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Analysing the Use of Hedging in Medical Academic Writing

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Abstract

The current study aims to identify, categorize, and specify the functions of the hedges found in the study corpus. The study corpus consists of 50 research articles (RAs) in diverse medical disciplines written in English at Turkish universities. The study adopts the taxonomy proposed by Hyland (1994) to identify and analyze the hedges found. The found hedges are counted manually. The findings showed how important to use hedges in medical research articles. Also, the findings showed the necessity of being knowledgeable and aware of the vital roles and functions that hedges play in academic writing in general, and medical research articles writing in particular. The study presented several implications for future researchers and authors.

Keywords: Hedges, Hyland (1994), Academic Writing, Medical Research Articles.

Introduction

The writer-reader interaction is an important requirement for measuring the acceptability in public. Such interaction should contain some statements, phrases, or words that put it closer to the research communities. Thus, academic writers, like other writers of different genres, are obliged to use certain linguistic devices to achieve their objective. Hedging is one of these strategies that academic writers are used to follow in their writing. Hedges have been defined by several linguists from different perspectives (Crompton, 1997; Hyland, 1996, 1998; Myers, 1989; Nash, 1990; Salager-Meyer, 1994) since the first definition which was produced by Lakoff (1972). The term is first used to refer to “words whose job is to make things more or less fuzzy” (1972, p.194), while Holmes (1982) defined it as a rhetorical device used by writers to demonstrate a kind of politeness and consideration for others, and a space or a chance to disagree (Afshar & Bagherieh, 2014).

Hedging is defined as a term that expresses possibility, uncertainty, and tentativeness and is one of the requirements in academic writing where presenting unproven prepositions carefully and precisely is required (Hyland, 1996b). Hyland (1994) attributes the use of hedging to two main reasons: to express claims with partial caution, humility, and modesty or to diplomatically

negotiate other specialists' or practitioners' works or claims. Hyland (2000, p.111) taxonomized hedges as interpersonal metadiscourse that signifies the words that express the writer's modification toward a commitment. Thus, hedges are usually described by lexicographers as the author's or writer's confidence lack.

In addition, several linguists and specialists taxonomized hedges, among them Myers (1985), Salager-Meyer (1994), and Hyland (1996a, 1996b).

The corpus of the study is 50 RAs in diverse medical disciplines written in English and published in 2023 or 2024. The journals are Acta Medica Alanya, Acta Medica Nicomedica, Ahi Evran Medical Dergisi, and Akadeniz Medical Journal. The reason behind the selection of medical journals lies in the use of the English language as the only basic language adopted as a language by these journals. The Turkish teaching system adheres to the use of the Turkish language in the majority of humanities and social sciences disciplines, while it gives some space to the use of foreign language in hard domain disciplines.

Literature Review

Hedging was a focus of a lot of studies in the last few decades from different perspectives Afshar & Baghericeh (2014), Hu & Cao (2011), and Chen & Li (2023). It was discussed from several perspectives due to its importance to the process of writing in general, and to the process of understanding a text correctly and directly, in particular. Demir's (2018) study discussed hedging lexically. It focused on hedging and academic writing. It discussed the difference between L1 academic writers' use of hedging and their L2 equivalents. The sample of this study was 200 RAs written in English by native and non-native researchers. The discipline of the articles was English Language Teaching. The study found that native speakers are more productive of lexical hedges in all types. The lexical variety was clear and significant at native speakers' RAs. The study also presents several pedagogical implications that may be useful for other researchers, teachers, and linguists in future studies.

Varttala's (1999) study discussed the communicative functions of Hedging in medical RAs. The corpus of the study was 30 RAs written in English in medical disciplines. The corpus was divided into 15 RAs extracted from *Scientific American (SA)* and 15 RAs extracted from *The New England Journal of Medicine (NEJM)*. Articles less than 3000 words were excluded from the corpus. The study adopted Hyland's (1994) taxonomy to categorize hedges found in the corpus. The study concluded that hedging is an important element in medical English writings and lexical hedging and its varied functions cannot be neglected or deviated in a big way.

Research Methodology

Research Design

The study followed the quantitative research design in collecting and analyzing data.

Data Collection

The data of the study is 50 RAs in diverse medical disciplines. The RAs are written in English and published in 2023 or 2024. The main aim of the current study is to identify, categorize, and specify the functions of the hedges found throughout the corpus.

Identification of Hedges

The current study adopts Hyland's (1994) taxonomy for identifying hedging devices in writing. Principally, the taxonomy categorized hedges into five categories: Epistemic Modal Auxiliaries, Epistemic Main Verbs, Epistemic Adverbs, Epistemic Adjectives, and Epistemic Nouns.

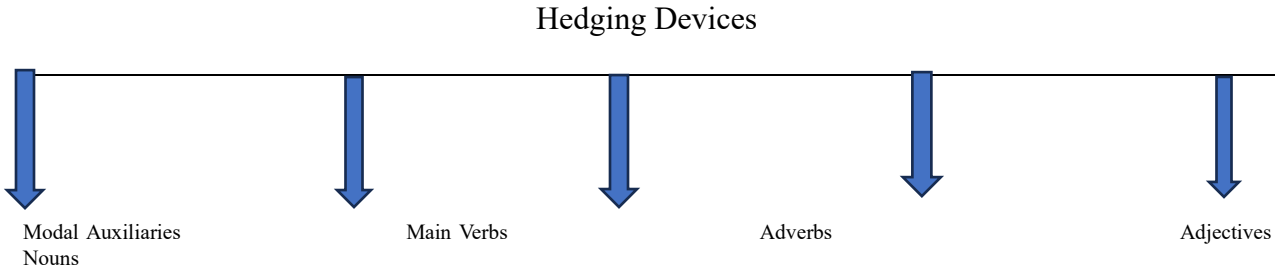


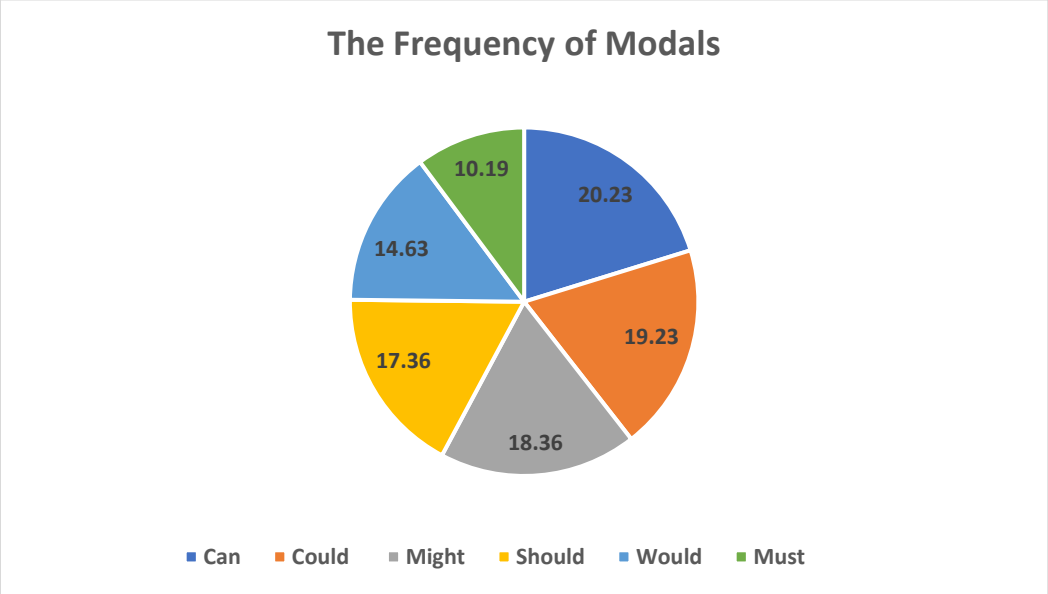
Figure 1. Hyland's (1994) Theoretical Framework for Identifying Hedging Devices

According to Hyland (1998a), a hedge has four functions to perform. The first is to perform an *attribute* function when playing the role of specifying the extent to which a term accurately describes the reported phenomena. The second function is to perform a *reliability* function when a hedge plays the role of conveying the writer's assessment of the certainty of the truth of a proposition. The third function is to perform as *a writer-oriented* hedge when the hedge occurs in a context that conceals the writer's viewpoint and avoids personal responsibility for propositional truth. The fourth function is to perform as *a reader-oriented* hedge when the writer acknowledges personal responsibility for the validity of propositional content or invites reader involvement.

Findings

Thi Qar Arts Journal
Vol 8 No 47 Sep. 2024

1- Modals: The modal verb *may* was the most frequent among other models with (186) frequencies. This use belongs to the writer's desire to avoid directness when writing. The frequency of each modal is shown in the pie chart below as percentages.



As it is shown in the pie chart above, the modal verb *can* ranked second with (141) frequencies and a percentage (% 20.23) , while the modal verb *could* ranked third with (134) frequencies and a percentage (% 19.23). Moreover, the modal verb *might* ranked fourth with (128) frequencies and a percentage (% 18.36), while the modal verb *should* ranked fifth with (121) frequencies and a percentage (% 17.36). In addition, the modal verb *would* ranked sixth with (102) frequencies and a percentage (% 14.63), while the modal verb *must* ranked seventh with (71) frequencies and a percentage (% 10.19).

2- Verbal Hedges: The RAs under study were rich in verbs, but the evidential verbs were the most common ones. The following table shows the frequency of each evidential verb mentioned in the RAs under research.

Thi Qar Arts Journal
Vol 8 No 47 Sep. 2024

Table 1

The frequency of each hedging word in the corpus

No.	Verb	Frequency	No.	Verb	Frequency
1	Argue	109	14	Demonstrate	64
2	Consider	87	15	Estimate	67
3	Propose	103	16	Report	106
4	Find	168	17	affect	97
5	Appear	79	18	Reveal	111
6	Claim	124	19	Feel	65
7	Attempt	97	20	result	121
8	Advise	39	21	Maintain	94
9	Assert	95	22	Show	187
10	Observe	73	23	Suggest	104
11	Assume	41	24	Presume	96
12	Believe	53	25	Offer	34
13	Expect	39	26	Cause	89

As shown in the table above, the verbs: *show*, *find*, *claim*, *indicate*, *result*, *cause*, *affect*, and *argue* ranked first respectively as the most frequent verbs in the corpus under study, while the verbs: assume, expect, and advise ranked at the bottom of the ranking as the least frequent verbs in the corpus under study. The following sentences are some authentic examples of the use of these verbs:

*1-The study findings **showed** a positive correlation between individuals with a familial history of cancer and their enhanced understanding of cancer screening tests….* (Fidancı, 2024).

*2-Kinesio taping is **considered** advantageous in mechanical properties compared to other types of taping that lose their structural support within 20 minutes of exercise.* (Çekmece et al., 2024).

3-It is known that maternal and fetal hypothyroidism can be ***caused*** *during pregnancy by even mild to moderate iodine deficiency* (Akin & Marakoğlu, 2024).

4-**Adverbs**: sometimes, adverbs take up an important location to act as adverbial hedges in academic writing. These adverbs also contribute to the understatement used by writers in their writings. Adverbs such as: *mainly*, *mostly*, *almost*, *fairly*, *mildly*, and *approximately* are more commonly used in the data of the corpus under study. The following are some authentic sentences that clarify these uses:

1-*We think that this is due to the fact that the anxiety of the patients included in the study was* ***mostly*** *in the middle anxiety group and the number of cases between the different anxiety groups was not homogeneous* (Sanbirgan et al., 2024).

2- *Although* ***almost*** *all of the cancers' prognosis for the other childhood tumors improved, neonatal malignancies have still lower survival*. (Aktekin et al., 2024).

3- *Following the spasms that lasted* ***approximately*** *2 minutes, a sedation phase of 2-3 minutes was observed* (Doğan et al., 2024).

3-**Adjectives:** adjectives such as: *in line with, consistent with*, *potential*, possible, and *probable* are more commonly seen in the data under research and they are adjectives acting as hedges. The following are some authentic sentences from the corpus of the study under research:

1-*The findings in the literature regarding the effects of taping such as increasing somatosensory information, providing correct positional input, and increasing muscle activation are* ***in line with*** *our study (*Çekmece et al., 2024*).*

2- *We examined the* ***potential*** *of calcitriol at various concentrations …* (Kartal & Alimoğulları, 2024).

3- *The most prominent of these factors can be listed as follows: differences in gestational age at the time of measurement, the age groups of pregnant women,* ***possible*** *comorbidities, and confounding factors within and between studies…* (Yakupoğlu & Altuntas, 2024).

5-**Nouns:** Some nouns act as hedges to soften or reduce the effect of the action mentioned in the sentences. Nouns such as *majority*, *possibility*, *suggestion*, and *assumption* are found in the corpus of the study under research while they act as noun hedges. The following sentences are authentic examples found in the RAs under research:

1-***Majority*** *of the organelle proteins are found in the nucleus* (Uzunyol et al., 2024)

2- *Kidney transplantation may be a **possibility** if ex-vivo partial nephrectomy can be performed in incidentally detected early-stage renal cell cancers* (Doğan et al., 2024).

3-*Due to the feedback and **suggestions** of the committee and invited patients, changes have been made to the Turkish version of the questionnaire to better align the translated version with the original, to adapt the questionnaire to Turkish culture, and to ensure all items were easily understandable* (Dağli et al., 2023).

Discussion and Conclusion

The use of hedging subjects to several criteria such as text type, discipline, issue, and genre. Requirements such as clarity, directness, and understandability are more common in scientific discipline texts and writings. Writers of scientific disciplines should avoid the use of ambiguous and mitigating statements. Scientific writing must create a kind of trust and credibility between writers on the one hand and readers on the other hand.

If compared to Demir's (2018) study, the findings of the current study did not show a significant difference from that of Demir's (2018) in terms of frequency and diversity. In terms of frequency and ranking, the current study is in tune with Demir's (2018) study, while in terms of diversity, there is a slight difference due to the discipline of the corpus collected.

As to Varttala's (1999) study, the findings of the current study are in tune with Varttala's (1999) study findings in terms of the necessity of disciplined use of hedges in academic writing. The communicative situations in some parts of medical fields require a certain degree of hedging that serves as a negative politeness that provides knowledge that saturates the readers' expectations and desires of the audience.

Future researchers, in general, and writers in particular should be aware of the important variety of functions that hedges perform in writing. Regardless of how professional they are, writers should note the varied effects that hedges have on communication and situations in general. The overuse of hedges in writing is usually criticized and such use by non-native writers in general is due to the unawareness of the effect and role that hedges play in academic writing.

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