



The Prevalence of Honorary and Ghost Authorships in Iranian Bio-Medical Journals and Its Associated Factors

*A Mirzazadeh^{1,2}, *S Navadeh^{1,2}, MB Rokni³, M Farhangniya⁴*

¹*Physiology Research Centre, Kerman University of Medical Sciences, Kerman, Iran*

²*Regional Knowledge Hub for HIV/AIDS Surveillance, Kerman University of Medical Sciences, Kerman, Iran*

³*Dept. of Medical Parasitology and Mycology, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran*

⁴*Dept. of Physical Therapy Research (ACECR), Kerman University of Medical Sciences, Kerman, Iran*

(Received 21 Jul 2010; accepted 18 Jan 2011)

Abstract

Background: The purpose of this study was to detect the prevalence of ghost and honorary authors and its determinant factors in bio-medical journals of Iran.

Methods: The study was done in 2009-10 in Tehran, Kerman, and Iran Medical Universities, Iran. We contacted the first or corresponding authors of the papers had published papers in the recent two issues of Iranian Journal of Public Health, Journal of Kerman University of Medical Sciences, and Tehran University Medical Journal. They explored the role of each coauthor and others who had done mouthing for the paper. Then, according to ICMJE criteria, we counted how many of them are real, honorary or ghost author. For the analysis, we utilized two databases. One included articles as the records and the other included authors as the records.

Results: From 124 articles, with 536 authors, 301 (56.1%) were honorary authors. Each article had 4.35 authors on average, while 2.4 of them were honorary authors. The percentage of honorary author in basic science articles was about 6% more than the articles of clinical sciences. Moreover, 89% of articles had at least one honorary author. About 20% of all articles had more than three honorary authors. Besides, 25 (21.43%) authors confessed they had colleague(s) omitted from the authors list, while only one (0.81%) of them met the authorship criteria. The percentage of agreement between the corresponding and the remaining authors on the number of honorary of the authors was about 47.4% (Kappa= 0.27, $P= 0.01$).

Conclusion: It seems that the present data might assist the authorities to make a decisive decision on amending the process of authorship in Iran.

Keywords: *Journal, Paper, Honorary author, Ghost author, Iran*

Introduction

Publishing an article is one of the most important processes especially in medical universities (1) that should be based on trust (2). With ever-increasing individual's interest and encouraging by university to conduct research, author's article or ethical principles in a research gain more importance.

One of the requirements of the article for being acceptable is the authors' honesty and their responsibility for related articles and firm belief on their writings (1-4). This requirement does not apply

to those articles written by a single author. However, when the number of author is more than one, the relationship among authors and ranking their names get more complicated (2). In addition, when involvement of more than one author in original articles, new problems emerge concerning the responsibility and responding born by author toward the article and new problems such as Honorary (that has not eligibility for being author) or Guest authorship (Deleted real author appear).

In 1985, the International Committee of Medical Journal Editors (ICMJE) sets criteria for authors

(5), which was amended in 2000, and confirmed by most authentic journals. According to these criteria, the author should have the following qualifications:

1. Main participation in idea of research (study design) and acquisition of data or analysis/data interpretation;
2. Main participation in writing of the whole or part of the article or precise and scientific review of the article;
3. Review and final approval of article for publication.

By virtue of the said criteria, individuals or organizations, which involved in financial support, data collection, and research group's leaders, are not eligible for being author, but it is necessary to appreciate them in Acknowledgement section after having obtained their written consent (1, 6-7). Therefore, honorary author who does not have main participation in the project and has not acquired necessary qualification and competence for such position must not be included in the list of authors (1, 3, 8). Another case is deleting real author from the list (Ghost authorship) who encompasses the main participation in research (1). If the authors are not selected based on the right criteria, it can lead to confuse the readers and provide a situation for falsification and manipulation on the analysis and results. Despite declaration of the authors' contribution by ICMJE, and its acknowledgement by many journals, daily experiences witness that misconduct on this phenomenon is prevalent in many cases.

In line with the other countries, Iran has established a system to encourage universities, research institutes and academic staffs to be more productive in producing and disseminating science. A surge of publications in many fields including biomedical area is indicating that the system is in track to improve scientific level of the country. However, always there is a concern that such publications are well-qualified and ethically approved and published. The purpose of this study was to enquire the prevalence of ghost and honorary authors and its determinant factors as regards bio-medical journals of Iran.

Materials and Methods

This study was conducted in 2009-10 in three Medical Universities of Tehran, Iran (Now changed to Tehran) and Kerman in Iran. We approached the local research committee members, students in the research committees, and the academic staffs in the public health schools.

The main idea behind this sampling strategy was to reach people who are actively involved in research and publication activities. Therefore, they will be eligible for the study, as they must have at least one published paper, which they were the corresponding first author.

Moreover, the recent two issues of Iranian Journal of Public Health, Journal of Kerman University of Medical Sciences, and Tehran University Medical Journal were reviewed and original papers were selected for contacting the corresponding authors. We contacted the corresponding authors by email address and if reminder failed, the follow-up was done by phone.

We collected the demographic data and the contribution of co-authors in writing the paper by distributing a two-page standard data collection form in both electronic and hard copy format (Appendix). Then, we asked the corresponding authors to provide us the contact information for at least one of the co-authors, preferably the person who had been involved in the project more than the others had. We contacted them with the same approach and collected the filled data forms. We applied an identifier code to match two forms referred to one paper and assessed their agreement on the role of the authors.

Before doing the analysis, we distinguished Real, Honorary and Ghost authors according to the kind of contribution that was mentioned in the data collection forms. The criteria for allocating authors to Real, Honorary and Ghost authors is just as the same as what we have mentioned above in the introduction section (based on the ICMJE criteria) For the analysis, we made two databases. One was included articles as records and the other included authors as the records. Analysis was done by STATA v.10. The average percentage of the

honorary and ghost author and its confidence interval was calculated by standardized linear estimators. The statistical significance was tested by Chi-Square and Z-scores (Beta coefficients). The percentage of agreement on the number of honorary authors, between the two co-authors was assessed by Kappa coefficient. At the end, we applied multiple regressions to assess the relationship of the years of publication, types and subject of the articles with the percentage of honorary authors.

Results

Authors

Altogether, 124 articles with 536 authors were enrolled into analysis. 56.1% (301 out of 536) of them were honorary authors according to the ICMJE criteria. On the other hand, each article had 4.35 (3.9-4.7, CI95%) authors on average, while 2.4 (2.1-2.7, CI95%) of them were distinguished as honorary author.

About 55% (49.8-59.5%, CI95%) of authors listed in the published articles were honorary authors. It was about 57.5% for the articles published in recent two years, while it had been about 49% before 2009 ($P= 0.104$). The percentage of honorary author in basic science articles was about

6% more than the articles had their focus on clinical sciences ($P= 0.2$). About 57% of authors listed in articles produced from existing databases were honorary authors, while it was reduced to 52% and 44% for those from thesis and original researches, respectively (Table 1).

By multiple regression models, we checked the relationship between the years of publication, types and subject of the articles on the percentage of honorary authors and found no statistically significant relationship.

Articles

Moreover, 89% (82.6-93.8%, CI95%) of articles had at least one honorary author. About 20% (13.9-28.2%, CI95%) of all articles had more than three honorary authors (Table 2).

Ghost Authors

Twenty-five (21.43%) authors confessed they had colleague(s) omitted from the authors list, while only one of them met the authorship criteria.

Agreement between the authors

The percentage of agreement between the corresponding and one of the other authors on the number of honorary of the authors for the article was about 47.4% (Kappa= 0.27 – $P= 0.01$).

Table 1: Percentage of honorary authors and demographic data

	Number of reviewed articles	Average percent of honorary author (95%CI)	P Value
Total	124	54.7 (49.8 – 59.5)	----
Publication Year:			
2010	33	54.5 (44.2 – 64.9)	0.38
2009	49	59.5 (52.1 – 67)	
Before 2009	37	49.08 (40.8 – 57.3)	
Article Subject			
Basic Science	67	58.8 (51.8 – 65.9)	0.20
Clinical	49	52.6 (45.9 – 59.3)	
Article Type (by source of data)			
Thesis	52	52.2 (45 – 59.4)	0.41
Research	44	56.3 (47.6 – 65)	
Existing Databases	15	57.5 (43.2 – 71.8)	

Table 2: Percentage of articles with honorary author

	Number of reviewed articles	Percent of articles with honorary author (95%CI)
Total	124	89.5 (82.6 – 93.8)
1 Honorary Author	21	16.9 (11.2 – 24.7)
2 Honorary Author	43	34.7 (26.7 – 43.6)
3 Honorary Author	22	17.7 (11.9 – 25.6)
More than 3 Honorary Author	25	20.2 (13.9 – 28.2)

Discussion

As we found from the findings, more than 89% of published bio-medical articles in Iran have at least one honorary author. On average, 55% of authors listed in an article do not meet the authorship criteria. In addition, there is a misunderstanding of the ghost authors among the study subject.

Importance of this subject is clear because many articles discuss about it. As an example, in Flanagan et al. study on 6 authentic journals (JAMA, The New England Journal of Medicine, Annals of International Medicine, American Journal of Medicine, American Journal of Cardiology, and American Journal of Obstetrics and Gynecology) 19% (11%-25%) of journals encompassed honorary authors and this rate was more in systematic review articles than research articles (26% vs. 16%) (3). Moreover, the frequency of the deleted real authors (Ghost authorship) was 11% (7%-16%) and 85% of these articles had not Acknowledgement section. This measure was the same in different articles. On the other hand, another study on various journals shows that 20%-50% of authors are the honorary authors and do not have three submission criteria by ICMJE (6). They declared the frequency of honorary authors in studied journals as follows: 0.5% for JAMA, 9.5% for BMJ and 21.5% for Annals of Internal Medicine. These rates showed association with type of journal, kind of research study, and author's place. In Hwang et al. study (1) on articles of Radiology Journal, published in the years of 1998 to 2000, only 68% of authors had ICMJE criteria and this low rate showed association with the number of authors, their rank and author's geographical place in each article. Gotzsche et al. study (4) on clinical trial papers showed that 75% of investigated articles had deleted real authors

(Ghost authorship). If the people mentioned in Acknowledgement section who have the criteria as real authors, were added to this rate, undoubtedly the rate would increase up to 91%.

A study conducted on Cochrane database which is one of the most austenitic databases on systematic studies, revealed that 39% of authors mentioned there are honorary authors and 9% are ghost authors (9).

In conclusion, the present data are witness that regardless of authorship criteria expressed by ICMJE and acknowledged by many journals, still there are cases of reverting from these criteria. The necessity of clarification is obvious, since many authors have not any idea on these criteria and indisputably, many of them after being informed of the realities would amend their way of mentioning the list of real authors. As we have seen in Discussion section, the issue is not confined to Iran and many regions unfortunately, more or less, have witnessed this unpleasant situation. Generally, the results indicated that ethical issues on authorship rights are not followed properly by researchers in Iran. The evaluation system should not only think about the numbers of publications from universities, institutes or academic staff, but also the other points such as ethics, trusts, quality of publications should be considered and it is much needed that strategies to achieve and monitor these goals should be developed and implemented.

Ethical Considerations

Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors.

Acknowledgements

The study was financially supported by a grant from the Deputies of Research, Tehran and Kerman Universities of Medical Sciences. The authors appreciate the sincere collaboration of Mrs S. Arabnejad, M. Aryaeipor, M. Gharayloo, and M. Sadeghi. The authors declare that they have no conflicts of interest.

References

1. Hwang SS, Song HH, Baik JH, Jung SL, Park SH, Choi KH, et al. (2003). Researcher contributions and fulfillment of ICMJE authorship criteria: analysis of author contribution lists in research articles with multiple authors published in radiology. International Committee of Medical Journal Editors. *Radiology*, 226(1): 16-23.
2. Rennie D, Yank V, Emanuel L (1997). When authorship fails. A proposal to make contributors accountable. *Jama*, 278(7): 579-85.
3. Flanagin A, Carey LA, Fontanarosa PB, Phillips SG, Pace BP, Lundberg GD, et al. (1998). Prevalence of articles with honorary authors and ghost authors in peer-reviewed medical journals. *Jama*, 280(3): 222-24.
4. Gotzsche PC, Hrobjartsson A, Johansen HK, Haahr MT, Altman DG, Chan AW (2007). Ghost authorship in industry-initiated randomised trials. *PLoS Med*, 4(1): e19.
5. International Committee of Medical Journal Editors. Guidelines on authorship. *Br Med J (Clin Res Ed)*. 1985 September 14; 291(6497): 722.
6. Bates T, Anic A, Marusic M, Marusic A (2004). Authorship criteria and disclosure of contributions: comparison of 3 general medical journals with different author contribution forms. *Jama*, 292(1): 86-8.
7. Perrin DH (2001). Editorial: Guidelines for Authorship in JAT. *J Athl Train*, 36(1): 15.
8. Meakins JL, Waddell JP (2002). Authorship. *Can J Surg*, 45(2):84-7.
9. Mowatt G, Shirran L, Grimshaw J, Rennie D, Flanagin A, Yank V, et al. (2002). Prevalence of honorary and ghost authorship in Cochrane reviews. *JAMA*, 287(21): 2769-71.

Appendix : Data collection form

Dear Colleague, please complete the below items about the last published article that you were first or corresponding author.

Article Title:
 Journal Name: Affiliation: Number of Authors: Publication Year: Data Collecting Year:
 Study Design: Case report Cross Sectional Case-Control Cohort Clinical Trial Experimental Review Article
 Systematic Review & Meta-Analysis Ecologic Qualitative Other types
 Article Subject: Clinical Basic Sciences Your role in this article: Corresponding author First author Second author

Please complete the below items without writing your name:

Sex: Male Female Age:..... (Year) When did you publish your first article: When did you publish your last article:
 How many article have you participated in (published or submitted one): Your email address:
 What was the article type: Thesis Research Existing Data
 Position: [Academic staff : Academic Teacher Assistant Professor Associate Professor Full Professor
 [Student : Residency Student or PhD Student General Practitioner or Equivalent Master Student Bachelor Student] [Other

Please specify the contribution of each of the authors in this article.

ID	Position*	Idea/ Research Question	Study Design/ Proposal Writing	Data collecting	Analysis / Data Interpretation	Literature Review	Article Writing	Editing the Pre-Final Version	Executive Management	Final Proof	Other Activities
1		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
2		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
3		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
4		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
5		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

*Position: specify the position of each of the authors during the article publication: 1.Teacher 2.Assistant Professor 3.Associate Professor 4.Full Professor 5.Student

Were there anybody who participated in the study but s/he did not consider as author? Yes No

If yes, please complete the below table:

ID	Position*	Idea/ Research Question	Study Design/ Proposal Writing	Data collecting	Analysis/ Data Interpretation	Literature Review	Article Writing	Editing the Pre-Final Version	Executive Management	Final Proof	Other Activities
1		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
2		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
3		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
4		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
5		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

*Position: specify the position of each of the authors during the article publication: 1.Teacher 2.Assistant Professor 3.Associate Professor 4.Full Professor 5.Student

Please complete this section for the corresponding or the first author of the paper:	
(if the first and correspond author are the same, fill it for the second author)	
First Name/Surname:.....	Telephone:
Cell phone:.....	Email:
Role of the author : Corresponding author <input type="checkbox"/> First Author <input type="checkbox"/> Second Author <input type="checkbox"/>	

Unique Identifier Code (last three digit of your phone + first three alphabets of family name):

Third alphabet of family name	Second alphabet of family name	First alphabet of family name	Third digit of your phone	Second digit of your phone	First digit of your phone