Special Article

Scientific misconducts and authorship conflicts: Indian perspective

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ABSTRACT

This article is a narrative review about how appropriate authorship can be achieved, a brief mention about various scientific misconducts, the reason and consequences of such misconducts and finally, the policies to be adopted by the aspiring authors to avert these problems. The literature search was performed in the Google and PubMed using 'scientific misconduct', 'honorary/ghost authorship', 'publish-or-perish', 'plagiarism' and other related key words and phrases. More than 300 free full-text articles published from 1990 to 2015 were retrieved and studied. Many consensus views have been presented regarding what constitutes authorship, the authorship order and different scientific misconducts. The conflicts about authorship issues related to publication of dissertation, the area of the grey zone have been discussed. Suggestions from different authorities about improving the existing inappropriate authorship issues have been included.

Key words: Authorship, biomedical research/ethics, plagiarism, scientific misconduct

INTRODUCTION

The incidence of scientific misconduct is on an upswing.[1] Several inappropriate authorships have been described in the literature.[2-5] Sensational news stories about authorship misrepresentations have already eroded the public's trust in medical literature.[2,6,7] Publication in peer-reviewed journals is often considered a major criterion for career enhancement. Sometimes, studies are initiated to utilise the existing funds, or to solicit funds by submitting the study proposal to a granting body without real desire to conduct a thorough research. Many researchers including those in medical field expect their name in the author list in spite of their non-involvement. Some researchers are always ready to accept the 'gift' of authorship for papers to which they have contributed nothing but they still want to claim the 'coins of academic credit'.[8] Larger number of publications can bring greater recognition and better opportunities. However, academic careers can be ruined by accusations of scientific misconduct.[9]

The central theme of authorship is authority and not a mere 'good' composition.[10] The 'author' is the person who creates or starts something.[11] Someone who has made 'substantive contributions' to a study or another intellectual work is generally considered to be an 'author' owing to creativity, originality and diligence.[12] Although every author bears public or legal responsibility for its content, some authors often shrug off their responsibilities when there is any problem with a publication.[2]

The present article is a narrative review on authorship criteria, scientific misconduct (causes and consequences), conflicts of position in authors' by-line and policies to be adopted by the new authors to minimise the problems. The article presents mostly a consensus view regarding ethics and responsibility of an author and thereby intends to raise the awareness of the issue. The order of authorship, especially in case of publication of thesis or dissertation matter remains

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an area of grey zone. Literature search was performed with Google and PubMed using 'scientific misconduct' 'authorship misconduct', 'honorary/ghost authorship', 'authorship order', 'publish-or-perish', 'plagiarism' and other related key words and phrases. More than 300 free full-text articles (review, original, editorial comments) published from 1990 to 2015 have been reviewed.

WHAT IS NEW IN THE RECENT AUTHORSHIP CRITERIA?

The International Committee of Medical Journal Editors (ICMJE) in its publication 'Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations)'[13] replaces the word 'requirement' with 'recommendation' probably to imply more stringency in the criteria. Moreover, there is addition of a fourth criterion regarding 'accountability' for work 'related to accuracy or integrity'. Authorship credit should be based on following criteria:

- Substantial contributions to conception and design of the study, acquisition and interpretation of data
- Drafting the article or revising it critically for intellectual content
- Final approval of the version to be published
- Be accountable for all aspects of the work; questions related to accuracy or integrity are to be properly resolved.

Additionally, corresponding author should identify which co-authors are responsible for specific portions of work. All those designated as authors should meet all four criteria; those not meeting all four criteria should be acknowledged.[13]

Authors and contributors

Defining 'contributorship' and what constitutes 'substantial contribution' to a scientific paper to achieve authorship is a grey zone. Generally contributors should include all those who have added successfully to the work such as, somebody who suggested the idea and design for the study but did nothing further. Areas/roles that do not constitute authorship are provision of space or funding, general supervision of the research group, data collection and participation that do not meet all the four requirements of authorship. All such contributors may be listed in the acknowledgments section after obtaining written permission.[14]

Kressel and Dixon[15] mentioned an interesting 'rule of 5', by which a person claiming authorship, should be able to talk knowledgeably without any preparation about the aims and findings of their published work for at least 5 min, about 5 years after the article's publication!

BEWARE OF AUTHOR INFLATION!

The doctrine of the day is 'publish-or-perish'. Undoubtedly, undue importance is being given to a published paper by assessors in most of the countries including India. This pressurises faculty members to publish as many papers as possible for their career enhancement.[7] However, the character, morals and mindset are the prime factors for the scientific misconduct. If papers are written solely for this purpose and the study is not designed to explore the lacunae in the existing knowledge, it will result in low-quality publication.[16] Another aspect, the higher number of publications from some of the reputed faculty member (with nothing new, but technically rich in composition) might pose challenges to the 'beginner' authors to get their real work get published. New authors may need encouragement in the form of timely publication. Doubts about the genuineness of the research may arise if an author submits and succeeds in publishing articles too frequently.

In recent years, a hike in duplicate or redundant publications has been noted as also an increase in the overall number of authors per publications - The 'author inflation'.[2,17] This author inflation occurs owing to duplicate publication or 'salami slicing' and inclusion of non-contributing persons as authors (honorary authorship) in the 'author by-line'. Real authors certainly suffer a drop value by inclusion of undeserved authors.[2] Addition of new knowledge to the existing information is essential for an original paper. But generation of new knowledge cannot be expected as everyday affair.[18,19] Nowadays, there is an explosion in the number of journals owing to creation of many internet-based journals, specialised journals and the open-access system. Shorter length papers are getting processed quickly. There is an increasing tendency among some authors to slice their single research work into many pieces to fit the journal length and sending those as different papers to different journals. As many journals exist in the market, these get published easily. Millions of scientific papers are getting published every year. To reduce the reporting of incremental advances and to reduce the number of

publications that a library has to pay for, one model, the so-called '20-paper rule' has been proposed through an editorial of Nature Medicine. It says 'what would you do if you could publish only 20 papers throughout your career'. To elaborate that '20-paper rule', a person will receive 20 tickets at the start of his academic job. Every time, he publishes a paper, one ticket is dispensed off. Once the researcher is run out of tickets, the researcher's publishing days are over. Although this has not been accepted and implemented anywhere in the world, this proposal at least became successful to reveal the concern of the journal editors about these problems![20] However, this policy, if it ever gets implemented, can affect many able researchers who will not be able to publish their important work that can change the medical practice.

Scientific misconducts - The tip of the iceberg

A recent survey shows the rate of perceived honorary authorship to be 26.0%.[21] In another study, the prevalence of perceived and ICJME-defined honorary authorship in physical medicine and rehabilitation research articles were found to be 18.0% (44/244) and 55.2% (137/248), respectively.[22] A recent study from Iran reports that more than 89% of published biomedical articles have at least one honorary author, and about 55% of authors listed in an article do not meet the authorship criteria.[23] Violation of ethical standard, undeclared conflicts of interest, ghost authorship (deleting the real contributing author), plagiarism, duplicate publication, salami publication, fabricating data to get papers published in renowned journals-all constitute fraud. Some of the researchers have been identified as fraudsters. A heavy focus upon them can divert our attention from the fraudster among us all. Many go undetected and transgress the scientific information and are under detected.[18,24]

Authorship misconduct can have serious consequences, including retraction of papers, suspension of authors and other legal actions.[17] In the recent years, a 10-fold increase in retractions of articles for scientific fraud has been estimated.[25] Up to 29% of all retracted papers were allegedly due to some form of plagiarism. Authors in India have been responsible for about 6% of retractions worldwide.[26] In the recent years (2009-2012), 360 articles from 7 authors in journals published abroad, and 5 articles from 3 authors in Indian scenario were implicated, with reports of plagiarism, falsification and fabrication of data and lack of Institutional Review Board approval. This resulted in rejection and retraction of articles, ban from publications, stripping of the author of his title and even dismissal from university. However, this list is not exhaustive.[14,15,27,28]

The modern-day journals use software tools to detect plagiarism and duplicate publications.[4,24] However, there are loop holes and lacunae in the present peer-review system. It is a hard job for the editors and reviewers to verify the veracity of the manuscript under review. Often, some of the reviewers are not equipped with similar software and the facility to access full-text articles of all journals.[19,24] Moreover, some of the editors and reviewers are not adequately conversant with the biostatistics. This limits the checking of the veracity of data and results.[29]

THE AUTHORSHIP ORDER AND WHO WILL BE THE FIRST AUTHOR?

A common belief persists that it is useless to have one's name after position six in the 'author by-line' and less important when one finds his name after position two. Undoubtedly, the first author holds a special importance. The running title of every paper bears the name of the first author only, and the first author's name is often cited in the discussion part of a paper. It is a common practice of assessors to consider the articles up to a position of two during academic data verification for promotional or other interviews. The practice of explicitly giving authors 'equal credit', especially the first two, for published original research article has increased in the past decade.[30] The person who has conducted most of the work described in the paper, written the first draft, critically revised the manuscript thereafter and thus has made the greatest contribution, will be the first author. Middle authors (those not listed in the first, second or last) are the least likely to contribute to the intellectual work of the study. An implied assumption continues that the contributions of all authors, other than the first, second and last, are minimal.[3] The last position is usually reserved for the person who directed or guided the said research. Generally, this person accepts the overall responsibility for all aspects of the reported findings, inclusion of appropriate co-authors and the authorship order. Usually, he/she acts as the 'guarantor' who ensures the integrity of the study.[4,5] The names of other contributing authors appear after the primary author; senior authors' names are entered last. The authorship order should reflect their relative contribution to the work.[2]

Inappropriate authorship-the Indian context

In the recent past, some problematic situations have been mentioned in the Indian perspective where a deserving resident does not get due credit in spite of his labour in the project or conversely, the resident uses the unit data without others knowledge and publishes it. It has also happened that a senior professor who has done a huge amount of work retires and is then denied access to unit data or omitted from authorship by his/her successor when the unit subsequently publishes the work.[31]

The question arises who should be the first author when the work, conceived and supervised by the guide for his resident, is sent for publication.[32] The issue may gain a newer dimension when any guide is in need of extra weight for the career enhancement or for assessment by national regulatory bodies. Often sufficient credit is not offered to the faculty member owing to the fact of not being the first author. This may invite discrepancy in attitude among some of the faculty members to give ordinary research ideas to the residents while keeping the better ones for themselves, where he/she will appear as first author. Although it may depict selfishness and non-professionalism on the part of the faculty member, and the scenario cannot be generalised, it is happening.

Sometimes, the issue of publication of dissertation or thesis work as a paper arises, although this may need prior permission from the concerned university and involve an interval of 3–5 years. Some universities specify that the thesis must be completed, accepted and after appearing for the final examination, the material can be drawn for publication from the thesis. Also, controversy occasionally exists regarding utilisation of content as it is or under a different title. However, when such publications do occur, usually the resident becomes the first author owing to the most overall contribution to the manuscript regardless of his/her capability. Simply, it is decided on the absolute amount of time and effort spent on the project. However, if the resident does not show any inclination, a policy can be adopted by allowing the resident a stipulated period to write the draft and in case of failure, the supervisor then can write the paper and put himself first.[5,33] The sequence of contributing authors should be determined by the overall contributions to the manuscript as usual.[33]

The problem gains a newer dimension when another faculty member, not officially endorsed guide, comes forward to assist the student with substantial contribution in case of inactiveness of the formal or official guide. During submission for publication, the student and the official guide should be honest enough to include this contributing faculty member in the authorship list. To satisfy the authorship criteria of ICJME's recommendations,[13] the official guide should refrain from receiving authorship in case of total inactivity or should occupy the intermediate (third to fifth) position if there is partial involvement; needless to elaborate that the official guide must satisfy all four criteria of achieving authorship. Unfortunately, at present, there exists no surveillance from the authority on the guide's performance. Hence, it is difficult to exclude the name of the guide from the authorship list simply because of the non-contribution.

How is 'significant contribution' defined in each context? 'Work' could mean both the research project and the resultant publication. Although both are inter-related to a variable extent in view of data and draft, either of the phases has to be considered as a separate job owing to the fact that a fresh bulk of time and devotion is needed for the publication process. There are instances where authors have been omitted at the time of publication despite having contributed as co-investigators.[8]

Policies to minimise authorship conflicts

Researchers should remain clear and honest from the very beginning with issues relating to publication and authorship. This should address the issues regarding the roles of all contributors. Before initiating any research work, participants should agree on and document its scope, authorship and acknowledgments, order of authorship and each author's responsibility in the project and in preparing the final manuscript. This agreement should be sufficiently flexible to align with target journals and to match with the changed attitude and role of any team member with the progress of the work. Subsequent changes in authorship or responsibilities should be reviewed and approved by the entire group. Prospective authors should maintain a record of their contributions to the research work, to document authorship. With a new research project, obtaining permission of the Institutional Ethical Committee, registration with the concerned university, or registration with the Clinical Trial Registry-India (www.ctri.nic.in) may partly resolve the authorship conflicts. The chief coordinator of the study should remind others time to time regarding their responsibilities. Before the primary manuscript

or any revision is submitted, each author must read it, approve and agree to take public or legal responsibility for its content. Authors must clarify authorship expectations when they ask their colleagues to review a working manuscript to avoid the initiation of any dispute. Each author must disclose any significant financial interests and/or other real or potential conflicts of interest. Exhaustive information regarding the responsibilities of authors and other contributors and necessary declaration of conflict of interests should be consulted, understood and satisfied.[34] Any individual who believes that he should have been included as an author but was excluded should report this exclusion to the chief coordinator who should try to resolve any such conflict at the incipient stage.

Many of us have witnessed these unpleasant issues. It is unfortunate that the number of publications, and not their quality, remains one important parameter for assessing the credibility of medical faculty members. The evaluation system should be based not on quantitative assessment of publications alone. Rather it should consider other points such as ethics and quality of publications, teaching quality and experience, community service, expertise and excellence in clinical work and their impact on patient service. Anonymous feedback from the students regarding faculty members' teaching and clinical activities in confidential manner might be another useful assessment tool. The university should put the performance of faculty member acting as guide under close surveillance. Being evaluated solely by 'publication value' may result in reorienting the priorities away from teaching and clinical works toward mere paper publication. In such case, the research activities might not be designed as a desire to know the truth and/or to find out new knowledge.[19,35] Sometimes, dilemma exists in deciding on author's authenticity and authority of the Editor to uphold the publication values. Students and many faculty members in medical colleges of India have poor perception about issues of scientific misconducts. Lack of good role model among the faculty members probably also contributes to this problem. Educating the students and faculty members regarding healthy conduct of research and training about subsequent drafting, will help to change their attitude toward plagiarism.[36] Strategies should be developed to achieve and monitor these goals. Authorship should not be bestowed upon. Being a matter of pride, the authorship has to be deserved and earned.

SUMMARY

Every aspiring author must understand and adhere to the ICMJE criteria for authorship. Honesty in performing scientific investigation, maintenance of the integrity of both mind and work, proper documentation of every author's contribution, registration of the trial with regulatory bodies-all will help in reducing the conflicts of authorship in a summative manner. Plagiarism should be checked using necessary tools and be prevented with the best efforts from the authors during the preparation of first draft of the manuscript. The number of publications and the order of appearance in the author's by-line should not be given much importance.

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