

Subdisciplinary and Paradigmatic Impact of Metadiscourse Markers in Medical research Articles

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Abstract

As the overriding components of discourse, metadiscourse markers (MDMs) have been studied extensively through varying disciplines and paradigms and in different languages/cultures. However, when it comes to subdisciplinary realization of these features, particularly in medicine, we have to seemingly pave a long way. Identifying this gap, the present corpus-based study which is inspired by the metadiscourse taxonomy of Hyland (2005), focuses on exploration of 180 Medical Physics and Nursing research articles (RAs) as two rather distinct but comparable subfields of medicine across the quantitative and qualitative paradigms in English. It is expected that the findings will help in heading off the problems of the academic researchers and graduate students in writing RAs.

Keywords: Metdiscourse Markers (MDM), Research Articles (RAs), Medical Physics, Nursing, Native English Writers (NEW), Iranian English Writers (IEW)

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1. Background

Granted that some aspects of college life, i.e., teaching and research are seriously attended to in an educational system, this does not mean that other practices such as the writing skill can be regarded as peripheral in the academic settings. According to Hyland (2011, p. 2), "universities are ABOUT writing and that the specialist forms of academic literacy are at the heart of everything we do: central to constructing knowledge, educating students, and negotiating a professional academic career". Moreover, the expression 'publish or perish' has so vigorously found its way to the heart of universities that students and academics are now highly required to gain the ability to publish and thus bear their names identified in Anglophone journals for their survival and promotion.

It is also important to note that earlier views on language saw texts as largely expository and propositional in that language is used merely for the exchange of information or communication of ideas. To balance, however, the view, Krismore (1989), Vande Kopple (1985), Williams (1981), and some others' pioneering work emerged in literature to touch also upon the significance of the writers or speakers' intrusion into the text in order to impinge on the audience reception of the material. In this way, it was identified that some tokens such as interpersonal resources are also deployed in texts which help writers organize discourse and take attitude towards their readers as well (Hyland, 2004, 2005) and metadiscourse can act as one such resource. Interestingly, Hyland and Tse (2004) see all metadiscourse as interpersonal but with two levels of meaning arising from the perspective that textual features can also highly contribute to the writers' way of connection with and impression on the audience. It follows that

taking into account the knowledge and expectations of the interlocutors is now a critical consideration in issues related to metadiscourse use.

Some scholars have also underscored the multifunctionality of metadiscourse attributes (Crismore, Markkanen, & Stefferson, 1993; Hyland, 2005, 2015). They inform us that context of use is a critical factor in determining the function of metadiscourse elements. Put it in another way, the form of a token may in cases fail to easily crystalize its function unless the context in which the token is used is also taken into account. Stipulated by Hyland (2015), "analysis therefore begins by attending to linguistic *forms*, but it regards these forms as expressions of particular discourse-oriented *functions*" (p. 4).

Moreover, it is necessary to draw a dividing line between the employment of MDMs in varying genres: academic writing, business contexts, magazine advertising, company manual reporting and the like. It is because writers normally attempt to pursue different purposes by employing diverse metadiscourse elements so as to materialize their contribution, either widened or narrowed, to the text and impinge on particular audience.

Attested by literature, MDMs have been explored from a variety of taxonomies and approaches. Some studies have dealt with a whole range of MDMs (Akbas, 2012; Faghih & Rahimpour, 2009; Hyland & Tse, 2004; Marandi, 2003; Mostafavi & Tajalli, 2012; Shokouhi & Talati Baghsiahi, 2009) while others have examined certain metadiscourse subcategories (Burneikaite, 2008; Dahl, 2004; Farrokhi & Ashrafi, 2009; Ghadyani & Tahririan, 2015; Gomez, 2011; Jalilifar, 2011; Tessuto, 2008). In a study conducted by

Hyland (2005), for example, it was shown that the writers' deployment of a quite higher number of hedging attributes (e.g.: might, likely, possibly) in RAs compared with the lower distribution of the token in the textbooks (15.1 vs. 8.1 respectively) can instantiate the authors' awareness of the limitations of knowledge and thus the need for withholding certainty while writing RAs; this is, however, not the case in the textbooks.

Several studies have also tapped the possible paradigmatic variation in terms of use and frequency of metadiscourse features. Cao and Hue (2014), for example, compared 120 RAs written by psychologists, educationalists, and applied linguists to identify the distribution interactive metadiscourse signals by these knowledge makers. The results indicated variation in the employment of transitions and evidentials accounted for by the differences between quantitative and qualitative paradigms. In line with this study, Hu and Cao (2015), investigated the interactional metadiscourse frequencies in the disciplines mentioned and once more discerned the differences that could evidently be ascribed to paradigmatic epistemological contrasts. Mozayan and Allami's (2016) inquiry also underscored the importance of quantitative and qualitative differentiation in academic RAs that can contribute to the emergence of some varying results.

In addition, medical research papers have also been investigated for their disciplinary or paradigmatic variations across different languages/cultures. The unresearched niche in this arena, however, is the study of the subdisciplinary conventions of metadiscourse use in the qualitative and quantitative paradigms of medical RAs that triggered the present investigation. More

specifically, the present study aims to deal with the following research questions:

1. Are there any significant differences in terms of type and frequency between native English writers (NEW) and Iranian English writers (IEW) in the use of MDMs in post-method section of *quantitative* research articles in the field of Medical Physics?

2. Are there any significant differences in terms of type and frequency between native English writers (NEW) and Iranian English writers (IEW) in the use of MDMs in post-method section of quantitative research articles in the field of Nursing?

3. Are there any significant differences in terms of type and frequency between native English writers (NEW) and Iranian English writers (IEW) in the use of MDMs in post-method section of *qualitative* research articles in the field of Medical Physics?

4. Are there any significant differences in terms of type and frequency between native English writers (NEW) and Iranian English writers (IEW) in the use of MDMs in post-method section of qualitative research articles in the field of Nursing?

2. Method

2.1. Corpus

This corpus-based study included 180 RAs written by the native speakers of English and Persian. The journals out of which the articles were selected had been published between 2010 to 2015. This time span was selected for gaining access to the adequate number of the papers required. After extracting the full-length original articles needed for the study, attempts were made to convert the post-method sections into plain text format by excluding block quotations, tables, figures, footnotes, and references as well as appendices, if any, to provide a better possibility for corpus analysis. The reason for

opting the post-method sections of the papers is that these sections can highly be representatives of the writers' own structuring and wording (Abdi, 2011; Cao & Hu, 2014; Hu & Cao, 2015; Khedri et al., 2013). Therefore, the *introduction* and *method* sections of the papers were dispensed with. Moreover, due to the fact that no study to date has probed into the subdisciplines of medicine in the quantitative and qualitative cross-linguistic paradigms, decision was made to touch upon this knowledge gap.

The study was mostly triggered by the works of Harwood (2006) and Ozturk (2007) who stipulate the need for some *subdisciplinary* comparisons rather than just probing into disciplinary identities. Moreover, granted that several researchers have identified the rhetorical features of medicine to be different from those of other disciplines, yet the dichotomous realization of knowledge domains as hard/soft divide (Becher & Trawler, 2001) remains to be

understood in diverse paradigms and subdisciplines of medicine. For this purpose, it was initially necessary to consult the opinion of the professionals in the discipline, the results of which determined the two subfields of Medical Physics and Nursing as the rather distinct and comparable medical representatives of hard and soft sciences. Furthermore, paradigm characterization was developed on the basis of Cresswell's (2009) classification in social and behavioral research.

Knowledge-domain expertise was also needed to help us specify and draw on the academic journals published between the aforementioned years. And the disciplinary professionalism finally oriented us to select the English articles published by such databases as *a)* Scopus, Embase, CINAHL, Biological Abstract, and *b)* Psycho info as this would bring about more homogeneity with the articles listed in Table 1.

Table 1. List of the Journals Used

Subdisciplines	Journals
Medical Physics	Advances in Medical Sciences
Medical Physics	Iranian Journal of Medical Physics
Medical Physics	Iranian Journal of Biomedical Engineering
Medical Physics	Journal of Applied Clinical Medical Physics
Nursing	Journal of Nursing Care Quality
Nursing	Journal of Care Management
Nursing	Iranian Journal of Nursing
Nursing	Iranian Journal of Nursing Research (IJNR)

2.2. Procedure

To classify discourse elements, metadiscourse studies (Crismore *et al.*, 1993; Dafouz, 2003; Hyland, 1998 a, b; Vande Kopple, 1985, among others) have mostly drawn on the Hallidayan

distinction between *textual* and *interpersonal* functions of language. The former refers to the organization of the text whereas the latter helps the interlocutor to interpret, evaluate and react to such material. Moreover, of all the

metadiscourse categorizations present in the drawn on by other researchers in the field literature, this study utilized the one organized (illustrated in Table 2). by Hyland (2005) for the reason that it is highly

Table 2. Metadiscourse classification by Hyland (2005: 49), adapted

Category	Function	Example
Interactive	Help to guide the reader through the text	Resources
<i>Transitions</i>	express relations between main clauses	in addition; but; thus; and
<i>Frame markers</i>	refer to discourse acts, sequences or stages	finally; to conclude; my purpose is
<i>Endophoric marker</i>	refer to information in other parts of the text	noted above; see figure; in section
<i>Evidentials</i>	refer to information from other texts	according to X; Z states
<i>Code glosses</i>	elaborate propositional meaning	Namely; e.g.; such as; in other wor
Interactional	Involve the reader in the text	Resources
<i>Hedges</i>	withhold commitment and open dialogue	might; perhaps; possible; about
<i>Boosters</i>	emphasize certainty and close dialogue	in fact; definitely; it is clear that
<i>Attitude markers</i>	express writers' attitude to proposition	unfortunately; I agree; surprisingl
<i>Self-mentions</i>	explicit reference to author(s)	I; we; my; me; our
<i>Engagement marker</i>	explicitly build relationship with reader	consider; note; you can see that

Moreover, to avoid running the risk of obtained by assigning 80 of the articles to the misinterpretation of such tokens in the text, the rater groups before the study the results of contextual interpretation of the features was which are listed in Table 3. As the Table shows, subsumed rather than the computerized the reliability score among the groups roughly concordancing techniques. The content validity amounts to 1 which can be assumed as very of the research was also secured through high. For analyzing the data, the nonparametric applying the recommendations of the content- test of Chi-square was used by setting the Alpha knowledge professionals in the field. level at 0.05. Furthermore, the reliability of the probe was

Table 3. Results of Inter-Rater Reliability

Writer Groups	Type of paper	NO	Reliability value
NEW	Quantitative	20	1.00
NEW	Qualitative	20	0.976
IEW	Quantitative	20	0.997
IEW	Qualitative	20	0.997

3. Results and Discussion

In the following, the results for the four research questions presented above along with the discussion and reason for each and every piece of finding of the study will be introduced.

Results for Research Question 1

(Quantitative RAs in Medical Physics): Table 4 demonstrates the frequency of metadiscourse markers in Medical Physics quantitative papers by native English writers (NEW) and Iranian English writers (IEW) so as to address the research question 1. As it is observed, NEW had

a higher frequency per 10000 than IPW in terms of using metadiscourse features (Mean difference = 56.1).

Table 4. Frequency of MDMs in Medical Physics quantitative RAs by NEW and IEW in general

Type of context	Total word	Raw Frequency	Frequency per 10000
Quantitative papers by NEW	2620	21754	1204.37
Quantitative papers by IEW	3172	27624	1148.27

A chi-square test was conducted to identify the likelihood of a significant difference between the two groups but no difference was identified, $\chi^2 (1) = 1.333, p = 0.248$.

Table 5 indicates the distribution of metadiscourse features by both groups in details. As can be identified, boosters and transition markers have been deployed to a high extent by both groups.

Table 5. Frequency of MDM in Medical Physics quantitative papers by NEW and IEW in details

MDM categories	NEW			IEW			Chi-square value	p-value
	Raw	F per 100 W	%	Raw	F per 10000 W	%		
Code glosses	286	131.47	11.1	360	130.3	11.4	0.004	0.951
Evidentials	194	89.18	7.5	372	134.67	11.9	9.45	0.002
Endophoric markers	108	49.65	4.2	172	62.26	5.4	1.29	0.257
Frame markers	142	65.28	5.5	148	53.58	4.7	1.02	0.313
Transition markers	398	182.95	15.5	540	195.48	17.1	0.381	0.537
Attitude markers	112	51.48	4.3	106	38.37	3.3	1.899	0.168
Boosters	824	378.78	32.1	930	336.66	29.6	2.464	0.117
Self mention	188	86.42	7.3	158	57.20	5.0	5.88	0.015
Engagement markers	12	5.52	0.5	8	2.90	0.3	1.00	0.317
Hedges	308	141.58	12	354	128.15	11.2	0.726	0.394
Total	2620	1204.4	100	3172	1148.3	100	1.333	0.248

To recognize the likelihood of any features in evidentials and self-mentions. For association between each individual the rest of the subcategories, the differences subcategory across the two groups, a chi-square test was conducted. The results revealed a significant difference between metadiscourse

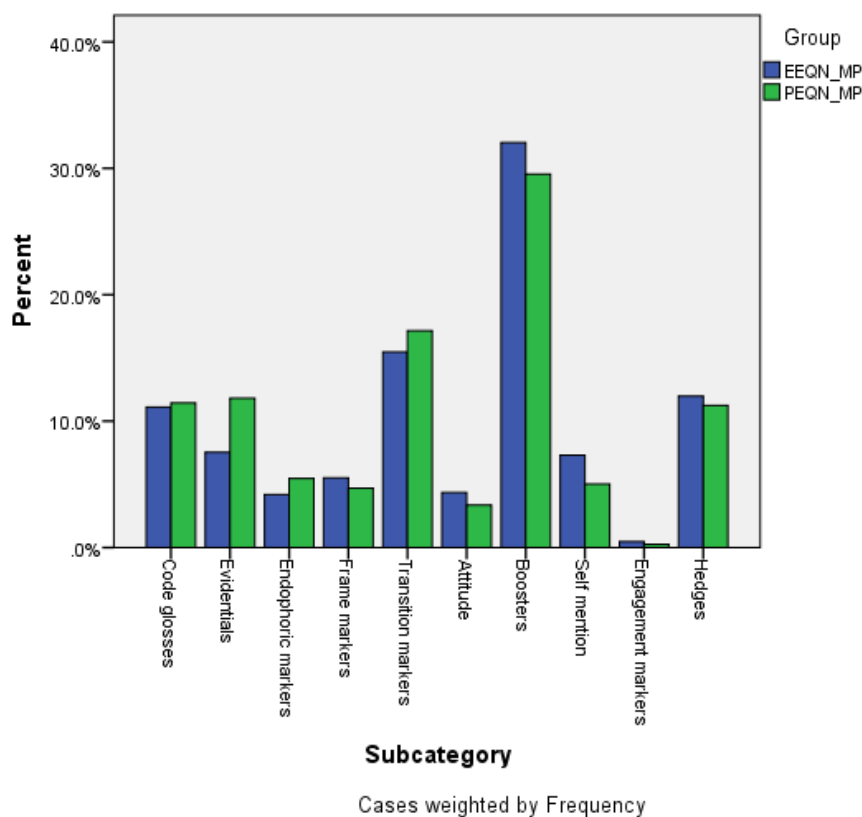


Fig. 1. Results of MDMs in quantitative papers of Medical Physics across subcategory type by NEW and IEW groups

As we can see from table 5, variation, in terms of MDMs between the two groups of Medical Physics quantitative writers (NEW & IEW), failed to be remarkable—only evidentials and self mentions' results were significant at the .05 level across the groups.

Evidentials: Iranians' higher use of evidentials (IEW, 134.67 vs. NEW, 89.17; $p = 0.002$) can be attributed to their tendency to refer to as many sources as possible for better consolidation of their position in the text. This higher number of evidentials can also help them bulk up their papers either in the form of including some block quotations or else so as to achieve an acceptable size.

Self mentions: Iranians' acceptability of their findings or perspectives can seemingly be materialized by lower use of self mentions as they have been culturally infused from school days to preferably employ passive structures in

their writing rather than "I" and "we". This is consonant with what Keshavarz and Kheirieh (2011) assert as to the fact that "students are sometimes instructed by teachers in Persian essay classes to be more formal and polite by avoiding self-mention in their written texts" (p. 12). The perspective is also borne out by Ohta (1991) and Scollon (1994) who capitalize on the Asian writers' conventions of formality and politeness materialized, in part, through collective projection of their identity and thus avoiding some personal pronouns in their texts.

Results for Research Question 2 (Quantitative RAs in Nursing): Table 6 reveals the frequency results of the Nursing quantitative papers by NEW and IEW in general. The frequency per 10000 for the native English group was higher than that of the counterpart group (Mean difference = 44.51)

Table 6. Frequency of MDMs in Nursing quantitative RAs by NEW and IEW in general

Type of context	Total words	Raw Frequency	Frequency per 10000
Quantitative papers by NEW	36015	2560	710.81
Quantitative papers by IEW	27254	1816	666.3

A chi-square test was conducted to find groups of writers. Table 7 depicts the results out whether there was any significant difference across metadiscourse types. As set out in the between the two groups. But the results failed to table, NEW used self-mentions more than the recognize a significant difference, $\chi^2 (1) = 1.47$, IEW ($p = 0.05$). However, IEW employed $p = 0.22$. attitude markers in higher frequency than their

The varying tokens of MDMs were counterparts, i.e., the NEW ($p = 0.04$). The two demarcatedly analyzed to find out which of groups did not differ in terms of the remaining them significantly differed between the two tokens.

Table 7. Frequency of MDMs in Nursing quantitative RAs by NEW and IEW in details

MDM categories	NEW			IEW			Chi-square value	p-value
	Raw	F per 10000 W	%	Raw	F per 10000 W	%		
Code glosses	334	92.74	12.9	238	87.33	12.9	0.20	0.65
Evidentials	226	62.75	8.7	228	83.66	12.4	3.00	0.08
Endophoric markers	124	34.43	4.7	106	38.89	5.8	0.34	0.59
Frame markers	144	39.98	5.5	78	28.62	4.3	1.75	0.18
Transition marker	596	165.49	22.9	364	133.56	19.8	3.21	0.07
Attitude marker	38	10.55	1.5	62	22.75	3.4	4.23	0.04
Boosters	650	180.48	24.9	480	176.12	26	0.04	0.83
Self mention	152	42.20	5.8	70	25.68	3.8	3.77	0.05
Engagement markers	8	2.22	0.3	2	.73	0.1	0.33	0.56
Hedges	332	92.18	12.7	212	77.79	11.5	1.15	0.28
Total	2560	710.81	100	1816	666.3	100	1.47	0.22

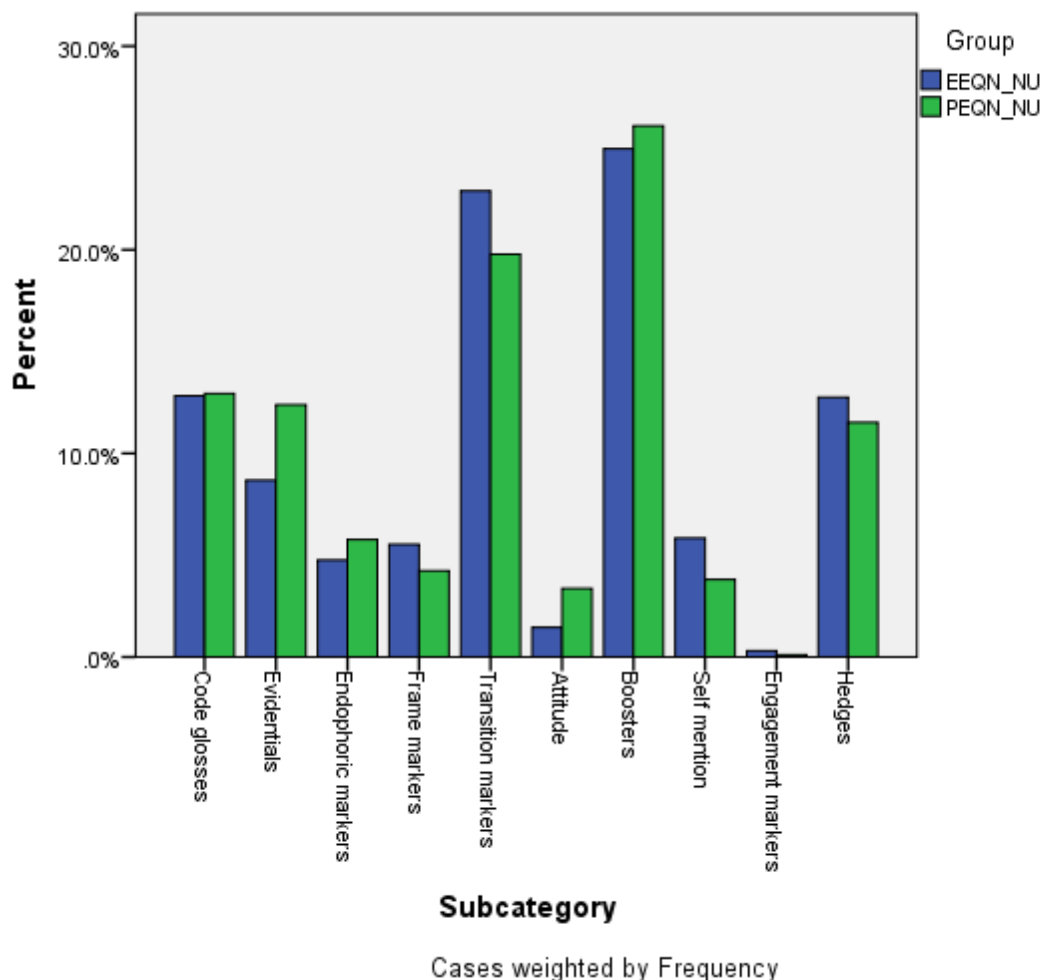


Fig. 2. Results of MDMs in quantitative papers of Nursing across subcategory type by NEW and IEW groups

As for research question 2 and the case of Nursing quantitative writers, again not much variation was observed across the groups. The only eye-catching signals which were different from others were self mentions and attitude markers.

Self mentions and attitude markers: For the higher significant use of self mentions by the Iranian writers, the above discussion rightly holds. However, to figure out why the use of attitude markers by this group was more noticeable (IEW, 22.75 vs. NEW, 10.55; $p = 0.04$), we once more reviewed the articles and saw that the IEW had, before winding up their discussion, indicated a higher affective attitude to proposition in their discourse although for the quantitative papers we expected to see just the comment on the status of the information—

the Iranians in effect had gone a step further and had explained more to show their concern about their patients' health through attitudinal configuration. The following are some of the closing sentences with attitudinal signals deployed by the Iranian Nursing quantitative writers; far less such expressions could be found in the counterpart texts:
 By improving women's health, their positive role in the society would become clearer, their sense of capability would be strengthened, and they would be more effective in taking care of the family health.

Given that most deprived areas of Iran lack adequate laboratory facilities, and most people living in these areas do not afford to pay for

specialized tests, ultrasonography of fetal NT is recommended as a useful and efficient, yet simple, inexpensive and applicable tool for screening of pregnant mothers in these areas.

- However, the need for and effect of various kinds of psychosocial support and intervention for the patients should not be questioned easily. The exact psychological functioning of breast cancer patients remains to be determined in the future studies.
- Sterile water was a promising option with no complications. Therefore, it can be used as a safe and effective irrigation fluid for achieving sterility.

Is this characteristic part of the Iranian Nursing persona? Can this then be generalized to other so-called soft-domain sciences? Conspicuously, more investigations on the subject are needed to properly propel the discussion.

Results for Research Question 3 (Qualitative RAs in Medical Physics): Table 8 compares the frequency of MDMs in Medical Physics qualitative RAs by NEW and IEW. Both group bore a different frequency of MDMs. The frequency of use by the NEW was higher than that of the counterpart group (Mean difference = 134.75).

Table 5. Frequency MDMs in Medical Physics qualitative papers by NEW and IEW in general

Type of context	Total words	Raw Frequency	Frequency per 10000
Qualitative papers by NEW	16676	1930	1157.35
Qualitative papers by IEW	24194	2474	1022.6

A chi-square test was conducted to explore the presence of any significant difference between the two groups. And the results identified significant difference between the groups, $\chi^2(1) = 8.23, p = 0.004$.

To have a more in-depth comparison, the different MDM subcategories were compared between the NEW and IEW in

qualitative texts. The chi-square results identified a statistically significant difference across the groups in using metadiscourse markers ($p > 0.05$). More specifically, IEW used endophoric markers more than the native English writers while it was the reverse for the engagement markers ($p = 0.003$).

Table 9. Frequency MDMs in Medical Physics qualitative papers by NEW and IEW in details

MDM categories	NEW			IEW			Chi-square value	p-value
	Raw	F per 100 W	%	Raw	F per 10000 W	%		
Code glosses	166	99.54	8.7	204	84.32	8.2	1.39	0.24
Evidentials	292	175.10	15.3	376	155.41	15.2	1.21	0.27
Endophoric markers	40	23.99	2.1	106	43.81	4.3	5.88	0.015

Frame markers	122	73.16	6.4	152	62.83	6.2	0.73	0.39
Transition markers	332	199.09	17.4	436	180.21	17.6	0.95	0.33
Attitude markers	164	98.34	8.6	236	97.54	9.6	0.05	0.82
Boosters	464	278.24	24.3	528	218.24	21.3	0.20	0.65
Self mention	80	47.97	4.2	126	52.08	5.1	0.16	0.69
Engagement markers	24	14.39	1.2	4	1.65	0.2	9.00	0.003
Hedges	224	134.32	11.7	306	126.48	12.3	0.25	0.62
Total	1930	1157.35	100	2474	1022.6	100	8.23	0.004

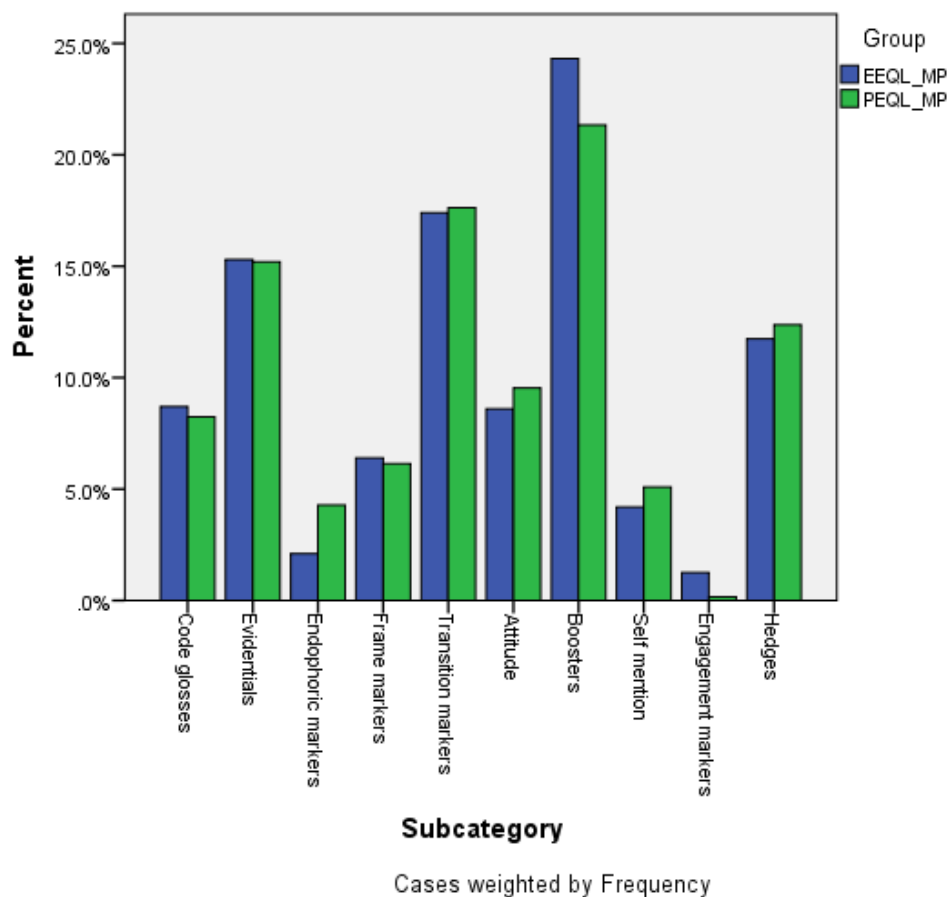


Fig. 3. Results of MDMs in qualitative papers of Medical Physics across subcategory type by NEW and IEW groups

To look for the disparities likely existing difference in terms of endophoric markers and between the groups of Medical Physics engagement markers—for other features non-qualitative writers (Research Question 3), we significant difference was identified. examined Table 9 and observed a significant

Endophoric markers: The endophoric markers' higher deployment by Iranians (IEW, 43.81 vs. NEW, 23.11; $p = 0.015$) can be assigned to their far more use of visual representations—primarily figures and then tables—so as to facilitate comprehension through making propositional content salient. Seemingly, for providing saliency, native speakers see less need to resort merely to visual encoding as they expertly can find other ways to steer their audience to the preferred interpretation of the intended discourse. In this vein, Cao and Hu (2014) compared interactive metadiscourse disciplinarily across education, applied linguistics, and psychology to pin down the influence of paradigm and discipline in RAs. And finally they concurred that “although [native English] authors of qualitative RAs also frequently referred to visual representations in their texts, their repertoires of such representations were more diversified,...” (p. 24).

Engagement markers: The far more application of the engagement markers by the English natives (NEW, 14.39 vs. 1.65; $p = 0.003$) across qualitative paradigm and Medical Physics discipline can be ascribed, as was earlier discussed, to their ability in creating and formulating structural variations such as inclusive *we*, questions, directives, as well as interjections, something that non-natives most often fail to afford.

Results for Research Question 4 (Qualitative RAs in Nursing): As displayed in Table 10, there was not a big difference between the frequency of metadiscourse markers between NEW and IEW (Mean difference = 25.25).

The results obtained from the chi-square test showed no statistically significant difference between the groups at large, $\chi^2(1) = 0.446, p = 0.504$.

Table 10. Frequency of MDMs in Nursing qualitative RAs by NEW and IEW in general

Type of context	Total words	Raw Frequency	Frequency per 10000
Qualitative papers by NEW	41321	2946	712.95
Qualitative papers by IEW	23788	1636	687.70

Table 11 sets out the results across the metadiscourse features. The transition markers were used more frequently than the other subcategories.

To identify any significant difference, the different MDMs were compared between NEW and IEW. The results revealed a significant difference across the two groups in the subcategories related to endophoric markers ($p = 0.00$), frame markers ($p = 0.04$), transition

markers ($p = 0.003$), attitude markers (0.029), boosters (0.027), self mentions (0.001) and hedges (0.022). The IEW used endophoric markers, frame markers, attitude markers and boosters more than the NEW. The NEW, however, deployed transition markers, self mentions and hedges higher than the IEW. The two groups did not turn out to be significantly different for other tokens.

Table 11. Frequency of MDMs in Nursing qualitative RAs by NEW and IEW in details

MDM categories	NEW			IEW			Chi-square value	p-value
	Raw	F per 100 W	%	Raw	F per 10000 W	%		
Code glosses	328	79.38	11.1	220	92.48	13.5	0.98	0.32
Evidentials	402	97.29	13.7	240	100.89	14.8	0.08	0.78
Endophoric markers	2	.48	0.0	40	16.82	2.5	14.22	0.00
Frame markers	142	34.37	4.8	126	52.97	7.7	4.15	0.04
Transition markers	898	217.32	30.6	380	159.74	23.4	8.61	0.003
Attitude markers	134	32.43	4.5	124	52.13	7.6	4.76	0.029
Boosters	292	70.67	10	238	100.05	14.6	4.92	0.027
Self mention	216	52.27	7.3	44	18.50	2.6	15.34	0.001
Engagement markers	24	5.81	0.8	6	2.52	0.4	1.00	0.32
Hedges	500	121.00	17.1	210	88.28	12.9	5.21	0.022
Total	2946	712.95	100	1636	687.7	100	0.446	0.504

Considering Research Question 4, the $p = 0.00$ & Medical Physics, $p = 0.015$)—this was general frequency results (Table 10) proved to not the case with the quantitative papers though. be devoid of a high variation (mean difference = It shows that IEW bear a tendency to deploy 25.25). However, when it came to examining the higher endophoric markers in qualitative subcategories in details (table 24), they were persuasive papers. We once more examined the shown to bear little resemblance with the three articles to see why there is such a difference. previous research findings, i.e., seven out of ten Appealed by the content, we identified some tokens showed to be markedly significant at the tables captioned by expressions such as .05 level across the groups. In effect, the “Patients’ status of health” or “Characteristics of endophoric markers, frame markers, attitude the study participants” and the like the inclusion markers and boosters had been used at a higher of which could for certain help them shun, to level by the Iranians writers. How can we some extent, the complexities of writing in account for such diversities? English (Note that for *quantitative* papers both

Endophoric markers: As for these groups used figures and tables adequately.).

markers, when compared with the results of **Frame markers:** In connection with qualitative RAs in Medical Physics, we observed frame markers’ increment in frequency of use by a significant main effect of paradigm (Nursing, the Iranians, it should not be discounted that

although we previously discussed in favor of the propositional content is provided by them so Persian as a reader-oriented language in which as not to leave the content ambiguous to their writers most often accommodate less audience—framing information and guiding explanations in their discourse, when, however, readers by endophoric markers stand as good it comes to Iranians’ writing in their second instances in this regard. language, more explanation and clarification of

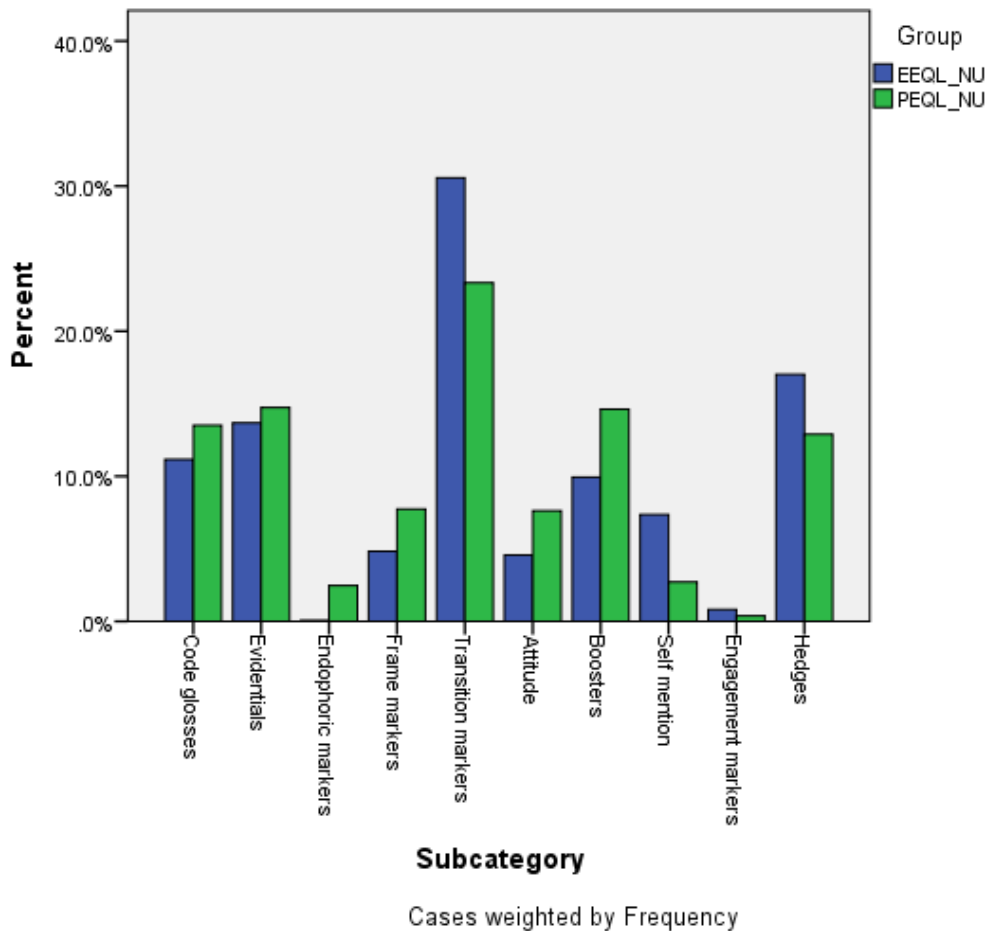


Fig. 4. Results of MDMs in qualitative papers of Nursing across subcategory type by NEW and IEW groups

Attitude markers: Higher use of identity in rhetorical orientation of discourse in attitude markers by the IEW (IEW, 100.05, vs. this way. It seems to us that both of these factors NEW, 70.67; $p = 0.027$) is however a significant exert their own effect. main effect of discipline as the increase can only be observed in the Nursing camp (both qualitative and quantitative writers). This finding may well be ascribed to the higher disposition of the IEW to take position and thus craft with more affective attitude when involved in the soft-domain discipline of Nursing. Granted that this is true, we still cannot overlook the instrumental impact of Iranian cultural

Transition markers, self mentions, and hedges: With regard to the use of transition markers, self mentions, and hedges, as was explored in Table 11, the English natives overrode their Iranian counterparts ($p = 0.003$, $p = 0.001$, & $p = 0.022$ respectively) to make a significant difference across each category. As relating to the previous research question (quantitative RAs) we were at a loss to find such

a difference, it is possible to attribute this assisted to consciously take heed of the epistemic knowledge to the nature of the appropriate employment of these tokens. qualitative argumentative-type texts through Contributing to this line of which the English natives demonstrate higher investigation, i.e., metadiscourse, this research ability to formulate their papers with more was developed to examine the nature and transition markers and hence help their distribution of MDMs in RAs. Generally, this audience interpret pragmatic connection in the study aimed to look at the use of all kinds of intended discourse in the nursing texts. MDMs in a comparable corpus of English and Moreover, the discussion made around the Persian RAs. More specifically, the purpose of Iranians' mitigated use of self mentions through this study was to zero in on some sort of some previous pertinent research questions, interdisciplinary and paradigmatic as well as here also holds. Finally, the lower application of cross-linguistic and cross-cultural variations in hedges by the Iranian Nursing writers (IEW, English and Persian RAs and on the rhetorical 88.28 vs. NEW, 121.00; $p = 0.022$) more possibly features of the Discussion and Conclusion stems from their inclination in coaching their (post-method) sections of these papers. It voices with rather higher certainty through intended to conduct a comparative study of deploying more boosters (discussed above) Persian and English to find out whether there which thereby lends itself well to using less are any commonalities or disparities between hedging devices in discourse. the two languages in the deployment of MDMs.

4. Final Remarks

Crafting research papers is a critical and more profound awareness of the nature of such complex part of language development. RAs in order to help in understanding a clearer Literature on RAs informs us that MDMs identity of textual organization of discourse. constitute an indispensable component of the Evidently, the ESP and material development writing quality not only in the mother tongue courses can also benefit from the findings in but also in a second/foreign language. order to sensitize students more to the norms of Consensually admitted, metadiscourse is "an writing along with the discrepancies that exist important means of facilitating communication, between the cross-cultural writers in different supporting a position, increasing readability, disciplinary paradigms. Moreover, the results and building a relationship with an audience" can lend themselves well to orienting future (Hyland, 2005, p.5). As to the achievement of research in exploring the identities of certain purposes behind using metadiscourse metadiscourse features in diverse RA moves. features including forming relation between This and similar investigations can also help main clauses, referring to other parts of a text, improve learners' better comprehension of the referring to other texts, elaborating meaning, texts (Camiciottoli, 2003; Daftaryfarid, 2002; emphasizing certainty, expressing writer's Dastgoshadeh, 2001; Jalilifar & Alipour; 2007; attitude, and building relation with the readers Khorvash, 2008; Massaabi, 2014; Parvaresh & in general, the critical role of MDMs cannot be Nemat, 2008; Tavakoli, Dabaghi, and discounted. Moreover, it is solely through Khorvash, 2010) as reading ability is assumed to providing a comprehensive account of their be a critical skill in most of the academic applications that the writers of RAs will be contexts in which English is learnt as a foreign language. And finally, the article writing

workshops held for L2 academic teachers and ameliorated by drawing on such metadiscoursal researchers who write in English can surely be findings.

References

- Abdi, A. (2011). Metadiscourse strategies in research articles: A study of the differences across subsections. *The Journal of Teaching Language Skills*, 3(1), 1-16.
- Akbas, E. (2012). Exploring metadiscourse in master's dissertation abstracts: Cultural and linguistic variations across postgraduate writers. *International Journal of Applied Linguistics & English Literature*, 1(1), 12-26.
- Becher, T., & Trowler, P. (2001). *Academic tribes and territories: Intellectual inquiry and the cultures of the disciplines* (2nd ed.). Milton Keynes: SRHE/Open University Press.
- Burneikaite, N. (2008). Metadiscourse in linguistics master's theses in English L1 and L2. *Kalbotrya*, 59(3), 38-47.
- Cao, F., & Hu, G. (2014). Interactive metadiscourse in research articles: A comparative study of paradigmatic and disciplinary influences. *Journal of Pragmatics*, 66, 15-31.
- Camicciotti, B. C. (2003). Metadiscourse and ESP reading comprehension: An exploratory study. *Reading in a Foreign Language*, 15(1), 15-33.
- Cresswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). London: Routledge.
- Crismore, A. (1989). *Talking with Readers: Metadiscourse as Rhetorical Act*. New York: Peter Lang.
- Crismore, A., Markkanen, R., & Steffensen, M. (1993). Metadiscourse in persuasive writing: A study of texts written by American and Finnish university students. *Written Communication*, 10(1), 39-71.
- Dafouz-Milne, E. (2008). The pragmatic role of textual and interpersonal metadiscourse markers in the construction and attainment of persuasion: Across-linguistic study of newspaper discourse. *Journal of Pragmatics*, 40, 95-113.
- DaftaryFard, P. (2002). *Scalability of reading comprehension skill constructs: Metadiscourse connection* (Unpublished master's thesis). University of Science and Technology, Iran.
- Dahl, T. (2004). Textual metadiscourse in research articles: A marker of national culture or of academic discipline? *Journal of Pragmatics*, 36, 1807-1825.
- Dastgoshadeh, A. (2001). *Reading comprehension of EFL students using metadiscourse* (Unpublished master's thesis). University of Tehran, Iran.
- Faghih, E. & Rahimpour, S. (2009). Contrastive rhetoric of English and Persian written texts: Metadiscourse in applied linguistics research articles. *Rice Working Papers in Linguistics*, 1, 92-107.
- Ghadyani, F., & Tahririan, M. H. (2015). Interactive markers in medical research articles written by Iranian and native authors of ISI and Non-ISI medical journals: A contrastive metadiscourse analysis of method section. *Theory and Practice in Language Studies*, 5(2), 309-317.
- Farrokhi, F., & Ashrafi, S. (2009). Textual metadiscourse resources in research articles. *Journal of English Language Teaching and Learning*, 212, 39-75.
- Gómez, L. F. P. (2011). *A contribution to the intercultural and interlinguistic analysis of interpersonal metadiscourse devices in business management research articles* (Unpublished master's thesis). Zaragoza University, Michigan.
- Harwood, N. (2006). (In)appropriate personal pronoun use in political science: A qualitative study and a proposed heuristic for future research. *Written Communication*, 23, 424-450.
- Hu, G., & Cao, F. (2015). Disciplinary and paradigmatic influences on interactional metadiscourse in research articles. *English for Specific Purposes*, 39, 12-25.
- Hyland, K. (1998a). Exploring corporate rhetoric: Metadiscourse in the CEO's letter. *Journal of Business Communication*, 35(2), 224-245.
- Hyland, K. (1998b). Persuasion and context: The pragmatics of academic metadiscourse. *Journal of Pragmatics*, 30, 437-455.
- Hyland, K. (2004). Disciplinary interactions: Metadiscourse in L2 postgraduate writing. *Journal Second Language Writing*, 13, 133-151.
- Hyland, K. (2005). *Metadiscourse: exploring interaction in writing* (1st ed.). New York: Continuum.
- Hyland, K. (2011). *Writing in the university: Education, knowledge and reputation*. Cambridge: Cambridge University Press.
 doi:10.1017/50261444811000036

- Hyland, K. (2015). Genre, discipline and identity. *Journal of English for Academic Purposes*, 25. 1-27. doi:10.1016/j.jeap.2015.02.005
- Hyland, K., and Tse, P. (2004). Metadiscourse in academic writing: A reappraisal. *Applied Linguistics*, 25(2), 156-77.
- Jalilifar, A. R. (2011). World of attitudes in research article discussion sections: A cross-linguistic perspective. *Journal of Technology and Education*, 5(3), 177-186.
- Jalilifar, A., & Alipour, M. (2007). How explicit instruction makes a difference: Metadiscourse markers and EFL learners' reading comprehension skill. *Journal of College Reading and Learning*, 38(1), 35-52.
- Keshavarz, M. H., & Kheirieh, Z. (2011). Metadiscourse elements in research articles written by native English and non-native English Iranian writers in applied linguistics and civil engineering. *Journal of English Studies*, 1(3), 3-15.
- Khedri, M., Ebrahimi, S. J., & Heng, C. S. (2013). Interactional metadiscourse markers in academic research article result and discussion sections. *The Southeast Asian Journal of English Language Studies*, 19(1), 65-74.
- Khorvash, Z. (2008). *The effect of metadiscourse awareness on EFL learners' reading comprehension* (Unpublished master's thesis). University of Isfahan, Iran.
- Marandi, S. (2003). Metadiscourse in Persian/English master's theses: A contrastive study. *Iranian Journal of Applied Linguistics*, 6(2), 23-42.
- Massaabi, A. (2014). Metadiscourse and reading research articles (RA) in English by Tunisian Geography Faculty. *Procedia - Social and Behavioral Sciences*, 98(6), 1110-1118.
- Mostafavi, M. & Tajalli, G. (2012). Metadiscoursal markers in medicine and literary texts. *International Journal of English Linguistics*, 2(3), 64-77.
- Mozayan, M., & Allami, H. (2016). Paradigmatic influences on metadiscourse features in medical research articles. *IJEAP*, 5(1), available online.
- Ohta, A. (1991). Evidentiality and politeness in Japanese. *Issues in Applied Linguistics*, 2(2), 183-210.
- Ozturk, I. (2007). The textual organization of research article introductions in applied linguistics: Variability within a single discipline. *English for Specific Purposes*, 26, 25-38.
- Parvareh, V., & Nemati, M. (2008). Metadiscourse and reading comprehension: The effects of language and proficiency. *Electronic Journal of Foreign Language Teaching*, 5(2), 220-239.
- Scollon, R. (1994). As a matter of fact: The changing ideology of authorship and responsibility in discourse. *World Englishes*, 13, 34-46.
- Shokouhi, H. & Talati Baghsiahi, A. (2009). Metadiscourse functions in English and Persian sociology articles: A study in contrastive rhetoric. *Poznań Studies of Contemporary Linguistics*, 45(4), 549-568.
- Tavakoli, M., Dabaghi, A., & Korvash, Z. (2010). The effect of metadiscourse awareness on L2 reading comprehension: A case of Iranian EFL learners. *English Language Teaching*, 3(1), 92-102.
- Tessuto, G. (2008). Writer identity in the introduction section of academic law research articles: Exploring metadiscourse strategies. *Linguistica e Filologia*, 27, 39-58.
- Vande Kopple, W. J. (1985). Some exploratory discourse on metadiscourse. *College, Composition and Communication*, 36(1), 82-93.
- Williams, J. (1981). *Style: Ten lessons in clarity and grace*. Boston: Scott Foresman.

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چکیده

عناصر فراکلامی به‌عنوان اجزاء مهم کلام به‌طور وسیعی در زبان‌ها و فرهنگ‌های مختلف مورد بررسی قرار گرفته‌اند ولی از نظر بررسی زیررشته‌ای این عناصر، مخصوصاً در حوزه پزشکی، ظاهراً هنوز راه درازی در پیش است. مطالعه حاضر که برگرفته از طبقه‌بندی عناصر فراکلامی هایلند (۲۰۰۵) است با تشخیص این خلاء علمی به تحقیق و تفحص در ۱۸۰ مقاله تحریر یافته به زبان انگلیسی در رشته‌های فیزیک پزشکی و پرستاری به‌عنوان دو زیررشته قابل قیاس در حوزه پزشکی پرداخته است و انتظاری رود که یافته‌های این تحقیق بتواند مشکلات پژوهشی محققان دانشگاهی و دانشجویان دوره‌های عالی دانشگاه‌ها در تحریر مقالات علمی را برآورده سازد.

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