

Self-mention Markers and their Rhetorical Functions in Dentistry Research Articles: A Corpus-based Study of Intradisciplinary Variations within Seven Dentistry Subdisciplines

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ABSTRACT

Research on intradisciplinary variations in self-mention marker use in research articles (RAs) in dentistry subdisciplines is lacking. The present study investigates self-mention markers used in each of the seven dentistry subdisciplines (oral sciences, periodontics, endodontics, pediatrics, prosthodontics, oral and maxillofacial surgery, and orthodontics), sections of RAs that employ more self-mention devices in each of the seven dentistry subdisciplines, and common rhetorical realizations of first-person pronouns in the seven dentistry subdisciplines. The analytical framework was primarily based on Hyland's (2003) four rhetorical functions of self-mentions in RAs. The findings showed the lack of qualitative and quantitative intradisciplinary variations across six of the seven dentistry subdisciplines. The first-person plural pronouns "we" and "our" were the most frequently employed self-mention devices in the Discussion section of RAs. Authors in the periodontics subdiscipline preferred to retain an objective stance through the use of passive constructions, abiding by the conventional norms of academic writing that restrict them. The findings also revealed that *explaining a procedure* and *stating findings/claims* were the most frequent realizations associated with the use of self-mention devices, with the exception of periodontics RAs that employed passive constructions instead. The findings contribute to the fields of discourse and genre studies as well as ESP/EAP courses. They may have implications for dentistry RA writing and teaching. An awareness of more frequently used self-mentions in dentistry RAs and their rhetorical functions can help English dentistry scholars successfully produce RAs in line with the academic writing norms of each subdiscipline.

INTRODUCTION

Academic writing, like any other form of communication, is considered an act of identity; it not only clarifies disciplinary content but also has the responsibility of representing the writer. Academic writers attempt to promote themselves and their contributions to the field by revealing their identities. They attempt to convey their values, ideas, beliefs, and claims in their writing to persuade readers (Hyland, 2002). In academic writing, identity can be defined as the way in which writers position themselves in their writing (Hyland, 2002). Therefore, academic writers must consider the importance of their linguistic choices, as "every word a writer writes contributes to the impression she is creating of herself to a reader" (Ivanič, 1994, p. 5). Academic writers use personal pronouns to present their research, explicitly reveal their contributions to the field, and show their solid authorial stance toward claims made. According to Ivanič (1998), there are three aspects of identity that appear in academic writing: the *autobiographical self* (the socially constructed

"identity" that writers bring to their writing); the *discoursal self* (the impression writers convey of themselves in written text); and the *authorial self* (the writer's "voice," or position, opinion, and beliefs). In this view, academic writing is socially and culturally affected, leading writers from various disciplines to use self-mention markers differently.

Self-mention is considered "a powerful rhetorical strategy for constructing authorial identity in research articles" (Wu & Zhu, 2014, p. 133). Writers need to write with authority, represent their voices and contributions to a field, and attempt to adopt its values and language (Hyland, 2002). Personal pronouns represent a challenge in academic writing because some writers often hesitate to use them. Both native and non-native writers have difficulty using personal pronouns and determiners in their academic texts. Further, some writers stand behind their use of the first-person pronoun *I*, while others prefer to be more impersonal, using either the inclusive or the exclusive "we." Whereas the inclusive "we" refers to the writer and reader together, the exclusive "we"

refers to the writer and other persons associated with the writer (Harwood, 2005). This difference among writers concerning how they represent themselves either personally or impersonally is currently being discussed by researchers. To the best of our knowledge, no previous studies have investigated the use of self-mentions and rhetorical realizations (or functions) of personal pronouns in research articles (RAs) of dentistry subdisciplines to highlight intradisciplinary (within the same discipline) similarities and differences.

More specifically, the present study aimed to fill this gap by investigating qualitatively and quantitatively 1) the most commonly employed self-mention markers in each of the seven dentistry subdisciplines (oral sciences, periodontics, endodontics, pediatrics, prosthodontics, oral and maxillofacial surgery, and orthodontics); 2) the RA section that employs more self-mention devices in each of the seven dentistry subdisciplines; and 3) the most common rhetorical realizations of personal pronouns in each of the seven dentistry subdisciplines. Although differences in the use of self-mention markers among these seven subdisciplines is not expected, it is pertinent in the present study to investigate whether there are any variations. The findings may be valuable for dentistry scholars attempting to publish their research work in high-ranking journals. The study may offer pedagogical implications for dentistry subdisciplines. The results may also contribute to the fields of discourse and genre studies as well as to English for Specific or Academic Purposes (ESP/EAP) courses.

LITERATURE REVIEW

Academic writers use pronouns, determiners, and other lexical items to express themselves in writing. Whereas some studies have investigated similarities and differences in the frequency of use, role, and functions of self-mentions in RAs written in English by native and non-native scholars (Behnam, Mirzapour, & Mozaheb, 2014; Hryniuk, 2018), most conducted interdisciplinary (across disciplines) investigations of their use by native speakers across disciplines (Hyland, 2001, 2003; Khedri, 2016; Salas, 2015). For example, Hyland (2001) focused on the use of first-person pronouns and determiners in 240 English RAs written by native speakers and found that the majority of first-person pronouns were found to be used to present the writer's viewpoint in the humanities and social sciences (soft sciences), especially philosophy. In contrast to the soft disciplines, the most frequent pronouns in the hard disciplines were plural forms of pronouns widely used in the sciences to reduce the personal tone of the writing. Self-mention markers are used differently depending on the nature of the discipline. Hyland (2003) also studied rhetorical realizations (or functions) in 800 abstracts in the eight disciplines and found that more pronouns and determiners were found in soft disciplines than in hard disciplines such as sciences and engineering. The quantitative data revealed that first-person pronouns were used in science disciplines to present procedures and arguments, while they were employed in the soft field to present the writer's viewpoint. Thus, self-mention devices play

an important role in shaping the relationship between the writer's claims and their disciplines.

The writer's identity in academic texts of various disciplines was also studied by Khedri (2016), who explored the frequency of using exclusive first-person plural pronouns ("we," "our," "us," and "ours") and the functions of these pronouns in 40 RAs in four disciplines (applied linguistics, psychology, environmental engineering, and chemistry). Similar to Hyland (2001), the results of the study revealed that self-mention markers were used most frequently in soft disciplines, particularly in applied linguistics. This increasing use of personal reference reflects the need of soft science writers to express their contributions to their field of research. Hard science writers, on the other hand, tend to use fewer references to themselves to be more impersonal.

However, Khedri (2016) also found the most frequent plural pronoun to be the subjective pronoun "we," which was used more in soft disciplines (73% and 67% in psychology and applied linguistics, respectively), compared to environmental engineering (60%) and chemistry (56%). Writers used the subjective pronoun to back their arguments and differentiate their work from others. Khedri (2016) found that the possessive adjective *our* was also used widely by hard science writers, more so than their peers in the soft fields. The study also revealed that personal plural pronouns were largely used in environmental engineering and chemistry RAs in the Results and Discussion sections, while they appeared in the Introduction and Methods sections in applied linguistics and psychology. With respect to the function of self-references, the study showed that expressing outcomes and announcing personal knowledge claims were seen in environmental engineering and chemistry, while making assumptions did not appear in any discipline, other than in the field of psychology. It is therefore pertinent to investigate the rhetorical realizations of such devices in dentistry subdisciplines.

Salas (2015) examined reflexive metadiscourse markers and several other functional categories including self-mentions in RAs written in Spanish in three disciplines (medicine, economics, and linguistics). The results of the study indicated that writers from linguistics used more metadiscourse markers than those from medicine and economics. The results also revealed a significant difference between linguistics and the other two disciplines of medicine and economics, in terms of personal and impersonal metadiscourses. These significant differences suggest that "the RA varies greatly in terms of the manner and the extent to which scientific writers from different disciplines are expected to signal their authorial presence, interact with their audience, and guide the reader" (Salas, 2015, p. 35).

Only a few studies have conducted intradisciplinary investigations of pronoun use in RAs. For example, McGrath (2016) investigated the use of first-person subject pronouns in 18 RAs each in history and anthropology, which are considered two closely related disciplines. The researcher found that authors of anthropology used first-person subject pronouns more frequently than did authors of history. However, the most frequent role in history was "I as

originator” when historians made claims, while the role of “I as opinion holder” appeared with very low frequency in the history discipline. In the anthropology discipline, on the other hand, the highest frequency role was associated with the “narrative I” and “reflexive I.” Unlike anthropology, history articles involved a low frequency of “reflexive I.” As the researcher stated, “anthropological knowledge, unlike historical knowledge, is constructed through the reconstruction of events experienced or observed by the researcher” (McGrath, 2016, p. 95). In terms of intradisciplinary variations, the researcher also found differences in the role of “I” in both anthropology and history. The literature review reveals that intradisciplinary investigations of self-mention markers in dentistry subdisciplines remain unexplored. It is therefore pertinent to investigate whether there are any intradisciplinary variations in the use of self-mention devices in dentistry subdisciplines.

METHODOLOGY

Theoretical Framework

We investigated all first-person pronouns to ensure they referred exclusively to authors (Biber, Johansson, Leech, Conrad, & Finegan, 1999). Pronouns referring to participants other than authors were eliminated. To answer research aim 3, the rhetorical function of each instance was determined by employing Hyland’s (2003, p. 257) four rhetorical functions of self-mentions in RAs: 1) stating a goal/structure, 2) explaining a procedure, 3) stating a result or making a claim, and 4) elaborating an argument.

Data

As the study aimed to qualitatively and quantitatively examine intradisciplinary variations in the use of self-mention markers and their rhetorical realizations in RAs in dentistry subdisciplines, 17 RAs from each subdiscipline were selected from high-impact journals, retrieving a 28,847-word corpus of 119 RAs (Table 1). All the RAs were co-authored, as this is customary in this discipline. The data selection criterion of whether RAs were written by native or non-native authors was not taken into consideration, since the aim was to investigate intradisciplinary variations in RAs written in

English and published in high-ranking journals, rather than intercultural variations.

The RAs were published during the years 2018–2019. They were downloaded from the databases, combined in one .pdf file, and converted to a .docx file. Then, the file was carefully checked and, as the following sections are not an integral part of the RA, they were excluded before converting the file to .text format: the title, abstracts, notes, acknowledgements, appendices, and references. It should be noted that one journal, the *International Journal of Periodontics and Restorative Dentistry*, covered more than one subdiscipline.

Procedures and Instrumentation

All features identified in the corpus were reported both qualitatively and quantitatively. Quantitative data were used to show the frequency and percentages of self-mention devices occurring in the corpus, supported by examples from the data. We investigated all pronouns to ensure they represented exclusive first-person uses. Inclusive pronouns referring to participants other than the author(s) were excluded.

We used AntConc 3.5.8 software¹ to code the self-mention devices found in the selected corpus. This tool calculates the frequency of all words in a corpus and presents them in an ordered list. The frequency of each self-mention was identified using the search-only feature. Instances of each self-mention were then manually checked on the software’s concordance page to eliminate inaccurate annotations. Instances of self-mentions in each RA section were identified using the search feature in Word, then occurrence of each self-mention was calculated per 1000 words by multiplying the total number of instances for that device by 1000 and then dividing the result by the total word count for the specific subdiscipline. Finally, to identify the most common realizations of first-person pronouns, we examined each instance of exclusive subject pronoun in context to categorize its function: *stating a goal/purpose*, *stating findings/claims*, *explaining a procedure*, and *elaborating an argument*. A fifth function of *referring back to the text* was added, as it emerged during the identification of the discourse functions. This function also emerged in Dobakhti and Hassan’s (2017) and Molino’s (2010) studies.

Table 1. Summary of data and journals’ impact factor

No.	Dentistry subdisciplines	Journal	Impact factor	No. of RAs	Word count
1	Oral Sciences	European Journal of Oral Sciences	1.655 (2017)	17	68,918
2	Periodontics	International Journal of Periodontics & Restorative Dentistry	1.249 (2017)	17	53,362
3	Endodontics	Journal of Endodontics	2.886 (2017)	17	62,632
4	Pediatric Dentistry	International Journal of Paediatric Dentistry	2.057 (2018)	17	70,320
5	Prosthodontics	Journal of Prosthodontics	1.750 (2017)	17	54,891
6	Oral and Maxillofacial Surgery	British Journal of Oral and Maxillofacial Surgery	1.260 (2017)	17	39,035
7	Orthodontics	Progress in Orthodontics	1.381 (2018)	17	60,658
			Total word count	119	409,816

RESULTS AND DISCUSSION

The findings for each research question are presented and discussed below, with illustrative examples to provide a detailed picture of the variations in the seven dentistry subdisciplines.

What are the most Commonly Employed Self-mentions in each of the Seven Dentistry Subdisciplines?

The frequency of first-person pronouns in each of the seven dentistry subdisciplines is presented in Table 2. The findings revealed that authors in six of the seven dentistry subdisciplines employed self-mentions, especially the first-person plural pronouns “we” and “our,” which were the most commonly used. With the exception of the orthodontics subdiscipline, use of the first-person plural pronoun “we” was more frequent than the possessive “our” in the other six subdisciplines. This contradicts Behnam et al.’s (2014) study of chemistry RAs, which showed that writers in hard fields use the first-person plural possessive “our” more than “we” because they are attempting to reduce responsibility for their claim. Dentistry authors used the first-person plural pronoun “we” to indicate their contributions to their field of research. The results of the present study refute the claim that personal pronouns are very rarely employed in hard disciplines (Hyland, 2005b), as quantitative research must be objective and impersonal. As Kuo (1999) stated, writers use the exclusive “we” to express their role and contribution to their field of research. However, Dobakhti and Hassan (2017) found that the plural pronouns were more common among quantitative than qualitative RAs. These findings are in line with a number of studies (Dobakhti & Hassan, 2017; Hyland, 2001; Kuo, 1999; Molino, 2010). These studies, however, attributed the use of first-person plural pronouns not only to multiple authorship (exclusive “we”) but also to the aim of involving the author and reader (inclusive “we”) in the argument (Biber et al., 1999). It is also in line with Afsari and Kuhi’s (2016) quantitative study of self-mentions in 20 MA theses in four soft sciences (applied linguistics, psychology, geography, and political sciences). Hyland (2005a) states that “expert writers” use personal pronouns and interjections to claim affinity with their audience.

The periodontics subdiscipline lacked instances of first-person pronouns, as members of this discourse community seemed to prefer employing the traditional conventions of academic writing by retaining an objective stance through the use of passive constructions, as seen in the following excerpts (1):

- 1) “Bone density **was measured** using AMIDE (a medical image data analysis software).”
 “Statistical analysis **was performed** using SPSS 15.0 and R.3.0.2 software. A descriptive analysis **was made** of both bone density and the histomorphometric parameters.”
 “In the analysis of the results of the histomorphometric study, it **was revealed** that the different ratios of HA/TCP generally do not significantly influence the percentage of NB.”

Table 2. Frequency of first-person pronouns in each of the seven dentistry subdisciplines

Subdiscipline	1. Oral sciences		2. Periodontics		3. Endodontics		4. Pediatric dentistry		5. Prosthodontics		6. Oral and maxillofacial surgery		7. Orthodontics		Total
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
We	75	58.59	0	0.00	62	55.36	82	53.95	30	63.83	195	68.19	53	39.55	
Our	46	35.94	0	0.00	46	41.07	69	45.40	17	36.17	91	31.81	79	58.96	
Us	7	5.47	0	0.00	4	3.57	1	0.65	0	0.00	0	0.00	2	1.49	
I	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	
My	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	
Mine	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	
Me	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	
N=	128	100	0	0.00	112	100	152	100	47	100	286	100	134	100	859
N per 1000 words	1.85		0		1.79		2.16		0.85		7.32		2.21		2.10

“In the best case, when integrity of the buccal or palatal tables **is maintained**, delivery of the prosthesis is delayed by at least 6 months”

“Hence, it **is suggested that surgical therapy will provide** more advantages compared to nonsurgical therapy if it is performed in deep PD.” (*International Journal of Periodontics & Restorative Dentistry*, 39/3, 2019)

The authors of the periodontics subdiscipline employed passive construction to background their role as agents (or doers) of the action. None of the seven dentistry subdisciplines included instances of first-person singular pronouns. This finding contrasts with McGrath’s (2016) study of the use of first-person subject pronouns in history and anthropology RAs. The use of first-person plural pronouns in six of the seven dentistry subdisciplines reflects the collaborative nature of these subdisciplines, in which multiple authors are involved (or foregrounded as agents). It also indicates authors’ confidence in the propositions or claims they are making.

2) “We aimed to determine whether a scoring system based on the presence of comorbid conditions may be a more accurate way of predicting disease-free survival.”

“We used descriptive statistics and Pearson’s chi squared test to assess the significance of differences between groups. Probabilities of less than 0.05 were deemed significant.”

“Finally, *we* conclude that there are limited interproximal distances in the anterior sector of the maxilla in subjects with class III facial deformity, which alerts us to the potential dental and periodontal risks for interdental osteotomies.”

“To *our* knowledge, its utility within the surgical setting has yet to be explored, and so, as a pilot study, *we* primarily explored the first two stages.” (*British Journal of Oral and Maxillofacial Surgery*, 57, 2019)

3) “We observed more demarcated opacities lesions in FMT and incisors.” (*International Journal of Paediatric Dentistry*, 29, 2019)

Hyland (2002) suggests two low-risk and two high-risk rhetorical functions of personal pronouns. While the former refers to cases in which authors employ first-person pronouns to state an aim or explain a procedure, the latter refers to instances of authors using such pronouns to explicitly express themselves when stating claims/findings or elaborating arguments. Thus, the above excerpts include all four functions of personal pronouns.

The authors minimally employed the words “author(s)” and “researcher(s)” to refer to themselves (Table 3).

The occurrence of these words was more frequent in the periodontics subdiscipline than in the other six subdisciplines. This could be the reason for the lack of first-person singular/plural pronouns in this subdiscipline, as the authors preferred to employ this strategy instead. Similar to Hryniuk’s (2018) study of self-mentions in linguistics RAs, the percentage of the self-reference item *the author(s)* according to the present study is higher in the Introduction, Methods, and Discussion sections.

4) “In relation to the histomorphometric parameters, *the authors* explored possible significant differences in NB, RM, and CT distributions according to the HA/TCP

Table 3. Other self-mention devices in each of the seven dentistry subdisciplines

Subdiscipline	1. Oral sciences		2. Periodontics		3. Endodontics		4. Pediatric dentistry		5. Prosthodontics		6. Oral and maxillofacial surgery		7. Orthodontics	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
The author (s)	5	50	40	100	7	100	4	100	7	100	2	100	1	33.33
The researcher (s)	5	50	0	0.00	0	0.00	0	0.00	0	0.00	0	0	2	66.67
N=	10	100	40	100	7	100	4	100	7	100	2	100	3	100

ratio used and the different time intervals (4, 12, and 24 weeks).”

“In the present study, *the authors* wanted to validate the success of this procedure for immediately loaded implants in a larger patient population and for a longer follow-up.”

“*The authors* hypothesize that these positive findings can be attributed to the laser-microgroove feature of the collar of the Laser-Lok implant.” (*International Journal of Periodontics & Restorative Dentistry*, 39/3, 2019)

5) “*The authors* would recommend policy makers to fine-tune the identification of socially vulnerable populations, in order to improve preventive interventions and health care organization.”

“*The authors* intentionally included only those children who received the oral health promotion and oral examination every single year during the whole 4-year study period, in order to examine the impact of the entire oral health programme with four sessions.” (*International Journal of Paediatric Dentistry*, 29, 2019)

6) “*The authors* concluded that such blocks exhibit limited osteoconductive capacity. However, further research is needed...” (*International Journal of Periodontics & Restorative Dentistry*, 39/3, 2019)

7) “In this study, *the authors* used the superimposition method and an extraoral scanner for all digitization procedures.” (*Journal of Prosthodontics*, 28, 2019)

The use of self-reference is “a powerful means by which writers express an identity by asserting their claim to speak as an authority, and this is a key element of successful academic writing” (Hyland, 2002, p. 1094). Wu and Zhu (2014), however, argue that writers employ self-mentions (or third-person nouns) to distance themselves from readers and to sound unemotional as they present themselves as authoritative sources. The use of such terms to refer to author(s)/ researcher(s) in previous studies was not counted as an instance of self-reference: that is,

8) “In the same way, *researchers* reported the lesions of demarcated opacities to be more frequent.” (*International Journal of Paediatric Dentistry*, 29, 2019)

9) “Several researchers have quantified the amount of RRR of the anterior maxilla area to ascertain whether implant-retained or -supported overdentures contribute towards this Combination Syndrome.” (*Journal of Prosthodontics*, 28, 2019)

Which RA Section among the Seven Dentistry Subdisciplines Employs more Self-mention Devices?

Writers may differently express themselves more explicitly across RA sections. The second research aim was therefore to investigate which RA section among the seven dentistry subdisciplines employed more self-mention devices. The occurrence frequency of the most commonly employed self-mentions (“we” and “our”) in each RA section of the seven dentistry subdisciplines was counted (Table 4 and Table 5).

The findings revealed that the first-person plural pronoun “we” was mainly employed in the Discussion section, with the exception of the periodontics subdiscipline, which lacked

Table 4. Distribution of the first-person plural pronoun “we” in each section of the seven dentistry subdisciplines

Self-mention	1. Oral sciences		2. Periodontics		3. Endodontics		4. Pediatric dentistry		5. Prosthodontics		6. Oral and maxillofacial surgery		7. Orthodontics	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Introduction	15	20	0	0	6	9.68	5	6.10	4	13.33	15	7.69	4	7.55
Methods	17	22.67	0	0	8	12.90	19	23.17	1	3.33	77	39.49	2	3.77
Findings	10	13.33	0	0	10	16.13	9	10.97	11	36.67	23	11.80	4	7.55
Discussion	33	44	0	0	38	61.29	49	59.76	14	46.67	78	40	41	77.36
Conclusion	0	0	0	0	0	0	0	0	0	0	2	1.02	2	3.77
N=	75	100	0	0	62	100	82	100	30	100	195	100	53	100

Table 5. Distribution of the first-person plural pronoun “our” in each section of the seven dentistry subdisciplines

Subdiscipline	1. Oral sciences		2. Periodontics		3. Endodontics		4. Pediatric dentistry		5. Prosthodontics		6. Oral and maxillofacial surgery		7. Orthodontics	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Introduction	6	13.04	0	0	4	8.69	3	4.35	0	0	12	13.19	2	2.53
Methods	7	15.22	0	0	7	15.22	2	2.90	0	0	11	12.09	4	5.06
Findings	0	0	0	0	1	2.17	3	4.35	1	5.88	8	8.79	1	1.27
Discussion	33	71.74	0	0	34	73.92	61	88.40	16	94.12	55	60.44	71	89.87
Conclusion	0	0	0	0	0	0	0	0	0	0	5	5.49	1	1.27
N=	46	100	0	0.00	46	100	69	100	17	100	91	100	79	100

this resource. This finding is in line with Khedri’s (2016) study, which found that this pronoun was largely employed in the Results and Discussion sections of environmental engineering and chemistry RAs, at 60% and 56%, respectively. The six dentistry subdisciplines used the exclusive “we” pronoun to restate the aims/results, elaborate arguments/results, highlight their contributions, and compare their results with those of previous studies.

10) “To counter such errors, *we* used standardized methods with properly positioned X-ray holders to best approximate the axes of the teeth to real anatomy.”

“In this retrospective study, *we* analyzed survival of two different types of mandibular retainers and one maxillary retainer 10–15 years post-treatment... *We* found that 10–15 years after debonding, TMA retainers were free of failures more often than the stainless steel ones bonded to all anterior teeth (61.0% vs. 40.4%, respectively).” (*Progress on Orthodontics*, 20, 2019)

Similarly, the first-person plural pronoun “our” was mainly employed in the Discussion section, with the exception of the periodontics subdiscipline, which lacked this linguistic resource.

11) “The data from this study agrees with *our* study, which found a significant difference between the pick-up conventional impression technique and the digital IOS impression technique in all tested variables.”

“*Our* results can be directly extrapolated to clinical conditions, but they are predictive of the probability of the behavior of these agents under in vitro conditions.”

“Also recognized is the fact that *our* findings, given the fact that they were the first to investigate the relationship between number of missing natural teeth and hip fracture, are preliminary in nature.” (*Journal of Prosthodontics*, 28, 2019)

Another strategy for showing authorial stance (or voice) is the use of the terms “the researcher(s)”/“the author(s).” The findings (Table 6) showed that the Discussion RA section in the following four subdisciplines mainly included these terms: oral sciences, periodontics, endodontics, and prosthodontics. Whereas these terms rarely occurred in the Methods section of the oral and maxillofacial surgery and orthodontics subdisciplines, they also rarely occurred in the Introduction section of the pediatric subdiscipline.

12) “In this study, the authors used the superimposition method and an extraoral scanner for all digitization procedures; this scanner had a 6- μ m accuracy, while CMM technology has a 1- μ m accuracy.”

Methods: “Questionnaire items, which had documented test/re-test reliability, were taken from the authors’ previous work in a practice-based study of dental care.”

“Each article retrieved by the search was reviewed by one of the authors (HD).” (*Journal of Prosthodontics*, 28, 2019)

What are the most common realizations of personal pronouns among the seven dentistry subdisciplines?

Table 7 presents the distribution of self-mention markers based on their main rhetorical realizations in the seven

Table 6. Distribution of self-mention term, “the researcher (s)”/“the author (s),” in each section of the seven dentistry subdisciplines

Subdiscipline	1. Oral sciences	2. Periodontics	3. Endodontics	4. Pediatric dentistry	5. Prosthodontics	6. Oral and maxillofacial surgery	7. Orthodontics					
RA section	Freq	%	Freq	%	Freq	%	Freq					
Introduction	4	40	3	7.5	1	14.28	4	100	0	0.00	0	0.00
Methods	1	10	13	32.5	2	28.57	0	0.00	2	28.57	2	100
Findings	0	0.00	6	15	0	0.00	0	0.00	0	0.00	0	0.00
Discussion	5	50	18	45	4	57.15	0	0.00	5	71.43	0	0.00
N=	10		40	100	7	100	4	100	7	100	2	100

Table 7. Rhetorical functions of self-mention devices in the seven dentistry subdisciplines

Subdiscipline	1. Oral sciences	2. Periodontics	3. Endodontics	4. Pediatric dentistry	5. Prosthodontics	6. Oral and maxillofacial surgery	7. Orthodontics					
Function	Freq	%	Freq	%	Freq	%	Freq					
Stating a goal/purpose	3	2.34	0	0.00	7	6.25	8	5.27	6	12.77	19	6.65
Explaining a procedure	52	40.63	0	0.00	36	32.14	69	45.39	16	34.04	105	36.71
Stating findings/claims	42	32.81	0	0.00	36	32.14	46	30.26	15	31.91	125	43.70
Elaborating an argument	18	14.06	0	0.00	24	21.44	26	17.10	10	21.28	37	12.94
Referring back to text	13	10.16	0	0.00	9	8.03	3	1.98	0	0.00	0	0.00
N=	128	100	0	0.00	112	100	152	100	47	100%	286	100

dentistry subdisciplines. The findings revealed that *explaining a procedure* and *stating findings/claims* were the most frequently occurring rhetorical functions of self-mentions in six of the seven dentistry subdisciplines. As the periodontics subdiscipline lacked instances of self-mention, Hyland's (2003) four rhetorical realizations were expressed in this subdiscipline through the use of passive construction, as seen in the following excerpts (13).

13) **Stating a goal/purpose:** "The aim of this study is to evaluate the survival rate of implants inserted and immediately loaded in sites where impacted teeth are present as well as the incidence of complications in the medium- to long-term follow-up." (Introduction)

Explaining a procedure: "The stent was converted to a surgical stent and was used for implant surgery." (Methods)

Stating findings/claims: "Analysis results are shown in Fig 8." (Results)

Elaborating an argument: This indicates that the biomimetic CaP coating with BMP-2 has a histologically positive influence on the osseointegration of zirconia implants. (Conclusion) (*International Journal of Periodontics & Restorative Dentistry*, 39.3, 2019)

This finding indicates that periodontics authors prefer the construction of objectivity by omitting the agent phrase and topicalizing the object. This finding is in line with Molino's (2010) argument that "impersonal authorial references are normally associated with explaining procedures, illustrating data, and stating results" (Molino, 2010, p. 95). The linguistics realization of stating a goal "helps clarify the direction of the research and the schematic structure of the argument" (Hyland, 2002, p. 1100). This realization co-occurred in the other six dentistry subdisciplines with verbs such as aim, intend, need, evaluate, think, analyze, and compare. The frequency of this realization was less than 12.77%. This indicates that authors in the seven subdisciplines were less inclined to indicate their authorial stance when stating their research aims. The function of explaining a procedure not only occurs in the Methods section but also in the Introduction, as the author(s) explain the steps of their research (Excerpt 14).

14) **Stating a goal/purpose:** "Based on a 20%–25% prevalence of torture experience (16), we aimed to recruit 150–200 refugees." (Materials & Methods) (*European Journal of Oral Sciences*, 127/3, 2019)

Explaining a procedure: "In the present study, we used the combination of metformin and tHA in an attempt to increase cellular activity and osteoinductivity of hPDLSCs." (Introduction) (*European Journal of Oral Sciences*, 127/3, 2019)

Stating findings/claims: "We conclude that metformin may prevent cytotoxicity in hPDLSCs exposed to tHA by reducing ROS via autophagy-related signaling pathways." (Discussion) (*European Journal of Oral Sciences*, 127/3, 2019)

Elaborating an argument: "Interestingly, the percentage of patients who had suffered hip fractures who were currently on medications (bisphosphonates or hormone

replacement drugs) was relatively low at 2%; a finding that we would expect to see." (Discussion).

"As Iowa has the third highest percentage of persons over the age of 65, at 15.6% of the population, we were interested in how many general dentists were restoring edentulous patients, how many were using implants..." (Introduction) (*Journal of Prosthodontics*, 28, 2019)

Similarly, elaboration of an argument is not only limited to the Discussion section but also occurs in the Introduction. The rhetorical realization of *explaining a procedure* is associated with the occurrence of the exclusive first-person subject pronouns that most commonly co-occurred with verbs such as use, test, collect, create, repeat, treat, separate, calculate, analyze, prescribe, remove, record, review, and enter. The verbs used for *stating findings/claims* included found, observed, and concluded. The authors state results ("our findings showed") and impart knowledge claims ("we conclude"). *Elaboration of an argument* most commonly co-occurred with verbs such as believe, propose, hypothesize, suggest, expect, realize, and overcome. The authors explicitly state their opinions through the use of such verbs. Therefore, when dentistry authors engage in authoring a manuscript, they take on the role of instructors, explaining procedures, and as arguers and evaluators, stating findings/claims and elaborating arguments.

CONCLUSION AND IMPLICATIONS

The findings showed the lack of intradisciplinary variations across six of the seven dentistry subdisciplines (oral sciences, endodontics, pediatrics, prosthodontics, oral and maxillofacial surgery, and orthodontics). With respect to the first research aim, the most commonly employed self-mention markers in the dentistry subdisciplines were the first-person plural pronouns "we" and "our," with the exception of periodontics, which lacked instances of these linguistic devices. This indicates the authors' confidence in the propositions or claims they are making. Interestingly, authors of the periodontics subdiscipline seem to abide by conventional norms of academic writing that restrict the use of these resources. Thus, authors of this subdiscipline retain an objective stance through the use of passive constructions. Moreover, none of the seven dentistry subdisciplines included instances of pronouns referring to the individual self, as all the RAs were written by more than one author. The use of the self-mention terms "author(s)"/"researcher(s)" that distance writers from readers was minimally employed in the seven dentistry subdisciplines, though they were more frequent in the periodontics subdiscipline. This could explain the reason underlying the lack of first-person singular/plural pronouns in this subdiscipline.

As regards the second research aim, the results also showed that the first-person plural pronouns "we" and "our" were mostly employed in the Discussion section, with the exception of periodontics subdiscipline which lacked this resource. Finally, the findings revealed that the two functions of *explaining a procedure* and *stating findings/claims* represented the most frequently occurring rhetorical functions of self-mentions, with the exception of periodontics

subdiscipline which associated Hyland's (2003) four rhetorical functions with impersonal authorial reference. This is expected since this subdiscipline lacked instances of self-mentions.

The findings contribute to the fields of discourse and genre studies, as well as ESP/EAP courses. They may have implications for dentistry RA writing and teaching. An awareness of more frequently used self-mentions in dentistry RAs and their rhetorical functions can help English dentistry scholars to successfully produce RAs that are in line with the academic writing norms of each subdiscipline, thereby becoming members of their community of practice. Likewise, EAP tutors can raise their students' awareness of intradisciplinary linguistic similarities and variations in the seven dentistry subdisciplines. They can also guide their attention toward the rhetorical options available to them and methods of being subjective. Future research studies may compare the findings in the present study with other science disciplines.

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END NOTE

1. <http://www.laurenceanthony.net/software/antconc/>

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