# Reporting Verbs in the Humanities and Medical Sciences Research Articles

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**Abstract**

Citation is an essential part of academic writing and allows writers to make strong arguments, review previous research, and express their opinions. This study investigates reporting verbs as a part of citation practice in the research articles published in Iranian and international journals (with different linguacultural backgrounds) in humanities and medical sciences from 2015-2019. In this cross-disciplinary study, 60 research articles (RAs) from Applied Linguistic (AL) and Nursing and Midwifery (NM) as part of humanities and medical sciences respectively were selected and classified based on Hyland's (2002) frameworks. The results demonstrated that the Iranian journal articles utilised more reporting verbs (RVs) than the international journal articles whereas, the international articles used RVs with a wide variety. Although the types of verbs were different, the research verbs had a clear preference in the corpus. The finding suggests some pedagogical implications for novice scholars and EFL (English as a Foreign Language) students to become familiar with differences in using RVs and select the correct choice of reporting verbs in the field of humanities and medical sciences.

**Keywords:** *Citation, Corpus, Cross-disciplinary Study, Linguacultural Backgrounds, Reporting Verbs*

## Introduction

Citation or referencing to previous studies is widely considered to be an essential rhetorical feature in academic discourse and acknowledged as a "central to the social context of persuasion" (Hyland,1999, p.342) and "an integral portion" (Luzon, 2018, p.173) of academic writing. Hewings, Lillis, and Vladimirou (2010) note that citation practice could be a primary factor by which scholars recognise their connection and the location of their work within their disciplinary community. Citation helps scholars to build their idea and support their claims of new knowledge. Therefore, mastering citation practice enables writers to directly reflect the ideas and words of other people in their writing and provides a framework for the presentation of their research results more persuasively.

A review of the literature in the citation practices reveals that scholars have focused on various aspects of citation such as type of citation (Swales, 1990), the frequency of citation practices (Coffin, 2009; Hyland, 1999, 2002; Thompson, 2005; Thompson & Tribble, 2001), the structure of reporting verbs and type of tenses (Thomson & Ye, 1991; Thomas & Hawes, 1994; Hyland, 1999, 2002; Charles, 2006; Bloch, 2009; Davidse & Vandelanotte, 2011; Jalilifar & Dabbi, 2012; Yeganeh & Boghayeri, 2015; Hyland & Jiang, 2017; Un-udom & Un-udom, 2020), citation activities vary between disciplines and genres (Hyland, 1999, 2000; Thompson & Tribble, 2001; Charles, 2006; Harwood, 2009), differences between cross-linguistic and cross-disciplinary (Mur-Duenas, 2009; Rowley & Carter-Thomas, 2014; Hu & Wang, 2014; Dontcheva-Navratilova, 2015, 2016; Luzón, 2018). Also, several studies on citations have mainly concentrated on citation practices in academic writing, particularly RAs (Hewings et al., 2010), articles written by expert and novice writers (Mansourizadeh & Ahmad, 2011; Marti et al., 2019), in PhD theses (Thompson, 2005; Thompson & Tribble, 2001), masters' dissertations (Jalilifar & Dabbi, 2012; Nguyen & Pramoolsook, 2016; Samraj, 2013), and doctoral grant proposals (Fazel & Shi, 2015).

More specifically, in cross-disciplinary and cross-linguistics studies consisting of 84 research articles, Hu and Wang (2014) found differences in the pattern of citations in English-medium and Chinese journals in applied linguistics and general medicine papers. They note that the differences indicated that "citation as a literacy practice needs to be taught and learned concerning specific disciplinary and cultural contexts" (Hu & Wang, 2014, p.27). Dontcheva-Navratilova (2016) notes that there were differences in the structure of citations in research papers published by Czech and Anglophone linguists in English because of differences in intended "readership" and "literacy traditions" (Dontcheva-Navratilova, 2016, p.70). Therefore, the investigation on cross-disciplinary and cross-linguistics studies could receive a common conclusion that nonnative may have challenges when trying to write in English and referring to others in academic discourse.

Reporting verbs (RVs) are a critical part of citation practices and one of the effective ways scholars have proven the reliability and validity of published statements. In other words, a variety of purposes fulfil by RVs in academic writing. RVs show the location of the work of the writer in the context (Myers, 1990), to describe what has been done and what has not been done to establish a new testing space (Swales, 1990) and to define particular information or problem context (Hyland, 1999). Also, RVs are recognised as one of the effective manners of writers to determine the validity of the statements reported (Swales, 1990; Thompson & Ye, 1991; Hawes & Thomas, 1994; Hyland, 1999, 2002; Bloch, 2010; Un-udom & Un-udom, 2020).

For example, Swales (1990) states that a remarkable number of references consist of RVS, which can have a range of roles and effects that assist academic writers in defining their positions, from a neutral report to a positive or negative attitude towards the research referred. Thompson and Ye (1991) emphasise that authors need to expose their arguments or ideas and show their attitudes toward the claims of others by using RVs. In a recent study, Un-udom and Un-udom (2020, p.162) note that reporting verbs are utilised to convey "the process and reliability" of arguments to help authors' writing. Thus, using RVs correctly provides reliability and validity for authors' claims.

According to the significant role of RVs, there is a tendency to consider the pattern and structure of using reporting verbs in different languages and disciplines. Therefore, RVs have been investigated from different views consist of disciplinary differences (Pickard, 1995; Hyland,1999, 2002; Adel & Garretson, 2006; Hyland & Jiang, 2017; Uba, 2020), L2 writers' reporting techniques (Lang, 2004; Luzon, 2015), expert and novice writers (Marti et al., 2019), Anglophone vs non –Anglophone writers or native vs nonnative (Rowley-Jolivet & Carter, 2014; Yeganeh & Boghayeri, 2015; Jafarigohar & Mohammadkhani, 2015; Luzon, 2018; Yasmin et al., 2020) and studies with a pedagogical emphasis (Bloch, 2010). These studies could help to understand the patterns and the correct use of RVs in various disciplines.

In the cross-disciplinary study by Uba (2020), 120 research articles from Applied Linguistics, Accounting, Engineering, and Medicine were investigated based on semantic categories of reporting verbs. Although the author found that using RVs were different between disciplines, the humanities discipline such as Accounting and Applied Linguistics used more reporting verbs. In a similar vein, Hyland and Jiang (2017) found increased use of citations and reporting verbs in Applied Linguistics and Electrical *Engineering* to compare Sociology and Biology.

From a native and nonnative perspective, Luzon (2018) compared the patterns of RVs in RAs by scholars from Anglophone and Spanishcontextsin English. The results revealed that in both corpora, the frequency of RVs was similar but, there were variations in the types of verbs. A higher percentage of discourse act RVs is used by Spanish scholars than Anglophone scholars. The author suggests that Spanish writers were less 'register sensitive' than Anglophone writers, and they may neglect accurate semantic differences while using 'false cognates' or using RVs for evaluation (Luzon, 2018, p.188).

In another study, Rowley-Jolivet and Carter-Thomas (2014) analysed 40 original manuscripts by expert French scholars and 40 published research articles by Anglophone writers in Engineering, Science, and Computational Linguistics written in English and 40 published RAs written in French by French Scholars. The results revealed that Anglophone scholars utilised a significantly greater number of "reporting-that" clauses. The authors propose that the reason for these contrasts may be that in the French academic context, other kinds of reporting systems are used.

One of the logical conclusions about mention studies demonstrated that first language (L1) could affect the writing styles (Rowley-Jolivet & Carter-Thomas, 2014), and nonnative structures may be different to compare native writers (Jafarigohar & Mohammadkhani, 2015). In other words, it is difficult for nonnative scholars to select suitable reporting verbs for reporting statements (Hyland, 2002; Pecorari, 2008; Bloch, 2010; Jaroongkhongdach, 2015). For example, Pecorari (2008) found that nonnative authors randomly chose a reporting verb without comprehension. According to Hyland (2002), this problem roots in two main reasons: their vocabulary deficiency in academic writing and insufficient identify sources.

Also, one of the difficulties that nonnative speakers face in citing claims, according to Hyland (2008), is that they seem compelled to take "definite and self-assured" positions without any indication of "fuzziness" (p. 70). Hyland also states that difficulties may arise from a general lack of vocabulary knowledge and lack of understanding of the successful rhetorical techniques required to define their statements. The significant role of these verbs

derives from the fact that they authorise the author to express the type of activity mentioned and the attitude towards those details in a precise and regular way. Therefore, one aspect of pedagogy in academic writing seems to be a deeper understanding of how to make their rhetorical statements by utilising and selecting RVs accurately. Generally, the grammatical structures are correct, but the writers may not choose appropriate RVs, and consequently, the rhetorical effect of their statements will suffer.

Therefore, research on citation patterns and RVs has provided valuable insight into our knowledge in various disciplines and languages. Although reporting verbs play a dominant role in citation practice, only a few studies have addressed how Iranian scholars used RVs. This research concerning reporting verbs aims to investigate and compare the use of reporting verbs in Iranian (IR) and international high rank (HI)articles written in English. Since both humanities and medical sciences consist of different fields, Applied Linguistics (AL) and Nursing and Midwifery (NM)research articles from the humanities and medical sciences were analysed.

**Methodology**
**Corpus**
Traditionally, medical sciences (such as Nursing and Midwifery) and applied linguistics refer to hard and soft discipline (Fløttum et al., 2006; Hyland, 1999). Due to graduate from both Midwifery and Applied Linguistics, the author was familiar with these disciplines. In this cross-disciplinary study, 30 articles from high-rank international journals (HI) with different linguacultural backgrounds and 30 articles Iranian journals (IR), in Nursing and Midwifery (NM), and Applied Linguistics (AL) articles in English were selected.

In this research, the main focus was on the articles published from 2015 to 2019. To create the international corpus, three high ranks (HI) journals for each discipline were selected based on SJR, 2018 (SCImago rank list) that NMHI includes *International Journal of Nursing Studies* (Elsevier), *Journal of Advanced Nursing* (Wiley Online Library), *Midwifery* (Elsevier) and ALHI consists of *Journal of Second Language Writing* (Elsevier), *Applied Linguistics*(Oxford), *Journal of Memory and Language*(Elsevier).

A lack of SCImago rank in Iranian journals; the Q1 journals were selected randomly from the Islamic World Science Citation (ISC) journals rank. NMIR journals include the *Iranian Journal of Nursing and Midwifery, Nursing Practice Today, International Journal of Community Based Nursing and Midwifery*, and ALIR consists of Apply *Research on the English Language, Iranian Journal of Applied Linguistics, The Journal of Teaching Language Skills.*

In the research articles, as highlighted in the literature, more citations are located in the *Introduction, Literature review, Discussion,* and *Conclusion* sections, and few citations found in the *Method* sections (Bahadorfar & Gholami, 2017; Thompson, 2005). Since the main focus of this study is on reporting verbs, the author deleted the Method section, titles, names of writers and descriptions, abstracts/ summaries, statistics, tables, footnotes, as well as context material including acknowledgements, endnotes, author notes, references, and appendices, and a corpus of 178,431 words was created for this study (see Table 1).

Table 1.
*Total words in the corpus*

| Journal | International | Iranian |
|---|---|---|
| NM | 34,246 | 21,099 |
| AL | 65,586 | 57,500 |
| Total | 99,832 | 78,599 |

**Method**

To create the corpus, the author set up these steps:

1. Selected articles converted from the PDF format to DOC www.pdfonline.com/pdf-to-word-converter.
2. Removing the extra parts
3. Using MS Word to count the total words
4. Using the Plain Text online tool to convert from DOC to TXT
5. Text files loaded into AntConc
6. Using Regular Expression (Regex) in AntConc concordance software to find the citations within the texts.

From an applied linguistic view, Swales (1986, 1990) is known as a pioneer in the study of citation analysis, makes explicit formal distinctions between integral and non-integral forms of citation.  The integral citation refers to the cited author's name in the citing sentences with a grammatical function, while the non-integral type is where the author is listed in parentheses or referred to elsewhere. Swales clarifies formal distinctions between reporting citation and non-reporting styles. In the former, RV is used to present previous works. In the latter, only previous research is reported without acknowledging the authors as the reporters of their outcomes. The reporting style refers to integral citations that emphasise the authorship of the claim. On the other hand, the non-reporting style is equal to the non-integral that emphasises the reported message.  Hyland (1999), Thompson and Tribble (2001), and Fløttum, Dahl, and Kinn (2006) were modified the Swales' framework.

The author used Swales' framework to investigate the type of RVs in this study. To searching the verbs in reporting clauses of citing sentences, the name of authors, noun phrases such as '*the researchers*, *the theory'* and pronouns such as *he, she,* and *they* were investigated by computer word navigation (Example1). Also, every concordance line was examined manually to find verbs that function as RVs.

1. The authors state that patient mortality …. (Sermeus et al., 2011), (NMHI).

The classification framework by Hyland (2002) was selected to investigate RVs. This framework is a revision of his framework (1999) created based on Thompson and Ye's framework (1991) that widely-used framework in the literature to evaluate RVs. Moreover, Hyland (2002) provides a list of RVs for each group concerning their denotative or processes and evaluative loads. Hyland classified the reporting verbs according to the type of activity referred to and the type of evaluation they carried. Three kinds of the process (Hyland, 2000, p. 27; Hyland, 2002, p.118; Hyland & Jiang, 2017, p. 68) consist of:

2. Research Acts apply to things in the real world and are commonly used in findings statements (*observe, discover, notice, show*) or procedures (e.g. *analyse, calculate, assay, explore).*

3. Cognition Acts are concerned with mental processes (*believe, suspect, view).*

4. Discourse Acts involve verbal expression (*ascribe, discuss, hypothesise, state).*

Hyland (1999) adopted and modified the Evaluative categorisation by Thompson and Ye. He argues that writers can present the information stated as true (factive) (e.g. acknowledge, point out, establish), false (counter-factive) (e.g. fail, overlook, exaggerate, ignore), and non-factive, giving no clear signal by using RVs in their work. In the current study, RVs were analysed for the evaluative meaning of the verb based on Hyland and Jiang's (2017, p.68) work, which is not a new one but, it is simple to compare Hyland's (1999, 2002) classification to distinguish verbs. Therefore, RVs were classified "for the evaluative meaning of the verb and whether writers represented the reported information positively, negatively, or neutrally" (Hyland & Jiang, 2017, p.68).

5. Positively (*acknowledge, point out,* establish)

6. Negatively (fail, overlook, exaggerate, ignore)

7. Neutrally, giving no clear signal either way. The final item allows the view of the writers to the authors as attribute positive (*see, argue*), neutral (*address*), tentative (suggest), and critical (attack) (Hyland & Jiang, 2017, p.68**).**

Semantic-pragmatic classification of verbs is quite problematic (Fløttum et al., 2006) to categorise different verbs, and the context may influence the roles of verbs. Therefore, verbs were classified based on meaning in context, and Hyland's list of RVs and Nguyen's work (2014) was employed to classified verbs as well.

Absolute frequency would have been a useful measure if the length of articles had been the same in terms of their word counts. When this condition does not exist, it is recommended to normalise the data by converting the total frequencies to 10000 words because of the variety in length of articles. Thus, the normalised frequencies were calculated in the quantitative analysis in this study. Besides, the proportions were utilised to develop comparative graphs in this study.

**Results**

Citation

The scholars in citing materials utilise the RVs in integral (Example 2) or non-integral (Example 3) citation patterns (Swales, 1990). These two types were defined as 'author prominent' and 'information prominent' by Weissberg and Buker (1990). In the present study, the author counted the frequency of integral and non-integral citations with RVs. Table 2 shows the frequency of RVs in different types of citations. The table indicates the frequency (F1) of RVs and the number of RVs per 10000 words (F2).

1. Miller (2010: 20) includes what he calls the 'military metaphor' among the 'words, phrases…. (ALHI)

2. Some studies support the acceptability …… (Kirkpatrick, 2006; Liu & Zhang, 2007; Lo et al., 2009; Prodromou, 2006). (ALIR).

Table 2
*Reporting verbs in integral citations and non-integral citations*

| Type of Citation | AL F1 | IR F2 | NM F1 | F2 | AL F1 | HI F2 | NM F1 | F2 |
|---|---|---|---|---|---|---|---|---|
| Integral | 389 | 67.6 | 21 | 9.95 | 173 | 26.3 | 58 | 16-2 |
| Non-Integral | 97 | 16.8 | 141 | 66.82 | 75 | 11.4 | 102 | 29.7 |
| Total | 486 | 84.5 | 162 | 76.8 | 284 | 37.2 | 160 | 46.7 |

The results revealed a preference for integral citation in AL articles while non-integral citation more in NM articles. Table 2 shows that Iranian scholars in AL journals used more integral citations (67.6) than scholars in international journals (26.3) in this area. These results show that Iranian writers in AL indicated the tendency to authors prominent instead of information. This parallels previous findings that more integral citation practice in the Iranian journals than the international journals (Jalilifar & Shooshtari, 2010; Kamyabi et al., 2014; Jalilifar et al., 2017; Farnia et al.,2018).

In contrast, Hyland and Jiang (2017) found that non-integral citations increased from 29% in 1965 to 73% in 2015. It could interpret that there is a preference for integral over non-integral citations in Iranian articles due to "Persian [Iranian] culture seems to be more people-oriented than performance-oriented" (Shooshtari et al., 2017, p.72). However, Iranian scholars prefer to respect those who conducted them a high ratio of non-integral in international journals shows that reports of information and new finding could be the target of citations.

NMIR articles used more non-integral citations (66.82 per 10000 words) to compare NMHI (29.7). Ghoodarzi and Gholami (2017) analysed the discussion section of 48 native and nonnative research papers in medical journals. Their findings revealed that 89.67% of Iranian medical articles were written in Vancouver styles, while 78.21% of international in APA styles. It could interpret that Iranian medical researchers are familiar with non-integral citations when more journals use this kind of citation. Utilising different types of citation depends on several components such as "convention, genre, discipline, and individual study type" (Thompson & Tribble, 2001, p.317). Therefore, different citation styles could be an original factor in selecting the type of citation.

Frequency of Reporting Verbs (RVs)

As shown in Table 3, Iranian scholars used more RVs compared to international ones. The number of occurrences of RVs per 10,000 words in Nursing and Midwifery (76.8) and Applied Linguistics (84.5 per) in Iranian articles were different to compare the frequency of RVs in NMHI (46.7) and ALHI (37.2) in the international context. The total of RVs in AL articles was higher than in NM articles. Hyland (1999, 2002) indicated that soft sciences used more citations to compare hard sciences; thus, more RVs were used. Hyland's finding supported the results of this study.

On the other hand, scholars of high-ranking international journals use more variety in the choice of reporting. Writers used 284 verbs consist of 76 verbs in ALHI, and 160 verbs in NMHI consist of 52 verbs. In the Iranian context, writers used 486 verbs, including 88 verbs in AL, and 162 verbs consisting of 39 verbs in NM articles (see Appendix A). This finding

support that Iranian scholars choose a more limited range of RVs. The result of this research was in line with Monreal and Salom (2011). They found Spanish writers choose a more limited range of RVs, while English writers use more variety in RV selection.

Table 3.
*Total reporting verbs*

| Sub-corpora | Raw Frequency | Per 10000 |
|---|---|---|
| ALIR | 486 | 84.5 |
| NMIR | 162 | 76.8 |
| ALHI | 248 | 37.2 |
| NMHI | 160 | 46.7 |

According to Hyland's framework (2002), RVs are divided into two categories: process (the type of activity related to) and evaluation (the type of evaluation they conducted). The first part of Table 4 distinguishes the process category of RVs in the corpus. Moreover, Figure 1 illustrates the proposition of the process RVs in this corpus. The Process was divided into research acts (refer to finding, procedure, or experimental activities), discourse acts (refer to verbal expression), and cognition acts (refer to mental process). In the four corpora, the most common verbs belong to research verbs (Example 4) and followed by discourse verbs (Example 5), and the cognition acts (Example 6) like *believe* and *suspect* were a rarely-used type of process RVs.

Table 4.
*Process and Evaluation of Reporting Verbs (Per 10000 Words)*

| | IR | | HI | |
|---|---|---|---|---|
| | AL | NM | AL | NM |
| | F | F | F | F |
| Process | | | | |
| Research | 47.7 | 41.7 | 19.4 | 28.3 |
| Discourse | 31.7 | 33.2 | 16.6 | 17.8 |
| Cognition | 5.2 | 1.9 | 1.8 | 0.6 |
| Evaluation | | | | |
| Positive | 48 | 35.1 | 20.9 | 23.9 |
| Negative | 0.3 | 0 | 0.6 | 0.3 |
| Neutral | 36.2 | 41.7 | 16.3 | 22.5 |

3. Hickman and colleagues examined the effects of a 15-month diet and exercise focusing on weight loss and Modified BMI (NMIRI).
4. Sermeus et al. (2011) state that patient mortality data were extracted for the year most proximate to the nurse survey (NMHI).
5. Canagarajah (2006) believes that because of the rapid spread of Outer Circle…. (ALIR).

Iranian writers in AL (n= 47.7) and NM (n= 41.7) used more frequent the research verbs than the international writers in AL (n= 19.4) and NM (n= 28.3) articles. Although research verbs in the corpus have a clear preference, NMHI articles used a much higher number of research verbs than ALHI articles. The result of this research was quite in line with Mur Duenas (2009), who found that both American-based and Spanish Business management scholars used to research and textual reporting verbs equally and very little use of mental reporting verbs.
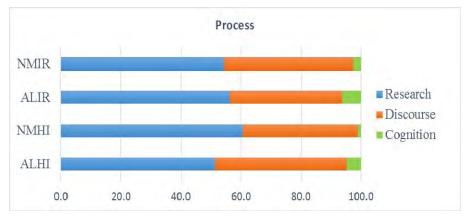
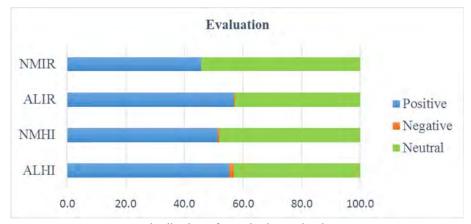*Figure 1*. Distribution of RVs in the process category



*Figure 2*. Distribution of RVs in the evaluation category

The second section of Table 4 is related to the writer's evaluation of the topic. Figure 2 shows the evaluation category in this corpus. The writers represent the information *positively*, *negatively*, and *neutrally* (Hyland & Jiang, 2017). There is a preference for the positive and neutral view for Iranian scholars to compare the international authors. Scholars in the corpus except for NMIR acknowledge the cited author with taking positive views. Scholars in the NMIR article prefer to use neutral verbs (41.7 per 10000 words) than positive verbs (36.2 per 10000). By positive view, Scholars need to unpretentiously select the author's position to support their claims (Hyland & Jiang,2017). The writers preferred to support previous views instead of criticising or rejecting them and confirming their topics.

Although there is a clear preference to use a positive and neutral view in the corpus, negative verbs in the international articles in both disciplines were around 1 per cent. These verbs in Iranian AL articles were less than 1 per cent and nothing in NM articles. Hyland (2002) states that the explicit rejection of other studies is "a serious face-threatening act" in academic writing. Monreal and Salom (2011) point out that positive reporting "allows the writer both to be faithful to and respectful with the reviewed author's findings while protecting her/him from refutation and conforming to politeness conventions" (Monreal & Salom, 2011, p.65). Like other oriental languages (e.g. Chinese, Japanese) (Ardekani 2002), Iranians do not use negative verbs to avoid personal confrontation. Therefore, Iranian

scholars could prefer to report information rather than evaluate previous researchers, and using positive and neutral views is very likely due to the authors' cautiousness.

Table 5 shows the ten top RVs in the corpus and the proportion of total reporting verbs. The verbs *find, show*, and *report* were in all four corpora with different ranks. In the Iranian context, AL articles used 32.8% of research verbs (e.g. find, investigated, show) and 9% of discourse verbs (e.g. argue, report), and in NM articles used 31.5 % of research verbs and 25% of discourse verbs in the ten top of RVs. By contrast, in the international context, AL articles used 23.3% of research verbs and 27.7% of discourse verbs, and NM articles 21.9 % and 20.1%.

Table 5.
*Top 10 most frequent reporting verbs*

| ALIR | % | NMIR | % | ALHI | % | NMHI | % |
|------|-----|--------|------|----------|------|-------------|-----|
| Find | 9.1 | Show | 24.7 | Find | 11.7 | Find | 15 |
| Investigate | 6.4 | Report | 16 | Argue | 10.1 | Report | 9.4 |
| Show | 5.3 | Find | 6.8 | Suggest | 6 | Show | 6.9 |
| Argue | 4.7 | Evaluate | 4.9 | Show | 4.4 | Conduct | 5 |
| Report | 4.3 | Conduct | 4.3 | Examine | 4.4 | Recommend | 3.8 |
| Examine | 4.1 | Suggest | 3.7 | Report | 3.2 | Highlight | 3.6 |
| Conduct | 3.3 | Reveal | 3.1 | Note | 3.1 | Suggest | 3.1 |
| Believe | 2.9 | Indicate | 3 | Use | 2.8 | Publish | 2.9 |
| Use | 2.8 | Conclude | 2.5 | Point out | 2.6 | Investigate | 2.6 |
| Assert | 2.9 | believe | 2.3 | Propose | 2.4 | Use | 2.5 |

In sum, the findings reveal that *find, show,* and *report* were found across in the corpus as top verbs. *Find,* and *show* are classified in research verbs and *report* in discourse verbs. There are not any cognitive verbs found in the top ten frequent verbs.

**Discussion**

The objective of this research is associated with investigating the use of reporting verbs (RVs) in the articles published in Iranian and high-rank international journals of humanities and medical sciences. RVs are one of the building blocks of academic writings, as they enable writers to evaluate and express their attitude towards previous studies (Thompson & Ye, 1991). This study showed that Iranian articles used more RVs than high-rank international articles. This finding is consistent with a recent research that indicated that expert writers used fewer RVs than novice writers, and there was a slight gap between expert and nonnative expert writers. (Marti et al., 2019). Since both contexts in this research consist of high-rank journals, it could explain that more RVs in the Iranian context as nonnative speakers were rooted in using more integral citations. It is essential to repeat that the articles selected in the international context were not selected based on native scholars. Therefore, it is not easy to generalise that the differences back to Iranian writers as nonnative speakers.

This study also showed that RVs were more frequently in humanities articles compared to medical science articles. This result is supported by some studies that demonstrated differences in the frequency of using reporting verbs between disciplines (Hyland, 1999, 2002; Hyland & Tse, 2005; Charles, 2006; Uba, 2020). More specifically, Uba found that Applied Linguistics and Accounting used more RVs than Engineering and Medicine

disciplines. The author notes that disciplinary discourse in Engineering and Medicine does not rely entirely on subjectivity but takes a more objective stance (Uba, 2020, p. 96).

The process categories of RVs in the current corpus revealed the high ratio of research acts verbs in the corpus. The finding is in line with some previous research on RVs (Hawes & Thomas, 1994; Fløttum et al., 2006; Mur Duenas, 2009; Monreal & Salom, 2011; Jirapankorn, 2012; Manan & Noor, 2013; Hyland & Jiang, 2017; Un-udom & Un-udom, 2020). The research verbs reflect real-world acts, such as proceeding and finding knowledge (Hyland, 2002) rather than researchers' interpretations (Hyland & Jiang, 2017). Thus, the interpretation of previous studies could not highlight by using more research verbs.

Similar to this study, Jirapanakorn (2012) investigated the introductions of medical articles written by Thai writers and showed that experimental/research verbs were the most frequently used, followed by discourse and cognition verbs. Nguyen (2014) states that this is not surprising the results of Jirapanakorn's study due to the disciplinary differences in citing conventions and 'experimental based' of research articles in the medical field (Nwogu, 1997). In another view, Hyland and Jiang (2017) analysed the corpus of 2.2 million words of four disciplines from 1965, 1985, 2015. The result of their study showed a fall in reporting structures and a rise in non-integral and research verbs and non-evaluative patterns for reporting others. The results of their study support the finding of this research to use more research verbs in the corpus. The tendency to use more research acts indicated that scholars in both contexts prefer to report "real-world actions" (Hyland & Jiang, 2017, p. 69) instead of the researchers' interpretations.

Discourse acts apply to arguments that encourage writers to discuss problems in a discursive manner, which was in the second rank. This finding was in contrast with some studies that discourse verbs were the most frequent category of RVs (Hyland, 1999, 2002; Nguyen & Pramoolsook, 2016; Yeganeh & Boghayeri, 2015; Marti et al., 2019). For instance, Nguyen and Pramoolsook investigated 24 literature review sections of theses by Vietnamese students. The result revealed that discourse acts were the most used type of RVs. The researchers state that Vietnamese students randomly used RVs without paying attention to their functions.

The common finding on RVs revealed that cognition acts were less frequently used type of RVs (e.g. Hyland,1999, 2002, Hawes & Thomas, 1994; Fløttum et al., 2006; Mur Duenas, 2009; Monreal & Salom, 2011; Jirapankorn, 2012; Yegane & Boghayeri, 2015; Hyland & Jiang, 2017; Un-udom & Un-udom, 2020). Manan and Noor's study exception found that cognition acts were in the second rank after research acts. They defined that a lack of critical thinking is the main reason for using more research verbs, and writers did not attempt to synthesise, compare, and criticise other works.

The analysis of the evaluation category of RVs indicated positive reporting verbs were the most frequent verbs followed by neutral and negative in the entire corpus. This finding aligns with some of the previous studies (Nguyen & Pramoolsook, 2015; Jaroongkhongdach, 2015; Luzon, 2015; Hyland & Jiang, 2017) showed that the positive attitude of RVs was the most frequent type of writer's evaluation. In contrast, Uba (2020) found that Applied Linguistics, Accounting, and Engineering used more neutral verbs. Luzon (2015) and Uba (2020) agreed that the writers tend to use RVs as reported information, not evaluation tools. Overall, the results of this study support Hyland and Jiang's study that there is a rise in research verbs and

non-evaluative patterns for reporting others. The writers preferred to support previous views instead of criticising or rejecting them and confirming their topics.

**Conclusion**

The way writers want to portray published data offers valuable insights into the context of academic convincing. This article aims to find out how reporting verbs are used in referencing other's research. The analysis of Iranian and international contexts indicates the variation of citations and RVs in research articles. The literature review and the results of this research show a growing preference for non-integral in the international context. International scholars focus on the reported studies and information instead of the authors. The Iranian scholars in the AL context used more integral citations and used more non-integral in NM articles. It seems likely that Iranian authors in different disciplines have particular preferences and rhetorical conventions. Also, they indicated aptitude to follow their colleagues. Regarding RVs, the high number of RVs in Iranian articles could since Iranian scholars used more RVs to make their claims of knowledge acceptable to readers. In both contexts, the priority for the research actions reflects the claims made in support of the research, which could be the purpose of using the RV, not the evaluation tool of prior work.

The findings suggest some pedagogical implications for novice scholars and EFL students should become familiar with differences in using RVs in international and Iranian articles. Bloch (2009, 2010) argued that a concordance of RVs from expert research papers to be used as an instructive device towards this point constructed to specifically teach learners how to use RVs to achieve their rhetorical goal. Therefore, to find an appropriate way of selecting RVs, a concordance program could be used as an effective tool for learners. For example, MI CASA is a web-based concordance program developed by Michigan University in 2002 and then upgraded in 2007. This program is equipped with a user-friendly interface asking the user some questions about the reporting verbs and the type of corpus. Once this information is entered, the program returns a series of sentences from the corpus. This can show the learners how a reporting verb by native and expert writers uses different situations and academic texts. Also, published research articles in high-rank journals as authentic materials could be significant resources to practice RVs to identify and to learn how RVs use in the context. The variety of RVs in Appendix A could be a list of verbs to consider in academic writing. The results of the study should be used with caution due to creating a small corpus. Future research could involve a comparative multidisciplinary and cross-linguistic investigation of citation processes at various levels of academic programs.

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**Ethics Declarations**
**Competing Interests**

No, there are no conflicting interests.
**Rights and Permissions**

**Appendix A**

**Reporting verbs in the corpus**

**Reporting Verbs in ALIR**

Acknowledge, address, advocate, ask, associate, attempt, conceive, cover, create, design, determine, discover, draw, evaluate, go on, hold, insist, modify, recognise, refer, review, see, set up, support, survey, test, utilise, view **(1)**

Attest, base, classify, comment, confirm, develop, discuss, elicit, include, predict, revise, stress, take, demonstrate **(2)**

explain, give (out), indicate, introduce, observe **(3),** add, analyse, apply, attribute, call, employ, make **(4)**

explore, highlight, mention, point out **(5).** claim, compare, focus, maintain, note, present, suggest **(6)**

emphasise, put, study, identify, provide **(8)**, conclude, consider **(9)**

propose, state **(10),** define, use **(13),** assert, believe **(14),** conduct **(16),** examine **(20)**

report **(21),** argue **(23),** show **(26), i**nvestigate **(31),** find **(44)**

**Reporting Verbs in NMIR**

acknowledge, apply, associate, attempt, classify, develop, emphasis, estimate, focus, hypothesis, illustrate, include, introduce, mention, provide, state, use **(1)**

attribute, compare, examine, identify, note, recommend, study **(2)**

assess, confirm, investigate, observe, propose **(3)**

believe, conclude **(4),** indicate, reveal **(5),** suggest **(6),** conduct **(7),** evaluate **(8)**

 find **(11),** report **(26),** show **(40)**

**Reporting Verbs in ALHI**

Add, adopt, advise, agree, ask, assert, believe, call, carry on, caution, cite, come, conclude, content, display, establish, evidence, follow, go on, hold, hypothesis, know, list, manipulate, prefer, question, recognise, recommend, reject, rule out, state, support, test, understand, utilise, write **(1)**

Advocate, aim, claim, design, draw, emphasise, explain, identify, include, indicate, maintain, offer, out line, posit, present, provide, see **(2)**

comment, consider, define, document, employ **(3)**

focus **(4),** compare, describe **(5),** demonstrate**,** explore, investigate, propose **(6)**

point out, use **(7),** note, report **(8),** examine, show **(11),** suggest **(15),** argue **(25),** find **(29)**

**Reporting Verbs in NMHI**

address, analysis, ask, associate, assume, base, call, carry out, classify, conclude, confirm, consider, develop, document, employ, establish, evaluate, hypothesis, observe, point out, propose, refer, reveal, set, state, support, write **(1)**

argue, define, examine, introduce, provide, study **(2),** describe, emphasis, explore, focus **(3)**

compare, demonstrate, identify, include, indicate, use **(4)**

investigate, publish, suggest **(5),** highlight, recommend **(6), c**onduct **(8)**

show **(11), r**eport **(15),** find **(24)**

❖ *The times of verb occurrences in the corpus are indicated by the number in brackets*