

Ethical Dilemma of Ghost, Guest, and Gift Authorship in Biomedical Research

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Biomedical literature serves as the foundation of scientific progress, facilitating the dissemination of research findings to clinicians, researchers, and policymakers, promoting innovation, and guiding medical practices. However, the credibility of this knowledge depends on the transparency and ethical rigor maintained during its production.¹ The authorship in biomedical research is more than a marker of contribution; it signifies accountability and intellectual ownership.^{2,3}

With the increasing complexity of collaborative research and the pressure to "publish or perish," authorship has evolved into a highly sought credential, influencing academic promotions, funding opportunities, and professional recognition. This emphasis on publishing has led to a competitive environment where ethical lapses often occur, such as the omission of contributors (ghost authorship), inclusion of unqualified authors (guest authorship), and attribution of authorship as a favour (gift authorship), distorting the academic record and misrepresenting contributions, threatening the integrity of the scientific record.^{4,5}

The International Committee of Medical Journal Editors (ICMJE) has established criteria to define authorship.⁶ These criteria ensure that authorship is attributed only to those who genuinely

contribute to the research process. According to these criteria, an individual qualifies as an author if they meet the following four criteria: (1) Significant contributions to the conception or design of the work, or the acquisition, analysis, or interpretation of data, (2) Drafting or critically revising the manuscript for important intellectual content, (3) Final approval of the version to be published, (4) Agreement to be accountable for all aspects of the work to ensure accuracy and integrity.

Ghost Authorship

Ghost authorship occurs when writers who have made significant contributions to an article are not acknowledged as authors. This unethical practice is prevalent in industry/pharma-sponsored research, where professional writers draft manuscripts while attributing authorship to prominent academics to lend credibility.⁷

Guest Authorship

Guest or honorary or courtesy authorship involves individuals who have not contributed significantly to the research. Often motivated by the desire to leverage a senior researcher's reputation, guest authorship distorts the record of intellectual contributions. While it may appear harmless, guest authorship misrepresents contributions and twists academic metrics.⁸⁻¹⁰

Gift Authorship

Gift authorship is to grant authorship to someone who can offer professional benefits, e.g. a

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senior colleague, supervisor or the organizational head.¹¹⁻¹²

Promotions of the medical faculty in Pakistan are dependent upon the quantity of research publications more than their quality. This “publish or perish” attitude creates pressure on scientists to produce many papers, sometimes with unethical approaches like gift authorship. Even when they’ve made no substantive contribution, senior faculty or other impactful professionals are often made authors on papers essentially as a kindness or to earn credit.

Studies indicate that unethical writing behaviors are rampant and are driven by institutional and academic compulsions.¹³ Although ghost authorship is common in industry-related research, guest and gift authorships appear to be widely used to increase publication counts. As the research grants often depend on one’s track record of publications, there is pressure to inflate the authors’ list with undeserved entries. The main reasons are the peer pressure and ideological hierarchy that are undermining the credibility of biomedical research. For example, even if senior faculty members contribute little or nothing, junior researchers might feel pushed into adding them to the list of authors.¹⁴

Given these system pressures, many researchers neglect the standards or are simply unaware of it. In the academic and clinical environment of Pakistan, ghost, guest, and gift authorship translate into serious and diverse implications for the credibility of the research, for the academic progress and for the health of the society. These habits cause damage that extends beyond the academic and health care structures and have potential to corrode the very fabric of ethical scientific inquiry. This results in reduced authentic collaboration, unethical competition for resources, damage to institutional reputation, and fake scholarly productivity.

Another ethical aspect is the use of Artificial Intelligence (AI), which has become a crucial tool

when it comes to scientific writing. It has transformed scientific writing by drafting the manuscript, arranging the data, references, and most importantly, summarizing the large data sets and literature. This is helpful when it comes to non-native English speakers and scientists in their early careers. AI can also help in the review process by pointing out plagiarism, inconsistent data, and non-adherence to the journal guidelines. The increasing use of AI especially in Pakistan has raised some ethical concerns. If the major portion of the paper is written by AI, then how the contribution can be credited accordingly. It is well known that sometimes AI generates fake data or false content, references which may appear real but are completely fabricated.¹⁵ This can make the credibility of both the author, and the journal compromised. There is still a lack of clear policies and regulations on the use of AI in scientific writing, and it is totally up to the author to decide whether to declare any use of AI.¹⁶ This can lead to inconsistencies. It is pivotal to clearly define guidelines for the use of AI in scientific writing to establish human integrity and transparency.

An all-embracing plan of action comprising the researchers, universities, and policymakers is required to deter misconducts in authorship including ghost, guest, gift authorship and use of AI in Pakistan. Advocacy workshops/seminars on ethics of authorship aimed towards academic administrators, journal editors, and researchers is one of the strategies. ICMJE recommendations for uniform ethical authorship should be implemented in earnest by all Pakistani biomedical journals. Policies that require contributor statements that state exactly what each contributor’s role in research is, are paramount. In addition, institutions need to have policies protecting whistleblowers who report unethical behaviour, which, in turn, can define the consequences of misconduct.

Key technological interventions involve using text-matching software to ensure the originality of documents, detect ghost writing and

associating authorship identification systems such as ORCID to verify the individual contribution.^{17,18} A broader culture shift is also needed - from valuing quality and not merely quantity. Evolving a more ethical and multi-dimensional appraisal model in Pakistani academia can only be made through restructuring of academic promotion through a greater weightage given to quality, relevance, and impact as a measure of research along other performance indicators such as teaching, clinical service, and community-oriented activities.

Conclusion

The authenticity of biomedical research is

negatively influenced by the ghost, guest, and gift writings, posing grave ethical challenges. Although international standards like those from ICMJE are available, their implementation at the national level has been a difficult task.

Addressing these problems in Pakistan calls for a collective effort to raise awareness, ensure stringent regulatory oversight, policy shift in promotions criteria, and use of high-tech tools. By promoting transparency and accountability, the credibility of biomedical research will be preserved and will ensure that authorship is represented only by true contributions.

References

1. Raja K. Biomedical Literature Mining and Its Components. *Methods Mol Biol.* 2022;2496:1-16. https://doi.org/10.1007/978-1-0716-2305-3_1.
2. DeTora LM, Toroser D, Sykes A, Vanderlinden C, Plunkett FJ, Lane T, et al. Good Publication Practice (GPP) Guidelines for Company-Sponsored Biomedical Research: 2022 Update. *Ann Intern Med.* 2022;175(9):1298-1304. <https://doi.org/10.7326/M22-1460>.
3. Caplan A, Badylak SF, Caplan AI, Davies LC, Strömland S, Weiss DJ, Le Blanc K. Author Accountability in Biomedical Research. *Stem Cells Dev.* 2018;27(24):1671-1673. <https://doi.org/10.1089/scd.2018.0214>.
4. Patel VM, Panzarasa P, Ashrafian H, Evans TS, Kirresh A, Sevdalis N, et al. Collaborative patterns, authorship practices and scientific success in biomedical research: a network analysis. *J R Soc Med.* 2019;112(6):245-257. <https://doi.org/10.1177/0141076819851666>.
5. Hackett R, Kelly S. Publishing ethics in the era of paper mills. *Biol Open.* 2020;9(10):bio056556. <https://doi.org/10.1242/bio.056556>.
6. Uniform requirements for manuscripts submitted to biomedical journals. International Committee of Medical Journal Editors. *JAMA.* 1997;277(11):927-34.
7. Wislar JS, Flanagan A, Fontanarosa PB, Deangelis CD. Honorary and ghost authorship in high impact biomedical journals: a cross sectional survey. *BMJ.* 2011;343:d6128. <https://doi.org/10.1136/bmj.d6128>.
8. Misra DP, Ravindran V, Agarwal V. Integrity of Authorship and Peer Review Practices: Challenges and Opportunities for Improvement. *J Korean Med Sci.* 2018;33(46):e287. <https://doi.org/10.3346/jkms.2018.33.e287>.
9. Goddixen MP, Johansen MW, Armond AC, Clavien C, Hogan L, Kovács N, et al. "The person in power told me to"-European PhD students' perspectives on guest authorship and good authorship practice. *PLoS One.* 2023 ;18(1):e0280018. <https://doi.org/10.1371/journal.pone.0280018>.
10. Waheed U. Paper mills and intellectual prostitution in Pakistani research: A challenge to scientific integrity. *J Islamabad Med Dental Coll.* 2024;13(Suppl): 495-497. <https://doi.org/10.35787/jimdc.v13i3.1320>.
11. Satalkar P, Perneger T, Shaw D. Accommodating an Uninvited Guest: Perspectives of Researchers in Switzerland on 'Honorary' Authorship. *Sci Eng Ethics.* 2020;26(2):947-967. <https://doi.org/10.1007/s11948-019-00162-8>.
12. Ashkenazi I, Olsha O. Authorship Disputes in Scholarly Biomedical Publications and Trust in the Research Institution. *Rambam Maimonides Med J.* 2023;14(3):e0015. <https://doi.org/10.5041/RMMJ.10503>.
13. Jafarey A, Shekhani S, Raza F, Naz S. Situation analysis of research ethics governance in Pakistan. *East Medit. Health J.* 2023;29(7):500-7. <https://doi.org/10.26719/emhj.23.069>.

14. Gopalan N, Khan RI, Silverman HJ, Sugarman J, Vaswani V. Enhancing Research Ethics Capacity in Asia: Fogarty International Center Supported Initiatives in India, Malaysia, Myanmar, and Pakistan. *J Empir Res Hum Res Ethics*. 2025;15562646251323133. <https://doi.org/10.1177/15562646251323133>.
15. Solomon DH, Allen KD, Katz P, Sawalha AH, Yelin E. ChatGPT, et al...Artificial Intelligence, Authorship, and Medical Publishing. *Arthritis Care Res (Hoboken)*. 2023;75(6):1196-1197. <https://doi.org/10.1002/acr.25113>.
16. Boone D. Artificial intelligence and authorship. *Prosthet Orthot Int*. 2023;47(2):123. <https://doi.org/10.1097/PXR.000000000000239>.
17. Kargl M, Plass M, Müller H. A literature review on ethics for AI in biomedical research and biobanking. *Yearb Med Inform*. 2022;31(1):152-60. <https://doi.org/10.1055/s-00421742516>.
18. Baumgartner R, Arora P, Bath C, Burljaev D, Ciereszko K, Custers B, et al. Fair and equitable AI in biomedical research and healthcare: Social science perspectives. *Artif Intell Med*. 2023;144:102658.