpose) | and the * of (presence) | in the * of (department) | at the * of (age) |
| * the number of (by) | in the * group (intervention) | of the * population (study) | in the * arch (lower) |
| of the * population (study) | * of the anterior (changes) | first or second * (molars) | * of this study (purpose) |
| with the * of (aid) | * the number of (by) | by the * of (number) | of the * and (upper) |
| was performed * (on) | * used in the (were) | * used in the (was) | * used in the (were) |
| the * of the (end) | the * of the (position) | the * of the (base) | the * number of (total) |
| of the * teeth (anterior) | at the * of (age) | at the * of (ages) | * of the study (end) |
| in the * group (L) | in the * group (H) | in the * group (INH) | of the upper * (second) |
| * the facial midline (from) | to the * plane (occlusal) | * the HPC line (to) | the * sample size (total) |
| * and lateral incisor (central) | * incisors and canines (central) | was performed * (with) | was performed * (on) |
| the * group was (control) | * used in the (were) | * in this study (included) | * between the groups (found) |
| was * in the (used) | was * in the (measured) | were * in the (used) | were * from the (obtained) |
| was * as a (defined) | was * as a (used) | were * from the (obtained) | was * with the (consistent) |
| are * in table (presented) | are * in table (listed) | as * in table (shown) | in order to * (provide) |
| in order to * (assess) | used to * the (evaluate) | was used to * (evaluate) | used to * the (evaluate) |
| * in this study (included) | the * of the (end) | the * of the (effect) | the * of the (use) |
| the * of the (size) | the *of the (reliability) | the * of the (top) | the * of the (duration) |
| the *of the (base) | the * of the (introduction) | the use of * (the) | the use of * (a) |
| the total * of (number) | and the * of (number) | * of gingival recession (frequency) | * of gingival recession (amount) |
| with *to the (respect) | in * with the (accordance) | in the* of (range) | to the * of (best) |
| * the level of (level) | at the *of (level) | within the *of (range) | within the *of (limitations) |
| by the * of (number) | and the * of (number) | the * between the (distance) | the * between the (difference) |
| vertical position of (the) | vertical position of * (maxillary) | * and control groups (extraction) | * in this study (included) |
| a high *of (level) | of * alveolar ridge (mesial) | of the * ridge (alveolar) | at the * time (three) |
| the * between the (difference) | a * level of (high) | in the * group (extraction) | of the * anterior (maxillary) |
| to the * midline (facial) | * orthodontic treatment (of) | * the right side (on) | to the * plane (occlusal) |
| of the mandibular * (third) | in the * arch (mandibular) | on the * side (right) | * the early permanent (in) |
| * clinical crown height (in) | to the * line (HPC) | central and lateral * (incisor) | the * position of (vertical) |
| face-to-face interaction with * (the) | * central and lateral (the) | reliability of the * (measurements) | position of the * (maxillary) |
| the * third molar (mandibular) | the early * dentition (permanent) | the * dental arch (upper) | the * dental arch (lower) |
| the * strong anchorage (indirect) | the * strong anchorage (direct) | the * and control (extraction) | on the *of (basis) |
| by the * of (number) | and the * of (number) | by the * of (number) | of the * and (upper) |
| the * of the (results) | the * of the (height) | in the * of (range) | and satisfaction with * (dental) |
| at the same * (time) | at the * time (same) | a * level of (significance) | of the mandibular * (third) |
| of * central incisors (maxillary) | satisfaction with * aesthetics (dental) | reliability of the * (cephalometric) | reliability of the * (measurements) |
| analyses were performed * (using) | analyses were performed * (with) | was * to assess (used) | used to * the (assess) |
| used to * the (compare) | used to * the (calculate) | was used to * (evaluate) | was used to * (assess) |
| was used to *(compare) | was used to * (calculate) | was used to * (determine) | analysis was * to (used) |
| * used to compare (was) | with * to the (respect) | to the * of (presence) | to the * of (presence) |
| the * between the (difference) | * difference between the (the) | to the * plane (occlusal) | to the * line (HPC) |
| the * position of (initial) | the early * dentition (permanent) | was performed * (using) | used to * the (compare) |
| used to * the (calculate) | was used to * (evaluate) | was used to * (compare) | was used to * (calculate) |
| was used to * (determine) | used to * the (evaluate) | * used to compare (were) | the * of the (effect) |
| to the * of (presence) | to the * of (presence) | a * level of (significance) | of the * and (canines) |

| A List of Phrase Frames in the English ODO Methods Section | | | |
|---|---|---|---|
| were * in the (used) | was * statistically significant (considered) | was * in the (performed) | were * in the (used) |
| was to * the (evaluate) | * used to assess (was) | in order to * (assess) | used to * the (evaluate) |
| used to * the (compare) | was used to * (evaluate) | was used to * (assess) | was used to * (compare) |
| was used to * (test) | were used to * (assess) | was to * the (evaluate) | study was to * (evaluate) |
| * used to compare (was) | * used to compare (were) | this study * to (was) | the * of the (results) |
| the * of the (position) | the * of the (top) | the * of the (location) | the * of a (use) |
| * of gingival recession (frequency) | at the * of (ages) | number of * with (patients) | * and control groups (experimental) |
| * with and without (children) | significant * between the (difference) | significant difference * the (between), | * the HPC line (to) |
| * the HPC line (crossing) | the prevalence of * (root) | the * position of (initial) | the early * dentition (permanent) |
| the * and control (experimental) | analyses were performed * (using) | analyses were performed * (with) | was a significant * (difference) |
| was * statistically significant (considered) | used to * the (assess) | used to * the (assess) | used to * the (evaluate) |
| was used to * (assess) | was used to * (compare) | was used to calculate * (calculate) | was used to * (determine) |
| were used to * (assess) | used to * the (evaluate) | analysis was * to (used) | was used to * (compare) |
| the * between the (correlation) | * and control groups (extraction) | * with and without (children) | a significant difference * (between) |
| significant * between the (difference) | significant difference * the (between) | statistically significant differences * (in) | significant differences * the (in) |
| * significant differences in (statistically) | * significant difference between (a) | a * level of (significance) | difference between the * (two) |
| * the facial midline (from) | * at the end (groups) | during the * period (observational) | in the * analysis (multivariate) |
| * the early permanent (in) | satisfaction with * aesthetics (dental) | reliability of the * (cephalometric) | reliability of the * (measurements) |
| the * and control (extraction) | | | |

As reported in Table 6.9, the findings showed 258 phrase frames that appeared in the English ODO Methods Section. In the Methods section, various phrase frames were employed to effectively convey the research design, sample selection, approval processes, and data collection methodologies. These phrase frames played a crucial role in structuring the information in a manner that is both clear and replicable, which is vital in scientific research to ensure transparency and consistency.

A central phrase frame that appeared throughout this section was *was approved by (study)*, *was approved by (protocol)*, and variations like *approved by the * (institutional) or approved by the * (ethics)*. These phrase frames serve to communicate that ethical considerations were addressed, and institutional review boards provided approval, which is a standard practice in clinical research. This indicates the study's adherence to ethical guidelines, ensuring that the participants' rights were protected throughout the research process. The repetition of such phrase frames throughout the section reinforces the ethical framework and oversight of the study. For instance, the frequent appearance of *approved by the * (ethics)* and similar constructions adds credibility to the research, signaling that the study was conducted within the bounds of ethical research practices.

Another important phrase frame in this section is *were * from the (obtained)*, which is used to describe how data or samples were collected. This is a critical aspect of the Methods section, as it outlines the data sources and the procedural rigor of obtaining the data. It serves to assure the reader that the study followed systematic methods to gather its data, ensuring that the results are based on reliable and valid sources. The frequent use of *were * in the (included)* also indicates the criteria for participant inclusion, further emphasizing the careful selection of study subjects and the parameters for their participation.

The phrase frames *the * sample size (total)* and *the number of * (by)* were used to describe the study's sample population, which is crucial for understanding the statistical power and generalizability of the results. The use of *the * of the (department)* and *in the * group (intervention)* also provides information on the study's context, specifying the departments or groups involved in the research. These phrase frames contribute to the reader's understanding of the scope and focus of the study by giving a clear picture of the population studied and the various interventions used.

Further, the phrase *used to * the (calculate)* or *was used to * (evaluate)* appeared frequently, signaling the application of specific tools or instruments to measure outcomes. This highlights the methodological rigor of the study, showing how quantitative and qualitative data were gathered, analyzed, and assessed. The inclusion of *used to * the (evaluate)* and similar phrase frames also emphasizes the study's reliance on standardized measures to assess outcomes, which is essential for ensuring that the results are reproducible and consistent.

In discussing the procedures or interventions, the phrase frame *was performed * (on)* appeared to describe actions taken during the study, such as treatments or measurements. These phrase frames serve to provide clarity on the exact procedures used, ensuring that future researchers can replicate the methodology accurately. Additionally, the use of *was * as a (used)* or *was * in the (observed)* emphasizes how certain tools or interventions were applied in practice, supporting the transparency of the research design.

The study also utilized phrase frames such as *were * from the (obtained), and was * as a (defined)* to describe how key variables were operationalized or defined, an essential part of any research methodology. These phrase frames highlight the care taken to define variables precisely, which is critical for clarity and for allowing other researchers to interpret and replicate the study.

In terms of data presentation, the phrase frame *are * in table (shown)* or *are * in table (presented)* signals that the study includes tables to summarize data. This is a standard practice in research, as it provides a clear and concise way to present findings for easy comparison and interpretation. The use of these phrase frames makes it evident that visual aids were an integral part of the methodology to display complex data in an accessible format.

Finally, *in order to * (assess)* and *in order to * (provide)* are examples of phrase frames that articulate the purpose behind certain procedures or data collection methods. These phrase frames help the reader understand the intent behind specific steps in the research, ensuring that the study's design was purposeful and goal-oriented.

In conclusion, the phrase frames used in the Methods section of this ODO RA serve as an essential tool for organizing and communicating the research process. These phrase frames ensure that the study's methodology is clearly presented, reproducible, and ethically sound. They also help maintain the clarity and precision required in scientific writing, allowing the study's procedures, sample population, data collection methods, and analytical tools to be fully understood and evaluated by readers and future researchers. Through the consistent use of these structured phrase frames, the study presents a robust and reliable framework for investigating orthodontic and dentofacial interventions.

### 6.5.3 Results and Discussion in the Results section

#### 6.4.3.1 Oral and Maxillofacial Surgery

**Table 6.10 A Summary of Phrase Frames in the English OMS Results Section**

| A List of Phrase Frames in the English OMS Results Section | | | |
|---|---|---|---|
| the * group was (control) | * this study was (in) | were used * the (for) | differences were found * (between) |
| no significant differences * (were) | was * in the (observed) | were * from the (excluded) | were * between the (found) |
| was * as a (defined) | were * from the (excluded) | are * in table (presented) | are * in table (listed) |
| * with the other (compared) | are * in table(shown) | included in * study (the) | the * of the (results) |
| the * of the (end) | the * of the (use) | the * of the (majority) | the * of the (use) |
| in the * of (department) | the number of * (patients) | in the * of (number) | in the * of (amount) |
| at the * of (time) | * number of patients (patients) | number of * with (patients) | * in this study (included) |
| * between the groups (significantly) | no significant differences * (between) | no significant differences * (were) | no significant differences * (in) |
| significantly between the * (groups) | significant * in the (differences) | significant differences * the (between) | * between the groups (significantly) |
| in the * area (parotid) | on the * side (right) | on the * side (left) | in the * group (test) |
| in the * group (SFA) | of the * bone (buccal) | on the * side (right) | on the * side (left) |
| during the * period (observation) | during the * period (study) | during the * period (observation) | on the * side (right) |
| * titanium base abutment (cylindrical) | of the * cases (included) | and * of the (floor) | position of the * (cutting) |
| in the * of (number) | the * group was (control) | the * group was (submental) | was a significant * (difference) |
| there was no * (difference) | there was no * (statistically) | there was no * (significant) | there were no * (significant) |
| was * statistically significant (no) | significant differences were * (observed) | was * in the (found) | was * in the (performed) |
| were found * the (in) | were * in the (placed) | were found * the (in) | * found in the (be) |
| this study * that (showed) | are * in table (shown) | are * in table (summarized) | is * in table (outlined) |
| * with the other (compared) | * shown in table (are) | were used to * (compare) | * used to compare (were) |

| A List of Phrase Frames in the English OMS Results Section | | | |
|---|---|---|---|
| * in the study (included) | the * of the (analysis) | the *r of the (floor) | the mean * of (number) |
| in * with the (comparison) | in the * of (department) | in the * of (case) | at the * of (time) |
| to the * of (presence) | the number of * (implants) | the * between the (differences) | the time of * (surgery) |
| * and control groups (experimental) | a * rate of (recurrence) | titanium base abutment * (designs) | a high * of (risk) |
| * between the groups (significantly) | no significant difference * (between) | * significant differences between (no) | no significant differences * (were) |
| * significant difference in (statistically) | a significant * in (increase) | a significant * in (decrease) | * for patients with (recommended) |
| a statistically significant * (difference) | significant * between the (differences) | the * between the (differences) | a significant * between (difference) |
| * between the groups (significantly) | in the * group (submental) | in the * group (with-deficiency) | in the * group (without-deficiency) |
| of the * second (upper) | in the * region (posterior) | * the parotid gland (in) | *the parotid gland (of) |
| in the * gland (parotid) | during the * period (study) | during the * period (retention) | in the * analysis (univariate) |
| in the * region (posterior) | * titanium base abutment (conical) | of the included * (studies) | of the included * (cases) |
| difference was not * (significant) | difference was not (statistically) | and * of the (stability) | and * of the (floor) |
| * soft tissue recession (advanced) | * titanium base abutments (cylindrical) | * titanium base abutments (conical) | the * and control (experimental) |
| * the two groups (in) | bone * in the (regeneration) | of the * and (maxilla) | the * group was (control) |
| the * group was (submental) | was * in the (higher) | * significant difference was (no) | there was no * (statistically) |
| * significant differences were (no) | was * in the (observed) | was * in the (found) | were * in the (placed) |
| was * in the (found) | are * in table (shown) | are * in table (summarized) | * with the other (compared) |
| the a* of the (analysis) | the mean * of (number) | the number of * (implants) | no significant difference * (in) |
| a * significant difference (statistically) | significantly * the two (between) | * between the two (significantly) | in the * group (submental) |
| in the * group (with-deficiency) | of the* lip (upper) | of the * lip (lower), | in the * analysis (univariate) |
| * titanium base abutment (cylindrical) | *of the upper (position) | * titanium base abutments (cylindrical) | a high * of (risk) |
| in the * group (test) | in the * group (with-deficiency) | in the * group (without-deficiency) | in the two * (groups) |
| with a * of (total) | the * group was (control) | were * likely to (likely) | was * statistically significant (no) |
| was no significant * (difference) | differences were * between (observed) | was * in the (observed) | was * in the (seen) |
| were * between the (found) | the use of * (adjunctive) | the * number of (average) | and the * of (presence) |
| and the * of (number) | in the * of (treatment) | in the * of (context) | and the * of (presence) |
| by the * of (number) | and the * of (number) | the number of * (implants) | a * in the (reduction) |
| titanium base abutment * (designs) | a * risk of (high) | * significant differences were (no) | * significant difference in (statistically) |
| a * significant difference (statistically) | significant * in the (differences) | * facial vertical height (increased) | in the * area (parotid) |
| in the * group (submental) | in the * group (with-deficiency) | in the * group (without-deficiency) | in the * group (END) |
| in the * area (parotid) | in the * analysis (multivariate) | * titanium base abutment (cylindrical), | * titanium base abutment (conical), |
| of the included * (studies) | abutments for the * (crown) | * titanium base abutments (cylindrical) | * titanium base abutments (conical) |
| the * and control (experimental) | in the two * (groups) | with the * of (exception) | on the * of (results) |
| in the * of (treatment) | by the * of (number) | was a significant * (increase) | there was * difference (no) |
| there was * statistically (no) | was * statistically significant (no) | are * in table (shown) | * shown in table (are) |
| * shown in table (as) | the * of the (results) | the * number of (average) | the * between the (differences) |
| number of * with (days) | significant difference * the (between) | a significant * in (increase) | the * between the (differences) |
| a * risk of (high) | a high * of (level) | in the * group (submental) | in the * group (test) |
| in the * group (END) | in the * analysis (multivariate) | satisfaction with * aesthetics (facial) | the quality of * (evidence) |
| difference was * significant (not) | was a significant * (correlation) | there was no * (significant) | there * no significant (were) |
| was no significant * (difference) | was no significant * (correlation) | significant * were observed (differences) | differences were * between (observed) |
| the * side was (fracture) | the * side was (non-fracture) | was * in the (seen) | were * between the (observed) |
| are * in table (presented) | is * in table (outlined) | * with the control (compared) | was used to * (assess) |
| was used to * (test) | the * of the (effect) | the * of the (majority) | the *of the (design) |
| the * of the (size) | the * of the (stability) | the * of the (positioning) | the * of the (analysis) |
| in the * of (range) | to the * of (lack) | at the * of (time) | the * between the (difference) |
| titanium base abutment * (designs) | a high * of (risk) | * significant correlation between (a) | no significant difference * (in) |
| significant difference * the (in) | the * between the (difference) | * significant differences in (statistically) | no statistically significant * (difference) |
| * significant correlation between (no) | * significant correlation between (a) | significant * in the (differences) | statistically significant differences * (in) |
| a high * of (risk) | on the * side (non-fracture) | on the * side (fracture) | in the * group (ABX) |
| in the * group (END) | * of the cutting (positioning) | on the * side (non-fracture) | on the * side (fracture) |

| A List of Phrase Frames in the English OMS Results Section | | | |
|---|---|---|---|
| to the * plane (horizontal) | in the * analysis (univariate) | * newly formed bone (of) | * titanium base abutment (cylindrical) |
| * titanium base abutment (conical) | of the * cavity (cystic) | difference was * significant (not) | the quality of * (evidence) |
| * titanium base abutments (cylindrical) | * titanium base abutments (conical) | the * and control (experimental) | with the * of (result) |
| with a * of (total) | | | |

As illustrated in Table 6.10, the findings showed 93 phrase frames that appeared in the English OMS Results Section. The findings of this study provide valuable insights into the clinical applications of various surgical techniques in OMS, particularly with respect to patient outcomes and procedural effectiveness. The frequent use of specific phrase frames in the Results section highlights the structured nature of scientific writing, emphasizing the clarity and precision with which key results are communicated.

One of the most prominent phrase frames observed was *the * group was (control)*, which occurred regularly when comparing treatment groups. This reflects the standard practice of utilizing a control group to evaluate the effectiveness of different interventions. By serving as a baseline, the control group enables the identification of treatment effects and establishes the groundwork for comparing various techniques. Similarly, the phrase frame *the * group was (submental)* indicates the inclusion of subgroups based on specific characteristics, such as the surgical site or patient demographics, allowing for a more focused analysis of these populations.

Several phrase frames emphasized the absence of significant differences between groups, which is crucial for evaluating the effectiveness of treatments. For example, *no significant differences * (between)* and *no significant differences * (in)* were frequently used to convey that, despite different interventions, no major disparities were observed between groups. These phrase frames suggest that some of the treatments did not lead to statistically significant improvements, which underscores the need for further exploration in future studies to understand these outcomes better.

On the other hand, phrase frames like *significant differences * between the (groups)* and *"significant differences * the (between)* point to cases where certain interventions led to measurable distinctions between groups. These findings highlight the importance of identifying which surgical approaches or techniques may offer more effective outcomes. The use of these phrase frames reinforces the notion that while some interventions may be comparable, others are more advantageous, and such differences are critical for informing clinical practice.

The phrase frame *were used * the (for)* appeared in reference to the methodologies employed in the study, signaling the tools or techniques used to facilitate comparisons or measurements. The phrase frame *were used to * (compare)* was similarly used to describe how different treatments or patient groups were assessed relative to one another. These phrase frames underscore the study's methodological approach and its reliance on systematic comparisons to draw meaningful conclusions.

Moreover, phrase frames like *are * in table (presented)* and *are * in table (shown)* suggest that much of the study's data was organized and displayed in tables for ease of analysis. The use of these phrase frames reflects the typical structure of academic articles, where data is clearly summarized and visually accessible, allowing readers to interpret results more efficiently. Tables are often used to communicate key numerical findings, and these phrase frames help ensure that such data is presented in a straightforward, digestible format.

Other important phrase frames seen in the results were *the * of the (results) and the * of the (end)*. These phrase frames are essential for drawing attention to the study's overall conclusions. The phrase frame *the * of the (results)* is used to summarize the key findings, while *the * of the (end)* typically directs attention to the conclusions drawn from the data. These phrase frames help structure the discussion by highlighting the outcomes in a concise and accessible manner.

The phrase frame *the number of * (patients)* appeared frequently, which emphasizes the importance of sample size in ensuring the robustness and reliability of the study's findings. Similarly, *the time of * (surgery)"* and *"at the * of (time)* reflect the consideration of temporal factors, such as when specific measurements were taken during the treatment process. These phrase frames are integral to understanding the timing of interventions and the potential influence of time-based variables on the results.

Several phrase frames also highlighted the significance of changes observed in the study, such as *a significant * in (increase)* and *a significant * in (decrease)*. These phrase frames point to measurable differences in key outcomes, such as improvement in surgical results or reductions in complications. The frequent use of these phrase frames suggests that the study was able to detect statistically significant changes, reinforcing the effectiveness of certain treatments or interventions.

Finally, phrase frames like *were * from the (excluded)* and *were found * the (in)* indicate that specific data points were either excluded from analysis based on predetermined criteria or located within certain groups. These phrase frames

are essential for understanding the scope of the study and ensuring transparency in the data analysis process, allowing readers to assess the validity of the findings.

In summary, the use of phrase frames in the Results section reported in this study not only aids in structuring the presentation of key findings but also serves as a linguistic tool to communicate complex information in a precise, efficient manner. These phrase frames provide a clear framework for presenting research outcomes, making it easier for readers to interpret the significance of the study and understand its implications for clinical practice in OMS. The consistent use of these phrase frames ensures that the study adheres to standard conventions in academic writing, facilitating the dissemination of important findings in a clear and organized way.

### 6.4.3.2 Orthodontics and Dentofacial Orthopedics

**Table 6.11 A Summary of Phrase Frames in the English ODO Results Section**

| A List of Phrase Frames in the English ODO Results Section | | | |
|---|---|---|---|
| was a significant * (difference) | there were no * (significant) | are * in table (shown) | is * in table (shown) |
| is * in table (shown) | * of gingival recession (amount) | with * to the (respect) | a significant * between (difference) |
| a significant * between (difference) | to the * that (fact) | the * group was (control) | the * group was (submental) |
| was a significant * (difference) | differences were found * (in) | differences were * between (found) | there was no * (significant) |
| there was no * (difference) | there was no * (statistically) | there was no * (significant) | there were no * (significant) |
| was * statistically significant (no) | * between the groups (found) | significant differences were * (found) | significant differences were * (observed) |
| differences were * between (found) | was * in the (observed) | were * in the (included) | were found * the (between) |
| are * in table (listed) | * shown in table (as) | the * of the (results) | the * of the (end) |
| the * of the (effect) | the * of the (majority) | the * of the (strength) | * of gingival recession (frequency) |
| in the * of (prevalence) | in the * of (range) | to the * of (presence) | to the * of (type) |
| at the * of (end) | at the * of (age) | at the * of (ages) | within the * of (range) |
| within the * of (limitations) | by the * of (number) | * and control groups (experimental) | a * rate of (recurrence) |
| titanium base abutment * (designs) | a high * of (risk) | a significant * between (difference) | * between the groups (difference) |
| no significant * between (difference) | no significant differences * (in) | a significant difference * (in) | no significant * in (differences) |
| * between the groups (difference) | statistically significant differences * (in) | * significant differences were (statistically) | a significant difference * (in) |
| difference between the * (groups) | on the * side (right) | in the * group (L) | in the * group (extraction) |
| in the * group (H) | * the upper second (of) | * the facial midline (from) | * the facial midline (to) |
| * at the end (spaces) | on the * side (right) | * the right side (towards) | * the right side (on) |
| of the * population (study) | during the * period (observational) | * the right side (on) | * the right side (towars) |
| * the study population (of) | * the HPC line (to) | * the HPC line (crossing) | satisfaction with * aesthetics (dental) |
| * and lateral incisor (central) | * incisors and canines (lateral) | the * position of (initial) | face-to-face interaction with * (their) |
| face-to-face interaction with * (the) | and soft tissue * (changes) | and soft tissue * (profile) | that the * of (effect) |
| position of the * (upper) | the quality of * (evidence) | the * dental arch (upper) | the * strong anchorage (indirect) |
| * the two groups (between) | to the * of (type) | by the * of (number) | there was no * (difference) |
| there were * significant (no) | this study * that (found) | as * in table shown) | the * of the (results) |
| the * of the (position) | the * of the (majority) | the *of the positioning | the * of the (age) |
| * of gingival recession (frequency) | at the * of (end) | the * between the (differences) | * with and without (children) |

| A List of Phrase Frames in the English ODO Results Section | | | |
|---|---|---|---|
| * significant difference between (no) | no significant * between (correlation) | significant * in the (difference) | a significant * in (difference) |
| a significant * in (decrease) | * significant correlation between (no) | on the * side (left) | in the * group (control) |
| * the facial midline (from) | * the facial midline (to) | on the * side (right) | of the * incisors (mandibular) |
| on the * side (right side) | the upper * arch (dental) | in * to the (relation) | tipping of the * (posterior) |
| tipping of the * (canines) | tipping of the * (incisors) | * in this study (included) | * tipping of the (distal) |
| were * likely to (likely) | * was statistically significant (difference) | was * in the (larger) | * one of the (as) |
| found between the * (groups) | was a significant * (difference) | differences were found * (in) | differences were found * (between) |
| no significant *was (difference) | there * no significant (was) | found between the * (groups) | significant differences were * (found) |
| differences were * between (found) | it has been * (reported) | be * to the (attributed) | were * in the (larger) |
| has been * that (reported) | are * in table (summarized) | is * in table (shown) | is * in table (shown) |
| as * in table (shown) | the * of the (results) | the * of the (end) | the * of the (size) |
| the * of the (height) | the * of the (length) | the use of * (use) | the total * of (number) |
| the * number of (total) | in the * of (amount) | of the a * teeth(anterior) | * the posterior teeth (of) |
| of the * teeth (posterior), | at the * of (age) | and satisfaction with * (dental) | a * rate of (higher) |
| * in this study (included) | * of the study (end) | * tipping of the (distal) | * tipping of the (mesial) |
| * tipping of the (lingual) | a * rate of (higher) | differences between the * (groups) | no significant difference * (between) |
| no significant differences * (in) | no significant differences * (were) | no significant * between (differences) | significant difference * the (difference) |
| a significant difference * (in) | significant * between the (difference) | a significant difference * (in) | * statistically significant difference (no) |
| significant differences * the (between) | significant * between the (differences) | a significant * in (difference) | on the * side (right) |
| on the * side (left) | on the * side (impacted) | in the * group (control) | in the * group (L) |
| in the * group (extraction) | in the * group (H) | in the * group (PHY) | in the * group (adult) |
| of the * lip (upper) | * at the end (groups) | on the * side (right) | on the * side (left) |
| to the * plane (midsagittal) | during the * period (observational) | on the * side (right) | * the early permanent (in) |
| crossing the * line (HPC) | satisfaction with * aesthetics (dental) | * tipping of the (distal) | the * of root (prevalence) |
| * prevalence of root (higher) | the * position of (initial) | face-to-face interaction with * (their) | and soft tissue * (profile) |
| the * posterior teeth (lower) | the * posterior teeth (upper) | the lower * teeth (anterior) | the quality of * (evidence) |
| the * central incisors (upper) | the * permanent dentition (early) | the * dental arch (upper) | the * dental arch (dental) |
| the lower * teeth (posterior) | the * strong anchorage (indirect) | the * strong anchorage (two) | * the two groups (between) |
| with a * of (history) | of the * and (upper) | of the * and (canines) | in * to the (relation) |
| in * to the (contrast) | the * group was (INH) | was significantly * than (greater) | was * in the (shorter) |
| was * in the (higher) | was * in the (larger) | no * was found (difference) | * were found in (differences) |
| * significant difference was (no) | was * statistically significant (not) | was * in the (observed) | * found in the (was) |
| were found * the (in) | were * in the (in) | were * in the (found) | * found in the (were) |
| * with the control (compared) | the * of the (end) | the * of the (size) | the total * of (number) |
| * of gingival recession (amount) | at the * of (age) | * the level of (level) | at the * of (ages) |
| at the * of (level) | an * of the (increase) | * of the study (end) | a * level of (high) |
| a high * of (level) | difference between the * (groups) | * significant difference between (no) | a significant * in (difference) |
| a significant *in (decrease) | * between the groups (difference) | difference between the * (groups) | * statistically significant difference (no) |
| significantly * than the (greater) | * between the groups (difference) | * facial vertical height (decreased) | in the * group (control) |
| in the * group (L) | in the * group (H) | in the * group (PHY) | in the * group (INH) |
| in the * group (treated) | in the * group (CON) | in the * group (CON) | in the * group (adult) |
| in the * group (intervention) | in the * sectors (anterior), | in the early * (permanent) | * was not statistically (difference) |
| the * permanent dentition (early) | the * dental arch (lower) | the mandibular * arch (dental) | with the * of (exception) |
| in * to the (relation) | * there was no (however) | were less * to (likely) | was significantly greater * (than) |
| was significantly greater * (in) | was * in the (higher) | differences were found * (between, in) | no significant * was (no) |
| there * no statistically (was) | might be * by (explained) | it has been * (reported) | be * by the (affected) |

| A List of Phrase Frames in the English ODO Results Section | | | |
|---|---|---|---|
| were * in the (found) | were * between the (found) | be * by the (affected) | was used to * (used) |
| was * to assess (performed) | were * in the (found) | are * in table (shown) | are * in table (shown) |
| used to * the (evaluate) | used to * the (evaluate) | analysis was * to (performed) | and the * of (presence) |
| with * to the (regard) | in the * of (treatment) | in the * of (absence) | of the * teeth (posterior) |
| at the * of (age) | at the * of (level) | to the * of (presence) | and the * of (presence) |
| and satisfaction with * (dental) | at the * level (same) | a significant * between (difference) | * between the groups (differences) |
| no significant difference * (between) | no significant difference * (between) | no significant * between (difference) | no significant * between (correlation) |
| no significant differences * (in) | no significant * were (differences) | * significant differences in (no) | significantly between the * (groups) |
| significantly greater * the (in) | * facial vertical height (increased) | * facial vertical height (decreased) | in the * group (control) |
| in the * group (extraction) | in the * group (PHY) | in the * group (INH) | in the * group (test) |
| in the * group (CON) | of the * second (maxillary) | of the maxillary * (second) | of the maxillary * (central) |
| * the early permanent (of) | the * central incisors (maxillary) | in the * of (treatment) | satisfaction with * aesthetics (dental) |
| central and lateral * (incisor) | * of the anterior (changes) | position of the * (upper) | in the two * (groups) |
| in the * study (present) | in the * of (treatment) | in * to the (relation) | |

As shown in Table 6.11, The findings showed 258 phrase frames that appeared in the English ODO Results Section. The use of these specific phrase frames highlights the structured nature of presenting findings in orthodontic and dentofacial orthopedics research. These phrase frames serve as tools for communicating important findings in a clear and concise manner. In particular, several recurring phrase frames were identified that emphasize the significance of differences between groups, the presentation of data, and the interpretation of clinical outcomes.

A prominent phrase frame that appeared frequently was *was a significant * (difference)*. This frame suggests that the study was able to detect measurable and statistically significant changes between the experimental groups and controls, reinforcing the effectiveness of the treatments under investigation. This is essential for drawing conclusions about the efficacy of specific orthodontic procedures or devices. For instance, *a significant * between (difference)* further indicates that notable distinctions were observed in specific outcomes, such as treatment success or changes in dental alignment. These findings underscore the importance of these differences in clinical decision-making and treatment planning.

However, several phrase frames also emphasized the absence of significant effects. For example, *there was no * (significant)* and *no significant differences * (in)* suggest that, in some cases, no major improvements or changes were observed between treatment groups. This finding may suggest the need for further research to identify potential factors that could influence treatment success, or it could highlight the limitations of the study in detecting certain outcomes. *No significant * between (difference)* and *no significant differences * (in)* serve to clarify that certain outcomes, such as specific orthodontic interventions or procedures, did not lead to

any measurable clinical changes, emphasizing the nuanced nature of clinical effectiveness.

The frequent use of *are * in table (shown)* and *are * in table (listed)* is a clear indicator of the importance of summarizing data in tabular form. This approach facilitates easier interpretation and comparison of results, allowing readers to assess the statistical significance of the findings. Tables are commonly used to highlight key results, such as the prevalence of gingival recession or changes in dental arch position, and these phrase frames highlight the way the data is organized for efficient review. For example, *the * of gingival recession (amount)* and *the * of gingival recession (frequency)* demonstrate how the study quantified changes in gingival health, which is crucial in orthodontic treatment to minimize side effects.

Moreover, the phrase frame *the * group was (control)* is essential for establishing the baseline against which experimental interventions were compared. This is a fundamental aspect of clinical trials, ensuring that the effectiveness of the treatment can be assessed relative to a standard or placebo. Similarly, the phrase *the * group was (submental)* points to specific subgroup analysis, possibly focusing on patient characteristics that may influence the outcomes.

Several other phrase frames addressed the limitations of the study or emphasized the need for further examination of certain outcomes. phrase frames such as *within the * of (limitations) and at the * of (end)* suggest that there were temporal or scope-based constraints to the research, which may have impacted the breadth of the conclusions. Furthermore, *the * of the (effect)* highlights the focus on the magnitude of the observed changes, whether they were clinically significant or not.

Additionally, terms like *significant differences were * (found)* and *significant differences were * (observed)* imply that certain treatment modalities led to measurable improvements in specific areas, such as dental alignment or facial aesthetics. These findings indicate that the research identified specific factors that influenced treatment success, and they help direct attention to areas of particular clinical importance.

On the other hand, phrase frames like *a significant * in (decrease)* and *a significant * in (increase)* draw attention to the direction of change, whether it was a positive or negative outcome. These phrase frames are crucial for understanding how different treatments or interventions affect variables like gingival recession, risk of recurrence, or other clinical measures.

Furthermore, *the * of the (majority) and the * of the (strength)* provide additional context for understanding the generalizability of the results. These

phrase frames point to the proportion of participants or cases that experienced a particular effect, highlighting the strength and robustness of the findings.

Finally, the use of *the * between the (differences) and by the * of (number)* emphasizes the statistical analyses employed in the study. These phrase frames are fundamental for discussing how the data was processed and interpreted, providing readers with an understanding of the statistical methods used to assess the significance of observed differences between groups.

In conclusion, the phrase frames used throughout the Results section of this ODO study not only serve as linguistic tools for organizing and presenting complex data but also offer valuable insights into the clinical implications of the findings. These frames help to structure the communication of key results, from significant differences between treatment groups to the absence of changes, and highlight important factors like patient demographics, treatment outcomes, and statistical analyses. As such, the use of phrase frames is an essential feature of scientific writing, ensuring that research findings are communicated effectively and can be interpreted accurately by the academic and clinical community.

### 6.5.4 Results and Discussion in the Discussion section

#### 6.4.4.1 Oral and Maxillofacial Surgery

**Table 6.12 A Summary of Phrase Frames in the English OMS Discussion Section**

| A List of Phrase Frames in the English OMS Discussion Section | | | |
|---|---|---|---|
| tipping of the * (mandibular) | * to evaluate the (was) | * to evaluate the (aimed) | study was to * (evaluate) |
| this study * to (was) | this study * to (aimed) | the * of the (design) | the * of the (precision) |
| the * of the (aim) | the * of this (results) | in the * area (parotid) | * titanium base abutment (the) |
| * of this study (results) | study * to evaluate (was) | on the * of (precision) | * there was no (that) |
| * there was no (however) | the * group was (submental) | * this study was (of) | * one of the (is) |
| * difference was found (no) | was a significant * (increase) | differences were found * (between) | there was no * (significant) |
| there was no * (difference) | there * no significant (was) | was not statistically * (significant) | was no significant * (correlation) |
| differences were found * (between) | * be due to (could) | * be due to (may) | * be due to (might) |
| * be attributed to (may) | may be * to (attributed) | * be due to (due) | * be explained by (could) |
| * be explained by (might) | * been reported to (has) | be * to the (due) | be * to the (related) |
| it is * that (recommended) | was * in the (was) | * observed in the (was) | were * in the (placed) |
| were * from the (excluded) | have been * to (found) | have been * to (used) | have been * to (reported) |
| was * as a (used) | was * as a (identified) | be * by the (explained) | were * from the (excluded) |
| was * with the (erformed) | was * with the (consistent) | been * to be (reported) | was * in the (found) |
| be * in the (found) | has been * that (suggested) | have * that the (demonstrated) | * to evaluate the (used) |
| analysis was * to (performed) | the * of the (effect), | the * of the (use) | the * of the (design) |
| the * of the (stability) | the * of the (precision) | the * of the (region) | the * of the (severity) |
| the * of the (location) | the * of the (positioning) | the * of the (age) | the * of the (floor) |
| the * of this (objective) | the use of * (use) | the use of * (use) | the use of * (adjunctive) |
| the * number of (average) | the * number of (total) | and the * of (number) | with * to the (respect) |
| in * with the (line) | in the * of (case) | in the * of (treatment) | to the * of (presence) |
| to the * of (lack) | to the * of (type) | at the * of (end) | * the level of (at) |
| to the * of (presence) | in the * of (range) | and the * of (number) | the number of * (implants) |
| the * between the (relationship) | the * between the (correlation) | a * rate of (recurrence) | a * in the (reduction) |
| a * in the (role) | an * of the (increase) | abutment for the * (crown) | * patients with a (for) |
| titanium base abutment * (design) | titanium base abutment * (for) | a higher * of (risk) | no significant correlation * (between) |
| significant difference between * (the) | * significant differences in (no) | a significant * in (increase) | a significant difference * (in) |

| A List of Phrase Frames in the English OMS Discussion Section | | | |
|---|---|---|---|
| * for patients with (recommended) | * significant correlation between (no) | * significant correlation between (a) | statistically significant differences * (in) |
| a significant * in (difference) | significantly between the * (two) | * the risk of (increase) | * the risk of (reduce) |
| * between the two (difference) | * between the two (significantly) | * between the two (difference) | in the * area (esthetic) |
| in the * area (lesion) | in the * group (control) | in the * group (H) | in the * group (submental) |
| in the * group (without-deficiency) | in the * group (ABX) | in the * area (esthetic) | of the * cavity (cystic) |
| of the * cavity (oral) | in the * region (posterior) | of the * bone (buccal) | of the * bone (hyoid) |
| of the * lip (upper) | of the * lip (lower) | positioning of the * (cutting) | of the * population (study) |
| to the * plane (horizontal) | during the * period (study) | in the * cavity (oral) | in the * analysis (multivariate) |
| in the * analysis (univariate) | of the * population (general) | * the treatment of (treatment) | * the treatment of (treatment) |
| in the * region (posterior) | * newly formed bone (the) | satisfaction with * aesthetics (facial) | * titanium base abutment (the) |
| * titanium base abutment (conical) | of the * cavity (cystic) | of the included * (studies) | difference was not * (significant) |
| difference was not * (statistically) | * dental implant failure (early) | * dental implant failure (for) | and * of the (stability) |
| the * of our (best) | and soft tissue * (changes) | that the * of (effect) | position of the * (cutting) |
| the mixed dentition * (phase) | * soft tissue recession (midfacial) | the * central incisors (upper) | the * third molar (impacted) |
| the * dental arch (mandibular) | the * and control (experimental) | * the two groups (between) | bone * in the (grafting) |
| bone * in the (regeneration) | bone * in the (graft) | * of this study (purpose) | with the * of (results) |
| with the * of (findings) | with the * of (exception) | on the p* of (precision) | * the results of (results) |
| * the results of (results) | * the treatment of (in, for) | * the type of (by) | * the number of (and) |
| by the * of (type) | with a * of (history) | of the * and (maxilla) | * this study was (in) |
| was * greater in (significantly) | * difference was found (no) | * significant difference was (no) | * be due to (could) |
| * be due to (may) | * be due to (might) | * be attributed to (could) | * be explained by (might) |
| * be due to (could) | could be * to (attributed) | has been * to (shown) | it is * that (recommended) |
| have been * to (found) | be * by the (explained) | studies have * that (reported) | been * to be (shown) |
| * found in the (be) | previous studies have * (reported) | the * of the (results) | the * of the (accuracy) |
| the * of the (severity) | the * of the (time) | the * of the (age) | the * number of (average) |
| and the * of (presence) | and the * of (effect) | with * to the (regard) | in * with the (line) |
| the * between the (difference) | the * of the (time) | number of * with (days) | * patients with a (for) |
| titanium base abutment * (design) | at the * time (same) | one of the * (most) | a significant difference * (between) |
| a significant * between (correlation) | a * correlation between (significant) | at the * time (three) | * significant difference between (no) |
| no * difference between (significant) | no significant differences * (in) | * significant difference in (statistically) | significant * between the (difference) |
| the difference * the (between) | * significant differences in (no) | a significant * in (reduction) | a statistically significant * (difference) |
| no significant * between (correlation) | a significant * in (difference) | a higher * of (risk) | * between the two (difference) |
| in the * area (parotid) | on the * side (non-fracture) | in the * group (control) | of the * cavity (cystic) |
| of the * cavity (oral) | in the * area (parotid) | of the * lip (lower) | on the * side (non-fracture) |
| to the * plane (horizontal) | in the * analysis (multivariate) | * titanium base abutment (conical) | of the * cavity (cystic) |
| * of our study (results) | with the * of (use) | with the * of (findings) | with the * of (goal) |
| * the fact that (by) | significant *was found (difference) | was * statistically significant (not) | was no significant * (difference) |
| compared * the control (with) | * be due to (could) | * be due to (may) | * be attributed to (could) |
| * be explained by (can) | * be explained by (might) | could be * to (due) | could be * to (attributed) |
| it has been * (reported) | it has been * (suggested) | has been * to (found) | has been * to (reported) |
| was * in the (used) | were * in the (placed) | were * from the (excluded) | have been * to (found) |
| have been * to (used) | was * as a (identified) | were * from the (excluded) | was * with the (performed) |
| was * with the (consistent) | been * to be (shown) | previous studies have * (reported) | the * of the (effect) |
| the * of the (majority) | the * of the (severity) | the * of the (positioning) | the * of the (time), |
| the * of a (use) | with * to the (respect) | in * with the (comparison) | in the * of (amount) |
| * the end of (at) | the * between the (relationship) | a higher * of (rate) | an * of the (increase) |
| * patients with a (in) | titanium base abutment * (design) | * with and without (patients) | a higher * of (risk) |
| a higher * of (rate) | one of the * (most) | at the * time (three) | * significant difference between (no) |
| no significant difference * (between) | significant * between the (difference) | a significant * in (reduction) | a * risk of (higher) |
| difference * the two (between) | * between the two (significantly) | in the * area (esthetic) | in the * gland (parotid) |
| in the * gland (parotid) | of the * bone (hyoid) | positioning of the * (cutting) | of the * population (study) |
| in the * analysis (univariate) | * newly formed bone (of) | * newly formed bone (the) | satisfaction with facial * (aesthetics) |
| * titanium base abutment (conical) | * was not statistically (difference) | * dental implant failure (for) | that the * of (use) |

| A List of Phrase Frames in the English OMS Discussion Section | | | |
|---|---|---|---|
| * soft tissue recession (midfacial) | bone * in the (grafting) | with the * of (use) | in the * of (treatment) |
| with a * of (history) | to the * that (fact), | that there was * (no) | was performed * (on) |
| * been reported to (have) | have been reported * (in) | was significantly greater * (than) | was a significant * (increase) |
| there was no * (significant) | was no significant * (difference) | significant * were observed (differences) | the * side was (fracture) |
| could be * to (due) | * be due to (may) | * be due to (might) | * be attributed to (could) |
| * be explained by (could) | has been * to (reported) | be * to the (due) | be * to the (related) |
| were * in the (included) | were * in the (placed) | have been * to (reported) | be * by the (explained) |
| studies have * that (demonstrated) | been * to be (shown) | been * to be (reported) | were * in the (found) |
| have * that the (demonstrated) | * with the control (compared) | the * of the (stability) | the * of the (severity) |
| the * of the (strength) | the use of * (adjunctive) | and the * of (presence) | in * with the (comparison) |
| in * with the (agreement), | in * with the (line) | in the * of (case) | in the * of (treatment) |
| in the * of (context) | to the * of (type) | a * rate of (recurrence) | a * rate of (higher) |
| a * in the (reduction) | * base abutment design (titanium) | titanium base abutment * (designs) | * with and without (patients) |
| a higher * of (rate) | no significant difference * (between) | * significant difference between (no) | no significant * between (correlation) |
| no significant differences * (in) | statistically significant differences * (in) | a significant * in (increase) | * significant differences in (statistically) |
| a higher * of (risk) | significantly between the * (two) | reduce the * of (risk) | in the * area (esthetic) |
| on the * side (non-fracture) | on the * side (fracture) | in the * group (test) | in the * group (ABX) |
| in the * zone (esthetic) | of the * bone (hyoid) | position of the * (cutting) | on the * side (non-fracture) |
| on the * side (fracture) | to the * plane (midsagittal) | in the * analysis (univariate) | of the * population (study) |
| * the treatment of (in) | * the treatment of (for) | * dental implant failure (for) | abutments for the * (prosthesis) |
| abutments for the * (crown) | * soft tissue recession (midfacial) | * soft tissue recession (advanced) | in the * study (present) |
| bone * in the (grafting) | with the * of (use) | with the * of (goal) | with the * of (results) |
| * the type of (to) | with a * of (history) | * this study was (in) | * in this study (included) |
| the * of the (effect) | the * of the (precision) | the * of this (limitations) | the * of this (findings) |
| with * to the (regard) | abutment for the * (prosthesis) | * in this study (included) | titanium base abutment * (design) |
| no significant differences * (in) | the titanium base * (abutment) | the titanium base * (abutments) | in the * study (present) |
| on the * of (precision) | aimed to * the (evaluate) | * to evaluate the (aimed) | the * of the (design) |
| the * of this (limitations) | number of * with (patients) | abutment for the * (prosthesis) | * of the study (limitations) |
| titanium base abutment * (design) | titanium base * for (abutment) | titanium base abutment * (for) | in the * cavity (oral) |
| and soft tissue * (changes) | the * of this (results) | in the * of (prevalence) | at the * of (time) |
| in the * cavity (oral) | the quality of * (evidence) | * in this study (included) | it has been * (suggested) |
| be * to the (due) | this study * that (found) | * in this study (included) | * in this study (included) |
| no significant differences * (in) | * the study population (of) | were * in the (included) | this study * that (found) |
| in order to * (assess) | * in the study (included) | the * of the (positioning) | the * of this (results) |
| significant * in the (difference) | no significant difference * (in) | of the * population (study) | * of this study (results) |
| by the * that (fact) | the * of the (design) | the * of the (length) | in the * area (esthetic) |

As illustrated in Table 6.12, the finding showed 458 phrase frames that appeared in the English OMS Discussion Section. The use of specific phrase frames in OMS RAs provides a structured and coherent approach to presenting the study's findings, while also addressing the underlying mechanisms and potential clinical implications. These phrase frames not only help in organizing the interpretation of the results but also allow for clear communication of the study's purpose, limitations, and potential for future research.

A recurring phrase frame in this study was *this study * to (evaluate)* or *study * to evaluate (was)*. These frames highlight the overarching aim of the study, which was focused on assessing specific clinical outcomes, such as the efficacy of particular surgical techniques or implants. For example, the use of the phrase frame *study was to * (aimed)* further reiterates the objective behind the research, underlining the structured approach that the authors took in investigating their hypothesis. By

clearly stating the research's intent, these phrase frames help orient the reader to the focus of the study, ensuring that the context of the findings is well understood.

One of the most prominent phrase frames used was *was a significant * (increase)*, which indicates that a measurable, statistically significant change occurred, particularly in the context of clinical outcomes such as the success of an implant or the reduction of symptoms. This is crucial in a field like OMS, where even minor improvements in clinical outcomes can significantly impact patient care and treatment planning. Additionally, the phrase frame *a * rate of (recurrence)* suggests that the study was concerned with long-term outcomes, such as the recurrence of oral conditions or complications, which is an important aspect in surgical interventions and their sustainability.

Another important aspect addressed in the discussion is the exploration of *differences were found * (between)* groups or conditions, as indicated by the repeated use of this phrase frame. This suggests that the study made comparisons between different treatment protocols, patient subgroups, or control and experimental groups. The phrase *there were no * (significant)* was also commonly used to point out the absence of measurable differences in certain conditions or variables, signaling that some interventions or factors did not lead to significant improvements. Such findings highlight the complexity of clinical outcomes and suggest that further research is needed to fully understand the reasons behind these null results.

The use of *be * due to (could/may/might)* reflects the study's attempt to address potential causative factors. These phrase frames imply that certain findings may be attributed to specific variables or underlying conditions, although the exact cause may not be fully understood or conclusive. For instance, when results showed no significant differences, phrase frames like ** be explained by (could/might)* or ** be due to (may)* help the authors propose potential reasons for these outcomes. These possibilities may include patient variability, procedural differences, or limitations in study design. This nuanced interpretation is vital in scientific research as it demonstrates an understanding that multiple factors can influence the outcome of clinical studies.

Moreover, phrase frames like *was * in the (found)* and *has been * that (suggested)* suggest that the study is building upon existing evidence or contributing new knowledge to the field. For example, *was * as a (used)* and *was * as a (identified)* indicate how specific methods or techniques were applied in the study, offering insights into their effectiveness or potential improvements. These frames are crucial in showing how the current research fits into the broader scientific landscape.

The repeated use of *the * of the (results)* or *the * of the (aim)* highlights the importance of results in answering the primary research question. The phrase frame *the * of the (effect)* is often used to discuss the magnitude or relevance of a particular outcome, helping to contextualize the clinical significance of the findings. Whether the effect is positive, neutral, or negative, these frames guide the reader's interpretation of the findings in relation to the study's objectives.

Additionally, the phrase frame *was * with the (performed)* or *was * with the (consistent)* was employed to suggest that the study's findings align with previous research or confirm the expected outcomes. These types of frames indicate that the research methodology and results were consistent with existing literature, adding credibility to the study's conclusions. Alternatively, the phrase frame *was not statistically * (significant)* was used to indicate where the data did not support certain hypotheses, emphasizing the complexity of surgical outcomes and the need for further investigation.

In discussing limitations and potential future directions, the phrase frame *was no * (statistically)* or *there * no significant (was)* was important for addressing the null results and pointing out areas where additional research may be needed. Phrase frames such as *was * in the (observed)* and *have been * to (found)* also allude to previous findings or observations, creating a dialogue between this study's results and prior research.

Furthermore, the study used phrase frames like *the number of * (implants)* and *the * of the (precision)* to focus on key quantifiable outcomes, such as the number of patients receiving implants and the precision of the surgical techniques used. These frames underscore the importance of clear metrics when evaluating the success of treatments, providing a solid foundation for future studies to refine methodologies and improve results.

Lastly, phrase frames like *the * between the (relationship)* and *a significant difference * (in)* were used to discuss specific relationships and distinctions found between groups. These frames were critical in highlighting the statistical relevance of certain differences, which are integral to understanding how various treatments or interventions performed across different patient groups.

In conclusion, the phrase frames in this study's Discussion section provide a clear, systematic approach to presenting the research's findings and their implications (Golparvar & Barabadi, 2020; Cheng & Zhang, 2025). These frames not only help structure the presentation of results but also guide the interpretation of those results in the context of existing literature and clinical practice. The use of these phrase

frames ensures that the study's findings are communicated in a precise, organized manner, enhancing the clarity and comprehensibility of the research.

### 6.4.4.2 Orthodontics and Dentofacial Orthopedics

**Table 6.13 A Summary of Phrase Frames in the English ODO Discussion Section**

| A List of Phrase Frames in the English ODO Discussion Section | | | |
|---|---|---|---|
| * in this study (used) | study was to * (compare) | face-to-face interaction with * (their) | the * anterior teeth (lower) |
| * of this study (aim) | the * group was (INH) | * in this study (used) | were less * to (likely) |
| * was not significant (difference) | was significantly greater * (than) | was significantly greater * (in) | * one of the (as) |
| * significant difference was (no) | significant differences were * (found) | significant differences were * (observed) | * to the control (compared) |
| has been * to (found) | has been * to (shown) | be * by the (affected) | it is * that (known) |
| was * in the (seen) | be * by the (affected) | was to * the (evaluate) | been * to be (found) |
| been * to be (shown) | has been * that (reported) | previous studies have * (reported) | have * that the (shown) |
| this study * that (showed) | this study * that (found) | * with the control (compared) | * to assess the (aimed) |
| * to evaluate the (was) | was to * the (evaluate) | this study * to (was) | this study * to (aimed) |
| included in * study (this) | included in * study (the) | the * of the (end) | the * of the (position) |
| the * of the (effect) | the * of the (size) | the * of the (height) | the * of the (duration) |
| the * of the (rigidity) | the * of the (base) | the * of the (introduction) | the use of * (direct) |
| * of gingival recession (frequency) | in the * of (number) | in the * of (prevalence) | of the * teeth (anterior) |
| the difference between * (the) | the * between the (differences) | and satisfaction with * (dental) | and satisfaction with * (aesthetics) |
| vertical position of * (the) | number of *with (patients) | * patients with a (in) | * of the study (end) |
| * with and without (children) | at the same * (time), | at the same * (level) | a higher * of (level) |
| one of the * (main) | * between the groups (significantly) | significantly between the * (groups) | than * of the (half) |
| of * alveolar ridge (mesial) | of * alveolar ridge (the) | * the same time (at) | no significant * between (difference) |
| * significant correlation between (no) | no * differences between (significant) | the * between the (difference) | a significant * in (reduction) |
| * for patients with (suitable) | * between the groups (differences) | * between the groups (significantly) | statistically significant differences * (were) |
| the * between the (differences) | a higher * of (level) | significantly between the * (groups) | significantly * the groups (between) |
| significantly greater * the (greater) | significantly greater * the (in) | on the * side (left) | on the * side (impacted) |
| in the * group (extraction) | in the * group (INH) | in the * group (treated) | in the * group (CON) |
| of the * second (maxillary) | in the * region (anterior) | in the anterior * (sectors) | in the anterior * (region) |
| of the maxillary * (second) | of the maxillary * (central) | * at the end (spaces) | * at the end (groups) |
| on the * side (left) | on the * side (impacted) | of the * population (general) | throughout the * period (observation) |
| during the * period (retention) | of the mandibular * (incisors) | in the * arch (lower) | in the * region (anterior) |
| * physiologic tooth mobility (the) | * physiologic tooth mobility (of) | * clinical crown height (in) | * the HPC line (to) |
| * the HPC line (crossing) | satisfaction with * aesthetics (dental) | * movement of the (distal) | * and lateral incisors (central) |
| central and lateral * (incisor) | * incisors and canines (lateral) | * incisors and canines (central) | * and lateral incisors (canines) |
| overbite of the * (anterior) | the * position of (vertical) | face-to-face interaction with * (the) | the * of our (results) |
| and soft tissue * (profile) | the * posterior teeth (lower) | the * anterior teeth (maxillary) | the lower * teeth (anterior) |
| between * and lateral (central) | position of the * (maxillary) | the mixed dentition * (group) | the * central incisors (maxillary) |
| first or second * (permanent) | first or second * (molars) | the * mixed dentition (early) | the * dental arch (maxillary) |
| the lower * teeth (posterior) | * the two groups (in) | *of this study (results) | * of this study (objective) |
| on the * of (basis) | on the * of (results) | * the type of (to) | * the number of (in) |
| of the * and (patient) | in * to the (addition) | in * to the (contrast) | * the fact that (by) |
| * the fact that (to) | the * group was (control) | * this study was (of) | have been * to (reported) |
| * in this study (used) | * tipping of the (mesial) | was significantly greater * (than) | was significantly greater * (in) |
| was * in the (larger) | * one of the (as) | * difference was found (significant) | significant differences were * (found) |
| * significant differences were (no) | * to the control (compared) | may be * to (due) | has been * to (found) |
| be * to the (related) | it is * that (known) | was * in the (observed) | was * in the (seen) |
| were * in the (larger) | * larger in the (were) | have been * to (reported) | was * as a (identified) |
| was *with the (consistent) | * consistent with the (was) | been * to be (found) | * found in the (was) |
| have * that the (shown) | have * that the (demonstrated) | this study * that (showed) | * to evaluate the (used) |
| * to assess the (aimed) | aimed to * the (evaluate) | study was to * (investigate) | study was to * (evaluate) |
| this study * to (was) | the * of the (position) | the * of the (majority) | the * of the (region) |

| A List of Phrase Frames in the English ODO Discussion Section | | | |
|---|---|---|---|
| the * of the (root) | the * of the (height) | the * of the (rigidity) | the * of direct (use) |
| with * to the (respect) | in the * of (number) | in the * of (prevalence) | in the * of (range) |
| * the range of (range) | to the * of (best) | to the * of (presence) | of the * teeth (posterior) |
| at the * of (end) | * the presence of (to) | the * between the (differences) | and satisfaction with * (dental) |
| and satisfaction with * (aesthetics) | * position of the (vertical) | * and control groups (extraction) | a * rate of (higher) |
| a * in the (role) | * in this study (used) | * tipping of the (mesial) | * the same time (at) |
| a higher * of (rate) | a * level of (higher) | one of the * (main) | of * alveolar ridge (mesial) |
| of * alveolar ridge (the) | no significant * between (correlation) | no significant difference * (in) | a significant * in (difference) |
| a significant * in (decrease) | * statistically significant difference (no) | a higher * of (level) | increase the * of (risk) |
| difference between the * (two) | on the * side (impacted) | in the * group (extraction) | in the * group (PHY) |
| in the * group (INH) | in the * group (adult) | of the * second (maxillary) | in the * region (anterior) |
| in the * region (anterior) | of the * central (maxillary) | on the * side (impacted) | to the * plane (midsagittal) |
| throughout the * period (observation) | in the * arch (lower) | of the * population (general) | of the * population (study) |
| * the early permanent (in) | * the early permanent (of) | the * central incisors (maxillary) | * physiologic tooth mobility (the) |
| * the HPC line (to) | * the HPC line (crossing) | satisfaction with * aesthetics (dental) | * titanium base abutment (the) |
| * movement of the (distal) | the * of our (best), | and soft tissue * (changes) | the * posterior teeth (lower) |
| the * posterior teeth (upper) | the * anterior teeth (lower) | position of the * (upper) | position of the * (maxillary) |
| the mixed dentition * (group) | the mixed dentition * (phase) | the * central incisors (maxillary) | first or second * (permanent) |
| the * posterior teeth (lower) | the * strong anchorage (indirect) | the * strong anchorage (direct) | the * and control (experimental) |
| the * and control (extraction) | in the * groups (two) | * of this study (aim) | with the * of (results) |
| with the * of (results) | of the * and (maxilla) | in * to the (addition) | in * to the (contrast) |
| by the * that (fact) | the * group was (control) | in this study * (was) | * one of the (is) |
| was a significant * (increase) | was a significant * (increase) | * were found in (differences) | * significant differences were (no) |
| compared * the control (to) | * be due to (may) | has been * to (shown) | be * by the (explained) |
| the * of the (end) | the * of the (accuracy) | the * of the (strength) | and the * of (effect) |
| in the * of (level) | of the * teeth (anterior) | * the level of (in) | * between the groups (differences) |
| no significant difference * (in) | no significant * between (differences) | a significant * in (increase) | suitable for * with (patients) |
| * between the groups (differences) | significant * between the (differences) | a higher *of (level) | * between the two (difference) |
| in the * sectors (anterior) | of the * second (maxillary) | * at the end (spaces) | of the *population (general) |
| throughout the * period (observation) | in the * arch (lower) | the * central incisors (maxillary) | * titanium base abutment (the) |
| the * sample size (small) | * and lateral incisors (central) | * of the anterior (overbite) | the quality of * (life) |
| the * dental arch (maxillary) | the * anterior teeth (lower) | in the * groups (two) | in the * study (present) |
| tipping of the * (posterior) | *in this study (included) | * tipping of the (distal) | was significantly greater * (in) |
| was * in the (larger) | * one of the (is) | * were found in (differences) | was not * significant (statistically) |
| compared * the control (to) | * be attributed to (may) | may be * to (due) | may be * to (attributed) |
| * be due to (could) | it has been * (suggested) | has been * to (found), | be * to the (attributed) |
| it is * that (known) | have been * to (used) | studies have * that (shown) | been * to be (found) |
| be * in the (found) | has been * that (reported) | has been * that (suggested) | have * that the (shown) |
| this study * that (showed) | the * of the (end) | the * of the (accuracy) | the * of the (majority) |
| the * of the (time) | the * of the (duration) | the * of the (rigidity) | the * number of (total) |
| * of gingival recession (frequency) | with * to the (respect) | in * with the (accordance) | in the * of (prevalence) |
| in the * of (range) | in the * of (level) | to the * of (lack) | of the * teeth (posterior) |
| at the * of (end) | at the * of (age) | at the * of (time) | in the * of (level) |
| and the * of (presence) | * the range of (within) | in the * of (range) | within the * of (limitations) |
| and satisfaction with * (dental) | * and control groups (experimental) | an increase * the (of) | an increase * the (in) |
| * in this study (used) | * in this study (included) | * tipping of the (distal) | at the * level (same) |
| a higher * of (risk) | a higher * of (level) | one of the * (main) | differences between the * (groups) |
| no significant differences * (were) | no significant differences * (between) | * between the groups (differences) | difference between the * (groups) |
| significant differences * the (between) | significant * between the (differences) | the differences between * (the) | a * level of (higher) |
| * the risk of (reduce) | significantly greater * the (than) | significantly greater * the (in) | difference between the * (groups) |
| * facial vertical height (increased) | * facial vertical height (decreased) | on the * side (impacted) | in the * group (control) |
| in the * group (L) | in the * group (extraction) | in the * group (H) | in the * group (PHY) |
| in the * group (INH) | of the maxillary * (second) | of the maxillary * (anterior) | of the * anterior (maxillary) |
| * at the end (spaces) | towards the * side (right) | on the * side (impacted) | of the * population (general) |
| throughout the * period (observation) | during the * period (study) | of the * incisors (mandibular) | in the * arch (mandibular) |
| towards the * side (right) | of the * population (general) | in the * permanent (early) | in the * region (anterior) |
| * physiologic tooth mobility (the) | * clinical crown height (the) | * the HPC line (to) | * the HPC line (crossing) |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| A List of Phrase Frames in the English ODO Discussion Section | | | |
|---|---|---|---|
| satisfaction with * aesthetics (dental) | * tipping of the (distal) | distal * of the (tipping) | distal * of the (movement) |
| * and lateral incisors (central) | * incisors and canines (lateral) | * and lateral incisors (central) | * and lateral incisors (canines) |
| * of the anterior (changes) | higher * of root (prevalence) | the * of our (results) | that the * of (effect) |
| the * and lateral (central) | between * and lateral (central) | the * mixed dentition (early) | the * dental arch (maxillary) |
| in the * groups (two) | * of our study (results) | with the * of (results) | with the * of (findings) |
| on the * of (basis) | * the type of (by) | in * to the (addition) | to the * that (fact) |
| were less * to (likely) | * be attributed to (may) | be * to the (attributed) | been * to be (found) |
| * in the study (included) | the * of the (limitations) | the * of the (root) | the use of * (a) |
| of the * teeth (anterior) | the * of patients (number) | the number of * (patients) | of * alveolar ridge (ridge) |
| in the * group (extraction) | to the * line (HPC) | the * sample size (small) | the * of our (results) |
| the quality of * (life) | the * central incisors (upper) | the * mixed dentition (early) | the lower * teeth (anterior) |
| the lower * teeth (posterior) | of this study * (was) | of * study was (this) | * in this study (used) |
| has been * to (reported) | be * to the (attributed) | were * from the (excluded) | this study * to (study) |
| the * of the (end) | the * of the (root) | the * of the (duration) | the * of this (results) |
| * the posterior teeth (posterior) | at the * of (end) | an * in the (increase) | * of the study (end) |
| in the * group (control) | in the * group (intervention) | in * crown height (clinical) | the * of our (results) |
| the * anterior teeth (lower) | the * strong anchorage (two) | * of this study (aim) | results of * study (this) |
| * of our study (results) | * excluded from the (were) | were * from the (excluded) | the * of the (reliability) |
| the * of a (use) | in * with the (accordance) | in the * of (treatment) | * of the study (limitations) |
| with * to the (regard) | in the * group (control) | * the early permanent (of) | in the * of (treatment) |
| * physiologic tooth mobility (the) | there were * significant (no) | was * in the (observed) | has been * that (suggested) |
| this study * that (showed) | the * of the (results) | the * of this (results) | the * of this (findings) |
| and satisfaction with * (aesthetics) | a * in the (role) | of * alveolar ridge (mesial), | * significant difference between (no) |
| no significant * between (difference) | no significant difference * (between) | significant * between the (difference) | significant difference * the (between) |
| significant * in the (differences) | in the * arch (mandibular) | * of this study (results) | the * of the (results) |

As reported in Table 6.13, the findings showed 517 phrase frames in the English ODO Discussion Section. These phrase frames function as essential scaffolds that support the logical interpretation of results, comparison with existing literature, and formulation of clinical implications (Golparvar & Brabadi, 2020; Cheng & Zhang, 2025). One of the most commonly used structures is ** in this study (used),* which often appears early in the discussion to reiterate the methodology or highlight specific techniques. Phrase frames such as *study was to * (compare), to assess the (aimed),* and *to evaluate the *(was)* are instrumental in revisiting the research purpose and setting the stage for interpretation.

Comparative evaluation, both within the study and against control groups, is frequently expressed using phrase frames like *was significantly greater * (than), was significantly greater * (in), significant difference was (no), significant differences were * (found),* and *to the control * (compared).* These constructions allow authors to clearly convey the magnitude and direction of observed changes or differences between experimental groups. For instance, statements like *significantly between the * (groups)"* or *between the groups * (differences)* indicate quantitative relationships vital for evidence-based conclusions.

Historical and contextual positioning of the current research is achieved through phrase frames such as *previous studies have * (reported), has been * to (found), has been * to (shown), and this study * that (found)*. These phrase frames

create connections between the present study and prior investigations, situating new findings within the broader scientific literature. The frame *it is * that (known)* is also commonly used to affirm established knowledge, providing a foundation for new insights.

Anatomical precision is fundamental in orthodontic discourse (Kapila et al., 2023). Hence, phrase frames like *the * anterior teeth (lower), of the * incisors (mandibular), the * central incisors (maxillary), position of the * (maxillary), and the lower * teeth (anterior)* are widely used to localize findings and ensure clarity. These phrase frames help authors specify where changes occurred, which is essential for treatment planning and interpretation. Similarly, phrase frames such as *movement of the (distal), clinical crown height (in),* and *physiologic tooth mobility * (of)* support the detailed reporting of dental and skeletal measurements.

Patient-centered outcomes are addressed through phrase frames like *"face-to-face interaction with * (their), satisfaction with * (dental)*, and *satisfaction with * (aesthetics)*, which reflect increasing emphasis on psychosocial and esthetic dimensions of care. In addition, *patients with a (in)* and *number of * with (patients)* are used to report demographic or subgroup-based observations, which aid in understanding treatment effects across various populations.

When discussing timing and procedural phases, authors often use temporal phrase frames such as *at the same * (time), throughout the * period (observation), during the * period (retention)*, and *** at the end (spaces).** These allow researchers to mark when changes occurred and ensure a clear chronological sequence in the interpretation of results. Anatomical regions are also specified using *in the * region (anterior), in the * arch (lower), in the anterior * (sectors)*, and *on the * side (left),* which emphasize the location-based nature of orthodontic corrections.

To describe quantitative or statistical findings, authors use frames like *a higher * of (level), no significant * between (difference), significant correlation between (no),* and *statistically significant differences * (were)*. These phrase frames are essential for delineating what changes were meaningful and which did not reach significance. Moreover, *the * between the (difference), significantly greater * the (in)*, and *than * of the (half)* add nuance to comparative claims and clarify the magnitude of effects.

Finally, framing the study's scope and contributions is achieved with phrase frames such as *of this study (aim), this study * to (aimed), included in * study (this), * of the study (end),* and *the * of our (results)*. These statements restate the

study objectives, limitations, and conclusions, reinforcing the coherence and integrity of the discussion.

### 6.5.5 Results and Discussion in the Conclusion section

#### 6.5.5.1 Oral and Maxillofacial Surgery

**Table 6.14 A Summary of Phrase Frames in the English OMS Conclusion Section**

| A List of Phrase Frames in the English OMS Conclusion Section | | | |
|---|---|---|---|
| * in this study (used) | there was * significant (no) | there was no * (significant) | * no significant difference (was) |
| were found * the (between) | the * of the (end) | the * of the (limitations) | the * of the (precision) |
| the * of this (limitations) | in the * of (treatment) | in the * of (context) | at the * of (end) |
| * of the study (limitations) | a * risk of (higher) | * significant difference between (no) | significant * between the (difference) |
| a higher * of (risk) | in the * area (esthetic) | in the * area (esthetic) | of the * incisors (mandibular) |
| in the * of (treatment) | of * formed bone (newly) | the * sample size (small) | the results of * (our) |
| * soft tissue recession (midfacial) | * of this study (results) | results of * study (this) | results of * study (our) |
| on the * of (precision) | | | |

As illustrated in Table 6.14, the findings showed 29 phrase frames that appeared in the English OMS Conclusion Section only. In OMS research, the conclusion section serves as a critical summary of the study's findings, clinical implications, and methodological considerations. Phrase frames commonly appearing in this section are not only linguistic patterns but also essential tools for structuring scientific communication. These standardized phrase frames guide readers through the interpretation of data, clarify the limitations of findings, and reinforce the reliability and applicability of results.

One of the most frequently used phrase frames is ** in this study (used)*, which introduces methods or tools specific to the research. It helps clarify the techniques or interventions applied and reinforces the relevance of findings to similar clinical scenarios. Similarly, *the results of * (our),results of * study (this),* and *results of * study (our)* are employed to reference findings clearly and assertively, establishing ownership of the data while maintaining academic tone.

To report statistical outcomes, researchers often use phrase frames like *there was * significant (no), there was no * (significant), no significant difference (was),* and *significant difference between (no).* These phrase frames are crucial for indicating that variables measured did not show statistically meaningful differences. Conversely, *significant * between the (difference)* is used to highlight when a statistically notable effect or association was detected, often regarding surgical outcomes, complication rates, or anatomical comparisons.

The phrase frame *a * risk of (higher)* and *a higher * of (risk)* typically appear in discussions about postoperative complications, patient morbidity, or risk-benefit assessments. These frames help express comparative findings related to clinical

safety, surgical precision, or prognosis. Similarly, anatomical references such as i*n the * area (esthetic), of the * incisors (mandibular),* and *soft tissue recession (midfacial)* are used to localize findings to specific regions of the oral and maxillofacial complex, which is critical for surgical planning and esthetic considerations.

Phrase frames that signal limitations or contextual boundaries are also prevalent. Phrase frames such as *the * of the (end), the * of the (limitations), the * of this (limitations), of the study (limitations),* and *the * sample size (small)* are employed to temper conclusions and acknowledge the constraints of the study. These acknowledgments are important for maintaining transparency and informing future research directions. Additionally, *on the * of (precision)* and *the * of the (precision)* are used to reflect on measurement accuracy or the reliability of instruments and procedures, which is essential in surgical disciplines where outcomes can be highly sensitive to technique.

Clinical context is framed through phrase frames, e.g., *in the * of (treatment), in the * of (context), and at the * of (end)*, which help position findings within broader therapeutic frameworks, such as the role of a specific intervention in post-traumatic reconstruction, implant placement, or bone grafting. Moreover, *of * formed bone (newly)* directly refers to regenerative outcomes, which are central to studies involving tissue engineering or reconstructive techniques in OMS.

Overall, these phrase frames are not random or decorative; they play a strategic role in organizing and communicating the complex clinical data typical of OMS research. They help maintain a professional tone, ensure logical flow, and support the reader's understanding of outcomes, methodology, and the study's clinical relevance. Mastering their use enhances the clarity and impact of scientific writing in this surgical discipline.

#### 6.5.5.2 Orthodontics and Dentofacial Orthopedics

**Table 6.15 A Summary of Phrase Frames in the English ODO Conclusion Section**

| Phrase Frames in the English ODO Conclusion Section | | | |
|---|---|---|---|
| were more * to (likely) | was * in the (higher) | no significant differences * (were) | no significant * were (differences) |
| it is * that (recommended) | was * in the (found) | were found * the (in) | was * as a (identified) |
| * found in the (were) | the * of the (results) | the * of the (position) | the * of the (stability) |
| the * of this (findings) | * of gingival recession (frequency) | in the * of (range) | in the * of (range) |
| in the * of (level) | in the * of (level) | within the * of (range) | within the * of (limitations) |
| and satisfaction with * (aesthetics) | a * in the (reduction) | for * with a (patients) | * in this study (used) |
| one of the * (most) | difference between the * (groups) | than * of the (half) | no significant * between (difference) |
| no significant * between (correlation) | no significant differences * (in) | a significant * in (reduction) | suitable for * with (patients) |
| difference between the * (groups) | no significant * between (correlation) | significant differences between * (the) | significant * between the (differences) |
| difference between the * (groups) | * facial vertical height (increased) | * facial vertical height (decreased) | in the * group (L) |
| of the * second (upper) | in the * sectors (anterior) | to the * midline (facial) | in the * arch (mandibular) |
| of the * population (study) | of * tooth mobility (physiologic) | the * crown height (clinical) | to the * line (HPC) |

| Phrase Frames in the English ODO Conclusion Section | | | |
|---|---|---|---|
| * the HPC line (crossing) | * and lateral incisor (central) | * incisors and canines (central) | * and lateral incisors (central) |
| * of the anterior (overbite) | face-to-face interaction with * (the) | the * posterior teeth (upper) | the * anterior teeth (maxillary) |
| the * anterior teeth (lower) | the * and lateral (central) | between * and lateral (central) | the * dentition group (mixed) |
| the * central incisors (upper) | first or second * (permanent) | the * dental arch (maxillary) | the * anterior teeth (lower) |
| the * strong anchorage (two) | on the * of (basis) | on the * of (results) | on the * of (results) |

As reported in Table 6.15, the findings showed 68 phrase frames that appeared in the English ODO Conclusion Section only. In ODO, RA conclusions frequently rely on specific phrase frames that standardize the presentation of findings, clarify the strength of evidence, and facilitate clinical interpretation. These phrase frames help ensure clarity, consistency, and objectivity when summarizing results and drawing conclusions based on complex clinical data.

Phrase frames such as *were more * to (likely), was * in the (higher)*, and *was * in the (found)* are typically used to report comparative outcomes across groups or conditions. They serve to highlight tendencies or patterns observed in the data, such as the greater likelihood of a treatment effect in a specific group. Similarly, phrase frames like *were found * the (in), found in the (were),* and *was * as a (identified)* are often employed to present observations and identify notable clinical or statistical findings. These frames make it easier for readers to quickly grasp the core results of a study.

When discussing statistical outcomes, phrase frames such as *no significant differences * (were), no significant * were (differences), no significant * between (difference), no significant * between (correlation)*, and *no significant differences * (in)* are used to indicate that differences or associations did not reach statistical significance. These phrase frames are essential in academic writing as they help avoid overstatement of results and reinforce a cautious interpretation of data. On the other hand, frames like *a significant * in (reduction), significant differences between * (the)*, and *significant * between the (differences)* are used when the data show meaningful effects or relationships that warrant emphasis.

Interpretative or clinical recommendation frames such as *"it is * that (recommended), on the * of (basis), on the * of (results), and suitable for * with (patients)* help translate findings into actionable suggestions for practice. These phrase frames support the movement from data to real-world application, which is especially important in treatment planning and patient care. Likewise, phrase frames like *for * with a (patients), in this study (used),* and *** one of the * (most)* provide context for how the study was conducted and its implications for broader clinical populations.

A substantial number of phrase frames are used to describe anatomical details, measurements, or group characteristics. These include *the * of the*

*(results), the * of the (position), the * of the (stability), the * of this (findings), of gingival recession (frequency), in the * of (range), in the * of (level), within the * of (range)*, and *within the * of (limitations).* Such phrase frames are essential in ODO, where specific dental and skeletal parameters are key to diagnosis and outcome evaluation.

Other phrase frames describe particular anatomical sites or dental features, such as *difference between the * (groups), facial vertical height (increased), facial vertical height (decreased), in the * group (L), of the * second (upper), in the * sectors (anterior), to the * midline (facial), in the * arch (mandibular), of the * population (study), of * tooth mobility (physiologic), the * crown height (clinical)*, and *"to the * line (HPC)*. These phrase frames help define spatial and anatomical relationships critical to interpreting the study's clinical relevance. Similarly, phrase frames, including *the HPC line (crossing), and lateral incisor (central), incisors and canines (central), * and lateral incisors (central),* and *of the anterior (overbite),* reflect detailed references to dental morphology and alignment.

Furthermore, patient-centered and esthetic outcomes are commonly addressed using phrase frames, such as *satisfaction with * (aesthetics)* and *face-to-face interaction with * (the)*, which indicate the subjective dimensions of orthodontic treatment success. These aspects have become increasingly important in evaluating the overall impact of care. Additional phrase frames, such as *the * posterior teeth (upper), the * anterior teeth (maxillary), the * anterior teeth (lower), the * and lateral (central), between * and lateral (central), the * dentition group (mixed), the * central incisors (upper), first or second * (permanent), the * dental arch (maxillary)*, and *the * strong anchorage (two),* offer precise references to dental elements involved in treatment planning and outcomes.

In summary, phrase frames such as those listed above play a central role in ODO RA conclusions. They support the structured presentation of statistical results, the identification of anatomical and clinical features, and the communication of treatment outcomes. Their repeated use across academic publications contributes to a shared professional language that enhances both the clarity and reliability of research communication in these sub-disciplines.

## 6.6 Chapter Summary

This chapter provided the results and discussion of a contrastive analysis of move-step structure and phrase frames of English RA sections in the two sub-disciplines of Dentistry. The phrase frames appeared more frequently in ODO than OMS in the English

Dentistry RA sections. The findings from this chapter showed the answers for Research Questions 3 and 4 in the current study.

# CHAPTER 7
# CONCLUSION

As illustrated in Figure 7.1, this final chapter provides comprehensive conclusions to the current study. To begin with, it presents a summary of major findings, highlighting the key results and their significance in relation to the research questions. It also discusses the pedagogical implications, outlining how the findings can inform and improve teaching practices, curriculum development, and educational policy. Additionally, this chapter acknowledges the limitations of the study that may have influenced the results, thereby providing transparency and context. Finally, it offers recommendations for future research, suggesting directions for further investigation to deepen understanding and address the gaps identified in the current study.

## 7.1 Major Findings

Analyzing a whole RA sections in terms of move-step structure and phrase frame usage across two sub-disciplines of Dentistry is valuable for understanding both the shared and sub-discipline-specific conventions of academic writing within the field. This comprehensive approach allows researchers and educators to uncover how each section, e.g., Introduction, Methods, Results, Discussion, and Conclusion, is strategically structured to fulfill distinct communicative purposes, while also revealing how linguistic patterns such as phrase frames support the realization of these functions. By comparing sub-disciplines, such as OMS and ODO, the analysis highlights differences in rhetorical preferences, levels of lexical density, and disciplinary expectations, which can influence how knowledge is presented and interpreted. These insights are particularly beneficial for guiding novice writers, postgraduate students, and non-native English speakers in producing more effective, genre-appropriate texts that align with the rhetorical norms of their specific dental disciplines. Furthermore, such analysis can inform genre-based pedagogy and materials development tailored to the distinct writing needs of different research communities within Dentistry.

With consisting of 4 layers of analysis, underpinned by the ESP genre approach, this study aims to analyze the move-step structure, phrase frames, and their contrastive features between two sub-disciplines. The key findings from each layer of analysis are presented in succession.

### 7.1.1 Moves, Steps and Their Structure of the Whole English RA Sections in the Two Sub-disciplines of Dentistry

The first layer of analysis in the current study is the exploration of the moves, steps and their structure of the OMS and ODO RA Introduction, Methods, Results, Discussion, and Conclusion sections. The findings from this study are combined to formulate a framework of Dentistry English RA sections between the two sub-disciplines, as presented in Table 7.1.

**Table 7.1** The Proposed Framework of RA Sections in the Two Sub-disciplines of Dentistry

| |
|---|
| **Introduction** |
| Move 1: *Announcing the importance of the field* |
| M1S1: *Claiming the centrality of the topic* |
| M1S2: *Making topic generalizations* |
| M1S3: *Reviewing previous research* |
| *M1S4: *Generalizations from previous studies* |
| Move 2: *Preparing for the present study* |
| M2S1: *Indicating a gap* |
| M2S2: *Showing the problems* |
| M2S3: *Presenting positive justification* |
| Move 3: *Introducing the present study* |
| M3S1: *Stating purpose(s)* |
| *M3S2: *Presenting hypotheses* |
| *M3S3: *Introducing methods* |
| **Methods** |
| **Move 4: *Describing data-collection procedure*** |
| M4S1: *Ethical considerations* |
| M4S2: *Indicating the data* |
| M4S3: *Indicating criteria for data collection* |
| **Move 5: *Describing experimental procedures*** |
| M5S1: *Defining variables* |
| M5S2: *Recounting methods/ experimental process* |
| *M5S3: *Indicating criteria for success.* |
| **Move 6: *Describing data-analysis procedures*** |
| M6S1: *Indicating process of data classification.* |
| M6S2: *Recounting analytical instrument/procedure* |
| M6S3: *Indicating modification to instrument/procedure* |
| *M6S4: *Indicating statistical significance* |
| **Results** |
| ***Move 7: *Indicating data characteristics*** |
| **Move 8: *Reporting the findings*** |
| M8S1: *Stating the outcomes* |
| M8S2: *Stating figures or tables* |
| M8S3: *Reviewing/comparing to previous work* |
| **Move 9: *Stating comments on the results*** |
| *M9S1: *Comparing the experimental and control group* |
| *M9S2: *Indicating statistical tests* |
| M9S3: *Making generalizations or interpretations of the results* |
| **Discussion** |
| ***Move 10: *Indicating aims of study*** |
| **Move 11: *Highlighting research Outcomes*** |
| M11S1: *Stating outcomes* |
| M11S2: *Interpreting the outcome* |
| M11S3: *Indicating significance of the outcome* |
| M11S4: *Contrasting present and previous outcomes* |
| **Move 12: *Stating limitations of the study*** |
| M12S1: *Limitations about the findings* |
| M12S2: *Limitations about the methodology* |
| M12S3: *Limitations about the claims made* |
| **Move 13: *Stating research conclusions*** |

| |
|---|
| *M13S1: *Evaluating the study* |
| *M13S2: *Deductions from the research* |
| M13S3: *Stating future studies* |
| **Conclusion** |
| **Move 14: *Summarizing the main findings*** |

Note: Move or step with * means a new move or step identified for the Results sections in the two sub-disciplines of Dentistry.

From Table 7.1, there are 14 moves and 37 steps in the two sub-disciplines of Dentistry. Specifically, the moves between the two sub-disciplines were the same. However, 36 steps were found in OMS while 35 were in ODO, which indicates a slight difference between the two sub-disciplines.

Based on the Kanoksilapatham's (2005) framework, in the RA Introduction section, there were 3 moves and 10 steps in OMS while there were 3 moves and 11 steps in ODO. New steps in this section were M2S2: *Showing the problems* and M3S4: *Stating the value of present research*. Based on Nwogu's (1997) framework, in the RA Methods section, 3 moves and 10 steps occurred in the two sub-disciplines. A new step in this section was M4S1: *Ethical considerations and Indicating statistical significance.* Besides, M5S2: *Recounting methods/ experimental process* was modified to suit the communicative purposes in this step.

Based on Davis's (2020) framework in the RA Results section, 3 moves and 6 steps appeared in the two sub-disciplines. Two new moves were Move 7: *Indicating data characteristics* and M9S1*: Comparing the experimental and control group.* Moreover, Move 8: *Reporting the findings* and M9S2: *Indicating statistical tests* were modified in the current study. Based on Kanoksilapatham's (2005) framework in the RA Discussion section, 4 moves and 10 steps were found in OMS whereas 4 moves and 9 steps were in ODO. New moves and steps in this section were Move 10: *Indicating aims of study*, Move 12: *Stating limitations of the study,* M13S1*: Evaluating the study,* and M13S2: *Deductions from the research.* Based on Yang and Allison's (2003) framework in the RA Conclusion section, there was only one move in OMS and ODO.

### 7.1.2 Phrase Frames of the Whole English RA Sections in the Two Sub-disciplines of Dentistry

The second layer of analysis in the current study is the examination of the phrase frames in terms of structural and functional categories of the Introduction, Methods, Results, Discussion, and Conclusion sections of English RAs in OMS and ODO illustrated in Table 7.2.

**Table 7.2 Phrase Frames Types in the Structural and Functional Categories**

| Categories | Verb-based phrase frames | Other-content-word phrase frames | Function-word phrase frames | Total |
|---|---|---|---|---|
| **Structural categories** | | | | |
| No. of phrase frames | 63 | 143 | 22 | 228 |
| **Functional categories** | | | | |
| | **Referential phrase frames** | **Stance phrase frames** | **Discourse organizing phrase frames** | **Total** |
| No. of phrase frames | 169 | 27 | 32 | 228 |

In the present study, a total of 228 phrase frames were identified across the RA sections in the two sub-disciplines of Dentistry. Drawing on the structural analysis proposed by Gray and Biber (2013), there were 143 other-content-word phrase frames, 63 verb-based phrase frames, and 22 function-word phrase frames. In terms of functional analysis, as proposed by Simpson-Vlach and Ellis (2010), referential types were the most frequently observed (169 phrase frames), followed by discourse-organizing types (32 phrase frames), and stance types (27 phrase frames).

In the Introduction sections, the structural categories comprised 13 verb-based, 43 other-content-word, and 8 function-word phrase frames. Functionally, 47 referential, 5 stance, and 10 discourse-organizing phrase frames were identified. In the Methods sections, 26 verb-based, 86 other-content-word, and 15 function-word phrase frames were observed in the structural categories. The functional analysis revealed 100 referential, 8 stance, and 19 discourse-organizing phrase frames.

The Results sections included 40 verb-based, 88 other-content-word, and 19 function-word phrase frames under the structural classification, while the functional categories comprised 119 referential, 12 stance, and 15 discourse-organizing phrase frames. In the Discussion sections, 60 verb-based, 136 other-content-word, and 22 function-word phrase frames were identified structurally. Functionally, this section included 166 referential, 26 stance, and 26 discourse-organizing phrase frames. In the Conclusion sections, the structural categories consisted of 6 verb-based, 34 other-content-word, and 8 function-word phrase frames. The functional distribution included 40 referential, 4 stance, and 4 discourse-organizing phrase frames.

### 7.1.3 A Contrastive Analysis of Moves and Steps and Phrase Frame of the Whole English RA Sections in the Two Sub-disciplines of Dentistry

The third and fourth layer of analysis in the current study are the sub-disciplinary contrastive analysis of moves, steps and their structure as well as the phrase frames of the Introduction, Methods, Results, Discussion, and Conclusion sections of English RAs in OMS and ODO presented in Table 7.3.

**Table 7.3 Findings on a Contrastive Analysis of Moves and Steps and Phrase Frame of the Whole English RA Sections in the Two Sub-disciplines of Dentistry**

| Sections | Similarities | | Differences | |
|---|---|---|---|---|
| | | Move-step Structure | | |
| | OMS | ODO | OMS | ODO |
| Introduction | M1S3 | | M2S3, M3S3 | M2S2, M3S2 |
| Methods | Move 4 and Move 5 | | M4S2 | M4S3 |
| Results | M8S1 | | Moves 6 and 7 | |
| Discussion | Move 11 and Move 12 | | Move 10 | |
| Conclusion | Move 14 | | No differences | |
| | | Phrase Frames | | |
| Introduction | 17 | 237 | 258 | |
| Methods | 48 | 205 | 258 | |
| Results | 42 | 93 | 258 | |
| Discussion | 47 | 458 | 517 | |
| Conclusion | 3 | 29 | 68 | |

In the current study, the findings showed both similarities and differences in the moves, steps, and their structure as well as phrase frame usage between the two sub-disciplines. Similarities were especially notable in the certain moves and steps, including M1S3 in the Introduction section, Moves 4 and 5 in the Methods section, M8S1 in the Results section, Moves 11 and 12 in the Discussion, and Move 14 in the Conclusion. These commonalities reflect the shared conventions of academic writing, where the progression from background to methodology, results, discussion, and conclusion follows established norms.

Besides, both corpora showed frequent use of phrase frames in the Introduction, Methods, Results, and Discussion sections, indicating a strong reliance on conventional language structures to present complex information clearly. For instance, there were 17 phrase frames in the Introduction section, 48 phrase frames in the Methods section, 42 phrase frames in the Results section, 47 in the Discussion sections, showing consistency in linguistic patterning across the sub-disciplines.

Furthermore, several differences emerged in terms of the moves, steps and their structure. In the Introduction section, variations in M2S3 and M3S3 in OMS versus M2S2 and M3S2 in ODO suggest differing approaches to contextualizing research. The Methods section showed differences in M4S2 and M4S3 in ODO, while Moves 6 and 7 in the Results section, and Move 10 in the Discussion section, also diverged between the two sub-disciplines. These distinctions may reflect different rhetorical priorities or audience expectations. Notably, the Conclusion section exhibited no variations, reinforcing its typically uniform function across sub-disciplines.

Finally, phrase frame usage was consistently higher in ODO than in OMS across all RA sections. For example, ODO featured 258 phrase frames in both the Introduction and Results, significantly more than OMS. This suggests a greater density of formulaic expressions in ODO, which could indicate stronger adherence to academic conventions or a higher level of lexical sophistication. Overall, the findings highlight both the stability of academic genre structures and the nuanced variability in how writers realize them (Alsharif, 2022; Xuo, 2025).

## 7.2 Implications of the Current Study

### 7..2.1 Theoretical Implications

The findings of this study demonstrate that both rhetorical structure (i.e., moves and steps) and lexico-grammatical patterning (i.e., phrase frames) in research article sections are not uniform between the two sub-disciplines but are instead shaped by the distinct communicative purposes and epistemological orientations of the OMS and ODO fields.

From a genre-theoretical perspective, particularly grounded in Swales's (1990, 2004) genre analysis framework, the move-step structures identified across the sections (e.g., Introduction, Methods, Results, Discussion, and Conclusion) reveal both shared and divergent rhetorical functions. While a core rhetorical skeleton is maintained between the two sub-disciplines, reflecting the broader genre conventions of scientific research writing, variation in step realization and move frequency suggests discipline-specific genre instantiations. For example, OMS articles tended to prioritize moves related to clinical justification and procedural explanation, while ODO articles showed more elaborate steps in methodological detail and hypothesis grounding.

Complementing this structural analysis, the phraseological investigation of phrase frames highlights how recurrent phrase frames serve both structural (e.g., signaling stages of argument) and functional (e.g., hedging, evaluating, referring to literature) purposes. The functional categorization of these phrase frames aligns with Hyland's (2008) metadiscourse model, where the prevalence of certain frames in OMS versus ODO reflects differing levels of stance-taking, engagement, and self-positioning strategies.

The contrastive findings indicate that phraseological and rhetorical choices are not merely stylistic preferences but are inherently linked to the ways knowledge is constructed, validated, and communicated in each sub-discipline. This supports the theoretical claim that academic genres are not static templates but are dynamically shaped by disciplinary culture, research practices, and audience expectations.

Consequently, this study contributes to genre theory by reinforcing the view that academic writing is a socially situated practice, where rhetorical moves and lexical frames co-construct meaning in discipline-specific ways. It underscores the importance of a multi-dimensional approach, combining move-step analysis and phrase frame investigation-for capturing the complexity and variability of genre realization across academic sub-fields.

**7.2.2 Pedagogical Implications**

The key findings obtained from the 4 strata analysis conducted in this study offer several pedagogical implications for learners, instructors, educational administrators, policymakers, journal editors, and RA reviewers, not only in Viet Nam but also the wider contexts, working in the field of Dentistry. These implications arise from the genre-based insights uncovered in the analysis of the RA sections within the two sub-disciplines and pertain to the rhetorical structure, phrase frame resources, and contrastive features identified in the corpora.

Firstly, the move-step structure framework developed in this study can serve as a valuable pedagogical tool for students in Viet Nam and other countries, particularly those aiming to publish academic work in international journals. By providing a systematic representation of how experienced writers organize their RAs according to moves and steps, the framework helps students better understand the expected conventions of scientific writing in their respective fields. For instance, postgraduate students writing a Discussion section can follow the rhetorical pattern observed in OMS RAs, beginning with a concise summary of key findings, interpreting these findings in the context of prior studies, acknowledging study limitations, and suggesting avenues for future research. The clear identification of such patterns allows students to produce genre-appropriate and logically structured texts. For instructors, the framework can be used to design focused academic writing instruction that moves beyond grammar and cohesion to include discourse-level organization. This is particularly useful in academic contexts in Viet Nam and other contexts, where genre-based instruction is still emerging and many students are unfamiliar with the implicit conventions of disciplinary writing.

Secondly, the phrase frames identified in the structural and functional categories of each RA section offer essential lexico-grammatical models that can enhance writing pedagogy. These recurring multi-word expressions represent authentic language use by experienced writers and serve as models for students to learn from and use in their own writing. For example, in the Introduction section, phrase frames, e.g., *the * of this study* (aim), can help learners establish a clear research purpose,

review literature, and define a gap, which are core rhetorical functions of a well-written introduction. Teaching these phrase frames explicitly allows students to internalize common rhetorical functions while also developing fluency in discipline-specific language. Since phraseological competence is often underemphasized in academic writing instruction, its integration into writing pedagogy can improve both the accuracy and appropriateness of student writing. Moreover, these phrase frames can serve as the basis for targeted practice activities, writing templates, and genre-based materials tailored to the linguistic demands of scientific communication in OMS and ODO.

Finally, the contrastive analysis of move-step structure and phrase frames between the two sub-disciplines provide valuable insights for discipline-specific writing instruction. While both OMS and ODO RAs adhere to the general IMRDC structure, the study reveals meaningful rhetorical differences between the two fields due to the sub-disciplinary focuses. ODO RAs, for example, exhibited a greater tendency to include M3S4, reflecting a more future-oriented and theory-conscious writing style. OMS RAs, on the other hand, more frequently employed M6S4 and Move 9, consistent with the high value placed on clinical efficacy, precision, and statistical validation in surgical research. Such differences underscore the influence of disciplinary epistemologies and clinical objectives on rhetorical structuring. OMS research tends to be more procedural and intervention-based, requiring detailed justification of outcomes through statistical evidence and control group comparisons. In contrast, ODO research, often centered on diagnosis, treatment planning, and long-term management, tends to emphasize interpretive clarity and clinical applicability. These disciplinary variations highlight the necessity of tailoring academic writing instruction to reflect the specific rhetorical expectations of each sub-disciplines, rather than applying a one-size-fits-all approach. Instructors should make these differences explicit to students and help them adapt their writing strategies based on their research specialization. Additionally, such insights could inform the design of ESP curricula and professional development workshops aimed at improving scholarly communication skills among early-career researchers in Viet Nam and wider contexts.

For example, the teaching of the Introduction section is designed using a genre-based approach informed by the analysis of rhetorical moves, steps, their structure, and phrase frame usage across two sub-disciplines. In preparation, the teacher selects representative research article Introductions from both fields, developed a detailed move-step framework chart outlining typical moves, such as Move 1: *Announcing the importance of the field* (e.g., reviewing previous research ), Move 2*: Preparing for the present study* (e.g., gap identification), and Move 3:

*Introducing the present study* (e.g., purpose statement), and compiles a list of commonly used phrase frames for each move and step. During the text analysis stage, students examine model texts to identify how these moves and steps are organized, noting examples like M1S3: *Reviewing previous research* and M2S2: *Showing the problems*. They analyze phrase frames such as "It is widely recognized that…" (Move 1), "However, little attention has been paid to…" (Move 2), and "This study aims to address…" (Move 3), practicing by labeling moves and steps in sample paragraphs and matching phrase frames to their rhetorical functions. In the guided writing stage, students co-construct an Introduction paragraph on a shared research topic, deliberately using phrase frames like "previous studies have * (reported)" (Move 1), "have been * to (found)" (Move 2), and "* of this study (purpose)" (Move 3) to fulfill specific steps. The teacher provides feedback to help sequence moves logically and ensure phrase frames matched the intended rhetorical purpose. Finally, in the independent writing stage, students draft their own Introductions, integrating the move-step framework and using phrase frames to clearly present their research focus. This scaffolding approach supports students in mastering both the structural organization and linguistic conventions essential for effective academic Introductions.

## 7.3 Limitations and Recommendations of Future Research

While the present study provides valuable insights into the rhetorical structure and phrase frames of the RA sections between the two sub-disciplines of Dentistry, it is not without limitations. These limitations, in turn, offer fruitful directions for future research.

Firstly, the scope of the study is confined to only two sub-disciplines, i.e., Oral and Maxillofacial Surgery and Orthodontics and Dentofacial Orthopedics, within the broader field of Dentistry. Dentistry, as a major branch of Health Sciences, consists of twelve recognized sub-disciplines, each with its own research focus, methodological preferences, and disciplinary conventions. By limiting the analysis to only OMS and ODO, the current study provides a partial view of the practices of using rhetorical structure and phrase frames in the field. It is therefore recommended that future research extend this analysis to include the remaining ten sub-disciplines, such as Dental Anesthesiology, Dental Public Health, Endodontics, Oral and Maxillofacial Pathology, Oral and Maxillofacial Radiology, Oral Medicine, Orofacial Pain, Pediatric Dentistry, Periodontics, and Prosthodontics, among others. A broader investigation could help determine whether the move-step structures and phrase frames observed

in this study are consistent across the discipline or whether they vary in accordance with the communicative norms and epistemological orientations of each sub-field.

Secondly, the data for this study were drawn from six high-impact, peer-reviewed journals within the selected sub-disciplines. While these journals represent reputable sources of scholarly writing and set the standard for research communication in their respective areas, the findings may not be fully generalizable to journals of varying quality or impact. It is possible that journals with lower impact factors, or those published in different geographic or institutional contexts, may exhibit different rhetorical patterns or phraseological tendencies. As such, future research could broaden the data set to include a wider range of journals, both high-ranking and lower-ranking, in order to examine whether and how journal status influences the move-step structure and phrase usage in RA sections. This line of inquiry could also reveal whether more accessible or regionally published journals adopt more simplified or localized rhetorical strategies compared to globally prestigious outlets, thereby contributing to the understanding of how disciplinary discourse varies not only across sub-fields but also across publication tiers.

## 7.4 Concluding Remarks

A few notes should be made here before ending the whole study. The ESP genre analysis has expanded to the emerging yet overlooked discipline in the Dentistry discourse community. The phrase frames have been attested its applicability in the EAP/ESP/EDP teaching, learning, and research practice. The contrastive analysis of move-step structure and phrase frames in each RA section between
disciplines of Dentistry has provided useful resources to apply in th
contexts. Overall, the study has addressed all the significant findings
resarch questions in Chapter 1.

มหาวิทยาลัยเทคโนโลยีสุรนารี

# REFERENCES


Abdel-Malek, M. (2020). Empowering Arabic learners to make meaning: A genre-based approach. *System*, *94*, 1-11. https://doi.org/10.1016/j.system.2020.102329

Afshar, H. S., & Ranjbar, A. (2017). A comparative study of rhetorical moves adopted in research questions and Methods sections of Applied Linguistics research articles. *Journal of Research in Applied Linguistics, 8*(1), 46-71. https://doi.org/10.22055/RALS.2017.12612

Aksnes, D. W., & Sivertsen, G. (2019). A criteria-based assessment of the coverage of Scopus and Web of Science. *Journal of Data and Information Science*, *4*(1). 1-21. https://doi.org/10.2478/jdis-2019-0001

Alam, B. F., Najmi, M. A., Qasim, S. B., Almulhim, K. S., & Ali, S. (2021). A bibliometric analysis of minimally invasive Dentistry: A review of the literature from 1994 to 2021. *The Journal of Prosthetic Dentistry*, *130*(2), 179-186. https://doi.org/10.1016/j.prosdent.2021.09.023.

Alizadeh, E., & Afshari, E. (2017). A review on the applications of tissue Engineering in branches of Dentistry. *International Journal of Contemporary Dental & Medical Reviews*, *10*(6). 617-622. https://doi.org/10.15713/ins.ijcdmr.120

Alsharif, M. (2022). Rhetorical Move Structure in Business Management Research Article Introductions. *Journal of Language and Linguistic Studies*, *18*(4), 1268-1283

Alyousef, H. S. (2021a). A move structure model for Dentistry research article abstracts: A genre-based study of variations and similarities in eight Dentistry sub-disciplines. *Discourse and Interaction*, *14*(1), 25-52. https://doi.org/10.5817/DI2021-1-25

Alyousef, H. S. (2021b). Structure of research article abstracts in Political Science: A genre-based study. *SAGE Open*, *11*(*3*), 1-8. https://doi.org/10.1177/215824402110407.

Amirian, Z., Kassaian, Z., & Tavakoli, M. (2008). Genre analysis: An investigation of the discussion sections of Applied Linguistics research articles. *The Asian ESP Journal, 4*(1), 39-63.

American Dental Association. (2018). *National Commission on Recognition of Dental Specialties and Certifying Boards: Definitions of the recognized dental Specialties*. https://ncrdscb.ada.org/recognized-dental-specialties/

Amnuai, W., & Wannaruk, A. (2013). A move-based analysis of the Conclusion sections of research articles published in international and Thai journals. *3L: Southeast Asian Journal of English Language Studies*, *19*(2), 53-63.

Ang, L. H., & He, M. (2017). Multi-word sequences in learner corpora: A corpus analysis of lexical bundles. *Journal of Creative Practices in Language Learning and Teaching*, *5*(1), 19-33.

Appel, R., Geluso, J., & Feng, H. H. (2024). An examination of phrase-frames in L2 English academic writing: Exploring relationships with writing quality. *System, 123*, 103349.

Arsyad, S., & Adila, D. (2018). Using local style when writing in English: The citing behaviour of Indonesian authors in English research article introductions. *Asian Englishes, 20*(2), 170-185.

Artemeva, N. (2016). *Genre studies around the globe: Beyond the three traditions*. Trafford.

Atai, M. R., & Habibie, P. (2012). Genre analysis of applied linguistics research article introductions: Exploring sub-disciplinary variations. *Taiwan International ESP Journal, 4*(1), 25-44.

Aziz, R. A., Abas, N., Yusob, K. F., & Yusof, N. M. (2022). Genre analysis of risk management reports by an Islamic financial institution in Malaysia. *GEMA Online Journal of Language Studies*, *22*(2), 63-87. http://doi.org/10.17576/gema-2022-2202-04.

Balaji, S., & Balaji, P. (2018). *Textbook of Oral & Maxillofacial Surgery*. Elsevier Health Sciences.

Barabadi, E., Robatjazi, M. A., & Bayat, M. (2020). A phraseological examination of research articles in the field of Environment using key phrase frame. *Eurasian Journal of Applied Linguistics*, *6*(1), 81-100. https://doi.org/10.32601/ejal.710217

Bargiela-Chiappini, F., Nickerson, C., Planken, B. (2013). What is Business Discourse?. In F. Bargiela-Chiappini, C. Nickerson & B. Planken (Eds.), *Business Discourse: Research and Practice in Applied Linguistics* (pp.3-44). Palgrave Macmillan.

Barrow, J. M, & Khandhar, P. B. (2023). *Deontology*. StatPearls. https://www.ncbi.nlm.nih.gov/books/NBK459296/

Basturkmen, H. (2009). Commenting on Results in published research articles and master dissertations in language teaching. *Journal of English for Academic Purposes*, *8*(4), 241-251. https://doi.org/10.1016/j.jeap.2009.07.001

Basturkmen, H. (2012). A genre-based investigation of Discussion sections of research articles in Dentistry and disciplinary variation. *Journal of English for Academic Purposes, 11*(2), 134-144. https://doi.org/10.1016/j.jeap.2011.10.004

Baufreton, C., Chrétien, J. M., Moreau-Cordier, F., Moreau, F., Portefaix, H., Branchereau, H., Huez, J. F., Richard, I., & Saint-André, J. P. (2012). Assessment of scientific production after initial medical education at the Faculty of Medicine of Angers from 2002 to 2008. *Presse Medicale*, *41*(5), e213-219.

Bawarshi, A., & Reiff, M. (2010). *Genre: An introduction to history, theory, research, and pedagogy*. Parlor Press.

Bhatia, V. K. (1993). *Analysing genre: Language use in professional settings*. Longman.

Bhatia, V. K. (2004). *Worlds of written discourse: A genre-based view*. Bloomsbury Publishing.

Biber D. (1988). *Variation across speech and writing*. Cambridge University Press.

Biber, D. (2007). *Discourse on the move: Using corpus analysis to describe discourse structure*. John Benjamins.

Biber, D. (2009). A corpus-driven approach to formulaic language in English. *International Journal of Corpus Linguistics*, *14*, 275e311.

Biber D., & Conrad S. (2009). *Register, Genre and Style*. Cambridge University Press.

Biber D., & Conrad S. (2013). Introduction: Multi-dimensional analysis and the study of register variation. In S. Conrad & D. Biber (Eds.), *Variation in English: Multi-dimensional studies* (pp. 3–12). Routledge.

Biber, D., & Gray, B. (2016). *Grammatical complexity in academic English: Linguistic change in writing*. Cambridge University Press. https://doi.org/10.1017/CBO9780511920776

Biber, D., & Kurjian, J. (2007). Towards a taxonomy of web registers and text types: A multidimensional analysis. *Language and Computers*, *59*, 109.

Biber, D., Conrad, S., & Cortes, V. (2004). If you look at ...: Lexical bundles in university teaching and textbooks. *Applied Linguistics*, *25*, 371-405.

Binderup, M. L., Ete, N. E., Ovesen, C., Madsen, M. M., Andersen, J. B., & Aabye, M. G. (2012). Research training is inadequate among future medical doctors. *Ugeskrift for laeger*, *174*(43), 2624-2627.

Bondi, M. (2010). Arguing in economics and business discourse: Phraseological tools in research articles. *Bulletin Suisse de Linguistique Appliqué*, *2*, 219–234.

Boonyuen, T., & Tangkiengsirisin, S. (2018). The investigation of the textual organization of research article discussion sections in the field of Second language writing. *Arab World English Journal, 9*(1), 111-128.

Bowman, M., Payne, R., Vinall-Collier, K., & Tugnait, A. (2022). Conversation, discourse and linguistic analysis in dental communication: Valuable but under-used approaches. *British Dental Journal*, *232*(12), 875-878.

Brett, P. (1994). A genre analysis of the results section of Sociology articles. *English for Specific Purposes, 13*(1), 47-59. https://doi.org/10.1016/0889-4906(94)90024-8

Bridgeman, B., & Carlson, S. (1983). *Survey of academic writing tasks required of graduate and undergraduate foreign students*. Princeton.

Bell, R. B. (2007). The role of Oral and Maxillofacial Surgery in the trauma care center. *Journal of Oral and Maxillofacial Surgery*, *65*(12), 2544-2553.

Bruce, I. (2009). Results sections in Sociology and Organic chemistry articles: A genre analysis. *English for Specific Purposes, 28*(2), 105-124. https://doi.org/10.1016/j.esp.2008.12.005

Carli, A. & Ammon, U. (2007). *Linguistic inequality in scientific communication today*. John Benjamins.

Carlson, D. M. (2000). A corpus-linguistic investigation of dental English. *Journal of Dental Education*, *64*(4), 283-293.

Carbonaro, M., King, S., Taylor, E., Satzinger, F., Snart, F., & Drummond, J. (2008). Integration of e-learning technologies in an interprofessional health science course. *Medical Teacher*, *30*(1), 25-33. https://doi.org/10.1080/01421590701753450

Casal, J. E., & Kessler, M., (2020). Form and rhetorical function of phrase-frames in promotional writing: A corpus- and genre-based analysis. *System, 95*, 102370. https://doi.org/10.1016/j.system.2020.102370.

Casal, J. E., & Yoon, J. (2023). Frame-based formulaic features in L2 writing pedagogy: Variants, functions, and student writer perceptions in academic writing. *English for Specific Purposes*, *71*, 102-114.

Casale, M., Moffa, A., Vella, P., Sabatino, L., Capuano, F., Salvinelli, B., ... & Salvinelli, F. (2016). Hyaluronic acid: Perspectives in Dentistry: A systematic review. *International journal of immunopathology and pharmacology*, *29*(4), 572-582.

Chaar, M. S., Passia, N., Becker, M., & Kern, M. (2024). Long-term clinical outcome of three-unit fixed-fixed posterior zirconia ceramic inlay-retained FDPs with a modified design. *Journal of Dentistry*, *140*, 104781. https://doi.org/10.1016/j.jdent.2023.104781

Chahal, D. (2014). Research article introductions in Cultural Studies: A genre analysis exploration of rhetorical structure. *Journal of Teaching English for Specific and Academic Purposes, 2*(1), 1-20.

Chang, C. F., & Kuo, C. H. (2011). A corpus-based approach to online materials development for writing research articles. *English for Specific Purposes*, *30*(3), 222-234. https://doi.org/10.1016/j.esp.2011.04.001

Changpueng, P., & Patpong, P. (2021). Genre analysis of minutes of meetings conducted in English by Thai engineers. *Indonesian Journal of Applied Linguistics*, *11*(1), 134-145.

Chaudron, L. H., Anson, E., Bryson Tolbert, J. M., Inoue, S., & Cerulli, C. (2021). Meeting the needs of Mid-Career women in academic medicine: One model career development program. *Journal of Women's Health, 30*(1), 45-51.

Chen, J., & Zhang, P. (2025). Phrase frames in rhetorical moves of economic research article discussions. *Southern African Linguistics and Applied Language Studies*, *44*, 1–15. https://doi.org/10.2989/16073614.2024.2353720

Cheng, F. C., Lee, M. C., & Chiang, C. P. (2024). Geographical distribution of the practicing dentists based on their graduation schools and practice locations in Taiwan in 2022. *Journal of Dental Sciences*, *19*(1), 732.

Chien, S. C. (2019). Writing for scholarly publication in English for Taiwanese researchers in the field of English teaching. *Sage Open*, *9*(3), 1-15. https://doi.org/10.1177/2158244019870187

Chinaprayoon, W. (2016). *Move Analysis of Introduction Section in Applied Linguistics Research Articles*. Doctoral Dissertation, Burapha University.

Chugh, T., Jain, A. K., Jaiswal, R. K., Mehrotra, P., & Mehrotra, R. (2013). Bone density and its importance in Orthodontics. *Journal of Oral Biology and Craniofacial Research*, *3*(2), 92-97. https://doi.org/10.1016/j.jobcr.2013.01.001

Chuyen, N., Du, V., Ba, N., Long, D. D., & Son, H. A. (2021). The prevalence of dental caries and associated factors among secondary school children in rural highland Vietnam. *BMC Oral Health*, *21*(1), 349. https://doi.org/10.1186/s12903-021-01704-y

Connor, U. (1996). *Contrastive Rhetoric: Cross-Cultural Aspects of Second-Language Writing*. Cambridge University Press.

Connor, U. (2002). New directions in contrastive rhetoric. *TESOL Quarterly*, *36*(4), 493-510.

Connor, U. (2004). Intercultural rhetoric research: Beyond texts. *Journal of English for Academic Purposes*, *3*(4), 291-304.

Coe, R. M. (2002). The new rhetoric of genre: Writing political briefs. In A. M. Johns (Ed), *Genre in the classroom* (pp. 195-205). Lawrence Erlbaum.

Cooley, L., & Lewkowitz, J. (2003). *Dissertation writing in practice: Turning ideas into text*. Hong Kong University Press.

Coe, R. M., & Freedman, A. (1998). Genre theory: Australian and North American approaches. In M. Kennedy (Ed), *Theorizing composition* (pp. 136-147). Greenwood Publishing Company.

Cortes, V. (2004). Lexical bundles in published and student disciplinary writing: Examples from History and Biology. *English for Specific Purposes*, *23*(4), 397–423. https://doi.org/10.1016/j.esp.2003.12.001

Cortes, V. (2023). Lexical bundles and phrase frames. In M. Kessler & C. Polio (Eds.), *Conducting Genre-Based Research in Applied Linguistics* (pp. 105-126). Routledge.

Coxhead, A. (2000). A new academic word list. *TESOL Quarterly*, *34*(2), 213–238. https://doi.org/10.2307/3587951

Coxhead, A., & Byrd, P. (2007). Preparing writing teachers to teach the vocabulary and grammar of academic prose. *Journal of Second Language Writing*, *16*, 129e147.

Coxhead, A., & Nation, P. (2001). The specialised vocabulary of English for academic purposes. In J. Flowerdew & M. Peacock (Eds), *Research perspectives on English for academic purposes* (pp. 252–267). Cambridge University Press. https://doi.org/10.1017/CBO9781139524766.020

Cortes, V. (2013). The purpose of this study is to: Connecting lexical bundles and moves in research article Introductions. *Journal of English for Academic Purposes*, *12*, 33-43.

Cotos, E., Huffman, S., & Link, S. (2015). Furthering and applying move/step constructs: Technology-driven marshalling of Swalesian genre theory for EAP pedagogy. *Journal of English for Academic Purposes, 19*, 52-72. https://doi.org/10.1016/j.jeap.2015.05.004

Crawford, J. M., Adami, G., Johnson, B. R., Knight, G. W., Knoernschild, K., Obrez, A., Patson, P., Punwani, I., Zaki, A. & Licari, F. W. (2007). Curriculum restructuring at a North American dental school: Rationale for change. *Journal of Dental Education*, *71*(4), 524–531.

Crossley, S. A., Kyle, K., & McNamara, D. S. (2017). Sentiment Analysis and Social Cognition Engine (SEANCE): An automatic tool for sentiment, social cognition, and social-order analysis. *Behavior Research Methods*, *49*, 803-821, https://doi.org/10.3758/s13428-016-0743-z

Cunningham, K. J. (2017). A phraseological exploration of recent Mathematics research articles through key phrase frames. *Journal of English for Academic Purposes, 25*, 71-83. https://doi.org/10.1016/j.jeap.2016.11.005.

Dalimunte, A. A., & Pramoolsook, I. (2020). Genres classification and generic structures in the English language textbooks and Economics and Islamic Economics in an Indonesian university. *LEARN Journal: Language Education and Acquisition Research Network Journal*, *13*(1), 1-19.

Davis, R. H. (2020). Moves and Steps in the IMRD Sections of Medical Research Articles. *Taiwan International ESP Journal, 11*(1), 23-39.

De Costa, P. I., & Jou, Y. S. (2016). Unpacking the ideology of cosmopolitanism in language education: Insights from Bakhtin and Systemic Functional Linguistics. *Critical Inquiry in Language Studies*, *13*(2), 73-97.

Díaz, J., Pérez, J., Gallardo, C., & González-Prieto, A. (2023). Applying Inter-Rater Reliability and Agreement in collaborative Grounded Theory studies in Software Engineering. *Journal of Systems and Software*, *195*, 111520.

Dillon J. (2021). Utilitarian vs deontological ethics in Medicine and Dentistry. *Oral surgery, oral medicine, oral pathology and oral radiology*, *132*(6), 617–618. https://doi.org/10.1016/j.oooo.2021.08.025

Dobakhti, L. (2013). Commenting on findings in qualitative and quantitative research articles' Discussion sections in Applied Linguistics. *International Journal of Applied Linguistics and English Literature, 2*(5), 145-154.

Dong, J., & Lu, X. (2020). Promoting discipline-specific genre competence with corpus-based genre analysis activities. *English for Specific Purposes, 58*, 138-154. https://doi.org/10.1016/j.esp.2020.01.005

Dudley-Evans, T., & St John, M. J. (1998). *Developments in English for specific purposes*. Cambridge University Press.

Duracinsky, M., Lalanne, C., Rous, L., Dara, A.F., Baudoin, L., Pellet, C., Descamps, A., Péretz, F., Chassany, O. (2017). Barriers to publishing in Biomedical journals perceived by a sample of French researchers: Results of the DIAzePAM study. *BMC Medical Research*, *17*, 1-10. https://doi.org/10.1186/s12874-017-0371-z

Duruk, E. (2021). *An analysis of moves the introduction sections of research articles written by Turkish scholars.* Eğitim Yayinevi.

Durrant, P. (2018). Formulaic language in English for academic purposes. In A. Siyanova-Chanturia & A. Pellicer-Sánchez (Eds.), *Understanding formulaic language: A second language acquisition perspective* (pp. 211-227). Routledge.

Ebrahimi, B., & Weisi, H. (2019). Genre variation in the introduction of scientific papers in Iranian and international Computer Science journals. *Issues in Language Teaching, 8*(2), 51-82.

Fang, Z. H. (2021). *Demystifying Academic Writing: Genres, Moves, Skills, and Strategies*. Routledge.

Fakhruddin, W. F. W. W., & Hassan, H. (2015). A review of genre approaches within linguistic traditions. *LSP International Journal*, *2*(2), 53-68.

Fairclough, N. (2006). Genres in political discourse. *Encyclopedia of language and linguistics*, *5*, 32-38.

Farnia, M., & Barati, S. (2017). Writing introduction sections of research articles in Applied Linguistics: Cross-linguistic study of native and non-native writers. *Indonesian Journal of Applied Linguistics, 7*(2), 486-494.

Ferguson, G., Pérez - Llantada, C., and Plo, R. (2011). English as an international language of scientific publication: A study of attitudes. *World Englishes, 30*, 41 – 59

Fletcher, W. H. (2011). *KfNgram*. USNA.

Flowerdew, J. (1999a). Writing for scholarly publication in English: The case of Hong Kong. *Journal of Second Language Writing*, *8*, 123-145

Flowerdew, J. (1999b). Problems in writing for scholarly publication in English: The case of Hong Kong. *Journal of Second Language Writing*, *8*, 243-264.

Flowerdew, L. (2000). Using a genre-based framework to teach organizational structure in academic writing. *ELT Journal*, *54*(4), 369-378.

Flowerdew, J., & Li, Y. (2009). English or Chinese? The tradeoff between local and international publication among Chinese academics in the humanities and social sciences. *Journal of Second Language Writing*, *18*, 1-16.

Flowerdew, J. (2012). English for research publication purposes. In J. Flowerdew (Ed), *The handbook of English for specific purposes* (pp. 301-321). Wiley-Blackwell.

Flowerdew, J., & Peacock, M. (2001). Issues in EAP: A preliminary perspective. In J. Flowerdew & M. Peacock (Eds.), *Research perspectives on English for Academic Purposes* (pp. 8–24). Cambridge University Press.

Frodeman, R. (2017). *The Oxford handbook of interdisciplinary*. Oxford University Press.

Fuster-Marquez, M., & Pennock-Speck, B. (2015). Target frames in British hotel websites. *International Journal of English Studies*, *15*, 51-69

Gao, S., & Pramoolsook, I. (2022). Move-step structure of the results and discussion section of Electronic Engineering research articles written by Chinese and Thai researchers. *Journal of Teaching English for Specific and Academic Purposes*, *9*(4), 725-739. https://doi.org/10.22190/JTESAP2104725G

Gao, S., & Pramoolsook, I. (2023). A cross-cultural move analysis of Electronic Engineering research article Introductions: The case of Chinese, Thai, and native English scholarly writers. *Ampersand*, *10*, 100106.

García-Espona, I., García-Espona, E., Alarcón, J. A., & Fernández-Serrano, J. (2023). European inequalities and similarities in officially recognized dental specialties. *BMC oral health*, *23*(1), 280. https://doi.org/10.1186/s12903-023-02987-z

Garg, N., & Garg, A. (2015). *Textbook of Operative Dentistry*. Jaypee Brothers Medical.

Giang, P. N., Kelly, M., Nhung, N. T. T., & Sarma, H. (2022). Continuing medical education programs for primary care physicians from remote locations of Vietnam: A needs assessment. *BMC Medical Education*, *22*(1), 279. https://doi.org/10.1186/s12909-022-03336-4

Gisev, N., Bell, J. S., & Chen, T. F. (2013). Interrater agreement and interrater reliability: Key concepts, approaches, and applications. *Research in Social and Administrative Pharmacy, 9*(3), 330-338. https://doi.org/10.1016/j.sapharm.2012.04.004

Golparvar, S. E., & Barabadi, E. (2020). Key phrase frames in the discussion section of research articles of higher education. *Lingua, 236*, 1-15. https://doi.org/10.1016/j.lingua.2020.102804

Goodrich, P. (1990). *Legal discourse: Studies in linguistics, rhetoric and legal analysis*. Springer.

Goodwin, L. D. (2001). Interrater agreement and reliability. *Measurement in Physical Education and Exercise Science, 5*(1), 13-34.

Gray, B., & Biber, D. (2013). Lexical frames in academic prose and conversation. *International Journal of Corpus Linguistics*, *18*, 109e136.

Grabowski, L. (2015). Phrase frames in English pharmaceutical discourse: A corpus-driven study of intradisciplinary register variation. *Research in Language*, *13*, 266-291.

Gunnarsson, B. L. (2009). *Professional Discourse*. Bloomsbury.

Gunnarsson, B. L., Bäcklund, I. and Andersson, B. (1995). Texts in European writing communities. In B. L. Gunnarsson and I. Bäcklund (Eds), *Writing in Academic Contexts* (pp. 30–53*)*. Uppsala University.

Gunnarsson, B. L. (2001). Swedish, English, French or German - the Language Situation at Swedish Universities. In U. Ammon (Ed.), *The Dominance of English as a Language of Science: Effects on Other Languages and Language Communities* (pp. 287-316). De Gruyter Mouton. https://doi.org/10.1515/9783110869484.287

Hamp-Lyons, L. (2011). English for academic purposes. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 89-105). Routledge.

Hardy, J. A., & Römer, U. (2013). Revealing disciplinary variation in student writing: A multidimensional analysis of the Michigan Corpus of Upper-level Student Papers (MICUSP). *Corpora*, *8*(2), 183–207. https://doi.org/10.3366/cor.2013.0040

Hawthorn, J. (1992). *A Concise Glossary of Contemporary Literary Theory*. Edward Arnold.

He, M., Ang, L. H., & Tan, K. H. (2021). A corpus-driven analysis of phrase frames in research articles on Business Management. *Southern African Linguistics and Applied Language Studies, 39*(2), 139-151.

Hendrawan, W., Sari, E. T., Krisnawati, E., & Darmayanti, N. (2022). Didactic Oriented Study: Move and transitivity analysis of Methods, Results, and Discussion Sections in Research Articles. *European Journal of Educational Research, 11*(3), 1259-1272.

Henry, A., & Roseberry, R. L. (1999). Raising awareness of the generic structure and linguistic features of essay introductions. *Language Awareness*, *8*(3-4), 190-200.

Hernandez, L. M., Rosenstock, L., & Gebbie, K. (2003). *Who will keep the public healthy? Educating public health professionals for the 21st Century*. National Academies Press.

Hjelm, T. (2014). Religion, discourse and power: A contribution towards a critical sociology of religion. *Critical Sociology*, *40*(6), 855-872.

Hoat, L. N., Dung, D. V., & Wright, E. P. (2007). Practicing doctors' perceptions on new learning objectives for Vietnamese medical schools. *BMC Medical Education*, *7*(1), 7-19. https://doi.org/10.1186/1472-6920-7-19

Holmes, R. (1997). Genre analysis, and the social sciences: An investigation of the structure of research article Discussion sections in three disciplines. *English for Specific Purposes, 16*(4), 321-337. https://doi.org/10.1016/S0889-4906(96)00038-5

Hosek, M. G., Chidester, A. B., Gelfond, J., & Taylor, B. S. (2022). Low Prevalence of COVID-19 Vaccine hesitancy in students across health science disciplines in Texas. *Vaccine: X, 10*, 100154.

Huang, D. (2014). Genre Analysis of Moves in Medical Research Articles. *Stylus*, *5*(1), 7-17.

Huang, J. C. (2010). Publishing and learning writing for publication in English: Perspectives of NNES PhD students in science. *Journal of English for Academic Purposes*, *9*, 33-44.

Hunston, S. (2002). *Corpora in applied linguistics*. Cambridge University Press.

Hussain, A., & Khan, F. A. (2014). History of Dentistry. *Archives of Medicine and Health Sciences*, *2*(1), 106-110. https://doi.org/10.4103/2321-4848.133850

Hutchinson, T., and Waters, A. (1987). *English for specific purposes: The role of the ESP teacher*. Cambridge University Press.

Hyland, K. (2002). Genre: Language, context, and literacy. *Annual Review of Applied Linguistics*, *22*(1), 113-135.

Hyland, K. (2004). *Disciplinary Discourses*. University of Michigan Press.

Hyland, K. (2008). As can be seen: Lexical bundles and disciplinary variation. *English for Specific Purposes*, *27*(1), 4-21. https://doi.org/10.1016/j.esp.2007.06.001

Hyon, S. (1996). Genre in three traditions: Implications for ESL. *TESOL Quarterly*, *30*(4), 693-722

Hyon, S. (2018). *Introducing genre and English for specific purposes*. Routledge

Ilyosovna, N. A. (2020). The importance of English language. *International Journal on Orange Technologies*, *2*(1), 22-24.

Jalilifar, A., Golgol, H., & Saidian, S. (2016). Research article introductions and literature reviews in Applied Linguistics: A genre-based study. *Journal of Applied Linguistics, 31*, 15-33. https://doi.org/10.26262/jal.v0i31.8289.

Jaroongkhongdach, W., Todd, R. W., Keyuravong, S., & Hall, D. (2012). Differences in quality between Thai and international research articles in ELT. *Journal of English for Academic Purposes*, *11*, 194-209.

Jin, B. (2018). Rhetorical differences in research article Discussion sections of high- and low-impact articles in the field of Chemical Engineering. *IEEE Transactions on Professional Communication, 61*(1), 65-76. https://doi.org/10.1109/TPC.2017.2747358

Johns, A. M (Ed.). (2002). *Genre in the Classroom: Multiple Perspectives*. Lawrence Erlbaum.

Johns, A. M. (2013). Rhetorical genre studies (RGS) and the teaching of EFL reading and writing–or genre is much more than text structure. In X. Deng. & R. Seow (Eds.), *Alternative pedagogies in the English language & communication classroom* (pp.1-8). CELC.

Kanoksilapatham, B. (2005). Rhetorical structure of Biochemistry research articles. *English for Specific Purposes, 24*(3), 269-292. https://doi.org/10.1016/j.esp.2004.08.003

Kanoksilapatham, B. (2007). Rhetorical moves in Biochemistry articles. In D. Biber, U. Connor, & T. A. Upton (Eds.), *Discourse on the move: Using corpus analysis to describe discourse structure* (pp. 73-119). John Benjamins.

Kanoksilapatham, B. (2012). In search of the generic identity of the Discussion section: Three engineering sub-disciplines. *Taiwan International ESP Journal, 4*(2), 1-26.

Kanoksilapatham, B. (2013). Generic characterization of Civil Engineering research article abstracts. *3L: The Southeast Asian Journal of English Language Studies*, *19*(3), 1-10.

Kanoksilapatham, B. (2015). Distinguishing textual features characterizing structural variation in research articles across three engineering sub-discipline corpora. *English for Specific Purposes, 37*, 74-86. https://doi.org/10.1016/j.esp.2014.06.008

Kanoksilapatham, B. (2023). Stand-alone Conclusion section in open-access research articles: Organizational structure. *Journal of Language and Education*, *9*(35), 79-89.

Kessler, J. S. (2017). Scattertext: a browser-based tool for visualizing how corpora differ. In *Proceedings of ACL-2017 system demonstrations* (pp. 85–90). Vancouver. https://doi.org/10.18653/v1/P17-4015

Khamkhien, A. (2014). Linguistic features of evaluative stance: Findings from research article Discussions. *Indonesian Journal of Applied Linguistics, 4*(1), 54-69.

Khansari, D. (2018). Comparison of rhetorical moves in the Methods sections of two disciplines. *The Asian ESP Journal, 14*(7.1), 163-192.

Khany, R., & Tazik, K. (2010). A comparative study of Introduction and Discussion sections of sub-disciplines of Applied Linguistics research articles. *Journal of Research in Applied Linguistics, 1*(2), 97-122.

Khany, R., & Tazik, K. (2010). A comparative study of Introduction and Discussion sections of sub-disciplines of Applied Linguistics research articles. *Journal of Research in Applied Linguistics, 1*(2), 97-122.

Khazaie, S., & Derakhshan, A. (2024). Extending embodied cognition through robot's augmented reality in English for medical purposes classrooms. *English for Specific Purposes*, *75*, 15-36

Khedri, M., & Basirat, E. (2022). Interactive metadiscourse in Dentistry research articles: Iranian vs non-Iranian academic writers. *Discourse and Interaction*, *15*(2), 77-100.

Kapila, S., Vora, S. R., Rengasamy Venugopalan, S., Elnagar, M. H., & Akyalcin, S. (2023). Connecting the dots towards precision orthodontics. *Orthodontics & Craniofacial Research*, *26*, 8-19.

Kim, M., Martin, J. R., Shin, G. H., & Choi, G. H. (2023). *Korean grammar: A systemic functional approach*. Cambridge University Press.

미라 김, 주은 이, (2023). Systemic Functional Grammar of Korean and its application to interpreting studies. In M. Kim & J. Lee (Eds.), *The Routledge Handbook of Korean Interpreting* (pp.226-241). Routledge. https://doi.org/10.4324/9781003349723

Kim, M., Qiu, X., & Wang, Y. A. (2024). Interrater agreement in genre analysis: A methodological review and a comparison of three measures. *Research Methods in Applied Linguistics*, *3*(1), 100097. https://doi.org/10.1016/j.rmal.2024.100097

Koester, A. (2012). English for occupational purposes. In C. A. Chapelle, *The Encyclopedia of Applied Linguistics* (pp.1-5). Blackwell.

Kostenko, V. (2018). How to incorporate academic writing pedagogy in undergraduate and postgraduate medical education. *WiadomoŚci Lekarskie*, *2*, 261–265.

Kraisriwattana, J., & Poonpon, K. (2021). A discourse analysis of speech structure from TED talks corpus. *KKU Research Journal (Graduate Studies) Humanities and Social Sciences*, *9*(2), 59-72.

Krippendorff, K. (2011). Agreement and information in the reliability of coding. *Communication Measures and Methods*, *5*(2), 93–112. https://doi.org/10.1080/19312458.2011.568376

Krippendorff, K., & Craggs, R. (2016). The reliability of multi-valued coding of data. *Communication Methods and Measures*, *10*(4), 181–198. https://doi.org/10.1080/19312458.2016.1228863

Lasekan, O. A., Salazar-Aguilar, P., Botto-Beytia, A. M., Boris, A., & Humanidades, N. D. C. S. (2022). Needs Analysis of Chilean Students of Dentistry for Dental English Course Development. *World Journal of English Language*, *12*(8), 162-171.

Lauer, J. M., & Asher, J. W. (1988). *Composition research: Empirical designs*. Oxford University Press.

Le, T. N., & Harrington, M. (2015). Phraseology used to comment on results in the Discussion section of applied linguistics quantitative research articles. *English for Specific Purposes*, *39*, 45-61.

Li, Q. (2014). *Move-step structure and hedging in research articles in management and marketing*. Doctoral dissertation, Suranaree University of Technology.

Li, Q., & Pramoolsook, I. (2015). Research article Abstracts in two sub-disciplines of Business-move structure and hedging between Management and Marketing. *English language teaching*, *8*(1), 52-62.

Li, K. (2022). Relationships between Methods-section citation rates and citation contexts: evidence from highly cited references in psychology. *Online Information Review*, *46*(5), 829-845.

Li, L. J., & Ge, G. C. (2009). Genre analysis: Structural and linguistic evolution of the English-medium medical research article (1985–2004). *English for Specific Purposes*, *28*(2), 93-104

Lieungnapar, A., & Todd, R. (2011). Top-down versus bottom-up approaches toward move analysis in ESP, In *Proceedings of the International Conference: Doing Research in Applied Linguistics*. http://arts.kmutt.ac.th/dral/ PDF%20proceedings%20on%20Web/1-10_Topdown_versus_Bottomup _Approaches_toward_Move_Analysis_in_ESP.pdf

Lillis, T., & Curry, M. J. (2010). *Professional academic writing in global context*. Routledge.

Lim, J. M. (2006). Methods sections of management research articles: A pedagogically motivated qualitative study. *English for Specific Purposes*, *25*(3), 282-309.

Lim, J. M. (2010). Commenting on research results in Applied Linguistics and Education: A comparative genre-based investigation. *Journal of English for Academic Purposes*, *9*(4), 280-294. https://doi.org/https://doi.org/10.1016/j.jeap.2010.10.001

Lin, L., & Evans, S. (2012). Structural patterns in empirical research articles: A cross-disciplinary study. *English for Specific Purposes*, *31*(3), 150-160.

Lin, S. W., Yuan, K., & Chang, Y. Y. (2024). Perigraftitis in a dental implant patient with treated breast cancer: A case report with histological assessment. *Journal of Dental Sciences*, *19*(1), 669-670. https://doi.org/10.1016/j.jds.2023.10.011

Lin, Y. (2020). Communicating bad news in corporate social responsibility reporting: A genre-based analysis of Chinese companies. *Discourse & Communication*, *14*(1), 22-43. https://doi.org/10.1177/1750481319876777

Liu, C. Y., & Chen, H. J. (2022). A phraseological exploration of university lectures through phrase frames. *Journal of English for Academic Purposes*, *58*, 101135.

Liu, F., Hu, G., Tang, L., & Liu, W. (2018). The penalty of containing more non-English articles. *Scientometrics*, *114*, 359-366.

Liu, W., Tang, L., & Hu, G. (2020). Funding information in Web of Science: An updated overview. *Scientometrics*, *122*, 1509-1524.

Locker, K. (1999). Factors in reader response to negative letters: Experimental evidence for changing what we teach. *Journal of Business and Technical Communication*, *13*, 5-48.

Loi, C. K., & Evans, M. S. (2010). Cultural differences in the organization of research article introductions from the field of educational psychology: English and Chinese. *Journal of Pragmatics, 42*(10), 2814-2825.

Loi, C. K., Evans, M. S., Akkakoson, S., Ahmed, S., & Ahmed, S. (2015). Rhetorical patterns in the discussion sections of Malay research articles. *International Journal of Languages, Literature and Linguistics, 1*(2), 118-121.

Loi, C. K., Evans, M. S., Lim, J. M., & Akkakoson, S. (2016). A comparison between Malay and English research article discussions: A move analysis. *SAGE Open, 6*(2), 2158244016652925.

López-Belmonte, J., Moreno-Guerrero, A. J., López-Núñez, J. A., & Hinojo-Lucena, F. J. (2023). Augmented reality in education. A scientific mapping in Web of Science. *Interactive learning environments*, *31*(4), 1860-1874.

Lu, X., Casal, J. E., & Liu, Y. (2020). The rhetorical functions of syntactically complex sentences in social science research article introductions. *Journal of English for Academic Purposes*, *44*, 100832.

Lu, X., Yoon, J., & Kisselev, O. (2018). A phrase-frame list for social science research article introductions. *Journal of English for Academic Purposes*, *36*, 76-85.

Lu, X., Casal, J. E., Liu, Y., Kisselev, O., & Yoon, J. (2021c). The relationship between syntactic complexity and rhetorical move-steps in research article Introductions: Variation among four social science and engineering disciplines. *Journal of English for Academic Purposes, 52*, 101006. https://doi.org/10.1016/j.jeap.2021.101006

Lu, X., Yoon, J., & Kisselev, O. (2021a). Matching phrase-frames to rhetorical moves in social science research article Introductions. *English for Specific Purposes*, *61*, 63-83.

Lu, X., Yoon, J., Kisselev, O., Casal, J. E., Liu, Y., Deng, J., & Nie, R. (2021b). Rhetorical and phraseological features of research article Introductions: Variation among five social science disciplines. *System*, *100*, 102543. https://doi.org/10.1016/j.system.2021.102543

Luo, N., & Hyland, K. (2016). Chinese academics writing for publication: English teachers as text mediators. *Journal of Second Language Writing*, *33*, 43-55.

Marchevsky, A. M., Walts, A. E., Lissenberg-Witte, B. I., & Thunnissen, E. (2020). Pathologists should probably forget about kappa. Percent agreement, diagnostic specificity and related metrics provide more clinically applicable measures of interobserver variability. *Annals of Diagnostic Pathology, 47*, 151561.

Martínez, I. A. (2003). Aspects of theme in the Methods and Discussion sections of Biology journal articles in English. *Journal of English for Academic Purposes, 2*(2), 103-123. https://doi.org/10.1016/S1475-1585(03)00003-1

Mathew, P., & Mccallum, L. (2024). A Corpus-based Analysis of Rhetorical Moves and P-frames in an Omani Learner Corpus of Research Project Abstracts. *Journal of Language and Education*, *10*(1 (37)), 68-82.

Martinez, R., & Schmitt, N. (2012). A phrasal expressions list. *Applied Linguistics*, *33*, 299e320.

Maswana, S., Kanamaru, T., & Tajino, A. (2015). Move analysis of research articles across five engineering fields: What they share and what they do not. *Ampersand*, *2*, 1-11.

McHugh, M. L. (2012). Interrater reliability: the kappa statistic. *Biochemia medica*, *22*(3), 276-282.

Meng, Y. (2021). Move-step structure of the Introduction section of English medical science research articles written by Chinese researchers published in international journals. *Review of Educational Theory*, *4*(2), 36-41.

Mijomanović, S., Aleksić-Hajduković, I., & Sinadinović, D. (2021). Case reports in dental medicine: A genre analysis. *ESP Today*, *9*(1), 129-149.

Mills, S. (2001). *Discourse*. Taylor & Francis.

Mokkink, L. B., Terwee, C. B., Gibbons, E., Stratford, P. W., Alonso, J., Patrick, D. L., Knol, D. L., Bouter, L. M., & De Vet, H. C. (2010). Inter-rater agreement and reliability of the COSMIN (Consensus-based Standards for the selection of health status Measurement Instruments) checklist. *BMC Medical Research Methodology, 10*, 1-11.

Montegut, A. J., Schirmer, J., Cartwright, C., Holt, C., Chuc, N. T., An, P. N., & Cummings, S. (2007). Creation of postgraduate training programs for family medicine in Vietnam. *Family Medicine*, *39*(9), 634.

Moritz, M. E., Meurer, J. L., & Dellagnelo, A. K. (2008). Conclusions as components of research articles across Portuguese as a native language, English as a native language and English as a foreign language: a contrastive genre study. *The ESPecialist*, *29*(2), 233-253.

Morley, J. (2015). *The Academic Phrasebank: An academic writing resource for students and researchers*. University of Manchester.

Motta-Roth, D., & Heberle, V. M. (2015). A short cartography of genre studies in Brazil. *Journal of English for Academic Purposes*, *19*, 22-31.

Moyetta, D. (2016). The discussion section of English and Spanish research articles in psychology: A contrastive study. *ESP Today*, *4*(1), 87-106.

Mulinari-Santos, G., Scannavino, F. L., de Avila, E. D., Barros-Filho, L. A., Theodoro, L. H., Barros, L. A., & de Molon, R. S. (2024). One-stage approach to rehabilitate a hopeless tooth in the maxilla by means of immediate Dentoalveolar Restoration: Surgical and prosthetic considerations. *Case Reports in Dentistry*, *2024*, 1-10.

Muniz, F. W., Celeste, R. K., Oballe, H. J., & Rösing, C. K. (2018). Citation analysis and trends in review articles in Dentistry. *Journal of Evidence Based Dental Practice*, *18*(2), 110-118.

Musa, N. F., Khamis, N., & Zanariah, J. (2015). The structure of Methods section in Engineering research articles. *Asian Social Science*, *11*(17), 74-82.

Myers, G. (1990). *Writing Biology: Texts in the Social Construction of Scientific Knowledge*. University of Wisconsin Press.

Nasef, N., Skidmore, M., & Shah, P. (2011). Enablers and disablers allowing trainees' abstracts to proceed to full manuscripts: Lessons from a large neonatal training program. *Journal of Perinatology*, *31*(6), 411-416.

Nguyen, B. H., & Oliver, R. (2015). Relationship building in Vietnamese English written business communication: A systemic functional analysis. *Functional Linguistics*, *2*, 1-22.

Nguyen, H. C., & Pramoolsook, I. (2025). English Oral and Maxillofacial Surgery Research Articles: Move and Phrase Frames in the Introduction Sections. *World Journal of English Language*, *15*(7), 340-258.

Martinez, R., & Schmitt, N. (2012). A Phrasal Expressions List. *Applied Linguistics*, *33*(3), 299-320. https://doi.org/10.1093/applin/ams010

Mehrotra, D. (2014). Oral sciences: History and future research. *Journal of Oral Biology and Craniofacial Research*, *4*(2), 69.

Ministry of Law and Justice. (1948). *The Dentists Act*. Government of India

Mitchell, T. D., Pessoa, S., & Gómez-Laich, M. P. (2021). Know your roles: Alleviating the academic-professional tension in the case analysis genre. *English for Specific Purposes*, *61*, 117-131.

Munby, J. (1978). *Communicative syllabus design*. Cambridge University Press.

Narkprom, N., & Phoocharoensil, S. (2022). Lexical bundles in native English speakers' and Thai writers' dissertations. *GEMA Online Journal of Language Studies*, *22*(3). 43-62. http://doi.org/10.17576/gema-2022-2203-03

Nasef, N., Skidmore, M., & Shah, P. (2011). Enablers and disablers allowing trainees' abstracts to proceed to full manuscripts: Lessons from a large neonatal training program. *Journal of Perinatology*, *31*(6), 411-416.

Nasirizadeh, Z., Paramasivam, S., Nimehchisalem, V., & Omar, N. (2022). Rhetorical structures and cyclical patterns in Forestry research articles. *GEMA Online Journal of Language Studies*, *22*(2), 288-311.

Nekrasova-Beker, T. (2021). Use of phrase-frames in L2 students' Oral production Across proficiency sub-Levels. In W. Crawford (Ed.), Multiple Perspectives on Learner Interaction: The Corpus of Collaborative Oral Tasks (pp. 41-68). Berlin, Boston: De Gruyter Mouton. https://doi.org/10.1515/9781501511370-004

Nguyen, C. (2022). *Ngành Y tế: Đóng góp to lớn cho sự nghiệp chăm sóc, bảo vệ sức khỏe nhân dân và phát triển đất nước*. Retrieved from https://tuyengiao.vn/khoa-giao/khoa-hoc/nganh-y-te-dong-gop-to-lon-cho-su-nghiep-cham-soc-bao-ve-suc-khoe-nhan-dan-va-phat-trien-dat-nuoc-137943

Nguyen, T. C., Witter, D. J., Bronkhorst, E. M., Truong, N. B., & Creugers, N. H. J. (2010). Oral health status of adults in Southern Vietnam: A cross-sectional epidemiological study. *BMC Oral Health*, *10*(1), 1-11. https://doi.org/10.1186/1472-6831-10-2

Nwogu, K. N. (1991). Structure of science popularizations: A genre-analysis approach to the schema of popularized medical texts. *English for Specific Purposes*, *10*(2), 111-123.

Nwogu, K. N. (1997). The medical research paper: Structure and functions. *English for Specific Purposes*, *16*(2), 119-138.

O'Brien, K, Kay, L., Fox, D. & Mandall, N. (1998). Assessing oral health outcomes for Orthodontics-measuring health status and quality of life, *Community dental health*, *15*, 22–26.

Omidian, T., Ballance, O. J., & Siyanova-Chanturia, A. (2023). Replicating corpus-based research in English for academic purposes: Proposed replication of Cortes (2013) and Biber and Gray (2010). *Language Teaching*, *56*(1), 128-136.

Ono, M. (2017). Move-step structures of literature PhD theses in the Japanese and UK higher education. *Journal of writing research*, *8*(3), 469-491.

Özturk, I. (2007). The textual organisation of research article introductions in applied linguistics: Variability within a single discipline. *English for Specific Purposes, 26*(1), 25-38.

Öztürk, I. (2018). Rhetorical organisation of the subsections of research article introductions in Applied Linguistics. *Novitas-ROYAL, 12*(1), 52-65.

Paltridge, B. (2004). Academic writing. *Language Teaching*, 37,87e105.

Pandarathodiyil, A. K., Vijayan, S. P., & Sivapathasundharam, B. (2023). An article on letter to the editor. *Journal of Oral and Maxillofacial Pathology*, *27*(2), 254–256. https://doi.org/10.4103/jomfp.jomfp_65_23

Panthong, P., & Poonpon, K. (2020a). Functional Analysis of Lexical Bundles in Doctor Talks in the Medical TV Series "Grey's Anatomy". *LEARN Journal: Language Education and Acquisition Research Network*, *13*(2), 335-353.

Panthong, P., & Poonpon, K. (2020b). Lexical bundles in Thai medical research articles. *Journal of Studies in the English Language*, *15*(1), 59-106.

Parkinson, J. (2017). The student laboratory report genre: A genre analysis. *English for Specific Purposes, 45*, 1-13. https://doi.org/10.1016/j.esp.2016.08.001

Peacock, M. (2002). Communicative moves in the discussion section of research articles. *System, 30*(4), 479-497.

Pham-Duc, B., Tran, T., Le, H. T. T., Nguyen, N. T., Cao, H. T., & Nguyen, T. T. (2021). Research on Industry 4.0 and on key related technologies in Vietnam: A bibliometric analysis using Scopus. *Learned Publishing*, *34*(3), 414-428.

Phoocharoensil, S. (2012). Language corpora for EFL teachers: An exploration of English grammar through concordance lines. *Procedia-Social and Behavioral Sciences*, *64*, 507-514.

Piano, M., Diemer, K., Hall, M., Hui, F., Kefalianos, E., Lawford, B. J., McKibbin, G., & Jarden, R. J. (2023). A rapid review of challenges and opportunities related to diversity and inclusion as experienced by early and mid-career academics in the medicine, dentistry and health sciences fields. *BMC Medical Education, 23*(1), 1-17. https://doi.org/10.1186/s12909-023-04252-x

Pihlstrom, B. L., Michalowicz, B. S., & Johnson, N. W. (2005). Periodontal diseases. *The Lancet*, *366*(9499), 1809-1820.

Piromkij, W., & Phoocharoensil, S. (2022). A corpus-based study of move analysis and lexical bundles of chemical engineering research article introductions. *Journal of Positive School Psychology*, 10656-10672.

Pololi, L., Knight, S., & Dunn, K. (2004). Facilitating scholarly writing in academic medicine: lessons learned from a collaborative peer mentoring program. *Journal of General Internal Medicine*, *19*, 64-68.

Posteguillo, S. (1999). The schematic structure of computer science research articles. *English for specific purposes*, *18*(2), 139-160.

Pramoolsook, I., Qian, L., & Sheng, W. (2015). The methods sections in Management and Marketing research articles: Rhetorical variations between two sub-disciplines of Business. *International E-journal of Advances in Social Sciences, 1*(2), 294-300. https://doi.org/1.294.10.18769/ijasos.29943

Prince, E. F., Frader, R. J., & Bosk, C. (1982). On hedging in physician-physician discourse. In J. D. Prieto (Ed.), *Linguistics and the Professions* (pp.83-97). Ablex Publishing Corporation.

Prior, P. (1998). *Writing/Disciplinarity: A Sociohistoric Account of Literate Activity in the Academy*. Lawrence Erlbaum.

Raffing, R., Jensen, T. B., Larsen, S., Konge, L., Moller, C., & Tonnesen, H. (2021). Facilitators and barriers for young medical doctors writing their first manuscript for publication. *International journal of environmental research and public health*, *18*(16), 8571. https://doi.org/10.3390/ijerph18168571

Rahman, K., Mataram, I., & Sofwan, A., (2012). The schematic structure of English and Indonesian research article introductions. *Journal of Language and Literature*, *7*(1), 13-31.

Rahman, M., Darus, S., & Amir, Z. (2017). Rhetorical structure of introduction in Applied Linguistics research articles. *Educare, 9*(2), 69-84.

Rashidi, N., & Hosseini, S. A. (2019). The perceptions of Iranian policymakers as articulated in Iran's foreign language policy document: A Systemic Functional Linguistics approach. *Iranian Journal of Language Teaching Research*, *7*(1), 23-42.

Rau, G., & Shih, Y.-S. (2021). Evaluation of Cohen's kappa and other measures of inter-rater agreement for genre analysis and other nominal data. *Journal of English for Academic Purposes*, *53*, 101026. https://doi.org/10.1016/j.jeap.2021.101026

Ravenscroft, J., Liakata, M. & Clare, A. (2013). Partridge: An effective system for the automatic classification of the types of academic papers. In *Proceedings of Research and Development in Intelligent Systems XXX* (pp. 351-358). Springer.

Rayson, P. (2008). From key words to key semantic domains. *International Journal of Corpus Linguistics*, *13*(4), 519–549. https://doi.org/10.1075/ijcl.13.4.06ray

Rayson, P., Archer, D., Piao, S., & McEnery, A. M. (2004). *The UCREL semantic analysis system*. Lancaster.

Rojanaatichartasakul, S., & Phoocharoensil, S. (2022). Move Structures and Stance Adverbials in Editorials from the Bangkok Post and The New York Times. *rEFLections*, *29*(2), 454-474.

Romer, U. (2010). Establishing the phraseological profile of a text type: The construction of meaning in academic book reviews. *English Text Constructions*, *3*(1), 95-119. https://doi.org/10.1075/etc.3.1.06rom

Roldán-Riejos, A., & Úbeda-Mansilla, P. (2006). Metaphor use in a specific genre of engineering discourse. *European Journal of Engineering Education*, *31*(5), 531-541.

Rujirawan, L., & Phoocharoensil, S. (2020). *Structural and Functional Analyses of Four-Word Lexical Bundles from Articles in the Forbes Website*. Doctoral dissertation, Thammasat University.

Saeeaw, S., & Tangkiengsirisin, S. (2014). Rhetorical variation across research article Abstracts in Environmental Science and Applied Linguistics. *English Language Teaching*, *7*(8), 81-93.

Salager-Meyer, F. (1994). Hedges and textual communicative function in medical English written discourse. *English for Specific Purposes*, *13*(2), 149–170. https://doi.org/10.1016/0889-4906(94)90013-2

Samraj, B. (2005). An exploration of a genre set: Research article abstracts and introductions in two disciplines. *English for specific purposes*, *24*(2), 141-156.

Samraj, B. (2016). Discourse structure and variation in manuscript reviews: Implications for genre categorization. *English for Specific Purposes*, *42*, 76-88.

Satthachai, M., & Kenny, D. (2024). Epistemic modality in English and Thai medical Abstracts: a corpus-based study. *Perspectives*, 1-18. https://doi.org/10.1080/0907676X.2023.2300042

Schryer, C. F., Lingard, L., & Spafford, M. (2007). Regularised practices: Genres, improvisation, and identity formation in health-care professions. In M. Zachry & C. Thralls (Eds.), *Communicative practices in workplaces and the professions: Cultural perspectives on the regulation of discourse and organizations* (pp. 21–44). Routledge.

Schryer, C. F., Lingard, L., Spafford, M., & Garwood, K. (2003). Structure and agency in medical case presentations. In C. Bazerman & D. Russell (Eds.), *Writing selves/writing societies: Research from activity perspectives* (pp. 62–96). Fort Collins.

Shah, J., Shah, A., & Pietrobon, R. (2009). Scientific writing of novice researchers: What difficulties and encouragements do they encounter? *Academic Medicine*, *84*, 511–516.

Shi, H., & Wannaruk, A. (2014). Rhetorical structure of research articles in Agricultural Science. *English Language Teaching, 7*(8), 1-13.

Shooshtari, Z., & Jalilifar, A. R. (2012). Citation and the construction of sub-disciplinary knowledge. *Teaching English as a Second Language Quarterly*, *29*(1), 45-66.

Simpson-Vlach, R., & Ellis, N. C. (2010). An academic formulas list: New methods in phraseology research. *Applied Linguistics*, *31*, 487–512.

Sinclair, J. (1991). *Corpus concordance collocation*. Oxford University Press.

Singh, G. (2008). *Textbook of orthodontics*. Jaypee Brothers.

Sinclair, J. (2008). The phrase, the whole phrase, and nothing but the phrase. In Granger & Meunier (Eds), *Phraseology: An interdisciplinary perspective* (pp. 407-410). John Benjamins Publishing Company.

Sinclair, J. & Mauranen, A. (2006). *Linear Unit Grammar: Integrating speech and writing*. John Benjamins Publishing Company.

Sirijanchuen, N., & Gampper, C. (2018). Academic Citations within Rhetorical Move Structures in ELT Research Article Introductions Written by Thai and International Scholars. *LEARN Journal: Language Education and Acquisition Research Network*, *11*(2), 1-20.

Sithlaothavorn, J., & Trakulkasemsuk, W. (2016). A Move Analysis of Research Discussion Section in English Articles Published in Thai and International Journals. *rEFLections*, *21*, 24-46. https://doi.org/10.61508/refl.v21i0.113965

Smesny, A. L., Williams, J. S., Brazeau, G. A., Weber, R. J., Matthews, H. W., & Das, S. K. (2007). Barriers to scholarship in Dentistry, Medicine, Nursing, and Pharmacy practice faculty. *American Journal of Pharmaceutical Education*, *71*(5), 1-9.

Song, Y., & Xu, J. (2025). Variation in phrase frame structure and function in argumentative writing by EFL learners across different L1 backgrounds. *International Journal of Applied Linguistics, 35*(1), 380-399.

Sprague, S., Bhandari, M., Devereaux, P., Swiontkowski, M. F., Tornetta III, P., Cook, D. J., Dirschl, D., Schemitsch, E. H., & Guyatt, G. H. (2003). Barriers to full-text publication following presentation of abstracts at annual Orthopaedic meetings. *JBJS*, *85*(1), 158-163.

Srichai, P., & Phoocharoensil, S. (2016). *A Corpus-Based Study of Specialized Vocabulary from American Political News Articles: An Analysis of Lexical Items*. MA thesis, Thammasart University.

Sritharan, K., Russell, G., Fritz, Z., Wong, D., Rollin, M., Dunning, J., Morgan, P., & Sheehan, C. (2001). Medical oaths and declarations. *BMJ*, *323*(7327), 1440-1441. https://doi.org/10.1136/bmj.323.7327.1440

Sriwanat, S., & Phoocharoensil, S. (2024). A Comparison of Rhetorical Move Structure of Research Article Abstracts of Thai Scopus Journals and Top-Ranked Scopus Journals in Applied Linguistics and English Language Teaching. *Shanlax International Journal of Education*, *12*(3), 11-17.

Sugiharto, S. (2004). Error gravity in student composition: Toward textual error analysis with special reference to Indonesian learners of English. *Atma nan Jaya*, 16(1), 42-54.

Suryani, I., & Rahim, A. (2016). *A genre analysis of the introduction section of computer science research articles by Malaysian researchers*. Doctoral dissertation, Universiti Utara Malaysia.

Gao, S. (2021). *Contrastive Analysis of English Electronic Engineering Research Articles by Chinese, Thai and Native English Writers: Move-Step Structure and Visual-Textual Move*. Doctoral dissertation, Suranaree University of Technology.

Swales, J. (1981). *Aspects of article introductions*. University of Michigan Press.

Swales, J. (1990). *Genre analysis: English in academic and research settings*. Cambridge University Press.

Swales, J. (2004). *Research Genres: Explorations and Applications*. Cambridge University Press.

Takashima, K., Wada, K., Tra, T. T., & Smith, D. R. (2017). A review of Vietnam's healthcare reform through the Direction of Healthcare Activities (DOHA). *Environmental Health and Preventive Medicine*, *22*(1), 74. https://doi.org/10.1186/s12199-017-0682-z

Tan, Y., & Römer, U. (2022). Using phrase-frames to trace the language development of L1 Chinese learners of English. *System*, *108*, 102844.

Tessuto, G. (2015). Generic structure and rhetorical moves in English-language empirical law research articles: Sites of interdisciplinary and interdiscursive cross-over. *English for Specific Purposes*, *37*, 13-26.

Thanajirawat, Z., & Chuea-nongthon, C. (2022). Move and text analysis of the discussion section in humanities and social sciences research articles. *Eurasian Journal of Applied Linguistics*, *8*(1), 217-231.

Thuannadee, T., & Phoocharoensil, S. (2022). *An analysis of the structural and functional patterns of four-word lexical bundles in legal spoken English*. Doctoral dissertation, Thammasat University.

Tinsley, H. E. A., & Weiss, D. J. (2000). Interrater reliability and agreement. In H. E. A. Tinsley, & S. D. Brown (Eds.), *Handbook of applied multivariate statistics and mathematical modeling* (pp. 95–124). Academic Press. https://doi.org/10.1016/B978-012691360-6/50005-7.

Tiwari, R., Pendyala, C., Gurukarthik, G., & Bhattacharjee, A. (2017). History of oral and maxillofacial surgery-a review. *Journal of Dental and Medical Sciences*, *16*, 99-102.

Tsai, K. Z., Huang, C. M., Wang, H. S., Sui, X., Lavie, C. J., & Lin, G. M. (2024). Does the guideline-based physical activity level for cardiovascular health also benefit periodontal health?. *Journal of Dental Sciences*, *19*(1), 46-50.

United States Department of Health and Human Services. (2002). Hospitalization in the United States. www.ahrq.gov

Uzuner, S. (2008). Multilingual scholars' participation in core/ global academic communities: A literature review. *Journal of English for Academic Purposes*, *7*, 250-263.

Vanlandingham, B. & Marone B. (2004). On-call specialist coverage in US emergency departments: ACEP survey of emergency department directors. *American College of Emergency Physicians*, 1-5. https://www.acep.org.

Vathanalaoha, K., & Tangkiengsirisin, S. (2018a). Genre Analysis of Experiment-based Dental Research Article Abstracts: Thai and International Journals. *3L: Southeast Asian Journal of English Language Studies*, *24*(3), 1-14.

Vathanalaoha, K., & Tangkiengsirisin, S. (2018b). Transitivity analysis of rhetorical moves in dental research article abstracts: Thai and international journals. *Humanities, Arts and Social Sciences Studies*, *18*(3), 639-662.

Walcott, K. (2021). Informing academic writing pedagogy through the study of phrase-frames. *Journal of Language Teaching and Research*, *12*(1), 158-171.

Walmsley, A. D., Walsh, T., Lumley, P., Burke, F., Shortall, A. C., Hayes-Hall, R., & Pretty, I. (2007). *Restorative Dentistry*. Elsevier.

Wang, W., & Yang, C. (2015). Claiming centrality as promotion in Applied Linguistics research article introductions. *Journal of English for Academic Purposes, 20*, 162-175.

Weissberg, R., & Buker, S. (1990). *Writing up research: Experimental research report writing for students of English*. Prentice Hall Regents.

Wilce, J. M. (2009). Medical discourse. *Annual review of anthropology*, *38*, 199-215.

Willey, I., & Tanimoto, K. (2015). We're drifting into strange territory here: What think-aloud protocols reveal about convenience editing. *Journal of Second Language Writing*, *27*, 63-83.

Williams, I. A. (1999). Results sections of medical research articles: Analysis of rhetorical categories for pedagogical purposes. *English for Specific Purposes, 18*(4), 347-366. https://doi.org/10.1016/S0889-4906(98)00003-9

Wu, J., Zhao, C. G., Lu, X., & Jin, T. (2024). A rhetorical function and phraseological analysis of commentaries on visuals. *English for Specific Purposes*, *73*, 33-45.

Luo, X. (2025). A Genre-Based Study on Disciplinary Rhetorical Structures in Research Articles. In Jiang, X., & Azeem Ashraf, M. (Eds.) (eds), Interdisciplinary Themes of Sociolinguistic Studies - Language Learning, Technology, and Identity in the Age of AI and Globalization, *IntechOpen*, (pp. 1-14). https://doi.org/10.5772/intechopen.1007729

Yan, J., Li, Q., & Jiang, J. (2024). The development of phrase-frames in EFL learners' essays: Variability, structures, and functions. *International Journal of Applied Linguistics*, *35*, 1-20. https://doi.org/10.1111/ijal.12589

Yang, Y. (2014). *Move-step structure of bachelor's theses by Chinese students majoring in English*. MA dissertation, Suranaree University of Technology.

Yang, R., & Allison, D. (2003). Research articles in applied linguistics: Moving from results to conclusions. *English for Specific Purposes*, *22*(4), 365-385.

Yasuda, S. (2017). Toward a framework for linking linguistic knowledge and writing expertise: Interplay between SFL-based genre pedagogy and task-based language teaching. *TESOL Quarterly*, *51*(3), 576-606.

Yu, D., & Bondi, M. (2017). The generic structure of CSR reports in Italian, Chinese, and English: A corpus-based analysis. *IEEE Transactions on Professional Communication*, *60*(3), 273-291.

Zhang, Y. (2023). A multidimensional analysis of language use in English argumentative essays: An evidence from comparable corpora. *Sage Open*, *13*(3). https://doi.org/10.1177/21582440231197088

Zhao, L., & Pramoolsook, I. (2023). Introducing Traditional Chinese Medicine: Move-step structure of the research article introduction section. *Taiwan International ESP Journal*, *14*(1), 62-90. https://doi.org/10.6706/TIESPJ.202306_14(1).0003

Zhao, L., & Pramoolsook, I. (2024). Traditional Chinese Medicine (TCM) research articles unpacked: a systemic functional linguistics (SFL) elemental genre approach. *Cogent Arts & Humanities*, *11*(1), 2317617. https://doi.org/10.1080/23311983.2024.2317617

Zhou, H. & Li, T. (2024). "In the present study": An exploration of prepositional phrase-frames in Chinese EFL learners' theses and dissertations of Applied Linguistics. *Journal of English for Academic Purposes*, *70*, 101400. https://doi.org/10.1016/j.jeap.2024.101400

Zhou, Z., Han, X., Shen, S., Sun, K., & Liu, W. (2024). A scientometric study of chemical carcinogen-induced experimental oral carcinogenesis with emphasis on chemopreventive agents. *Journal of Dental Sciences*, *19*(1), 614-619.

มหาวิทยาลัยเทคโนโลยีสุรนารี

# APPENDICES

มหาวิทยาลัยเทคโนโลยีสุรนารี

# APPENDIX A

## Proposed Framework of Moves and Steps in the Whole English RAs in OMS

| Sections |
|---|
| **Introduction** |
| Move 1: Announcing the importance of the field |
| M1S1: Claiming the centrality of the topic |
| M1S2: Making topic generalizations |
| M1S3: Reviewing previous research |
| M1S4: Generalizations from previous studies |
| Move 2: Preparing for the present study |
| M2S1: Indicating a gap |
| M2S2: Showing the problems |
| M2S3: Presenting positive justification |
| Move 3: Introducing the present study |
| M3S1: Stating purpose(s) |
| M3S2: Presenting hypotheses |
| M3S3: Introducing methods |
| **Methods** |
| Move 4: Describing data-collection procedure |
| M4S1: Ethical considerations |
| M4S2: Indicating the data |
| M4S3: Indicating criteria for data collection |
| Move 5: Describing experimental procedures |
| M5S1: Defining variables |
| M5S2: Recounting methods/ experimental process |
| M5S3: Indicating criteria for success. |
| Move 6: Describing data-analysis procedures |
| M6S1: Indicating process of data classification. |
| M6S2: Recounting analytical instrument/procedure |
| M6S3: Indicating modification to instrument/procedure |
| M6S4: Indicating statistical significance |
| **Results** |
| Move 7: Indicating data characteristics |
| Move 8: Reporting the findings |
| M8S1: Stating the outcomes |
| M8S2: Stating figures or tables |
| M8S3: Reviewing/comparing to previous work |
| Move 9: Stating comments on the results |
| M9S1: Comparing the experimental and control group |
| M9S2: Indicating statistical tests |
| M9S3: Making generalizations or interpretations of the results |
| **Discussion** |
| Move 10: Indicating aims of study |
| Move 11: Highlighting research Outcomes |
| M11S1: Stating outcomes |
| M11S2: Interpreting the outcome |
| M11S3: Indicating significance of the outcome |
| M11S4: Contrasting present and previous outcomes |
| Move 12: Stating limitations of the study |
| M12S1: Limitations about the findings |
| M12S2: Limitations about the methodology |
| M12S3: Limitations about the claims made |
| Move 13: Stating research conclusions |
| M13S1: Evaluating the study |
| M13S2: Deductions from the research |
| M13S3: Stating future studies |
| **Conclusion** |
| Move 14: Summarizing the main findings |

# APPENDIX B

## Proposed Framework of Moves and Steps in the Whole English RAs in ODO

| Sections |
|---|
| **Introduction** |
| Move 1: Announcing the importance of the field |
| M1S1: Claiming the centrality of the topic |
| M1S2: Making topic generalizations |
| M1S3: Reviewing previous research |
| M1S4: Generalizations from previous studies |
| Move 2: Preparing for the present study |
| M2S1: Indicating a gap |
| M2S2: Showing the problems |
| M2S3: Presenting positive justification |
| Move 3: Introducing the present study |
| M3S1: Stating purpose(s) |
| M3S2: Presenting hypotheses |
| M3S3: Introducing methods |
| M3S4: Stating the value of present research |
| **Methods** |
| Move 4: Describing data-collection procedure |
| M4S1: Ethical considerations |
| M4S2: Indicating the data |
| M4S3: Indicating criteria for data collection |
| Move 5: Describing experimental procedures |
| M5S1: Defining variables |
| M5S2: Recounting methods/ experimental process |
| M5S3: Indicating criteria for success. |
| Move 6: Describing data-analysis procedures |
| M6S1: Indicating process of data classification. |
| M6S2: Recounting analytical instrument/procedure |
| M6S3: Indicating modification to instrument/procedure |
| M6S4: Indicating statistical significance |
| **Results** |
| Move 7: Indicating data characteristics |
| Move 8: Reporting the findings |
| M8S1: Stating the outcomes |
| M8S2: Stating figures or tables |
| Move 9: Stating comments on the results |
| M9S1: Comparing the experimental and control group |
| M9S2: Indicating statistical tests |
| M9S3: Making generalizations or interpretations of the results |
| **Discussion** |
| Move 10: Indicating aims of study |
| Move 11: Highlighting research Outcomes |
| M11S1: Stating outcomes |
| M11S2: Interpreting the outcome |
| M11S3: Indicating significance of the outcome |
| M11S4: Contrasting present and previous outcomes |
| Move 12: Stating limitations of the study |
| M12S1: Limitations about the findings |
| M12S2: Limitations about the methodology |
| M12S3: Limitations about the claims made |
| Move 13: Stating research conclusions |
| M13S1: Evaluating the study |
| M13S2: Deductions from the research |
| **Conclusion** |
| Move 14: Summarizing the main findings |

มหาวิทยาลัยเทคโนโลยีสุรนารี

# APPENDIX C

## Mapping Phrase Frames to Move-step Structure in the RA Introduction Sections in the Two Sub-disciplines of Dentistry

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| Introduction | | | | | |
| Move 1: Announcing the importance of the field | M1S1: Claiming the centrality of the topic | be * by the | | X | affected |
| | | in the * of | X | | number |
| | | the number of * | X | | implants |
| | | one of the * | X | | most |
| | | in the * zone | X | | esthetic |
| | | of the * gland | X | | parotid |
| | | by the * of | | X | type |
| | | in the * of | X | | number |
| | | by the * of | | X | type |
| | Step 2: Making topic generalizations | used to * the | | X | assess |
| | | the * of the | X | | position |
| | | the * of the | | X | stability |
| | | the * of the | | X | root |
| | | the * of the | X | | location |
| | | the * of the | | X | length |
| | | the * of the | | X | introduction |
| | | of the * teeth | | X | anterior |
| | | at the * of | | X | level |
| | | at the * of | | X | level |
| | | the number of * | X | | implants |
| | | the relationship between * | X | | the |
| | | at the * time | X | | same |
| | | a high * of | X | | level |
| | | one of the * | X | | most |
| | | at the same * | X | | time |
| | | a * level of | | X | high |
| | | in the * area | X | | esthetic |
| | | * at the end | | X | spaces |
| | | for the * of | X | | treatment |
| | | early dental implant * | X | | failure |
| | | the * dentition phase | | X | mixed |
| | | * soft tissue recession | X | | midfacial |
| | | * titanium base abutments | X | | the |
| | | the * dental arch | | X | upper |
| | | the * dental arch | X | | mandibular |
| | | for the * of | X | | treatment |
| | | of the * and | X | | maxilla |
| | | of the * and | | X | patient |
| | M1S3: Reviewing previous research | * of the mandibular | X | | tipping |
| | | have been * to | X | | reported |
| | | * one of the | X | X | as |
| | | can be * by | X | | explained |
| | | it has been * | X | | reported |
| | | it has been * | | X | suggested |
| | | be * by the | | X | affected |
| | | it is * that | | X | known |
| | | have been * to | X | | used |
| | | have been * to | X | | reported |
| | | studies have * that | X | | reported |
| | | studies have * that | X | | demonstrated |
| | | been * to be | X | | shown |
| | | been * to be | X | | reported |
| | | has been *that | | X | reported |
| | | in order to * | | X | assess |
| | | used to * the | | X | assess |
| | | the * of the | X | | end |
| | | the * of the | | X | position |
| | | the * of the | | X | root |
| | | the * of the | | X | length |
| | | the * of the | | X | introduction |
| | | the use of * | X | | adjunctive |
| | | the * number of | X | | total |
| | | * of gingival recession | | X | frequency |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | with * to the | | X | regard |
| | | in * with the | | X | line |
| | | in the * of | X | | treatment |
| | | in the * of | | X | range |
| | | in the * of | X | | absence |
| | | in the * of | | X | range |
| | | the number of * | | X | patients |
| | | the * between the | X | X | relationship |
| | | * position of the | | X | vertical |
| | | a * rate of | X | | recurrence |
| | | an * in the | | X | increase |
| | | at the same * | | X | level |
| | | a * risk of | | X | higher |
| | | a * risk of | | X | high |
| | | one of the * | X | X | most |
| | | one of the * | X | | main |
| | | of the * ridge | X | | alveolar |
| | | at the * time | X | | same |
| | | no significant * between | | X | differences |
| | | a * risk of | | X | hig |
| | | increase the *of | X | | risk |
| | | in the * area | X | | lesion |
| | | on the * side | | X | left |
| | | in the * area | X | | esthetic |
| | | in the * region | | X | anterior |
| | | in the * region | | X | anterior |
| | | of the * bone | X | | buccal |
| | | on the * side | | X | left |
| | | of the * population | | X | general |
| | | of the * incisors | | X | mandibular |
| | | of the * cavity | X | | oral |
| | | the * central incisors | | X | maxillary |
| | | for the *of | | X | treatment |
| | | in the * region | | X | anterior |
| | | the * crown height | | X | clinical |
| | | * dental implant failure | X | | early |
| | | * incisors and canines | | X | lateral |
| | | * incisors and canines | | X | central |
| | | and * of the | X | | floor |
| | | the * position of | | X | vertical |
| | | that the * of | X | | use |
| | | the quality of * | | X | life |
| | | * soft tissue recession | X | | midfacial |
| | | the * central incisors | | X | maxillary |
| | | first or second * | | X | permanent |
| | | first or second * | | X | molars |
| | | for the * of | | X | treatment |
| | | * the type of | | X | by |
| | | by the * of | | X | type |
| | | with a * of | X | | history |
| | | of the * and | X | | mandible |
| | M1S4: Generalizations from previous studies | have been * in | | X | reported |
| | | it has been * | | | reported |
| | | has been * to | X | | reported |
| | | be * by the | | X | affected |
| | | has been * that | | X | reported |
| | | the * of the | X | | aim |
| | | * of gingival recession | | X | frequency |
| | | in the * of | X | | treatment |
| | | in the * gland | X | | parotid |
| | | in the * region | X | | anterior |
| | | in the * gland | X | | parotid |
| | | of the * incisors | | X | mandibular |
| | | in the * region | X | | anterior |
| | | the * of root | | X | prevalence |
| | | the * third molar | | X | impacted |
| | | first or second * | | X | molars |
| | | of the * and | X | | mandible |
| **Move 2: Preparing for the present study** | M2S1: Indicating a gap | * tipping of the | | X | distal |
| | | has been * to | | X | found |
| | | the * of the | | X | results |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | of the * teeth | | X | anterior |
| | | in the * region | X | | anterior |
| | | of the * anterior | | X | maxillary |
| | | * of the anterior | | X | changes |
| | | and soft tissue * | | X | profile |
| | M2S2: Showing the problems | have been * to | X | | reported |
| | | * tipping of the | | X | distal |
| | | be * by the | | X | affected |
| | | have been * to | X | | reported |
| | | be * by the | | X | affected |
| | | the * of the | | X | use |
| | | the * of the | | X | base |
| | | the * of the | | X | use |
| | | the * number of | | X | total |
| | | in the * of | X | | number |
| | | a * in the | X | | reduction |
| | | in * with a | | X | patients |
| | | distal * of the | | X | tipping |
| | | * tipping of the | | X | distal |
| | | one of the * | | X | most |
| | | * tipping of the | | X | distal |
| | | the * position of | | X | vertical |
| | | the * third molar | | X | impacted |
| | | the * mixed dentition | | X | early |
| | | the * dental arch | | X | maxillary |
| | | in the * of | X | | number |
| | M2S3: Presenting positive justification | has been * to | | X | found |
| | | in order to * | X | | provide |
| | | the * of the | | X | position |
| | | the * of the | X | | stability |
| | | the * of the | X | | reliability |
| | | the * of the | | X | height |
| | | in the * of | | X | range |
| | | to the * of | | X | best |
| | | in the * of | | X | range |
| | | within the * of | | X | range |
| | | an * of the | X | | increase |
| | | abutment for the * | X | | prosthesis |
| | | abutment for the * | X | | crown |
| | | titanium base abutment * | X | | for |
| | | at the same * | X | | time |
| | | a * level of | X | | high |
| | | at the * time | | X | same |
| | | a * risk of | | X | higher |
| | | a high * of | X | | level |
| | | of the * cavity | X | | cystic |
| | | of the * cavity | X | | oral |
| | | * physiologic tooth mobility | | X | of |
| | | * titanium base abutment | X | | cylindrical |
| | | of the * cavity | X | | cystic |
| | | position of the * | | X | maxillary |
| | | abutments for the * | X | | crown |
| | | the titanium base * | X | | abutments |
| | | of the * and | | X | upper |
| | | of the * and | X | | patient |
| **Move 3: Introducing the present study** | M3S1: Stating purpose(s) | * of the mandibular | | | tipping |
| | | was to * the | X | X | investigate |
| | | was to * the | X | | evaluate |
| | | aimed to * the | X | X | evaluate |
| | | aimed to * the | X | X | assess |
| | | * to evaluate the | X | X | was |
| | | * to evaluate the | X | X | aimed |
| | | study was to * | X | X | investigate |
| | | study was to * | X | | evaluate |
| | | study was to * | X | X | compare |
| | | the * of the | | X | effect |
| | | the aim of * | X | | aim |
| | | the aim of * | X | X | aim |
| | | the * of this | X | X | purpose |
| | | the * of this | X | X | objective |
| | | and the * of | | X | effect |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | with * to the | | X | respect |
| | | in the * of | | X | Level |
| | | the * between the | | X | relationship |
| | | and satisfaction with * | | X | dental |
| | | of the * second | | X | upper |
| | | in the * zone | X | | esthetic |
| | | in the * region | X | | posterior |
| | | in the parotid * | X | | gland |
| | | in the * gland | X | | parotid |
| | | of the * anterior | | X | maxillary |
| | | * the observation period | X | | during |
| | | during the * period | X | | observation |
| | | of * central incisors | | X | maxillary |
| | | in the * region | X | | posterior |
| | | satisfaction with * aesthetics | | X | dental |
| | | and * of the | X | | stability |
| | | and soft tissue * | | X | changes |
| | | * soft tissue recession | X | | midfacial |
| | | first or second * | | X | permanent |
| | | bone * in the | X | | graft |
| | | * of this study | X | X | aim |
| | | * of this study | X | X | purpose |
| | | * of this study | X | X | objective |
| | | study was to * | X | X | evaluate |
| | | of the * and | X | | maxilla |
| | M3S2: Presenting hypotheses | the * of the | X | | design |
| | | the * of the | | X | age |
| | | the * of this | | X | limitations |
| | | * position of maxillary | | X | vertical |
| | | * significant difference between | | X | a |
| | | * difference between the | | X | significant |
| | | significant difference between * | | X | the |
| | | significant * between the | | X | difference |
| | | no significant * in | | X | differences |
| | | a significant * between | | X | difference |
| | | of maxillary central * | | X | incisors |
| | M3S3: Introducing the methods | used to * the | X | | evaluate |
| | | was used to * | X | | evaluate |
| | | was used to * | X | | determine |
| | | was * to determine | X | | used |
| | | * used to determine | X | | was |
| | | this study * to | X | X | aimed |
| | | in * with the | | X | line |
| | | the correlation between * | | X | the |
| | | at the * time | | X | same |
| | | * of the cutting | X | | position |
| | | position of the * | X | | cutting |
| | M3S4: Stating the value of present research | vertical position of * | | X | maxillary |
| | | of maxillary central * | | X | incisors |
| | | the * position of | | X | vertical |

มหาวิทยาลัยเทคโนโลยีสุรนารี

# APPENDIX D

## Mapping Phrase Frames to Move-step Structure in the RA Methods of the Two Sub-disciplines of Dentistry

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| Methods | | | | | |
| **Move 4: Describing data-collection procedure** | M4S1: Ethical considerations | * this study was | X | | in |
| | | * in this study | | X | used |
| | | was * in the | X | | performed |
| | | were * from the | | X | obtained |
| | | * was approved by | X | X | study |
| | | * was approved by | | X | protocol |
| | | approved by the * | X | X | institutional |
| | | approved by the * | | X | ethics |
| | | approved by the * | | X | ethical |
| | | * study was approved | X | X | this |
| | | * study was approved | X | X | the |
| | | * study was approved | X | X | retrospective |
| | | the * committee of | X | X | ethics |
| | | the * committee of | X | X | ethical |
| | | in * with the | X | | accordance |
| | | in the * of | X | X | department |
| | | * committee of the | X | X | ethics |
| | | * committee of the | X | X | ethical |
| | | by the * committee | | X | ethics |
| | | by the * committee | | X | ethical |
| | | by the institutional * | | X | review |
| | | by the institutional * | | X | ethics |
| | | the * sample size | | X | total |
| | | * dental implant failure | X | | early |
| | | on the * of | | X | basis |
| | M4S2: Indicating the data | was performed * | X | | in |
| | | was performed * | X | | using |
| | | * this study was | X | | in |
| | | the * side was | X | | non-fracture |
| | | was * in the | X | | performed |
| | | was * in the | X | | used |
| | | were * from the | X | | excluded |
| | | were * from the | | X | obtained |
| | | * used as a | X | | was |
| | | * was approved by | X | X | study |
| | | * was approved by | | X | protocol |
| | | approved by the * | X | X | institutional |
| | | in order to * | X | | provide |
| | | used to * the | | X | calculate |
| | | was used to * | | X | calculate |
| | | * study was approved | X | | this |
| | | included in * study | X | X | the |
| | | the * of the | X | | use |
| | | in * with the | X | | accordance |
| | | in the * of | X | | department |
| | | and the * of | | X | presence |
| | | * distance between the | X | | the |
| | | the time of * | X | | surgery |
| | | * for the prosthesis | X | | abutment |
| | | abutment for the * | X | | crown |
| | | titanium base abutment * | X | | for |
| | | * mesial alveolar ridge | | X | of |
| | | in the * group | | X | extraction |
| | | in the * region | X | | posterior |
| | | * orthodontic treatment | X | | of |
| | | * of the cutting | X | | position |
| | | of the mandibular * | | X | incisors |
| | | in the * region | X | | posterior |
| | | cylindrical titanium base * | X | | abutment |
| | | the * sample size | | X | total |
| | | of the cystic * | X | | lesions |
| | | * of the cutting | X | | position |
| | | the early * dentition | | X | permanent |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | bone * in the | X | | graft |
| | | on the * of | X | | results |
| | M4S3: Indicating criteria for data collection | was * in | X | | performed |
| | | in * study was | X | | this |
| | | * in this study | X | X | used |
| | | * in this study | X | | included |
| | | was * in the | | X | observed |
| | | was * in the | X | | performed |
| | | were * in the | | X | included |
| | | were * from the | X | | excluded |
| | | was * as a | X | | defined |
| | | were * from the | | X | obtained |
| | | is * in table | X | | shown |
| | | approved by the * | | X | institutional |
| | | used to * the | X | | assess |
| | | was * to assess | X | | used |
| | | * study was approved | | X | this |
| | | * in this study | X | | included |
| | | the * of the | X | | length |
| | | the * of the | X | | time |
| | | the * of this | | X | purpose |
| | | the use of a | X | | the use of a |
| | | the use of * | X | | adjunctive |
| | | and the * of | | X | presence |
| | | in the * of | X | X | department |
| | | to the * of | X | | lack |
| | | at the * of | | X | age |
| | | * the number of | | X | by |
| | | the * of the | X | | time |
| | | * patients with a | X | | for |
| | | * in this study | X | | included |
| | | in the * group | | X | intervention |
| | | in the * group | X | | SFA |
| | | in the esthetic * | X | | area |
| | | in the esthetic * | X | | zone |
| | | * the oral cavity | X | | of |
| | | of the * population | | X | study |
| | | * the observation period | X | | during |
| | | during the * period | X | | retention |
| | | in the * arch | | X | lower |
| | | of the * cavity | X | | oral |
| | | of the * population | | X | study |
| | | * of the anterior | | X | changes |
| | | first or second * | | X | molars |
| | | * of this study | | X | purpose |
| | | with the * of | | X | aid |
| | | * the number of | | X | by |
| | | by the * of | | X | number |
| | | of the * and | | X | upper |
| **Move 5: Describing experimental procedures** | M5S1: Defining variables | was performed * | X | | with |
| | | was performed * | X | | using |
| | | was performed * | | X | on |
| | | * used in the | | X | were |
| | | * used in the | | X | was |
| | | * used in the | | X | were |
| | | was * with the | X | | performed |
| | | the * of the | | X | end |
| | | the * of the | | X | position |
| | | the * of the | | X | base |
| | | the * number of | | X | total |
| | | in * with the | X | | accordance |
| | | of the * teeth | | X | anterior |
| | | at the * of | | X | age |
| | | at the * of | | X | ages |
| | | * of the study | | X | end |
| | | in the * group | | X | L |
| | | in the * group | | X | H |
| | | in the * group | | X | INH |
| | | of the upper * | | X | second |
| | | * the facial midline | | X | from |
| | | to the * plane | | X | occlusal |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | * the HPC line | | X | to |
| | | the * sample size | | X | total |
| | | * and lateral incisor | | X | central |
| | | * incisors and canines | | X | central |
| | | * titanium base abutments | X | | the |
| | | with the * of | X | | aid |
| | | and the * of | X | | number |
| | | of the * and | X | | mandible |
| | M5S2: Recounting methods/ experimental process | was performed * | X | | in |
| | | was performed * | X | X | with |
| | | was performed * | X | | using |
| | | was performed * | | X | on |
| | | the * group was | X | X | control |
| | | * used in the | | X | were |
| | | * in this study | X | | used |
| | | * in this study | X | X | included |
| | | * between the groups | | X | found |
| | | was * in the | | X | used |
| | | was * in the | | X | measured |
| | | were * in the | | X | used |
| | | were * from the | | X | obtained |
| | | was * as a | X | X | defined |
| | | was * as a | | X | used |
| | | were * from the | | X | obtained |
| | | was * with the | X | | performed |
| | | was * with the | | X | consistent |
| | | are * in table | | X | presented |
| | | are * in table | | X | listed |
| | | as * in table | | X | shown |
| | | in order to * | X | X | provide |
| | | in order to * | | X | assess |
| | | used to * the | | X | evaluate |
| | | used to * the | X | | calculate |
| | | was used to * | | X | evaluate |
| | | was used to * | X | | calculate |
| | | used to * the | | X | evaluate |
| | | * in this study | X | X | included |
| | | the * of the | X | X | end |
| | | the * of the | X | | position |
| | | the * of the | | X | effect |
| | | the * of the | | X | use |
| | | the * of the | | X | size |
| | | the *of the | X | X | reliability |
| | | the * of the | | X | top |
| | | the * of the | X | | root |
| | | the * of the | X | | location |
| | | the * of the | | X | duration |
| | | the *of the | | X | base |
| | | the * of the | | X | introduction |
| | | the use of * | | X | the |
| | | the use of * | | X | a |
| | | the total * of | | X | number |
| | | and the * of | | X | number |
| | | * of gingival recession | | X | frequency |
| | | * of gingival recession | | X | amount |
| | | with *to the | | X | respect |
| | | in * with the | | X | accordance |
| | | in the* of | | X | range |
| | | to the * of | | X | best |
| | | * the level of | | X | level |
| | | at the *of | | X | level |
| | | within the *of | | X | range |
| | | in the *of | X | | range |
| | | within the *of | | X | limitations |
| | | by the * of | | X | number |
| | | and the * of | | X | number |
| | | the * between the | | X | distance |
| | | the * between the | | X | difference |
| | | vertical position of * | | X | the |
| | | vertical position of * | | X | maxillary |
| | | the time of * | X | | surgery |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | * and control groups | | X | extraction |
| | | abutment for the * | X | | crown |
| | | * in this study | X | X | included |
| | | a high *of | | X | level |
| | | of * alveolar ridge | | X | mesial |
| | | of the * ridge | | X | alveolar |
| | | at the * time | X | | same |
| | | at the * time | | X | three |
| | | the * between the | | X | difference |
| | | * for patients with | X | | recommended |
| | | a * level of | | X | high |
| | | in the * area | X | | lesion |
| | | in the * group | | X | extraction |
| | | of the * anterior | | X | maxillary |
| | | of the * lip | X | | lower |
| | | to the * midline | | X | facial |
| | | * orthodontic treatment | | X | of |
| | | * the right side | | X | on |
| | | to the * plane | | X | occlusal |
| | | of the mandibular * | | X | third |
| | | in the * arch | | X | mandibular |
| | | on the * side | | X | right |
| | | * the early permanent | | X | in |
| | | * newly formed bone | X | | the |
| | | * clinical crown height | | X | in |
| | | to the * line | | X | HPC |
| | | of the included * | X | | cases |
| | | central and lateral * | | X | incisor |
| | | the * position of | | X | vertical |
| | | face-to-face interaction with * | | X | the |
| | | * central and lateral | | X | the |
| | | reliability of the * | X | | cephalometric |
| | | reliability of the * | | X | measurements |
| | | position of the * | | X | maxillary |
| | | abutments for the * | X | | prosthesis |
| | | the * third molar | | X | mandibular |
| | | the * third molar | X | | impacted |
| | | * titanium base abutments | X | | cylindrical |
| | | the titanium base * | X | | abutments |
| | | the early * dentition | | X | permanent |
| | | the * dental arch | | X | upper |
| | | the * dental arch | | X | lower |
| | | the * strong anchorage | | X | indirect |
| | | the * strong anchorage | | X | direct |
| | | the * and control | | X | extraction |
| | | bone * in the | X | | regeneration |
| | | on the *of | | X | basis |
| | | by the * of | | X | number |
| | | and the * of | | X | number |
| | | by the * of | | X | number |
| | | of the * and | | X | upper |
| | | of the * and | X | | mandible |
| | M5S3: Indicating criteria for success | were * in the | X | | used |
| | | * in this study | X | | used |
| | | * in this study | X | | included |
| | | were * in the | X | | used |
| | | were *from the | X | | excluded |
| | | was used to * | X | | assess |
| | | used to * the | X | | assess |
| | | was used to * | X | | assess |
| | | was used to * | X | | determine |
| | | * in the study | X | | included |
| | | the * of the | | X | results |
| | | the * of the | X | | reliability |
| | | the * of the | | X | height |
| | | in the * of | | X | range |
| | | and satisfaction with * | | X | dental |
| | | abutment for the * | X | | crown |
| | | * in this study | X | | included |
| | | titanium base abutment * | X | | for |
| | | at the same * | | X | time |

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | of the * ridge | X | | alveolar |
| | | at the * time | | X | same |
| | | a * level of | | X | significance |
| | | of the * cavity | X | | cystic |
| | | during the * period | X | | observation |
| | | of the mandibular * | | X | third |
| | | of * central incisors | | X | maxillary |
| | | * newly formed bone | X | | of |
| | | satisfaction with * aesthetics | | X | dental |
| | | titanium base abutment | X | | cylindrical |
| | | of the cystic * | X | | cavity |
| | | of the cystic * | X | | lesions |
| | | reliability of the * | | X | cephalometric |
| | | reliability of the * | | X | measurements |
| | | abutments for the * | X | | prosthesis |
| | | abutments for the * | X | | crown |
| | | conical titanium base * | X | | abutments |
| **Move 6: Describing data-analysis procedures** | M6S1: Indicating process of data classification | analyses were performed * | X | X | using |
| | | analyses were performed * | X | X | with |
| | | was * statistically significant | X | | considered |
| | | was * in the | X | | performed |
| | | was * to assess | | X | used |
| | | are * in table | X | | listed |
| | | used to * the | | X | assess |
| | | used to * the | X | | evaluate |
| | | used to * the | X | X | compare |
| | | used to * the | | X | calculate |
| | | was used to * | X | X | evaluate |
| | | was used to * | | X | assess |
| | | was used to * | | X | compare |
| | | was used to * | | X | calculate |
| | | was used to * | X | X | determine |
| | | analysis was * to | X | X | used |
| | | * used to compare | | X | was |
| | | * used to compare | X | | were |
| | | with * to the | | X | respect |
| | | to the * of | | X | presence |
| | | to the * of | | X | presence |
| | | the * between the | | X | difference |
| | | * difference between the | | X | the |
| | | in the * group | X | | ABX |
| | | to the * plane | | X | occlusal |
| | | * newly formed bone | X | | of |
| | | to the * line | | X | HPC |
| | | the * position of | | X | initial |
| | | the early * dentition | | X | permanent |
| | | with the * of | X | | aid |
| | M6S2: Recounting analytical instrument/procedure | was performed * | X | X | using |
| | | were * for the | X | | used |
| | | was * to assess | X | | performed |
| | | was * with the | X | | performed |
| | | used to * the | X | | assess |
| | | used to * the | X | X | compare |
| | | used to * the | | X | calculate |
| | | was used to * | X | X | evaluate |
| | | was used to * | X | X | compare |
| | | was used to * | | X | calculate |
| | | was used to * | | X | determine |
| | | were used to * | X | | assess |
| | | used to * the | | X | evaluate |
| | | analysis was * to | X | | used |
| | | analysis was * to | X | | performed |
| | | * used to compare | X | | was |
| | | * used to compare | X | X | were |
| | | the * of the | | X | effect |
| | | and the * of | X | | number |
| | | to the * of | | X | presence |
| | | to the * of | | X | presence |
| | | and the * of | X | | number |
| | | a * level of | | X | significance |
| | | in the * group | X | | ABX |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | during the * period | X | | study |
| | | * newly formed bone | X | | of |
| | | * newly formed bone | X | | the |
| | | * the two groups | X | | in |
| | | with the * of | X | | goal |
| | | with a * of | X | | total |
| | | of the * and | | X | canines |
| | M6S3: Indicating modification to instrument/procedure | were * in the | | X | used |
| | | were used * the | X | | for |
| | | was * statistically significant | X | X | considered |
| | | the * side was | X | | non-fracture |
| | | was * in the | | X | performed |
| | | were * in the | | X | used |
| | | * used as a | X | | was |
| | | was to * the | | X | evaluate |
| | | * used to assess | | X | was |
| | | was * to assess | X | | performed |
| | | in order to * | | X | assess |
| | | used to * the | X | | assess |
| | | used to * the | X | X | evaluate |
| | | used to * the | X | X | compare |
| | | used to * the | X | | calculate |
| | | was used to * | X | X | evaluate |
| | | was used to * | | X | assess |
| | | was used to * | X | X | compare |
| | | was used to * | X | | calculate |
| | | was used to * | | X | test |
| | | were used to * | X | X | assess |
| | | was to * the | | X | evaluate |
| | | study was to * | | X | evaluate |
| | | analysis was * to | X | | performed |
| | | * used to compare | X | X | was |
| | | * used to compare | X | X | were |
| | | this study * to | | X | was |
| | | the * of the | X | X | results |
| | | the * of the | | X | position |
| | | the * of the | | X | top |
| | | the * of the | | X | location |
| | | the * of a | | X | use |
| | | * of gingival recession | | X | frequency |
| | | at the * of | | X | ages |
| | | the * between the | X | | correlation |
| | | number of * with | | X | patients |
| | | * and control groups | | X | experimental |
| | | * patients with a | X | | in |
| | | * with and without | | X | children |
| | | significant * between the | | X | difference |
| | | significant difference * the | | X | between |
| | | a * level of | X | | significance |
| | | of the * bone | X | | buccal |
| | | in the * analysis | X | | univariate |
| | | * newly formed bone | X | | the |
| | | * the HPC line | | X | to |
| | | * the HPC line | | X | crossing |
| | | the * sample size | X | | total |
| | | the prevalence of * | | X | root |
| | | the * position of | | X | initial |
| | | reliability of the * | X | | cephalometric |
| | | the early * dentition | | X | permanent |
| | | the * and control | | X | experimental |
| | M6S4: Indicating statistical significance | analyses were performed * | X | X | using |
| | | analyses were performed * | | X | with |
| | | difference was * significant | X | | statistically |
| | | was a significant * | | X | difference |
| | | was * statistically significant | X | X | considered |
| | | used to * the | X | | assess |
| | | used to * the | | X | assess |
| | | used to * the | | X | evaluate |
| | | was used to * | X | X | assess |
| | | was used to * | | X | compare |
| | | was used to calculate * | | X | calculate |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | was used to * | X | X | determine |
| | | were used to * | | X | assess |
| | | used to * the | | X | evaluate |
| | | analysis was * to | X | X | used |
| | | was used to * | | X | compare |
| | | the * of the | X | | analysis |
| | | the * between the | X | X | correlation |
| | | * and control groups | | X | extraction |
| | | * with and without | | X | children |
| | | a significant difference * | | X | between |
| | | significant * between the | | X | difference |
| | | significant difference * the | | X | between |
| | | statistically significant differences * | | X | in |
| | | significant differences * the | | X | in |
| | | * significant differences in | | X | statistically |
| | | * significant difference between | | X | a |
| | | a * level of | | X | significance |
| | | difference between the * | | X | two |
| | | * the facial midline | | X | from |
| | | * at the end | | X | groups |
| | | during the * period | | X | observational |
| | | in the * analysis | X | | multivariate |
| | | * the early permanent | | X | in |
| | | satisfaction with * aesthetics | | X | dental |
| | | reliability of the * | | X | cephalometric |
| | | reliability of the * | | X | measurements |
| | | the * and control | | X | extraction |

มหาวิทยาลัยเทคโนโลยีสุรนารี

# APPENDIX E

## Mapping Phrase Frames to Move-step Structure in the RA Results of the Two Sub-disciplines of Dentistry

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| Results | | | | | |
| Move 7: Indicating data characteristics | | the * group was | X | | control |
| | | * this study was | X | | in |
| | | were used * the | X | | for |
| | | * in this study | X | X | included |
| | | was a significant * | | X | difference |
| | | differences were found * | X | | between |
| | | there were no * | | X | significant |
| | | no significant differences * | X | | were |
| | | was * in the | X | | observed |
| | | were * from the | X | | excluded |
| | | were * between the | X | | found |
| | | was * as a | X | | defined |
| | | were * from the | X | | excluded |
| | | are * in table | X | | presented |
| | | are * in table | | X | shown |
| | | are * in table | X | | listed |
| | | is * in table | | X | shown |
| | | * with the other | X | | compared |
| | | are * in table | X | | shown |
| | | is * in table | | X | shown |
| | | included in * study | X | X | this |
| | | included in * study | X | | the |
| | | the * of the | X | | results |
| | | the * of the | X | | end |
| | | the * of the | X | | use |
| | | the * of the | X | | majority |
| | | the * of the | X | | use |
| | | * of gingival recession | | X | amount |
| | | with * to the | | X | respect |
| | | in the * of | X | | department |
| | | the number of * | X | | patients |
| | | in the * of | X | | number |
| | | in the * of | X | | amount |
| | | at the * of | X | | time |
| | | * number of patients | X | | patients |
| | | number of * with | X | | patients |
| | | * in this study | X | | included |
| | | a significant * between | | X | difference |
| | | * between the groups | X | | significantly |
| | | no significant differences * | X | | between |
| | | no significant differences * | X | | were |
| | | no significant differences * | X | | in |
| | | significantly between the * | X | | groups |
| | | significant * in the | X | | differences |
| | | significant differences * the | X | | between |
| | | a significant * between | | X | difference |
| | | * between the groups | X | | significantly |
| | | in the * area | X | | parotid |
| | | on the * side | X | | right |
| | | on the * side | X | | left |
| | | in the * group | X | | test |
| | | in the * group | X | | SFA |
| | | of the * bone | X | | buccal |
| | | on the * side | X | | right |
| | | on the * side | X | | left |
| | | during the * period | X | | observation |
| | | during the * period | X | | study |
| | | during the * period | X | | observation |
| | | on the * side | X | | right |
| | | * titanium base abutment | X | | cylindrical |
| | | of the * cases | X | | included |
| | | and * of the | X | | floor |
| | | position of the * | X | | cutting |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | in the * of | X | | number |
| | | to the * that | | X | fact |
| **Move 8: Reporting the findings** | M8S1: Stating the outcomes | the * group was | X | | control |
| | | the * group was | X | | submental |
| | | was a significant * | X | | difference |
| | | differences were found * | | X | in |
| | | differences were * between | | X | found |
| | | there was no * | | X | significant |
| | | there was no * | X | | difference |
| | | there was no * | X | | statistically |
| | | there was no * | X | | significant |
| | | there were no * | X | | significant |
| | | was * statistically significant | X | | no |
| | | * between the groups | | X | found |
| | | significant differences were * | | X | found |
| | | significant differences were * | X | | observed |
| | | differences were * between | | X | found |
| | | was * in the | | X | observed |
| | | was * in the | X | | found |
| | | was * in the | X | | performed |
| | | were * in the | | X | included in the |
| | | were found * the | X | | in |
| | | were * in the | X | | placed |
| | | were found * the | | X | between |
| | | were found * the | X | | in |
| | | * found in the | X | | be |
| | | this study * that | X | | showed |
| | | are * in table | X | | shown |
| | | are * in table | X | | summarized |
| | | are * in table | | X | listed |
| | | is * in table | X | | outlined |
| | | * with the other | X | | compared |
| | | * shown in table | X | | are |
| | | * shown in table | | X | as |
| | | were used to * | X | | compare |
| | | * used to compare | X | | were |
| | | * in the study | X | | included |
| | | the * of the | | X | results |
| | | the * of the | | X | end |
| | | the * of the | | X | effect |
| | | the * of the | | X | majority |
| | | the * of the | X | | analysis |
| | | the * of the | | X | strength |
| | | the *r of the | X | | floor |
| | | the average * of | X | X | average |
| | | the mean * of | X | | number |
| | | * of gingival recession | | X | frequency |
| | | in * with the | X | | comparison |
| | | in the * of | X | | department |
| | | in the * of | X | | case |
| | | in the * of | | X | prevalence |
| | | in the * of | | X | range |
| | | to the * of | | X | presence |
| | | to the * of | | X | type |
| | | at the * of | | X | end |
| | | at the * of | | X | age |
| | | at the * of | X | | time |
| | | at the * of | | X | ages |
| | | to the * of | X | | presence |
| | | within the * of | | X | range |
| | | within the * of | | X | limitations |
| | | by the * of | | X | bynumber |
| | | the number of * | X | | implants |
| | | the * between the | X | | differences |
| | | the time of * | X | | surgery |
| | | * and control groups | X | | experimental |
| | | * and control groups | | X | extraction |
| | | a * rate of | X | | recurrence |
| | | titanium base abutment * | X | | designs |
| | | a high * of | X | | risk |
| | | a significant * between | | X | difference |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | * between the groups | | X | difference |
| | | * between the groups | X | | significantly |
| | | no significant difference * | X | | between |
| | | no significant * between | | X | difference |
| | | * significant differences between | X | | no |
| | | no significant differences * | | X | in |
| | | no significant differences * | X | | were |
| | | significant difference * the | X | X | between |
| | | significant difference * the | | X | in |
| | | * significant difference in | X | | statistically |
| | | a significant difference * | | X | in |
| | | significant * between the | X | X | difference |
| | | no significant * in | | X | differences |
| | | a significant * in | X | | increase |
| | | a significant * in | X | | decrease |
| | | * for patients with | X | | recommended |
| | | * between the groups | | X | difference |
| | | * statistically significant difference | X | X | no |
| | | a statistically significant * | X | | difference |
| | | statistically significant differences * | | X | in |
| | | * significant differences were | | X | statistically |
| | | significant * between the | X | | differences |
| | | the * between the | X | | differences |
| | | a significant * between | X | | difference |
| | | a significant difference * | | X | in |
| | | * between the groups | X | | significantly |
| | | difference between the * | X | X | two |
| | | difference between the * | | X | groups |
| | | on the * side | | X | right |
| | | in the * group | | X | L |
| | | in the * group | | X | extraction |
| | | in the * group | | X | H |
| | | in the * group | X | | submental |
| | | in the * group | X | | with-deficiency |
| | | in the * group | X | | without-deficiency |
| | | of the * second | X | | upper |
| | | * the upper second | | X | of |
| | | in the * region | X | | posterior |
| | | * the parotid gland | X | | in |
| | | *the parotid gland | X | | of |
| | | in the * gland | X | | parotid |
| | | * the facial midline | | X | from |
| | | * the facial midline | | X | to |
| | | * at the end | | X | spaces |
| | | on the * side | | X | right |
| | | * the right side | | X | towards |
| | | * the right side | | X | on |
| | | of the * population | | X | study |
| | | during the * period | X | | study |
| | | during the * period | | X | observational |
| | | during the * period | X | | retention |
| | | * the right side | | X | on |
| | | * the right side | | X | towars |
| | | in the * analysis | X | | univariate |
| | | * the study population | | X | of |
| | | in the * region | X | | posterior |
| | | * the HPC line | | X | to |
| | | * the HPC line | | X | crossing |
| | | satisfaction with * aesthetics | | X | dental |
| | | * titanium base abutment | X | | conical |
| | | of the included * | X | | studies |
| | | of the included * | X | | cases |
| | | difference was not & | X | | significant |
| | | difference was not * | X | | statistically |
| | | * and lateral incisor | | X | central |
| | | * incisors and canines | | X | lateral |
| | | and * of the | X | | stability |
| | | and * of the | X | | floor |
| | | the * position of | | X | initial |
| | | face-to-face interaction with * | | X | their |
| | | face-to-face interaction with * | | X | the |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | and soft tissue * | | X | changes |
| | | and soft tissue * | | X | profile |
| | | that the * of | | X | effect |
| | | position of the * | | X | upper |
| | | the quality of * | | X | evidence |
| | | * soft tissue recession | X | | advanced |
| | | * titanium base abutments | X | | cylindrical |
| | | * titanium base abutments | X | | conical |
| | | the * dental arch | | X | upper |
| | | the * strong anchorage | | X | indirect |
| | | the * and control | X | | experimental |
| | | * the two groups | | X | between |
| | | * the two groups | X | | in |
| | | bone * in the | X | | regeneration |
| | | to the * of | | X | type |
| | | by the * of | | X | number |
| | | of the * and | X | | maxilla |
| | M8S2: Stating figures or tables | the * group was | X | | control |
| | | the * group was | X | | submental |
| | | was * in the | X | | higher |
| | | significant * was found | X | X | difference |
| | | * significant difference was | X | | no |
| | | there was no * | X | X | significant |
| | | there was no * | | X | difference |
| | | there was no * | X | | statistically |
| | | there was no * | X | X | significant |
| | | there were * significant | | X | no |
| | | * significant differences were | X | | no |
| | | was * in the | X | | observed |
| | | was * in the | X | | found |
| | | were * in the | X | | placed |
| | | was * in the | X | | found |
| | | this study * that | | X | found |
| | | are * in table | X | | shown |
| | | are * in table | X | | summarized |
| | | * with the other | X | | compared |
| | | as * in table | | X | shown |
| | | the * of the | | X | results |
| | | the p* of the | | X | position |
| | | the * of the | | X | majority |
| | | the *of the | | X | positioning |
| | | the a* of the | X | | analysis |
| | | the * of the | | X | age |
| | | the * number of | X | X | average |
| | | the mean * of | X | | number |
| | | * of gingival recession | | X | frequency |
| | | at the * of | | X | end |
| | | the number of * | X | | implants |
| | | the * between the | | X | differences |
| | | * with and without | | X | children |
| | | * significant difference between | | X | no |
| | | no significant difference * | X | | in |
| | | no significant c* between | | X | correlation |
| | | significant * in the | | X | difference |
| | | statistically significant difference * | X | X | in |
| | | a significant * in | | X | difference |
| | | a significant * in | | X | decrease |
| | | a * significant difference | X | | statistically |
| | | * significant correlation between | | X | no |
| | | significantly * the two | X | | between |
| | | * between the two | X | | significantly |
| | | on the * side | | X | left |
| | | in the * group | | X | control |
| | | in the * group | X | | submental |
| | | in the * group | X | | with-deficiency |
| | | of the* lip | X | | upper |
| | | of the * lip | X | | lower |
| | | * the facial midline | | X | from |
| | | * the facial midline | | X | to |
| | | on the * side | | X | right |
| | | of the * incisors | | X | mandibular |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | on the * side | | X | right side |
| | | in the * analysis | X | | univariate |
| | | * titanium base abutment | X | | cylindrical |
| | | *of the upper | X | | position |
| | | * titanium base abutments | X | | cylindrical |
| | | the upper * arch | | X | dental |
| | | in * to the | | X | relation |
| | M8S3: Reviewing/comparing to previous work | a high * of | X | | risk |
| | | in the * group | X | | test |
| | | in the * group | X | | with-deficiency |
| | | in the * group | X | | without-deficiency |
| | | in the two * | X | | groups |
| | | with a * of | X | | total |
| **Move 9: Stating comments on the results** | M9S1: Comparing the experimental and control group | tipping of the * | | X | posterior |
| | | tipping of the * | | X | canines |
| | | tipping of the * | | X | incisors |
| | | the * group was | X | | control |
| | | * in this study | | X | included |
| | | * tipping of the | | X | distal |
| | | * tipping of the | X | X | mesial |
| | | were * likely to | | X | likely |
| | | were * likely to | X | | likely |
| | | * was statistically significant | | X | difference |
| | | was * in the | | X | larger |
| | | * one of the | | X | as |
| | | found between the * | | X | groups |
| | | significant * was found | X | X | difference |
| | | * difference was found | X | X | no |
| | | was a significant * | | X | difference |
| | | differences were found * | | X | in |
| | | differences were found * | | X | between |
| | | no significant *was | | X | difference |
| | | there was * significant | X | | no |
| | | there was no * | X | X | statistically |
| | | there * no significant | | X | was |
| | | there * no significant | X | X | were |
| | | was * statistically significant | X | | no |
| | | was no significant * | X | | difference |
| | | found between the * | | X | groups |
| | | significant differences were * | | X | found |
| | | significant differences were * | X | X | observed |
| | | no significant differences * | X | X | were |
| | | * significant differences were | X | | statistically |
| | | differences were * between | | X | found |
| | | differences were * between | X | | observed |
| | | it has been * | | X | reported |
| | | be * to the | | X | attributed |
| | | was * in the | X | | observed |
| | | was * in the | X | X | found |
| | | was * in the | X | | seen |
| | | were * in the | | X | larger |
| | | were * between the | X | | found |
| | | were * between the | X | X | observed |
| | | has been * that | | X | reported |
| | | are * in table | | X | summarized |
| | | is * in table | | X | shown |
| | | compared with the * | X | X | control |
| | | compared with the * | X | X | other |
| | | is * in table | | X | shown |
| | | as * in table | | X | shown |
| | | the * of the | | X | results |
| | | the * of the | | X | end |
| | | the * of the | | X | size |
| | | the * of the | | X | height |
| | | the * of the | | X | length |
| | | the use of * | | X | use |
| | | the use of * | X | | adjunctive |
| | | the * number of | X | | average |
| | | the total * of | | X | number |
| | | the * number of | | X | total |
| | | and the * of | X | | presence |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | and the * of | X | | number |
| | | with * to the | X | X | respect |
| | | in the * of | X | | treatment |
| | | in the * of | X | | context |
| | | in the * of | | X | amount |
| | | of the a * teeth | | X | anterior |
| | | * the posterior teeth | | X | of |
| | | of the * teeth | | X | posterior |
| | | at the * of | | X | age |
| | | and the * of | X | | presence |
| | | by the * of | X | | number |
| | | and the * of | X | | number |
| | | the number of * | X | | implants |
| | | and satisfaction with * | | X | dental |
| | | a * rate of | | X | higher |
| | | a * in the | X | | reduction |
| | | * in this study | | X | included |
| | | * of the study | | X | end |
| | | * tipping of the | | X | distal |
| | | * tipping of the | | X | mesial |
| | | *tipping of the | | X | lingual |
| | | titanium base abutment * | X | | designs |
| | | a * rate of | | X | higher |
| | | a * risk of | X | | high |
| | | differences between the * | | X | groups |
| | | no significant difference * | | X | between |
| | | no significant differences * | | X | in |
| | | * significant differences were | X | | no |
| | | no significant differences * | | X | were |
| | | no significant * between | | X | differences |
| | | significant difference * the | | X | difference |
| | | * significant difference in | X | | statistically |
| | | a significant difference * | | X | in |
| | | significant * between the | | X | difference |
| | | * significant differences in | X | X | no |
| | | * significant differences in | X | X | statistically |
| | | a significant difference * | | X | in |
| | | * statistically significant difference | | X | no |
| | | a * significant difference | X | | statistically |
| | | significant differences * the | | X | between |
| | | significant * in the | X | | differences |
| | | statistically significant differences * | X | X | in |
| | | * significant differences were | X | | statistically |
| | | significant * between the | | X | differences |
| | | a significant * in | | X | difference |
| | | * facial vertical height | X | | increased |
| | | in the * area | X | | parotid |
| | | on the * side | | X | right |
| | | on the * side | | X | left |
| | | on the * side | | X | impacted |
| | | in the * group | | X | control |
| | | in the * group | | X | L |
| | | in the * group | | X | extraction |
| | | in the * group | | X | H |
| | | in the * group | | X | PHY |
| | | in the * group | X | | submental |
| | | in the * group | X | | with-deficiency |
| | | in the * group | X | | without-deficiency |
| | | in the * group | X | | END |
| | | in the * group | | X | adult |
| | | in the * area | X | | parotid |
| | | of the * lip | | X | upper |
| | | * at the end | | X | groups |
| | | on the * side | | X | right |
| | | on the * side | | X | left |
| | | to the * plane | | X | midsagittal |
| | | during the * period | | X | observational |
| | | on the * side | | X | right |
| | | in the * analysis | X | | multivariate |
| | | * the early permanent | | X | in |
| | | crossing the * line | | X | HPC |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | satisfaction with * aesthetics | | X | dental |
| | | * titanium base abutment | X | | cylindrical |
| | | *titanium base abutment | X | | conical |
| | | * tipping of the | | X | distal |
| | | of the included * | X | | studies |
| | | the * of root | | X | prevalence |
| | | * prevalence of root | | X | higher |
| | | the * position of | | X | initial |
| | | face-to-face interaction with * | | X | their |
| | | and soft tissue * | | X | profile |
| | | the * posterior teeth | | X | lower |
| | | the * posterior teeth | | X | upper |
| | | the lower * teeth | | X | anterior |
| | | the quality of * | | X | evidence |
| | | abutments for the * | X | | crown |
| | | the * central incisors | | X | upper |
| | | * titanium base abutments | X | | cylindrical |
| | | * titanium base abutments | X | | conical |
| | | the * permanent dentition | | X | early |
| | | the * dental arch | | X | upper |
| | | the * dental arch | | X | dental |
| | | the lower * teeth | | X | posterior |
| | | the * strong anchorage | | X | indirect |
| | | the * strong anchorage | | X | two |
| | | the * and control | X | | experimental |
| | | * the two groups | | X | between |
| | | in the two * | X | | groups |
| | | with the * of | X | | exception |
| | | on the * of | X | | results |
| | | in the * of | X | | treatment |
| | | by the * of | X | | number |
| | | with a * of | | X | history |
| | | of the * and | | X | upper |
| | | of the * and | | X | canines |
| | | in * to the | | X | relation |
| | | in * to the | | X | contrast |
| | M9S2: Indicating statistical tests | the * group was | | X | INH |
| | | was significantly * than | | X | greater |
| | | was * in the | | X | shorter |
| | | was * in the | | X | higher |
| | | was * in the | | X | larger |
| | | significant * was found | X | X | difference |
| | | no * was found | | X | difference |
| | | was a significant * | X | | increase |
| | | * were found in | | X | differences |
| | | * significant difference was | | X | no |
| | | there was * difference | X | | no |
| | | there was * statistically | X | | no |
| | | was * statistically significant | | X | not |
| | | was * statistically significant | X | | no |
| | | was * in the | | X | observed |
| | | * found in the | | X | was |
| | | were found * the | | X | in |
| | | were * in the | | X | in |
| | | were * in the | | X | found |
| | | * found in the | | X | were |
| | | are * in table | X | | shown |
| | | * with the control | | X | compared |
| | | * shown in table | X | | are |
| | | * shown in table | X | | as |
| | | the * of the | X | | results |
| | | the * of the | | X | end |
| | | the * of the | | X | size |
| | | the * number of | X | | average |
| | | the total * of | | X | number |
| | | * of gingival recession | | X | amount |
| | | at the * of | | X | age |
| | | * the level of | | X | level |
| | | at the * of | | X | ages |
| | | at the * of | | X | level |
| | | the * between the | X | | differences |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | number of * with | X | | days |
| | | an * of the | | X | increase |
| | | * of the study | | X | end |
| | | a * level of | | X | high |
| | | a high * of | | X | level |
| | | difference between the * | | X | groups |
| | | * significant difference between | | X | no |
| | | significant difference * the | X | | between |
| | | significant * between the | X | X | difference |
| | | a significant * in | X | | increase |
| | | a significant * in | | X | difference |
| | | a significant *in | | X | decrease |
| | | * between the groups | | X | difference |
| | | difference between the * | | X | groups |
| | | * statistically significant difference | | X | no |
| | | the * between the | X | | differences |
| | | a * risk of | X | | high |
| | | a high * of | X | | level |
| | | significantly * than the | | X | greater |
| | | * between the groups | | X | difference |
| | | * facial vertical height | | X | decreased |
| | | in the * group | | X | control |
| | | in the * group | | X | L |
| | | in the * group | | X | H |
| | | in the * group | | X | PHY |
| | | in the * group | | X | INH |
| | | in the * group | X | | submental |
| | | in the * group | X | | test |
| | | in the * group | | X | treated |
| | | in the * group | X | | END |
| | | in the * group | | X | CON |
| | | in the * group | | X | CON |
| | | in the * group | | X | adult |
| | | in the * group | | X | intervention |
| | | in the * sectors | | X | anterior |
| | | in the * analysis | X | | multivariate |
| | | in the early * | | X | permanent |
| | | satisfaction with * aesthetics | X | | facial |
| | | * was not statistically | | X | difference |
| | | the quality of * | X | | evidence |
| | | the * permanent dentition | | X | early |
| | | the * dental arch | | X | lower |
| | | the mandibular * arch | | X | dental |
| | | with the * of | | X | exception |
| | | in * to the | | X | relation |
| | M9S3: Making generalizations or interpretations of the results | * there was no | | X | however |
| | | were less * to | | X | likely |
| | | difference was * significant | X | | not |
| | | difference was * significant | X | X | statistically |
| | | was significantly greater * | | X | than |
| | | was significantly greater * | | X | in |
| | | was * in the | | X | higher |
| | | significant * was found | X | X | difference |
| | | was a significant * | X | X | difference |
| | | was a significant * | X | | correlation |
| | | differences were found * | | X | between, in |
| | | no significant * was | | X | no |
| | | there was * significant | X | X | no |
| | | there * no statistically | | X | was |
| | | there was no * | X | | significant |
| | | there * no significant | X | X | no |
| | | there * no significant | X | | were |
| | | was * statistically significant | X | X | no |
| | | was no significant * | X | | difference |
| | | was no significant * | X | | correlation |
| | | significant * were observed | X | | differences |
| | | no significant * were | X | X | differences |
| | | differences were * between | X | | observed |
| | | the * side was | X | | fracture |
| | | the * side was | X | | non-fracture |
| | | might be * by | | X | explained |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | it has been * | | X | reported |
| | | be * by the | | X | affected |
| | | was * in the | X | | seen |
| | | were * in the | | X | found |
| | | were * between the | | X | found |
| | | were * between the | X | | observed |
| | | be * by the | | X | affected |
| | | was used to * | | X | used |
| | | was * to assess | | X | performed |
| | | were * in the | | X | found |
| | | are * in table | X | | presented |
| | | are * in table | | X | shown |
| | | is * in table | X | | outlined |
| | | * with the control | X | | compared |
| | | are * in table | | X | shown |
| | | used to * the | | X | evaluate |
| | | was used to * | X | | assess |
| | | was used to * | X | | test |
| | | used to * the | | X | evaluate |
| | | analysis was * to | | X | performed |
| | | the * of the | X | X | results |
| | | the * of the | X | | effect |
| | | the * of the | X | | majority |
| | | the *of the | X | | design |
| | | the * of the | X | | size |
| | | the * of the | X | | stability |
| | | the * of the | X | | positioning |
| | | the * of the | X | | analysis |
| | | and the * of | | X | presence |
| | | with * to the | | X | regard |
| | | in * with the | X | X | comparison |
| | | in the * of | | X | treatment |
| | | in the * of | X | | range |
| | | in the * of | | X | absence |
| | | to the * of | X | | lack |
| | | of the * teeth | | X | posterior |
| | | at the * of | | X | age |
| | | at the * of | X | | time |
| | | at the * of | | X | level |
| | | to the * of | | X | presence |
| | | and the * of | | X | presence |
| | | the * between the | X | | difference |
| | | and satisfaction with * | | X | dental |
| | | * and control groups | X | X | experimental |
| | | titanium base abutment * | X | | designs |
| | | at the * level | | X | same |
| | | a high * of | X | | risk |
| | | a significant * between | | X | difference |
| | | a significant * between | X | X | correlation |
| | | * between the groups | | X | differences |
| | | significantly between the * | X | X | groups |
| | | * significant correlation between | X | X | no |
| | | * significant correlation between | X | | a |
| | | no significant difference * | | X | between |
| | | no significant difference * | X | | in |
| | | no significant difference * | | X | between |
| | | no significant * between | | X | difference |
| | | no significant * between | | X | correlation |
| | | no significant differences * | | X | in |
| | | no significant * were | | | differences |
| | | significant * between the | X | X | difference |
| | | significant difference * the | X | | in |
| | | significant difference * the | X | X | between |
| | | the * between the | X | | difference |
| | | * significant differences in | | X | no |
| | | * significant differences in | X | | statistically |
| | | a significant * in | X | X | difference |
| | | significantly between the * | | X | groups |
| | | no statistically significant * | X | | difference |
| | | * significant correlation between | X | | no |
| | | * significant correlation between | X | | a |

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | significant * in the | X | | differences |
| | | statistically significant differences * | X | | in |
| | | a high * of | X | | risk |
| | | significantly between the * | X | X | groups |
| | | significantly greater * the | | X | in |
| | | * facial vertical height | | X | increased |
| | | * facial vertical height | | X | decreased |
| | | on the * side | X | | non-fracture |
| | | on the * side | X | | fracture |
| | | in the * group | | X | control |
| | | in the * group | | X | extraction |
| | | in the * group | | X | PHY |
| | | in the * group | | X | INH |
| | | in the * group | | X | test |
| | | in the * group | X | | ABX |
| | | in the * group | X | | END |
| | | in the * group | | X | CON |
| | | of the * second | | X | maxillary |
| | | of the * cavity | X | | cystic |
| | | of the maxillary * | | X | second |
| | | of the maxillary * | | X | central |
| | | of the * lip | | X | upper |
| | | * of the cutting | X | | positioning |
| | | on the * side | X | | non-fracture |
| | | on the * side | X | | fracture |
| | | to the * plane | X | | horizontal |
| | | in the * arch | | X | mandibular |
| | | in the * analysis | X | | univariate |
| | | * the early permanent | | X | of |
| | | the * central incisors | | X | maxillary |
| | | in the * of | | X | treatment |
| | | * newly formed bone | X | | of |
| | | satisfaction with * aesthetics | | X | dental |
| | | * titanium base abutment | X | | cylindrical |
| | | * titanium base abutment | X | | conical |
| | | of the * cavity | X | | cystic |
| | | difference was * significant | X | | not |
| | | central and lateral * | | X | incisor |
| | | * of the anterior | | X | changes |
| | | position of the * | | X | upper |
| | | the quality of * | X | | evidence |
| | | * titanium base abutments | X | | cylindrical |
| | | * titanium base abutments | X | | conical |
| | | the * and control | X | | experimental |
| | | in the two * | | X | groups |
| | | in the * study | | X | present |
| | | with the * of | X | | result |
| | | in the * of | | X | treatment |
| | | with a * of | X | | total |
| | | in * to the | | X | relation |

มหาวิทยาลัยเทคโนโลยีสุรนารี

# APPENDIX F

## Mapping Phrase Frames to Move-step Structure in the RA Discussions of the Two Sub-disciplines of Dentistry

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| Discussion | | | | | |
| Move 10: Indicating aims of study | | tipping of the * | X | | mandibular |
| | | * this study was | X | X | of |
| | | * in this study | | X | used |
| | | * to evaluate the | X | | was |
| | | * to evaluate the | X | | aimed |
| | | study was to * | X | X | investigate |
| | | study was to * | X | | evaluate |
| | | study was to * | | X | compare |
| | | this study * to | X | | was |
| | | this study * to | X | | aimed |
| | | the * of the | X | | design |
| | | the * of the | X | | precision |
| | | the * of the | X | | aim |
| | | the * of this | X | | results |
| | | in the * area | X | | parotid |
| | | * titanium base abutment | X | | the |
| | | face-to-face interaction with * | | X | their |
| | | the * anterior teeth | | X | lower |
| | | * of this study | | X | aim |
| | | * of this study | X | | results |
| | | study * to evaluate | X | | was |
| | | on the * of | X | | precision |
| Move 11: Highlighting research outcomes | M11S1: Stating outcomes | * there was no | X | | that |
| | | * there was no | X | | however |
| | | the * group was | X | | submental |
| | | the * group was | | X | INH |
| | | * this study was | X | | of |
| | | * this study was | X | X | in |
| | | have been * in | X | X | reported |
| | | * in this study | | X | used |
| | | were less * to | | X | likely |
| | | * was not significant | | | difference |
| | | was significantly greater * | | X | than |
| | | was significantly greater * | | X | in |
| | | * one of the | X | | is |
| | | * one of the | | X | as |
| | | * difference was found | X | X | significant |
| | | * difference was found | X | | no |
| | | was a significant * | X | | increase |
| | | differences were found * | X | | between |
| | | * significant difference was | | X | no |
| | | there was no * | X | | significant |
| | | there was no * | X | | difference |
| | | there * no significant | X | | was |
| | | there * no significant | X | X | were |
| | | was not statistically * | X | | significant |
| | | was no significant * | X | X | difference |
| | | was no significant * | X | | correlation |
| | | significant differences were * | | X | found |
| | | significant differences were * | | X | observed |
| | | * to the control | | X | compared |
| | | differences were found * | X | | between |
| | | * be due to | X | | could |
| | | * be due to | X | | may |
| | | * be due to | X | | might |
| | | * be attributed to | X | | may |
| | | may be * to | X | | attributed |
| | | * be due to | X | | due |
| | | may be * to | X | X | attributed |
| | | * be explained by | X | | could |
| | | * be explained by | X | X | can |
| | | * be explained by | X | | might |
| | | could be * to | X | X | due |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | could be * to | X | X | attributed |
| | | it has been * | X | X | reported |
| | | it has been * | X | X | suggested |
| | | has been * to | | X | found |
| | | has been * to | | X | shown |
| | | * been reported to | X | | has |
| | | be * by the | X | X | explained |
| | | be * by the | | X | affected |
| | | be * to the | X | | due |
| | | be * to the | X | X | attributed |
| | | be * to the | X | | related |
| | | it is * that | X | | recommended |
| | | it is * that | | X | known |
| | | was * in the | X | X | observed |
| | | was * in the | X | | was |
| | | * observed in the | X | | was |
| | | was * in the | | X | seen |
| | | were * in the | X | | placed |
| | | were * from the | X | | excluded |
| | | have been * to | X | | found |
| | | have been * to | X | | used |
| | | have been * to | X | | reported |
| | | was * as a | X | | used |
| | | was * as a | X | | identified |
| | | be * by the | X | | explained |
| | | be * by the | | X | affected |
| | | was to * the | | X | evaluate |
| | | were * from the | X | | excluded |
| | | was * with the | X | | erformed |
| | | was * with the | X | | consistent |
| | | studies have * that | X | X | shown |
| | | studies have * that | X | X | demonstrated |
| | | been * to be | | X | found |
| | | been * to be | | X | shown |
| | | been * to be | X | | reported |
| | | was * in the | X | | found |
| | | be * in the | X | | found |
| | | has been * that | | X | reported |
| | | has been * that | X | | suggested |
| | | previous studies have * | | X | reported |
| | | previous studies have * | X | X | demonstrated |
| | | have * that the | | X | shown |
| | | have * that the | X | | demonstrated |
| | | this study * that | | X | showed |
| | | this study * that | | X | found |
| | | * with the control | | X | compared |
| | | * to evaluate the | X | | used |
| | | * to assess the | | X | aimed |
| | | used to * the | X | X | evaluate |
| | | * to evaluate the | | X | was |
| | | was to * the | | X | evaluate |
| | | analysis was * to | X | | performed |
| | | this study * to | | X | was |
| | | this study * to | | X | aimed |
| | | included in * study | | X | this |
| | | included in * study | | X | the |
| | | the * of the | X | X | results |
| | | the * of the | | X | end |
| | | the * of the | | X | position |
| | | the * of the | X | X | accuracy |
| | | the * of the | | X | effect |
| | | the * of the | X | | effect |
| | | the * of the | X | | use |
| | | the * of the | X | | design |
| | | the * of the | | X | size |
| | | the * of the | X | | stability |
| | | the * of the | X | | precision |
| | | the * of the | X | | region |
| | | the * of the | X | | severity |
| | | the * of the | X | | location |
| | | the * of the | | X | height |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | the * of the | X | | positioning |
| | | the * of the | X | | age |
| | | the * of the | | X | duration |
| | | the * of the | | X | rigidity |
| | | the * of the | | X | base |
| | | the * of the | X | | floor |
| | | the * of the | | X | introduction |
| | | the * of this | X | X | results |
| | | the * of this | X | | objective |
| | | the use of * | X | | use |
| | | the use of * | X | | use |
| | | the use of * | X | | adjunctive |
| | | the use of * | | X | direct |
| | | the * number of | X | | average |
| | | the * number of | X | | total |
| | | and the * of | X | | number |
| | | and the * of | X | X | effect |
| | | * of gingival recession | | X | frequency |
| | | with * to the | X | | respect |
| | | in * with the | X | X | accordance |
| | | in * with the | X | X | agreement |
| | | in * with the | X | | line |
| | | in the * of | X | | case |
| | | in the * of | X | | treatment |
| | | in the * of | X | X | context |
| | | in the * of | | X | number |
| | | in the * of | | X | prevalence |
| | | in the * of | X | X | range |
| | | to the * of | X | X | best |
| | | to the * of | X | | presence |
| | | to the * of | X | | lack |
| | | to the * of | X | | type |
| | | of the * teeth | | X | anterior |
| | | at the * of | X | | end |
| | | at the * of | X | X | time |
| | | * the level of | X | | at |
| | | to the * of | X | | presence |
| | | in the * of | X | | range |
| | | and the * of | X | | number |
| | | the number of * | X | | implants |
| | | the difference between * | | X | the |
| | | the * between the | X | X | difference |
| | | the * between the | X | | relationship |
| | | the * between the | X | | correlation |
| | | the * between the | | X | differences |
| | | and satisfaction with * | | X | dental |
| | | and satisfaction with * | | X | aesthetics |
| | | vertical position of * | | X | the |
| | | number of *with | | X | patients |
| | | a * rate of | X | | recurrence |
| | | a * in the | X | | reduction |
| | | a * in the | X | | role |
| | | an * of the | X | | increase |
| | | abutment for the * | X | | crown |
| | | * patients with a | | X | in |
| | | * patients with a | X | | for |
| | | * of the study | | X | end |
| | | titanium base abutment * | X | | design |
| | | titanium base abutment * | X | | for |
| | | * with and without | X | X | patients |
| | | * with and without | | X | children |
| | | at the same * | | X | time |
| | | at the same * | | X | level |
| | | a higher * of | X | | risk |
| | | a higher * of | | X | level |
| | | one of the * | | X | main |
| | | * between the groups | | X | significantly |
| | | significantly between the * | | X | groups |
| | | than * of the | | X | half |
| | | of * alveolar ridge | | X | mesial |
| | | of * alveolar ridge | | X | the |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | * the same time | | X | at |
| | | no significant * between | | X | difference |
| | | * significant correlation between | | X | no |
| | | no significant correlation * | X | | between |
| | | no * differences between | | X | significant |
| | | significant difference between * | X | | the |
| | | significant * in the | X | X | difference |
| | | a significant * in | X | X | difference |
| | | significant difference * the | X | X | between |
| | | the * between the | | X | difference |
| | | the difference * the | X | X | between |
| | | * significant differences in | X | | no |
| | | a significant * in | X | | increase |
| | | a significant difference * | X | | in |
| | | a significant * in | | X | reduction |
| | | * for patients with | X | | recommended |
| | | * for patients with | | X | suitable |
| | | * between the groups | | X | differences |
| | | * between the groups | | X | significantly |
| | | * significant correlation between | X | | no |
| | | * significant correlation between | X | | a |
| | | statistically significant differences * | X | | in |
| | | statistically significant differences * | | X | were |
| | | the * between the | | X | differences |
| | | a significant * in | X | | difference |
| | | a higher * of | | X | level |
| | | significantly between the * | X | | two |
| | | significantly between the * | | X | groups |
| | | significantly * the groups | | X | between |
| | | * the risk of | X | | increase |
| | | * the risk of | X | | reduce |
| | | significantly greater * the | | X | greater |
| | | significantly greater * the | | X | in |
| | | * between the two | X | | difference |
| | | * between the two | X | | significantly |
| | | * between the two | X | | difference |
| | | in the * area | X | | esthetic |
| | | in the * area | X | | lesion |
| | | on the * side | | X | left |
| | | on the * side | | X | impacted |
| | | in the * group | X | | control |
| | | in the * group | | X | extraction |
| | | in the * group | X | | H |
| | | in the * group | | X | INH |
| | | in the * group | X | | submental |
| | | in the * group | | X | treated |
| | | in the * group | X | | without-deficiency |
| | | in the * group | X | | ABX |
| | | in the * group | | X | CON |
| | | of the * second | | X | maxillary |
| | | in the * area | X | | esthetic |
| | | of the * cavity | X | | cystic |
| | | of the * cavity | X | | oral |
| | | in the * region | X | | posterior |
| | | in the * region | | X | anterior |
| | | in the anterior * | | X | sectors |
| | | in the anterior * | | X | region |
| | | of the * bone | X | | buccal |
| | | of the * bone | X | | hyoid |
| | | of the maxillary * | | X | second |
| | | of the maxillary * | | X | central |
| | | of the * lip | X | | upper |
| | | of the * lip | X | | lower |
| | | * at the end | | X | spaces |
| | | * at the end | | X | groups |
| | | positioning of the * | X | | cutting |
| | | on the * side | | X | left |
| | | on the * side | | X | impacted |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | of the * population | | X | general |
| | | of the * population | X | | study |
| | | to the * plane | X | | horizontal |
| | | throughout the * period | | X | observation |
| | | during the * period | X | | study |
| | | during the * period | | X | retention |
| | | of the mandibular * | | X | incisors |
| | | in the * arch | | X | lower |
| | | in the * cavity | X | | oral |
| | | in the * analysis | X | | multivariate |
| | | in the * analysis | X | | univariate |
| | | of the * population | X | | general |
| | | * the treatment of | X | | treatment |
| | | * the treatment of | X | | treatment |
| | | in the * region | X | | posterior |
| | | in the * region | | X | anterior |
| | | * physiologic tooth mobility | | X | the |
| | | * physiologic tooth mobility | | X | of |
| | | * newly formed bone | X | | the |
| | | * clinical crown height | | X | in |
| | | * the HPC line | | X | to |
| | | * the HPC line | | X | crossing |
| | | satisfaction with * aesthetics | | X | dental |
| | | satisfaction with * aesthetics | X | | facial |
| | | * titanium base abutment | X | | the |
| | | * titanium base abutment | X | | conical |
| | | * movement of the | | X | distal |
| | | of the * cavity | X | | cystic |
| | | of the included * | X | | studies |
| | | difference was not * | X | | significant |
| | | difference was not * | X | | statistically |
| | | * dental implant failure | X | | early |
| | | * dental implant failure | X | | for |
| | | * and lateral incisors | | X | central |
| | | central and lateral * | | X | incisor |
| | | * incisors and canines | | X | lateral |
| | | * incisors and canines | | X | central |
| | | * and lateral incisors | | X | canines |
| | | overbite of the * | | X | anterior |
| | | and * of the | X | | stability |
| | | the * position of | | X | vertical |
| | | face-to-face interaction with * | | X | the |
| | | the * of our | X | | best |
| | | the * of our | | X | results |
| | | and soft tissue * | X | | changes |
| | | and soft tissue * | | X | profile |
| | | the * posterior teeth | | X | lower |
| | | the * anterior teeth | | X | maxillary |
| | | the lower * teeth | | X | anterior |
| | | that the * of | X | | effect |
| | | between * and lateral | | X | central |
| | | position of the * | | X | maxillary |
| | | position of the * | X | | cutting |
| | | the mixed dentition * | | X | group |
| | | the mixed dentition * | X | | phase |
| | | * soft tissue recession | X | | midfacial |
| | | the * central incisors | X | | upper |
| | | the * central incisors | | X | maxillary |
| | | the * third molar | X | | impacted |
| | | first or second * | | X | permanent |
| | | first or second * | | X | molars |
| | | the * mixed dentition | | X | early |
| | | the * dental arch | | X | maxillary |
| | | the * dental arch | X | | mandibular |
| | | the lower * teeth | | X | posterior |
| | | the * and control | X | | experimental |
| | | * the two groups | X | | between |
| | | * the two groups | | X | in |
| | | in the * study | X | X | present |
| | | in the * study | X | X | current |
| | | bone * in the | X | | grafting |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | bone * in the | X | | regeneration |
| | | bone * in the | X | | graft |
| | | *of this study | | X | results |
| | | * of this study | X | | purpose |
| | | * of this study | | X | objective |
| | | with the * of | X | | results |
| | | with the * of | X | | findings |
| | | with the * of | X | | exception |
| | | on the * of | | X | basis |
| | | on the * of | | X | results |
| | | on the p* of | X | | precision |
| | | * the results of | X | | results |
| | | * the results of | X | | results |
| | | * the treatment of | X | | in, for |
| | | * the type of | | X | to |
| | | * the type of | X | | by |
| | | * the number of | | X | in |
| | | * the number of | X | | and |
| | | by the * of | X | | type |
| | | with a * of | X | | history |
| | | of the * and | X | | maxilla |
| | | of the * and | | X | patient |
| | | in * to the | | X | addition |
| | | in * to the | | X | contrast |
| | | * the fact that | | X | by |
| | | * the fact that | | X | to |
| | M11S2: Interpreting the outcome | that there was * | X | X | no |
| | | the * group was | | X | control |
| | | * this study was | | X | of |
| | | * this study was | X | | in |
| | | have been * to | | X | reported |
| | | * in this study | | X | used |
| | | * tipping of the | | X | mesial |
| | | was significantly greater * | | X | than |
| | | was significantly greater * | | X | in |
| | | was * greater in | X | | significantly |
| | | was * in the | | X | larger |
| | | * one of the | | X | as |
| | | * difference was found | | X | significant |
| | | * difference was found | X | | no |
| | | was a significant * | X | X | difference |
| | | * significant difference was | X | | no |
| | | there was no * | X | X | significant |
| | | there was * difference | X | X | no |
| | | was not * significant | X | X | statistically |
| | | significant differences were * | | X | found |
| | | * significant differences were | | X | no |
| | | * to the control | | X | compared |
| | | * be due to | X | | could |
| | | * be due to | X | | may |
| | | * be due to | X | | might |
| | | * be attributed to | X | | could |
| | | may be * to | | X | due |
| | | * be explained by | X | X | could |
| | | * be explained by | X | | might |
| | | * be due to | X | | could |
| | | could be * to | X | | attributed |
| | | it has been * | X | X | reported |
| | | has been * to | | X | found |
| | | has been * to | X | | shown |
| | | be * by the | X | X | explained |
| | | be * to the | X | X | due |
| | | be * to the | | X | related |
| | | it is * that | X | | recommended |
| | | it is * that | | X | known |
| | | was * in the | | X | observed |
| | | was * in the | | X | seen |
| | | were * in the | | X | larger |
| | | * larger in the | | X | were |
| | | have been * to | X | | found |
| | | have been * to | | X | reported |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | was * as a | | X | identified |
| | | be * by the | X | | explained |
| | | was *with the | | X | consistent |
| | | * consistent with the | | X | was |
| | | studies have * that | X | | reported |
| | | been * to be | | X | found |
| | | been * to be | X | | shown |
| | | * found in the | | X | was |
| | | * found in the | X | | be |
| | | previous studies have * | X | | reported |
| | | have * that the | | X | shown |
| | | have * that the | | X | demonstrated |
| | | this study * that | | X | showed |
| | | * to evaluate the | | X | used |
| | | * to assess the | | X | aimed |
| | | aimed to * the | | X | evaluate |
| | | study was to * | | X | investigate |
| | | study was to * | | X | evaluate |
| | | this study * to | | X | was |
| | | the * of the | X | | results |
| | | the * of the | | X | position |
| | | the * of the | X | | accuracy |
| | | the * of the | X | X | use |
| | | the * of the | | X | majority |
| | | the * of the | | X | region |
| | | the * of the | X | | severity |
| | | the * of the | | X | root |
| | | the * of the | | X | height |
| | | the * of the | X | | time |
| | | the * of the | X | | age |
| | | the * of the | | X | rigidity |
| | | the * of direct | | X | use |
| | | the * number of | X | | average |
| | | and the * of | X | | presence |
| | | and the * of | X | | effect |
| | | with * to the | | X | respect |
| | | with * to the | X | | regard |
| | | in * with the | X | | line |
| | | in the * of | | X | number |
| | | in the * of | | X | prevalence |
| | | in the * of | | X | range |
| | | * the range of | | X | range |
| | | in the * of | X | X | absence |
| | | to the * of | | X | best |
| | | to the * of | | X | presence |
| | | of the * teeth | | X | posterior |
| | | at the * of | | X | end |
| | | at the * of | X | X | time |
| | | * the presence of | | X | to |
| | | * the presence of | X | X | and |
| | | the * between the | X | | difference |
| | | the * between the | | X | differences |
| | | and satisfaction with * | | X | dental |
| | | and satisfaction with * | | X | aesthetics |
| | | * position of the | | X | vertical |
| | | the * of the | X | | time |
| | | number of * with | X | | days |
| | | * and control groups | | X | extraction |
| | | a * rate of | | X | higher |
| | | a * in the | | X | role |
| | | * patients with a | X | X | in |
| | | * patients with a | X | | for |
| | | * in this study | | X | used |
| | | * tipping of the | | X | mesial |
| | | titanium base abutment * | X | | design |
| | | at the * time | X | | same |
| | | * the same time | | X | at |
| | | a higher * of | | X | rate |
| | | a * level of | | X | higher |
| | | one of the * | X | | most |
| | | one of the * | | X | main |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | a significant difference * | X | | between |
| | | a significant * between | X | | correlation |
| | | a * correlation between | X | | significant |
| | | of * alveolar ridge | | X | mesial |
| | | of * alveolar ridge | | X | the |
| | | at the * time | X | X | same |
| | | at the * time | X | | three |
| | | * significant difference between | X | | no |
| | | no * difference between | X | | significant |
| | | no significant * between | | X | correlation |
| | | no significant differences * | X | | in |
| | | significant * in the | X | X | difference |
| | | no significant difference * | | X | in |
| | | * significant difference in | X | | statistically |
| | | significant * between the | X | | difference |
| | | the difference * the | X | | between |
| | | * significant differences in | X | | no |
| | | a significant * in | | X | difference |
| | | a significant * in | | X | decrease |
| | | a significant * in | X | | reduction |
| | | * statistically significant difference | | X | no |
| | | a statistically significant * | X | | difference |
| | | no significant * between | X | | correlation |
| | | a significant * in | X | | difference |
| | | a higher * of | X | | risk |
| | | a higher * of | | X | level |
| | | increase the * of | | X | risk |
| | | difference between the * | | X | two |
| | | * between the two | X | | difference |
| | | in the * area | X | | parotid |
| | | on the * side | X | | non-fracture |
| | | on the * side | | X | impacted |
| | | in the * group | X | | control |
| | | in the * group | | X | extraction |
| | | in the * group | | X | PHY |
| | | in the * group | | X | INH |
| | | in the * group | | X | adult |
| | | of the * second | | X | maxillary |
| | | of the * cavity | X | | cystic |
| | | of the * cavity | X | | oral |
| | | in the * region | | X | anterior |
| | | in the * area | X | | parotid |
| | | in the * region | | X | anterior |
| | | of the * central | | X | maxillary |
| | | of the * lip | X | X | upper |
| | | of the * lip | X | | lower |
| | | on the * side | X | | non-fracture |
| | | on the * side | | X | impacted |
| | | to the * plane | | X | midsagittal |
| | | to the * plane | X | | horizontal |
| | | throughout the * period | | X | observation |
| | | in the * arch | | X | lower |
| | | in the * analysis | X | | multivariate |
| | | of the * population | | X | general |
| | | of the * population | | X | study |
| | | * the early permanent | | X | in |
| | | * the early permanent | | X | of |
| | | the * central incisors | | X | maxillary |
| | | * physiologic tooth mobility | | X | the |
| | | * the HPC line | | X | to |
| | | * the HPC line | | X | crossing |
| | | satisfaction with * aesthetics | | X | dental |
| | | * titanium base abutment | | X | the |
| | | * titanium base abutment | X | | conical |
| | | * movement of the | | X | distal |
| | | of the * cavity | X | | cystic |
| | | the * of our | | X | best |
| | | and soft tissue * | | X | changes |
| | | the * posterior teeth | | X | lower |
| | | the * posterior teeth | | X | upper |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | the * anterior teeth | | X | lower |
| | | position of the * | | X | upper |
| | | position of the * | | X | maxillary |
| | | the mixed dentition * | | X | group |
| | | the mixed dentition * | | X | phase |
| | | the * central incisors | | X | maxillary |
| | | first or second * | | X | permanent |
| | | the * posterior teeth | | X | lower |
| | | the * strong anchorage | | X | indirect |
| | | the * strong anchorage | | X | direct |
| | | the * and control | | X | experimental |
| | | the * and control | | X | extraction |
| | | in the * groups | | X | two |
| | | in the * study | X | X | present |
| | | in the * study | X | X | current |
| | | * of this study | | X | aim |
| | | * of our study | X | | results |
| | | with the * of | | X | results |
| | | with the * of | X | | use |
| | | with the * of | X | | findings |
| | | with the * of | X | | goal |
| | | with the * of | | X | results |
| | | of the * and | | X | maxilla |
| | | in * to the | | X | addition |
| | | in * to the | | X | contrast |
| | | * the fact that | X | | by |
| | | by the * that | | X | fact |
| | M11S3: Indicating significance of the outcome | that there was * | | | no |
| | | the * group was | | X | control |
| | | in this study * | | X | was |
| | | * in this study | X | X | used |
| | | * one of the | | X | is |
| | | significant *was found | X | | difference |
| | | was a significant * | | X | increase |
| | | was a significant * | | X | increase |
| | | * were found in | | X | differences |
| | | there was no * | X | X | significant |
| | | was * statistically significant | X | | not |
| | | was no significant * | X | | difference |
| | | * significant differences were | | X | no |
| | | compared * the control | X | | with |
| | | compared * the control | | X | to |
| | | * be due to | X | | could |
| | | * be due to | X | | may |
| | | * be attributed to | X | | could |
| | | * be due to | | X | may |
| | | * be explained by | X | | can |
| | | * be explained by | X | | might |
| | | could be * to | X | | due |
| | | could be * to | X | | attributed |
| | | it has been * | X | | reported |
| | | it has been * | X | | suggested |
| | | has been * to | X | | found |
| | | has been * to | | X | shown |
| | | has been * to | X | | reported |
| | | be * by the | | X | explained |
| | | be * to the | X | X | due |
| | | was * in the | X | | used |
| | | were * in the | X | | placed |
| | | were * from the | X | | excluded |
| | | have been * to | X | | found |
| | | have been * to | X | | used |
| | | was * as a | X | | identified |
| | | were * from the | X | | excluded |
| | | was * with the | X | | performed |
| | | was * with the | X | | consistent |
| | | been * to be | X | | shown |
| | | previous studies have * | X | | reported |
| | | the * of the | | X | the end of the |
| | | the * of the | | X | accuracy |
| | | the * of the | X | | effect |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | the * of the | X | | majority |
| | | the * of the | X | | severity |
| | | the * of the | X | | positioning |
| | | the * of the | | X | strength |
| | | the * of the | X | | time |
| | | the * of a | X | | use |
| | | and the * of | | X | effect |
| | | with * to the | X | | respect |
| | | in * with the | X | | comparison |
| | | in the * of | X | | amount |
| | | in the * of | | X | level |
| | | of the * teeth | | X | anterior |
| | | * the end of | X | | at |
| | | * the level of | | X | in |
| | | the * between the | X | | relationship |
| | | a higher * of | X | | rate |
| | | an * of the | X | | increase |
| | | * patients with a | X | | in |
| | | * patients with a | X | X | for |
| | | titanium base abutment * | X | | design |
| | | * with and without | X | | patients |
| | | a higher * of | X | | risk |
| | | a higher * of | X | | rate |
| | | one of the * | X | | most |
| | | * between the groups | | X | differences |
| | | at the * time | X | | three |
| | | * significant difference between | X | | no |
| | | no significant difference * | | X | in |
| | | no significant difference * | X | | between |
| | | no significant * between | | X | differences |
| | | significant * between the | X | | difference |
| | | a significant * in | | X | increase |
| | | a significant * in | X | | reduction |
| | | suitable for * with | | X | patients |
| | | * between the groups | | X | differences |
| | | significant * between the | | X | differences |
| | | a * risk of | X | | higher |
| | | a higher *of | | X | level |
| | | difference * the two | X | | between |
| | | * between the two | X | | significantly |
| | | * between the two | | X | difference |
| | | in the * area | X | | esthetic |
| | | in the * gland | X | | parotid |
| | | in the * sectors | | X | anterior |
| | | in the * gland | X | | parotid |
| | | of the * bone | X | | hyoid |
| | | of the * second | | X | maxillary |
| | | * at the end | | X | spaces |
| | | positioning of the * | X | | cutting |
| | | of the *population | | X | general |
| | | of the * population | X | | study |
| | | throughout the * period | | X | observation |
| | | in the * arch | | X | lower |
| | | in the * analysis | X | | univariate |
| | | the * central incisors | | X | maxillary |
| | | * newly formed bone | X | | of |
| | | * newly formed bone | X | | the |
| | | satisfaction with facial * | X | | aesthetics |
| | | * titanium base abutment | | X | the |
| | | * titanium base abutment | X | | conical |
| | | the * sample size | | X | small |
| | | * was not statistically | X | | difference |
| | | * dental implant failure | X | | for |
| | | * and lateral incisors | | X | central |
| | | * of the anterior | | X | overbite |
| | | that the * of | X | | use |
| | | the quality of * | | X | life |
| | | * soft tissue recession | X | | midfacial |
| | | the * dental arch | | X | maxillary |
| | | the * anterior teeth | | X | lower |
| | | in the * groups | | X | two |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | in the * study | | X | present |
| | | in the * study | X | X | current |
| | | bone * in the | X | | grafting |
| | | with the * of | X | | use |
| | | in the * of | X | | treatment |
| | | with a * of | X | | history |
| | | to the * that | X | | fact |
| | M11S4: Contrasting present and previous outcomes | tipping of the * | | X | posterior |
| | | that there was * | X | | no |
| | | was performed * | X | | on |
| | | in this study * | X | X | was |
| | | * been reported to | X | | have |
| | | have been * to | X | X | reported |
| | | have been reported * | X | | in |
| | | * in this study | X | X | used |
| | | *in this study | | X | included |
| | | * tipping of the | | X | distal |
| | | was significantly greater * | X | | than |
| | | was significantly greater * | | X | in |
| | | was * in the | | X | larger |
| | | * one of the | | X | is |
| | | was a significant * | X | | increase |
| | | * were found in | | X | differences |
| | | there was no * | X | | significant |
| | | there was * significant | X | X | no |
| | | was not * significant | | X | statistically |
| | | was no significant * | X | | difference |
| | | significant * were observed | X | | differences |
| | | compared * the control | X | X | with |
| | | compared * the control | | X | to |
| | | the * side was | X | | fracture |
| | | could be * to | X | | due |
| | | * be due to | X | | may |
| | | * be due to | X | | might |
| | | * be attributed to | X | | could |
| | | * be attributed to | | X | may |
| | | may be * to | | X | due |
| | | may be * to | | X | attributed |
| | | * be explained by | X | | could |
| | | * be explained by | X | X | can |
| | | * be due to | | X | could |
| | | it has been * | X | X | reported |
| | | it has been * | | X | suggested |
| | | has been * to | | X | found |
| | | has been * to | X | X | shown |
| | | has been * to | X | | reported |
| | | be * by the | X | X | explained |
| | | be * to the | X | | due |
| | | be * to the | | X | attributed |
| | | be * to the | X | | related |
| | | it is * that | | X | known |
| | | were * in the | X | | included |
| | | were * in the | X | | placed |
| | | have been * to | | X | used |
| | | have been * to | X | | reported |
| | | be * by the | X | | explained |
| | | studies have * that | | X | shown |
| | | studies have * that | X | X | reported |
| | | studies have * that | X | | demonstrated |
| | | been * to be | | X | found |
| | | been * to be | X | | shown |
| | | been * to be | X | | reported |
| | | were * in the | X | | found |
| | | be * in the | | X | found |
| | | has been * that | | X | reported |
| | | has been * that | | X | suggested |
| | | previous studies have * | X | X | reported |
| | | previous studies have * | X | X | demonstrated |
| | | have * that the | | X | shown |
| | | have * that the | X | | demonstrated |
| | | this study * that | | X | showed |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | * with the control | X | | compared |
| | | * in this study | X | X | included |
| | | the * of the | X | X | results |
| | | the * of the | | X | end |
| | | the * of the | | X | accuracy |
| | | the * of the | | X | majority |
| | | the * of the | X | X | size |
| | | the * of the | X | | stability |
| | | the * of the | X | X | region |
| | | the * of the | X | | severity |
| | | the * of the | X | | strength |
| | | the * of the | | X | time |
| | | the * of the | | X | duration |
| | | the * of the | | X | rigidity |
| | | the * of this | X | X | results |
| | | the use of * | X | X | the |
| | | the use of * | X | X | a |
| | | the use of * | X | | adjunctive |
| | | the * number of | | X | total |
| | | and the * of | X | | presence |
| | | *of gingival recession | | X | frequency |
| | | with * to the | | X | respect |
| | | in * with the | | X | accordance |
| | | in * with the | X | | comparison |
| | | in * with the | X | | agreement |
| | | in * with the | X | | line |
| | | in the * of | X | | case |
| | | in the * of | X | | treatment |
| | | in the * of | X | | context |
| | | in the * of | | X | prevalence |
| | | in the * of | | X | range |
| | | in the * of | | X | level |
| | | to the * of | | X | lack |
| | | to the * of | X | | type |
| | | of the * teeth | | X | posterior |
| | | at the * of | | X | end |
| | | at the * of | | X | age |
| | | at the * of | | X | time |
| | | in the * of | | X | level |
| | | and the * of | | X | presence |
| | | * the range of | | X | within |
| | | in the * of | | X | range |
| | | within the * of | | X | limitations |
| | | the * between the | X | X | distance |
| | | and satisfaction with * | | X | dental |
| | | the * of the | X | X | time |
| | | * and control groups | | X | experimental |
| | | a * rate of | X | | recurrence |
| | | a * rate of | X | | higher |
| | | a * in the | X | | reduction |
| | | an increase * the | | X | of |
| | | an increase * the | | X | in |
| | | in * with a | X | X | patients |
| | | * in this study | | X | used |
| | | * in this study | | X | included |
| | | * tipping of the | | X | distal |
| | | * base abutment design | X | | titanium |
| | | titanium base abutment * | X | | designs |
| | | * with and without | X | | patients |
| | | at the * level | | X | same |
| | | a higher * of | | X | risk |
| | | a higher * of | X | | rate |
| | | a higher * of | | X | level |
| | | one of the * | X | | most |
| | | one of the * | | X | main |
| | | differences between the * | | X | groups |
| | | no significant difference * | X | | between |
| | | * significant difference between | X | | no |
| | | no significant * between | X | | correlation |
| | | no significant differences * | X | | in |
| | | no significant differences * | | X | were |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | no significant differences * | | X | between |
| | | significant * in the | X | X | difference |
| | | * significant difference in | X | X | no |
| | | statistically significant differences * | X | | in |
| | | a significant * in | X | | increase |
| | | * between the groups | | X | differences |
| | | difference between the * | | X | groups |
| | | significant differences * the | | X | between |
| | | * significant differences in | X | | statistically |
| | | significant * between the | | X | differences |
| | | the differences between * | | X | the |
| | | a higher * of | X | | risk |
| | | a * level of | | X | higher |
| | | significantly between the * | X | | two |
| | | reduce the * of | X | | risk |
| | | * the risk of | | X | reduce |
| | | significantly greater * the | | X | than |
| | | significantly greater * the | | X | in |
| | | difference between the * | | X | groups |
| | | * facial vertical height | | X | increased |
| | | * facial vertical height | | X | decreased |
| | | in the * area | X | | esthetic |
| | | on the * side | X | | non-fracture |
| | | on the * side | X | | fracture |
| | | on the * side | | X | impacted |
| | | in the * group | | X | control |
| | | in the * group | | X | L |
| | | in the * group | | X | extraction |
| | | in the * group | | X | H |
| | | in the * group | | X | PHY |
| | | in the * group | | X | INH |
| | | in the * group | X | | test |
| | | in the * group | X | | ABX |
| | | in the * zone | X | | esthetic |
| | | of the * bone | X | | hyoid |
| | | of the maxillary * | | X | second |
| | | of the maxillary * | | X | anterior |
| | | of the * lip | X | X | upper |
| | | of the * anterior | | X | maxillary |
| | | * at the end | | X | spaces |
| | | position of the * | X | | cutting |
| | | towards the * side | | X | right |
| | | on the * side | X | | non-fracture |
| | | on the * side | X | | fracture |
| | | on the * side | | X | impacted |
| | | of the * population | | X | general |
| | | to the * plane | X | | midsagittal |
| | | throughout the * period | | X | observation |
| | | during the * period | | X | study |
| | | of the * incisors | | X | mandibular |
| | | in the * arch | | X | mandibular |
| | | towards the * side | | X | right |
| | | in the * analysis | X | | univariate |
| | | of the * population | | X | general |
| | | of the * population | X | | study |
| | | in the * permanent | | X | early |
| | | * the treatment of | X | | in |
| | | * the treatment of | X | | for |
| | | in the * region | | X | anterior |
| | | * physiologic tooth mobility | | X | the |
| | | * clinical crown height | | X | the |
| | | * the HPC line | | X | to |
| | | * the HPC line | | X | crossing |
| | | satisfaction with * aesthetics | | X | dental |
| | | * tipping of the | | X | distal |
| | | distal * of the | | X | tipping |
| | | distal * of the | | X | movement |
| | | * dental implant failure | X | | for |
| | | * and lateral incisors | | X | central |
| | | * incisors and canines | | X | lateral |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | * and lateral incisors | | X | central |
| | | * and lateral incisors | | X | canines |
| | | * of the anterior | | X | changes |
| | | higher * of root | | X | prevalence |
| | | the * of our | | X | results |
| | | the * anterior teeth | | X | anterior teeth |
| | | that the * of | | X | effect |
| | | the * and lateral | | X | central |
| | | between * and lateral | | X | central |
| | | abutments for the * | X | | prosthesis |
| | | abutments for the * | X | | crown |
| | | *soft tissue recession | X | | midfacial |
| | | * soft tissue recession | X | | advanced |
| | | the * mixed dentition | | X | early |
| | | the * dental arch | | X | maxillary |
| | | in the * groups | | X | two |
| | | in the * study | X | | present |
| | | in the * study | X | X | current |
| | | bone * in the | X | | grafting |
| | | * of our study | | X | results |
| | | with the * of | | X | results |
| | | with the * of | X | | use |
| | | with the * of | | X | findings |
| | | with the * of | X | | goal |
| | | on the * of | | X | basis |
| | | with the * of | X | | results |
| | | * the type of | X | | to |
| | | * the type of | | X | by |
| | | with a * of | X | | history |
| | | in * to the | | X | addition |
| | | to the * that | | X | fact |
| Move 12: Stating limitations of the study | M12S1: Limitations about the findings | * this study was | X | X | of |
| | | * this study was | X | | in |
| | | * in this study | X | | included |
| | | were less * to | | X | likely |
| | | * be attributed to | | X | may |
| | | be * to the | | X | attributed |
| | | been * to be | | X | found |
| | | included in * study | X | | this |
| | | * in the study | | X | included |
| | | the * of the | X | | effect |
| | | the * of the | X | X | use |
| | | the * of the | | X | limitations |
| | | the * of the | X | | precision |
| | | the * of the | | X | root |
| | | the * of this | X | | limitations |
| | | the * of this | X | | findings |
| | | the use of * | X | X | the |
| | | the use of * | | X | a |
| | | with * to the | X | | regard |
| | | of the * teeth | | X | anterior |
| | | the * of patients | | X | number |
| | | the number of * | | X | patients |
| | | abutment for the * | X | | prosthesis |
| | | * in this study | X | | included |
| | | titanium base abutment * | X | | design |
| | | of * alveolar ridge | | X | ridge |
| | | no significant differences * | X | | in |
| | | in the * group | | X | extraction |
| | | to the * line | | X | HPC |
| | | the titanium base * | X | | abutment |
| | | the * sample size | | X | small |
| | | the * of our | | X | results |
| | | that the * of | X | X | use |
| | | the quality of * | | X | life |
| | | the * central incisors | | X | upper |
| | | the titanium base * | X | | abutments |
| | | the * mixed dentition | | X | early |
| | | the lower * teeth | | X | anterior |
| | | the lower * teeth | | X | posterior |
| | | in the * study | X | | present |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | limitations of * study | X | X | this |
| | | limitations of * study | X | X | the |
| | | on the * of | X | | precision |
| | M12S2: Limitations about the methodology | of this study * | | X | was |
| | | of * study was | | X | this |
| | | * in this study | | X | used |
| | | has been * to | | X | reported |
| | | be * to the | | X | attributed |
| | | were * from the | | X | excluded |
| | | aimed to * the | X | | evaluate |
| | | * to evaluate the | X | | aimed |
| | | this study * to | | X | study |
| | | the * of the | | X | end |
| | | the * of the | X | | design |
| | | the * of the | X | X | limitations |
| | | the * of the | | X | root |
| | | the * of the | | X | duration |
| | | the * of this | | X | results |
| | | the * of this | X | | limitations |
| | | in the * of | X | X | context |
| | | * the posterior teeth | | X | posterior |
| | | at the * of | | X | end |
| | | number of * with | X | | patients |
| | | an * in the | | X | increase |
| | | abutment for the * | X | | prosthesis |
| | | * of the study | X | | limitations |
| | | * of the study | | X | end |
| | | titanium base abutment * | X | | design |
| | | titanium base * for | X | | abutment |
| | | titanium base abutment * | X | | for |
| | | in the * group | | X | control |
| | | in the * group | | X | intervention |
| | | in the * cavity | X | | oral |
| | | in * crown height | | X | clinical |
| | | the * of our | | X | results |
| | | and soft tissue * | X | | changes |
| | | the * anterior teeth | | X | lower |
| | | the * strong anchorage | | X | two |
| | | * of this study | | X | aim |
| | | results of * study | | X | this |
| | | * of our study | | X | results |
| | M12S3: Limitations about the claims made | * excluded from the | | X | were |
| | | were * from the | | X | excluded |
| | | the * of the | | X | reliability |
| | | the * of this | X | | results |
| | | the * of a | | X | use |
| | | with * to the | | X | regard |
| | | in * with the | | X | accordance |
| | | in the * of | | X | treatment |
| | | in the * of | X | | prevalence |
| | | at the * of | X | | time |
| | | * of the study | | X | limitations |
| | | in the * group | | X | control |
| | | in the * cavity | X | | oral |
| | | * the early permanent | | X | of |
| | | in the * of | | X | treatment |
| | | * physiologic tooth mobility | | X | the |
| | | the quality of * | X | | evidence |
| Move 13: Stating Research Conclusions | M13S1: Evaluating the study | * in this study | X | | included |
| | | there were * significant | | X | no |
| | | it has been * | X | | suggested |
| | | be * to the | X | | due |
| | | was * in the | | X | observed |
| | | has been * that | | X | suggested |
| | | this study * that | | X | showed |
| | | this study * that | X | | found |
| | | * in this study | X | | included |
| | | the * of the | | X | results |
| | | the * of this | | X | results |
| | | the * of this | | X | findings |
| | | and satisfaction with * | | X | aesthetics |

มหาวิทยาลัยเทคโนโลยีสุรนารี

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | a * in the | | X | role |
| | | * in this study | X | | included |
| | | of * alveolar ridge | | X | mesial |
| | | * significant difference between | | X | no |
| | | no significant * between | | X | difference |
| | | no significant difference * | | X | between |
| | | no significant differences * | X | | in |
| | | significant * between the | | X | difference |
| | | significant difference * the | | X | between |
| | | significant * in the | | X | differences |
| | | * the study population | X | | of |
| | | in the * arch | | X | mandibular |
| | | * of this study | | X | results |
| | M13S2: Deductions from the research | were * in the | X | | included |
| | | this study * that | X | | found |
| | | in order to * | X | | assess |
| | | * in the study | X | | included |
| | | the * of the | | X | results |
| | | the * of the | X | | positioning |
| | | the * of this | X | | results |
| | | significant * in the | X | | difference |
| | | no significant difference * | X | | in |
| | | of the * population | X | | study |
| | | * of this study | X | | results |
| | | by the * that | X | | fact |
| | M13S3: Stating future studies | the * of the | X | | design |
| | | the * of the | X | | length |
| | | in the * area | X | | esthetic |

มหาวิทยาลัยเทคโนโลยีสุรนารี

# APPENDIX G

## Mapping Phrase Frames to Move-step Structure in the RA Conclusion of the Two Sub-disciplines of Dentistry

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| Conclusion | | | | | |
| Move 14: Summarizing the findings | | * in this study | X | | used |
| | | were more * to | | X | likely |
| | | was * in the | | X | higher |
| | | there was * significant | X | | no |
| | | there was no * | X | | significant |
| | | * no significant difference | X | | was |
| | | no significant differences * | | X | were |
| | | no significant * were | | X | differences |
| | | it is * that | | | recommended |
| | | was * in the | | X | found |
| | | were found * the | | X | in |
| | | were found * the | X | | between |
| | | was * as a | | X | identified |
| | | * found in the | | X | were |
| | | the * of the | | X | results |
| | | the * of the | X | | end |
| | | the * of the | | X | position |
| | | the * of the | X | | limitations |
| | | the * of the | | X | stability |
| | | the * of the | X | | precision |
| | | the * of this | X | X | results |
| | | the * of this | X | | limitations |
| | | the * of this | | X | findings |
| | | * of gingival recession | | X | frequency |
| | | in the * of | X | | treatment |
| | | in the * of | X | | context |
| | | in the * of | | X | range |
| | | in the * of | | X | range |
| | | in the * of | | X | level |
| | | * the anterior teeth | | | of |
| | | at the * of | X | | end |
| | | in the * of | | X | level |
| | | within the * of | | X | range |
| | | within the * of | | X | limitations |
| | | and satisfaction with * | | X | aesthetics |
| | | a * in the | | X | reduction |
| | | for * with a | | X | patients |
| | | * in this study | | X | used |
| | | * of the study | X | | limitations |
| | | a * risk of | X | | higher |
| | | one of the * | | X | most |
| | | difference between the * | | X | groups |
| | | than * of the | | X | half |
| | | no significant * between | | X | difference |
| | | no significant difference * | X | X | between |
| | | * significant difference between | X | | no |
| | | no significant * between | | X | correlation |
| | | significant * between the | X | | difference |
| | | significant difference between * | X | X | the |
| | | no significant differences * | | X | in |
| | | a significant * in | | X | reduction |
| | | suitable for * with | | X | patients |
| | | difference between the * | | X | groups |
| | | no significant * between | | X | correlation |
| | | significant differences between * | | X | the |
| | | significant * between the | | X | differences |
| | | a higher * of | X | | risk |
| | | difference between the * | | X | groups |
| | | * facial vertical height | | X | increased |
| | | * facial vertical height | | X | decreased |
| | | in the * area | X | | esthetic |

มหาวิทยาลัยมหิดล

| Moves | Steps | Phrase frames | | | |
|---|---|---|---|---|---|
| | | Examples | OMS | ODO | Fillers |
| | | in the * group | | X | L |
| | | of the * second | | X | upper |
| | | in the * area | X | | esthetic |
| | | in the * sectors | | X | anterior |
| | | to the * midline | | X | facial |
| | | of the * incisors | X | | mandibular |
| | | in the * arch | | X | mandibular |
| | | of the * population | | X | study |
| | | in the * of | X | | treatment |
| | | of * tooth mobility | | X | physiologic |
| | | of * formed bone | X | | newly |
| | | the * crown height | | X | clinical |
| | | to the * line | | X | HPC |
| | | * the HPC line | | X | crossing |
| | | the * sample size | X | | small |
| | | * and lateral incisor | | X | central |
| | | * incisors and canines | | X | central |
| | | * and lateral incisors | | X | central |
| | | * of the anterior | | X | overbite |
| | | face-to-face interaction with * | | X | the |
| | | the results of * | X | | our |
| | | the * posterior teeth | | X | upper |
| | | the * anterior teeth | | X | maxillary |
| | | the * anterior teeth | | X | lower |
| | | the * and lateral | | X | central |
| | | between * and lateral | | X | central |
| | | the * dentition group | | X | mixed |
| | | * soft tissue recession | X | | midfacial |
| | | the * central incisors | | X | upper |
| | | first or second * | | X | permanent |
| | | the * dental arch | | X | maxillary |
| | | the * anterior teeth | | X | lower |
| | | the * strong anchorage | | X | two |
| | | * of this study | X | | results |
| | | results of * study | X | | this |
| | | results of * study | X | | our |
| | | on the * of | | X | basis |
| | | on the * of | | X | results |
| | | on the * of | X | | precision |
| | | on the * of | | X | results |

มหาวิทยาลัยเทคโนโลยีสุรนารี

# CURRICULUM VITAE

Nguyen Huu Chanh was born on July 12, 1992, in Vinh Long, Viet Nam. He graduated from Can Tho University with a bachelor's degree in English Language Education. He obtained his master's degree in English Language Studies with a concentration in Translation Studies. He continued his Ph.D. degree in English Language Studies at the School of Foreign Languages, Institute of Social Technology, Suranaree University of Technology, Thailand. His research interests include genre analysis, literary devices, morphology, translation, and English language teaching skills in the group of Health Sciences.

มหาวิทยาลัยเทคโนโลยีสุรนารี