

Quality of the Results Section of Original Dental Articles Published in National Farsi and International English Journals

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Abstract

Objective: Lack of scientific writing skills is one major problem encountered for publication of research results of Iranian scientists in accredited journals. As the result, many research projects or dissertation findings remain unpublished. This study aimed to assess the quality of writing of the “results” section of some original articles published in Iranian Farsi and international English journals.

Methods: This analytical, cross-sectional study was conducted on 64 dental articles published in 3 international English and 3 Iranian Farsi journals. Selection of journals was non-random but articles were selected randomly based on specific criteria. A checklist containing 32 criteria regarding general statistics, context of the results, statistical tests, tables, charts and graphs was prepared. Obtained data were analyzed by SPSS 10 using Fisher’s exact and chi square tests.

Results: Farsi articles met 64.1% and English articles met 65.8% of the checklist criteria. No significant difference was found in the quality of the results section of Farsi and English papers ($p>0.05$).

Conclusion: Most papers did not provide adequate details in the results section to help readers better comprehend the subject.

Key words: English articles, Farsi articles, Quality of writing, Results.

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Introduction:

Science production is among the most important tasks of any academic unit and determines the scientific ranking of a country. Number of published articles is one parameter used for the assessment of science production and is an indicator of the scientific growth and development of a country (1). Databases such as ISI web of knowledge and Medline indicate that the eastern Mediterranean countries play a very

small part in science production. However, Iranian scientific publications especially in the field of medicine have had a growing trend in terms of the number of published articles, number of citations and impact factor of journals in comparison with the neighboring countries (Diagram 1). Quality control is necessary to generate science.

Impact factor and number of citations are among the most commonly used criteria for the assessment of the quality of journals (2-4).

Using predefined criteria is another common method to assess the quality of manuscripts and

scientific reports.

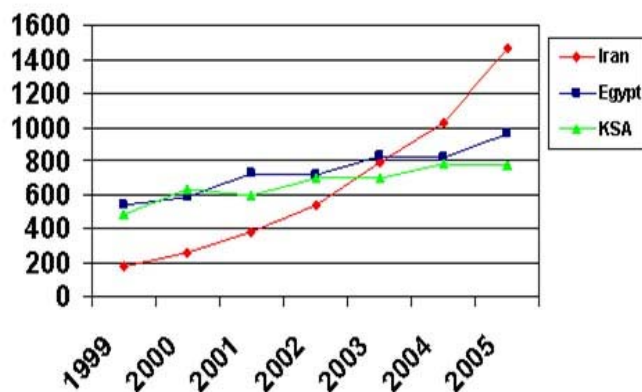


Diagram 1- Number of Iranian, Egyptian and Saudi Arabian manuscripts indexed in Medline available at <http://tumspress.tums.ac.ir>

For instance, following standard templates like consolidated Standards of Reporting Trails (CONSORT) is suggested when reporting clinical trials (2-4). By doing so, the same level of standard quality can be maintained for all manuscripts; which results in higher quality of articles.

A scientifically well-written manuscript will definitely have a greater chance to be published in accredited journals. There are a few generally acceptable resources to refer to for authoring a manuscript with an acceptable structure. There are some uniform requirements for manuscripts submitted to biomedical journals like the IMRAD format, which refers to the Introduction, Materials and Methods, Results and Discussion sections in a manuscript. This format is widely accepted by most accredited journals as well as the World Health Organization. Several studies have evaluated the quality of writing of manuscripts. Narine, *et al.* evaluated the abstracts of some published articles. Berwanger, *et al.* in 2006 assessed the abstracts of some articles published in accredited dental journals (5-9). Authoring the results section of a

manuscript is particularly important and many manuscripts are rejected due to having incomplete or poorly written results section (10). No previous study has evaluated the quality of the results section of manuscripts published in Iranian dental journals. Thus, this study aimed to assess the quality of the results section of original research articles published in Farsi Iranian journals in comparison with international English journals.

Methods:

This analytical, cross-sectional study was conducted on 3 international English journals and 3 Farsi dental journals that were selected using non-randomized sampling by a dental student, an oral medicine specialist and a statistician.

The inclusion criteria were as follows:

- Accredited English journals with an impact factor over 3
- Publishing in Farsi or English language
- Being indexed in Scopus, ISC, ISI or PubMed

- Availability of all consecutive issues of the journal

Original articles written in accord with the IMRAD format were selected from the chosen journals.

Considering the sample size calculation based on $\alpha=0.05$ and $\beta=0.20$, 64 articles were randomly selected from 6 journals (3 Farsi and 3 English, 32 from each). The understudy journals were:

1. Triple O: 2005, Numbers 4-6
2. Oral Disease: 2007, Numbers 2-4
3. Australian Dental Journal 2005. Numbers 2-4
4. Journal of Dental School, Shahid Beheshti University of Medical Sciences: 2007, Numbers 2-4
5. Journal of Dentistry of Tehran University of Medical Sciences: 2006, Numbers 2-4
6. Journal of Islamic Dental Association of Iran: 2007, Numbers 1-3

The selected articles from the afore-mentioned journals were evaluated using a checklist containing 32 criteria assessing the results section of manuscripts. The checklist was designed by two methodologists.

The respective checklist was separately filled out for each article by a dental student, an oral

disease specialist and a methodologist. In case of any disagreement, a consensus was reached in a session discussing the perspectives of the reviewers.

After data collection, the frequency distribution and percentages were calculated for each journal and groups were compared using chi square test or Fisher's exact test.

Results:

Compliance with the criteria in the checklist was evaluated by the three reviewers and statistically analyzed. Farsi articles met 64.1% and English articles met 65.8% of the checklist criteria. No significant difference was found in the quality of the results section of Farsi and English papers ($p>0.05$). Separate statistical analysis of each question revealed that in 2 out of 32 criteria, a significant difference existed between the mean score of Farsi and English journals ($p<0.05$). These questions were:

1. Was the type of statistical analysis applied mentioned for each statement?
2. Where the graphs or charts informative?

The difference in mean scores of these two questions between Farsi and English journals is shown in Diagram 2.

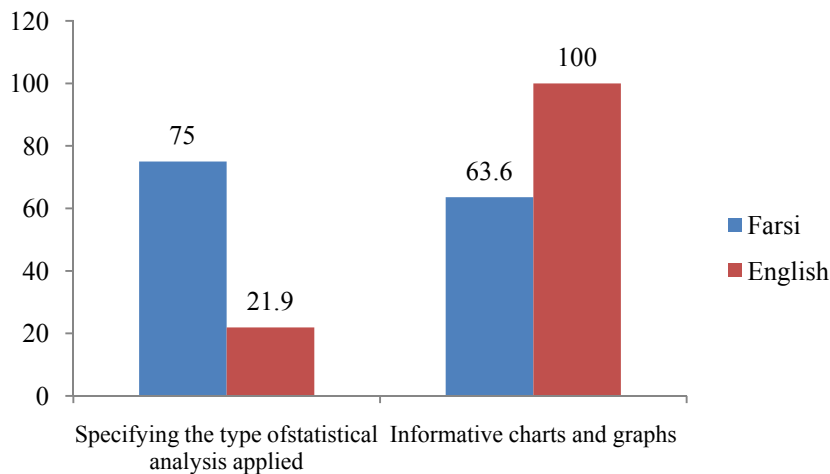


Diagram 2- The frequency percentage of the criteria met by the results section of Farsi and English journals

For other questions, no difference existed between Farsi and English journals in the mean

scores. The frequency of compliance with the remaining criteria is demonstrated in Table 1.

Table 1- The frequency of compliance with the criteria (not significantly different between the Farsi and English journals)

Title		Frequency (percentage)	
		Yes	No
Reporting the same number of digits after the decimal place	Farsi	86.7	13.3
	English	93.5	6.5
Taking into account the normal distribution of data when reporting the mean value	Farsi	82.6	17.4
	English	58.3	41.7
Reporting the difference between standard deviation and standard error	Farsi	83.3	16.7
	English	76.5	23.5
Reporting the confidence interval	Farsi	10.0	90.0
	English	12.5	87.5
Reporting the median and dispersion for non-normal data	Farsi	50.0	50.0
	English	81.8	18.2
Following a logical sequence when reporting the results	Farsi	100.0	0.0
	English	96.9	3.1
Reporting the number of specimens and their characteristics	Farsi	40.6	59.4
	English	34.4	65.6
Avoid mentioning raw data	Farsi	77.4	22.6
	English	80.0	20.0
Reporting the number of dropouts	Farsi	20.0	80.0
	English	11.1	88.9
Explaining the reason for dropout	Farsi	10.0	90.0
	English	11.1	88.9
Avoiding duplication	Farsi	80.8	19.2
	English	95.8	4.2
Spelling out the abbreviations in text	Farsi	0	100.0
	English	3.7	96.3
Reporting the P values	Farsi	84.4	15.6
	English	75.0	25.0
Power calculation in case of insignificance	Farsi	47.1	52.9
	English	36.4	63.6
Reporting units in statistical tests	Farsi	83.3	16.7
	English	100.0	0.0
Spelling out the abbreviations in tables	Farsi	44.4	55.6
	English	73.3	26.7
Understandable titles	Farsi	66.7	33.3
	English	48.0	52.0
Avoid mentioning unnecessary figures in statistical tests	Farsi	95.7	4.3
	English	92.0	8.0
Summarizing the results in tables error-free	Farsi	20.8	79.2
	English	8.0	92.0
Explaining the results in the text rather than using tables	Farsi	4.3	95.7
	English	0.0	100.0
Referencing the tables in the text	Farsi	91.7	8.3
	English	100.0	0
Understandable and informative table legends	Farsi	75.0	25.0
	English	92.0	8.0
Referencing the graphs and charts in the text	Farsi	81.8	18.2
	English	100.0	0
Drawing the graphs in a simple, easy to understand fashion	Farsi	83.3	16.7
	English	100.0	0
The ability to report graphs or charts in tables	Farsi	27.3	72.7
	English	8.3	94.7
Understandable and informative chart legends	Farsi	34.4	65.6
	English	54.4	40.6

Reporting units in tables	Farsi	12.5	77.5
	English	18.8	81.2
Avoiding excess lines in tables	Farsi	75.0	25.0
	English	78.1	21.9
Avoid reporting unnecessary figures in tables	Farsi	96.9	3.1
	English	93.8	6.2

Discussion:

The results showed that Farsi articles met 64.1% and English articles met 65.8% of the checklist criteria. In both Farsi and English journals, more than half the required criteria were met in the results section. A total of 64 original research articles published in 6 dental journals (3 Farsi and 3 English) were evaluated. Of 32 understudy criteria, English and Farsi journals showed significant differences in only 2 criteria. One significantly different criterion was specifying the type of statistical analysis applied. Type of applied statistical test had been mentioned in greater number of articles published in English journals compared to Farsi journals. The second significantly different criterion was the quality of graphs and charts in terms of being informative. English journals mostly had colored charts and graphs; which were more appealing and could better grab the attention of readers.

Several previous studies have evaluated the quality of articles and their abstracts. In 1991, the quality of the abstract of original research articles published in CMAJ was evaluated and it was reported that most abstracts met the required criteria but adequate details were not provided to improve the reader's perception of the manuscript. The obtained mean score was 0.63 out of 1; which indicated that about one-third of the necessary information had not been provided in the abstracts (6).

In another study in 2006, abstracts of randomized clinical trials published in several accredited dental journals including NEJM, JAMA and Lancet were evaluated qualitatively. The authors concluded that most published abstracts had suboptimal quality and were not in complete accordance with the CONSORT

checklist and stated the need for an improvement in this regard (9).

Abstracts published in BMJ, CMAJ and JAMA were also evaluated in 2001 and 2002 and the authors concluded that the quality of abstracts significantly improved compared to that in 2002-2003 (11).

In 2003, the quality of abstracts published in three clinical dermatology journals was evaluated and the authors reported that unstructured abstracts had a lower quality than the structured abstracts (12).

Our results demonstrated that the quality of the results section of articles published in selected Farsi and English journals was not significantly different and more than half the required criteria were met in both Farsi and English journals. Considering the increasing number of accredited dental journals, authors have a wider choice for journal selection if pay adequate attention to the results section of their manuscripts. Information provided in the results section can help readers better understands the methodology of the study. Thus, the obtained results must be adequately described in the results section in a structured format to enhance the overall quality of the manuscript.

Conclusion:

The quality of the results section of selected Farsi and English journals was not significantly different. However, some articles lacked adequate information to enhance readers' perception. Thus, results must be adequately described in the results section in a structured fashion to enhance the overall quality of the manuscript.

Conflict of Interest: "None Declared"

References:

1. Mansouri R. Scientific Development in Iran. 1st Ed. UNESCO National Commission Publication in Iran 1994; Chap 1-3: 10-100.
2. Clyde LA. Evaluating the quality of research publications: A pilot study of school librarianship. *J Am Soc Info Sci Technol* 2004; 55: 1119-1130.
3. Thornley B, Adams C. Content and quality of 2000 controlled trials in schizophrenia over 50 years. *BMJ* 1998; 317: 1181-1184.
4. Lee KP, Schotland M, Bachhetti P, Bero LA. Association of journal quality indicators with methodological quality of clinical research articles. *JAMA* 2002; 287: 2805-2808.
5. Wang L, Li Y, Li J, Zhang M, Xu L, Yuan W, Wang G, Hopewell S. Quality of reporting of trial abstracts needs to be improved: using the CONSORT for abstracts to assess the four leading Chinese medical journals of traditional Chinese medicine. *Trials* 2010; 11: 75.
6. Narine L, Yee DS, Einarson TR, Ilersich AL. Quality of abstracts of original research articles in *CMAJ* in 1989. *CMAJ* 1991; 144: 449-453.
7. Gøtzsche PC. Methodology and overt and hidden bias in reports of 196 double-blind trials of non-steroidal anti inflammatory drugs in rheumatoid arthritis. *Control Clin Trials* 1989; 10: 31-56.
8. Pocock SJ, Hughes MD, Lee RJ. Statistical problems in the reporting of clinical trials. A survey of three medical journals. *N Engl J Med* 1987; 317: 426-432.
9. Berwanger O, Ribeiro RA, Finkelsztejn A, Watanabe M, Suzumura EA, Duncan BB, Devereaux PJ, Cook D. The quality of reporting of trial abstracts is suboptimal: survey of major general medical journals. *J Clin Epidemiol* 2009; 62: 387-392.
10. Hall GM. How to write a paper. 5th Ed. Wiley, Blackwell 2012; Chap 1: 9-11.
11. Wong HL, Truong D, Mahamed A, Davidian C, Rana Z, Einarson TR. Quality of structured abstracts of original research articles in the *British Medical Journal*, the *Canadian Medical Association Journal* and the *Journal of the American Medical Association*: a 10-year follow-up study. *Curr Med Res Opin* 2005; 21: 467-473.
12. Dupuy A, Khosrotehrani K, Lebbé C, Rybojad M, Morel P. Quality of abstracts in 3 clinical dermatology journals. *Arch Dermatol* 2003; 139: 589-593.