

The need for a change in the evaluation of research done in medical institutes!

The Medical Council of India (MCI), in an attempt to promote research in medical institutions, has made publications a mandatory requirement for faculty promotions.^[1] However, the authorship criteria laid down for giving credit of publication to the faculty did not remain constant. Initially, MCI recommended first/second author as the criteria for giving the credit of a publication. Later, this is now changed to first/corresponding author. The first author is the principal investigator of the research work by convention, but not as a rule. The corresponding author may or may not be the principal investigator, but has the overall responsibility with respect to the data presented and the scientific content. The corresponding author's position is not fixed in the author's sequence, and often, the senior most author who is the guarantor for the study is the last author. Equal authorship equitably balances the greater time spent by a mentee versus the greater impact of a mentor on the manuscript quality. It provides manifold benefits, including cementing equal status for mentee and mentor to promote mentorship, avoiding rivalry for first authorship, equitably attributing author contributions, and retaining the mentee's advantage in career advancement because the mentee is still listed as the first author. The other authors of the manuscript are those who have worked in collaboration with the principal investigator. They are involved in some aspects of the study e.g., co-management of the study participants, interpretation of diagnostic results, analysis of samples, statistical analysis, interpretations of results and critical analysis of the conclusions drawn from the study. All these components have their own importance in the conduct of a research study and thus their contribution to the final outcome of the study. Hence, weighing contribution to research based on authorship position seems to be illogical.

The International Committee of Medical Journal Editors (ICMJE)^[2] has given guidelines on who is an author as a part of the uniform requirements for manuscripts submitted to biomedical journals. It suggests that authorship credit should be based on substantial contributions during the conduct of the research right from the conception and design of the study to interpretation of data, including acquisition of data and analysis of data. Involvement in preparing the draft of the manuscript or

revising it critically for important intellectual content is also required along with the final approval of the version to be published. The National Institutes of Health (NIH) definition of authorship (<http://sourcebook.od.nih.gov/ethic-conduct/Conduct%20Research%206-11-07.pdf>; accessed May 11, 2018) is also similar. The ICMJE mandates involvement in all of the above three aspects to qualify as an author. Coming to the order of the authors, the ICMJE guidelines state that 'the order of the authorship on the byline should be a joint decision of the co-authors'. The authors should be prepared to explain the order in which they are listed. This again can be subjective.

It is difficult to consider original research paper for promotion as original research is limited to very few medical institutions only. It may not be appropriate to be very flexible in criteria for promotion in India where most of the original and substantial research is limited to only few medical colleges/institutions. A recent study in India observed that about 60% of the medical colleges here did not have a single publication in the past 10 years.^[1] With the maximum number of predatory journals being contributed from India, 42% of fake single-journal publishers are based in India.^[2]

The guidelines were also proposed by various associations including American College Personnel Association (ACPA) Statement of Ethical and Professional Standards,^[3] American Psychological Association (APA) Ethics Committee^[4] and American Association for Counseling and Development (AACD) Ethical Standards.^[5] The guidelines by the AACD^[5] are vague mentioning, 'the member must give due credit through joint authorship, acknowledgement, footnote statements or other appropriate means to those who have contributed significantly to the research/and or publication, in accordance with such contribution'. On the other hand, the guidelines by the ACPA^[3] give better clarity, 'members acknowledge major contributions to research projects and professional writings through joint authorship, listing the author who made the principal contribution first. Minor contributions of a professional or technical nature are acknowledged in footnotes or introductory statements'. 'Members do not demand co-authorship of publications when their involvement has been ancillary. Teachers

and/or supervisors exercise caution when working with students and/or subordinate staff so as not to unduly pressure them for joint authorship'. The APA^[4] issued a policy statement to guide journal editors in considering complaints, especially with respect to dissertations. The statement says that dissertation supervisors can be second authors. It also mentions that second authorship could be given as an obligation if the supervisor designates the primary variables, makes *major* interpretive contributions or provides the data base. Further, the 'second authorship may be extended as a courtesy if the supervisor is substantially involved in developing the research design or measurement techniques/data collection, or if the supervisor substantially contributes to the writing of the publication'. However, it clearly states that authorship cannot be given on grounds of encouragement, facility, financial support, critiques and editorial assistance provided by the supervisor. To avoid conflicts, it was also recommended that institutions and departments should have a written policy what is 'ancillary involvement' and who made the 'principal contribution in publications and on the order of authorship for any given research publications'.^[6]

Kiser^[7] identified that being shafted on an authorship list impedes cross-disciplinary approaches to difficult questions creating negative feedback loop that hinders research. She also expresses concern over link between publications and promotions. She feels the culture remains largely unchanged from 50 years ago and whirls round 'first' and 'senior' authorship. The fate of middle authors whose contributions can many times be equally or more significant are often left to find only self-satisfaction.

There are alternate proposals in literature that address this issue. Wintson^[8] proposed a scoring system to help in easy identification of the contributions made by each author with respect to all the components discussed earlier i.e., conceptualising the research design, literature search, creating research design, instrument selection, instrument construction/questionnaire designing, selection of statistical tests/analysis, collection and preparation of data, performing and interpreting statistical analysis and preparation for first/second and final draft of the manuscript. A scoring system was also proposed by Hunt^[9] based on intellectual input, practical/data capture input, data processing/organising, special input from related fields and literary inputs. The University Grants Commission follows a simple scoring system for promotions based on academic performance indicators, wherein the first/principal author/supervisor/mentor of the teacher would share equally 60% of the score and all other authors will get 40% distributed equally among themselves.^[10]

'Scoring system' appears to be a more rational way to promote research among medical faculty, the motive of MCI behind linking promotions to publications. The above-mentioned models can be taken as baseline and a tailor-made scoring system generated that will drive the medical faculty of India to accept research as part of their professional responsibility. The main aim would be to have objective estimates based on a scoring system that measures the total contribution of the faculty during the period of observation for promotion. An objective assessment by means of a scoring system can also eliminate bias. A total score from all the publications during the observation period should form the basis for promotions. This is especially required in medical field because research involving patient care logically involves all those disciplines involved in patient care. Hence, contributions, if scored based on the type and extent of involvement of faculty in that particular research, will motivate the faculty to develop their own proposals to get a higher score.

Authorship guidelines have variations as discussed and the journal policies in this area considering the manuscripts for publication are also likely to vary. In this background, instead of 'authorship criteria', an authorship 'scoring system' reflecting the actual research contribution of the faculty, if developed by the MCI, is likely to be accepted better and can result in a positive mood among medical faculty for research.

The proposed scoring system should be designed in such a way that it helps get an unbiased listing, thereby avoiding conflicts among those involved in the research and the subsequent publications. Possibly, a micro-defined scoring system would be necessary to achieve this because all activities cannot be conducted at one place in a hospital setting and is likely to involve people from various departments. Furthermore, many a time, they have to take extra time out so as not to disturb the patient care and teaching activities which consume most of their working time. Hence, recognition of even minor contribution is needed to motivate for research which cannot happen if authorship is taken as criteria.

Both major and minor activities culminating in a publication need to be recognised in the scoring system for reasons mentioned above. Apart from the lead roles considered by Wintson,^[8] supporting activities such as literature search, screening of study subjects for eligibility, preparation of questionnaire, collection of biological samples, aliquoting and storage and data entry should also get recognised by incorporating them into the scoring system. The scoring system should also be robust enough to address the issues

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that are more specific to medical colleges and institutions like partial contributions because of change of place of work.

Thus, there is a need for the MCI to think out of the box and entertain thoughts like the one mentioned above to bring out an attitudinal change in medical faculty towards the expectations of current-day world.

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