

LETTERS**Do authorship disputes deter Indian medical students from pursuing research?**

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Medicine, being an ever-expanding field, makes it crucial for doctors-in-training to understand research and its methodology and translate this into their clinical practice. However, in India, the response of medical students and residents in adopting this has been sluggish, primarily owing to high levels of stress attributed to the extensive academic curriculum, hectic duty hours, and shortage of workforce that leads to an unacceptably high patient load [1]. Lack of funding and mentorship programmes, difficulty in data collection and analysis, and no additional credits awarded to students for the time invested act as additional barriers to taking up research projects [2]. An important but rarely discussed disincentive is the disputes regarding credits awarded to research in a publication.

Amidst the “publish or perish” academic culture, the ICMJE guidelines are infrequently adhered to. The Medical Council of India (MCI), in its circular of 2017, amended its requirements for research publications to be considered for promotion of faculty in medical colleges [3]. The amendment limits credits for authorship only to the first and corresponding authors. This reform may have been intended to decrease the practice of “gift authorship” (when a faculty member is short of the required quota of papers, he/she requests a research team to include his/her name in the list of authors); but has had the opposite effect in practice [4]. In postgraduate courses, students must submit a dissertation with a faculty guide and a few co-guides from the same or related disciplines. The need to comply with guidelines for periodic promotion leads to the coercion of students to add co-authors with no significant contribution, and encourages the denial of first authorship, and credit, to junior researchers whose contribution is often the most.

“Ghost authorship”, defined as the failure to identify someone who is a substantial contributor to the research or written manuscript as an author, is condemned as unethical [5]. On the other hand, professional medical writing assistance is an ethical and legitimate practice, permitted when appropriately acknowledged, and enhances the manuscript's quality. Ironically, “non-experts” such as medical students are subjected to being ghost authors after working on projects, with no compensation for the students' time and efforts. Such instances of denial of recognition, in the form of “gift authorship” and “ghost authorship” are unethical practices that

demotivate medical students from undertaking any further research activity.

We propose some solutions to combat this negative trend:

*Inclusion of credits and mentorship for research in the Indian medical curriculum*

Research projects require an extensive time commitment from the mentor, especially if it is a medical students' first research project. However, it serves as an excellent mentoring opportunity for faculty to enhance students' interest in research. The inclusion of credits for research in the medical curriculum is likely to encourage students' participation.

*Credit matrix for research*

The International Students Surgical Network (InciSioN) designed complementary authorship guidelines that use a point-based system and a research contribution tracking spreadsheet to quantify each contributor's involvement [6]. This tracker can maintain transparency and accountability amongst all contributors on a project to avoid authorship disputes. Normalising authorship discussions and managing expectations early on by faculty mentors in research projects would benefit students and junior faculty, who may lack the ability to raise these issues themselves.

*Collaborative multidisciplinary research*

An unexplored avenue amongst Indian medical students is collaborative research networks. These models facilitate students' participation in good quality research led by experts with different skill sets, thus widening the spectrum of learning. Publishing under a unified corporate authorship also ensures appropriate credits to all collaborators, encourages teamwork and ensures guidance for students [7]. Student-led initiatives like the first student-led collaborative ‘STAR SURG’ research study by UK medical students, which included 1513 patients from 109 centres with each author given equal recognition [8], can provide students with experience of applied academic training

*Institutional policy for credits in research*

A formal institutional policy for credits in research should be advocated for in medical colleges. As the need for local data-driven solutions rises exponentially, we must provide an effective pathway to address grievances and provide students with research exposure that encourages them to continue research with their future clinical practice.

In conclusion, research and clinical practice go hand in hand, and efforts should be focused on an inclusive approach aimed at training students as early-career researchers, equally equipped with clinical acumen and the nuances of clinical research. Given the small cadre of physician-

scientists in India, a new generation of enthusiastic clinician-scientists needs to be fostered to ensure appropriate recognition and research credits.

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## The meaning of being acknowledged in a manuscript

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With a fresh degree in Biotechnology, I was keen on getting some work experience before deciding on further studies. I wrote emails to several leading researchers in the country. A few responded and one offered me an internship. After a brief interview, I was on board, working in her laboratory. It was an intense work environment, where focused and dedicated professionals spent much of their time in benchwork, designing and redesigning experiments proving hypotheses.

As an intern, this was a first of its kind experience for me.

The principal investigator (PI) was an accomplished scientist who would take a great interest in mentoring every lab member. Out of the two studies that I was involved in, I had a chance to contribute markedly to one, by helping build the desired genetic strains of the model organism. The PI suggested that my work merited an "acknowledgement" in the upcoming manuscript. I was overjoyed and felt that it was a mark of achievement that I could put on my CV.

Sometime later, I came across a professional opening at a reputed academic institute and wanted to know more about the role. I wrote to the employer. However, instead of addressing my query she asked whether I had a publication. I thought I did — after all, I was to be acknowledged in the manuscript. However, I learned that being acknowledged in an academic paper does not count as having a publication. Later I realised that an acknowledgement is a "non-academic contribution" that carries "very low" credits, and mentioning it on the CV will not add much value. This was the beginning of my realisation of the value given to authorship; the measure of excellence in the world of research and academia. As a result, I began undervaluing the significance of being acknowledged in a manuscript.

The success of research and indeed the completion of a manuscript depends on several individuals, not all of whom are researchers or skilled academic writers. The International Committee of Medical Journal Editors (ICMJE) suggests that an author should (i) *substantially contribute to the conception or design of the work; or to the acquisition, analysis, or interpretation of data for the work; and (ii) draft or critically revise the manuscript for intellectual content; and (iii) agree to be accountable for all aspects of the work; and (iv) approve the final version of the manuscript* [1]. Those failing to meet all four criteria, cannot be classified as authors but could only be acknowledged [1]. According to the ICMJE and the Committee on Publication Ethics (COPE), activities that can merit acknowledgement are technical support, financial support, supervision, proofreading, and mentorship amongst others [1,2]. Therefore, those who do substantial groundwork like mobilising the community and administering the informed consent process in a field-based research project; those taking notes in a focus group discussion and helping translate crucial documents into the local language; and interns in life science laboratories who help in benchwork so that other researchers have enough time to do their "intellectual" work and continue with their paper writing — can all merit an acknowledgement, if some good PIs ensure this, at all times. This is also in line with the principle of equality, where everybody's work is recognised and valued. Besides, there is something intrinsically good in giving credit where credit is due. Additionally, some PIs take an interest in building individuals' capacities so that they can make it as authors. After all, being in the league of authors is not just about qualifications, skills, and merit but also about having the privilege of accessing quality education.