

# Research publications: Should they be mandatory for promotions of medical teachers?

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## BACKGROUND

As per new amendment rules of Medical Council of India (MCI), research publications in indexed/national journals are now mandatory for promotion to posts of professors and associate professors.<sup>[1]</sup> This amendment has raged a debate across the whole country as to whether medical teachers should really involve in research.

It is a sad to know that even though India has the largest number of medical institutes and large biodiversity of population, we are short of quality research publications. Research works originating in our country get patented in the west. Where does the problem lie - with the system or with the teachers?

Through this debate, we try to come to a conclusion whether research publications should be mandatory for teachers to get promotions.

### What is the need for research?

The literal meaning of research is “an endeavor to discover facts by study or investigation.” Undergraduate students need to learn research for a strong foundation. Postgraduate students need research methodology for thesis and medical teachers are guides for conducting their thesis. Practitioners need to understand research, as they have to deal with a variety of cases. Policy makers utilize research for framing policies

while administrators take decisions with the help of research outcomes. In short, knowledge of research is needed for all medical professionals and the fields related to medicine.<sup>[2]</sup>

Medicine is an ever-evolving science based on research. We have entered into an era of evidence-based medicine (EBM) which aims to apply evidence gained by a scientific method to change current medical practice. The EBM lies on foundation of research. In this era, all doctors should understand science and art of research methodology. Research, forms the basis for various decisions regarding investigations, diagnosis, and treatment. The ultimate aim of conducting research is to improve health and patient care, thereby serving the mankind. Teachers also need to publish their research in a peer-reviewed journal as we are fast approaching toward “publish or perish” principle adopted by the western countries.<sup>[2]</sup>

### Yes, research should be mandatory for teachers

Teachers should be “role models” for their students in terms of honesty in teaching and conducting ethical research. There are enough evidences to prove that the quality of teaching improves if faculty is oriented toward research.<sup>[3]</sup> The teachers who have publications are definitely an edge above their rivals when there is competition for promotions.

In literature, one can see many instances of biased research that could be because of sponsorships in research, most journals accepting only positive results for publication and so on. It is not possible to differentiate between biased researches outcomes from unbiased ones without a proper understanding of each aspect of research. The faculty who is not conducting the research, would also, in some way be using benefits of research. Hence, through research orientation, at least, they will be able to critically appraise the literature. There are other added benefits like any treatment instituted on the basis of published evidence

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in a peer-reviewed journal becomes a very good defense for doctors in the court of law in cases of dispute. Another benefit being, having a strong foundation in research methodology, a medical professional can have a choice of various career options one of which could be a research career.<sup>[2]</sup>

### **Are our teachers really trained on research methodology?**

In the undergraduate curriculum, research methodology is covered under preventive and social medicine and is not stressed upon. This lacuna is carried forward during the postgraduate (PG) course where dissertation is a mandatory requirement. Teachers qualify as guides of PG students because of the number of years of experience or publications, most of which being as gift authorship. Mediocrity in research continues unabated because many of the teachers and guides have shown little interest in getting trained in research methodology. Most PG courses in medical colleges of India do not have a research methodology component. In fact, the only way through which PG students get to know how to do research is by working on their dissertation.<sup>[3-5]</sup> Due to the casual attitude of teachers who are not oriented to research, the candidates are finding shortcuts to fill in a few pages in the name of thesis. Data in thesis are worked on overnight like completing a ritual to get a degree.<sup>[4-6]</sup> Earlier, there were amendments to delete thesis for postgraduate exams, but this resulted in decrease in number of scientific publications, so, once again, thesis became a requirement for postgraduate exams.<sup>[4]</sup>

The absence of PG course in some institutes has been one of the reasons cited by teachers for not involving in research. Some teachers give lame excuses that they are too busy, they have academic work, administrative work, and so on that there is no time left for research. Can students be enthusiastic with new research topics when they have no interested teacher to guide them?

### **No, research should not be mandatory for teachers**

Earlier, there were time bound promotions in teaching posts based on experience. However, research, if a requirement for promotion, would certainly put a pressure on teachers for conducting research. To some extent, the plight and apathy of teachers can be understood and explained. In some institutes, there is understaffing of teachers putting the pressure of regular teaching into the hands of only a few teachers, leaving them with no time for research. Government medical teachers like other government officials are posted on duties for natural disasters or epidemics. There are other administrative government works such as student admissions, surveys, election duties, etc. for which government officials including medical teachers, are deployed. Repeated transfers of government teachers (for different reasons) may not give them adequate time or continuity for proceeding with research. There are some teachers who may not be well versed with computer technology and may not be at ease with searching online journals or sending research publications online.

Some teachers, out of frustration of pressure of research, may leave teaching posts and join elsewhere. Another problem could be that if a teacher is devoting his/her entire time to research, he/she could be neglecting teaching work and, students would have to suffer on account of this.

### **Is the compulsion encouraging unethical acts?**

The current academic standards make publication mandatory for academic elevation. This has resulted in increase in coauthorships and a madness to get articles published at any cost. There are some teachers who try to get into coauthorships but provide minimal support toward the article. This is evidenced by the issue of multiple authorship, which has risen dramatically over the years (from 4.5 in 1980, 6.9 in 2000, to over 15 in 2007) – not just in low-profile journals but also in high-profile journals. The incidence of multiple authorships is reported to be 80% for clinical research, 59% for life science research, while it is just 4% for physics and chemistry.<sup>[7]</sup>

There are some journals that require payment for publication. Such journals are utilizing publication compulsion for teachers as an opportunity to mint money. Substandard articles gain easy access to publication by seducing editorial staff and even reviewers. Do such acts serve the purpose of research? In such cases, is research being promoting or traded?

Research misconduct includes deliberately providing incomplete or improperly processed data, failure to follow ethical procedures, failure to obtain informed consent, breach of patient confidentiality, improper award, or denial of authorship, failure to declare competing interests, duplicate submission, and plagiarism. With the newer technology such as computers, internet, and software for ease in writing available and affordable to all; the teachers are entering into an era of “armchair research.” The data is being cooked up on table or plagiarized from other research publications. Favours are also taken by some guides to sign thesis.<sup>[4]</sup>

These unethical acts led to the laying down of various guidelines (including those of the International Committee of Medical Journal Editors and the Council of Science Editors). With such guidelines and the availability of improved antiplagiarism software, a substantial amount of scientific fraud can be arrested. Those who detect scientific fraud have a fear of retaliation, career sanctions, and also fear an early end to research ambitions. Regulatory bodies should ensure protection for the vigilant researchers and editorial staff in order to maintain the sanctity of scientific medical research.<sup>[7]</sup>

### **Should research be optional for teachers?**

Some teachers join institutes so that they can settle down along with their spouses in the same city. They join any post, any department where their basic qualification is met with and are indifferent to research. For such teachers, who want to remain

static to the post they joined, or for those who have medical problems, research can be optional.

### What needs to be done?

India is fast becoming a hub of clinical trials. Foreign companies are opening clinical research organizations in all parts of our country. The research work of some of them is also being carried out in medical teaching institutes. Teachers should not work like clerks filling their forms and using their protocols. Rather, the teachers should undergo training in research methodology and learn to design protocols by themselves and conduct ethical research.<sup>[5]</sup>

Uniformity in selection of teachers is needed with due importance to experience and research. The shortage of guides can be overcome if 3-5 years experienced assistant professors and associate professors are also appointed as guides. That way, more attention can be given to students. In some institutes, guide teachers do private practice leaving no time for the students and research. This can be overcome by improving the pay scale of teachers or banning private practice. This may help in attracting and retaining good teachers.<sup>[4]</sup> Guides should help postgraduates in selecting a topic such that patients are not neglected, and at the same time research is carried out.

Lack of infrastructure and good lab facility for doing good research has been a problem faced by researchers; clinical or epidemiological research can be done till facilities become available.<sup>[4]</sup> Temporary posting of researchers can be done at an equipped laboratory nearby for a short time to complete their research.

Incentives in the form of prizes or awards can be given for best thesis to both guide and student by the institute. Travel fellowships can be given to present research papers in various conferences. Priority in research publication can be given to projects that have been awarded prizes in conferences.<sup>[4]</sup> If the project is of good quality and the teacher wishes to present it at international conference, the government should sponsor it.

### The way forward

Research provides an important learning activity. With some effort, problems faced by teachers and students can be minimized and research output can be improved. To make research a useful and enjoyable exercise, there is a need to change the attitude of students as well as teachers.<sup>[4]</sup> It is a waste of time trying to reinvent the wheel. Literature should be searched to have an idea on what is already known and how their research will add to current knowledge.

Editors of various reputed journals have taken the initiative to bridge this gap by conducting comprehensive workshops on “Medical Research and Scientific Writing” all over India. The workshops deal with many segments from initiation of

a research idea, thorough literature search, formulation of a research question, proper study design, possible source of funding, conduction of research, analysis of data obtained, proper interpretation of results, publication in a peer-reviewed journal, and critical analysis of published papers. Institutes should make such courses mandatory and sponsor them for prospective guides. A guide should keep himself/herself updated with research methods through such workshops every 4 to 5 years. Such workshops are recommended for medical teachers, practitioners, and undergraduate as well as postgraduate students of all disciplines.<sup>[2,5,6]</sup>

Interest can be infused amongst the medical professionals on an important and relevant but relatively neglected area, that is, medical research. For those teachers who are interested in research and/or have flair for writing, but cannot travel out of station due to personal reasons, books on research methodology and easily downloadable user friendly software are available, for example, “ReMe” prepared by department of Pharmacology, Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry (available at [www.indphar.org](http://www.indphar.org)). Series of articles on scientific writing and statistics like how to choose a statistical tests and their clinical application can also be presented in a simplified and lucid manner in peer reviewed journals.<sup>[2,3,5]</sup>

The teachers trained in research methodology will not find scientific writing difficult, but the clinicians may not be able to devote that much of time to write the manuscripts. They could only conduct the study and make an outline of paper ready because tables, graphs, formatting, reference writing, and sequencing suiting to journal consume a lot of time. If there are posts of computer assistants or the existing posts of clerks and laboratory assistants are trained for such works (their work can be acknowledged at the end of article), writing becomes much easier. There can also be collaborative work of clinical with nonclinical and paraclinical departments.

### How research helps?

By doing research, a teacher could have a personal satisfaction of contributing to science and the society, get recognition and appreciation by peers in the profession, acquire a job, get a job promotion, or even retain a job. If teachers keep neglecting research, the day is not far off when our medical institutes will be termed “rehabilitation centers for inefficient doctors.”

## CONCLUSIONS

Looking into the advantages associated with research over disadvantages, we can conclude that research should be mandatory for teachers who are guides or prospective guides and research publications should be one of the requirements for promotion. If every medical teacher plants a seed of research,

its fruit, in terms of better patient care, could be reaped by our future generations.

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