

## POINT OF VIEW

# Medical Research in Medical College in India: Current Scenario and Ways to Improve it

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## Abstract

**Background:** Medical colleges should be the engines of medical research in India however sadly it is far from that.

**Materials and Methods:** Articles published in English literature from 1990's were reviewed along with personal experience of more than 30 years of interacting with various medical institutions of India.

**Results:** Six to ten medical colleges publish more than 60% of research papers in indexed journals out of existing 450 medical colleges in India. There are many reasons why there is very little or poor quality research in medical colleges in India. Poor mentorship, severe patients load, lack of research interest, lack of funding and lack of multicentric co-ordinates research activity, lack of incentive for research, are some of the reasons.

**Discussion and Conclusion:** Many of the reasons cited above for good quality research needs are correction. However generous funding should be available as a research fund to the medical colleges both by state and by central government. Both undergraduate and postgraduate curricula needs to be modified to reflect that good medical research is part of good medical practice.

## Introduction

Medical Colleges are engines of medical research anywhere in the world. There are more than 450 medical colleges in India churning out more than 60000 medical graduates in the country. Out of these 60000 graduates at least 40% of them do various postgraduate degrees, diploma or fellowships. In addition to 450 medical colleges there are at least equal number of corporate hospitals where postgraduates medical curriculum are available in many of them. Sadly such a big medical manpower spread across their vast country contributes very little for research activity. One of the research papers<sup>1</sup> cites that top 6 colleges published more than 56% of total research papers since 1990s. Several scathing criticism on nature of medical research in medical colleges in India has been published.<sup>1-5</sup> These papers not only pointed out poor quality of research but also academic dishonesty, plagiarism, publications in non-indexed substandard medical journals without review as some such

shortcomings. Even the mere output of research from these colleges are meagre.

It may be argued that each year thousands of candidates are completing there MD, MS, MCH, DM degrees where writing a dissertation is a must. So why at least a good number of these dissertations are not finding their way to good publications? Let us now see what It takes to develop a good research infrastructure and do our medical colleges have it?

### Scenario in India and Solution

First and foremost is the need for a good mentor with a track record of good research capability. Sadly most of the medical college faculties will fall short of it. More over even if there are good faculty they are transferred so often that they cannot develop a good research base in any medical college. Secondly there has to be a tradition of

research in a college so that from the beginning MBBS students and later MD / MS students are in contact with the research ambience of the Institute. Infact few of the medical colleges where such ambience has already been developed publish maximum number of research papers. Colleges should incentivize good research both at student as well as faculty level. Though Medical Council of India (MCI) have let down the rules of selection and promotion of medical college faculties where a minimum number of research papers need to be published for such a job or promotions. Many such papers are published in predatory journals on paying money.<sup>6</sup>

Patient's load and low number of faculties in medical colleges are real challenges as well as opportunities. Where load of patients are very high it is often difficult to concentrate on research. In addition many faculties in medical colleges are extremely busy practitioners and their private practice definitely in some way compromise with their time to do research (There are notable exactions to all role tough) and not uncommonly takes precedence over all other activities.

Modern medicine is laboratory based and the progress in laboratory medicine including imaging techniques is happening by leaps and bounds. Though many corporate hospitals are using these techniques most of the medical colleges do not. They outsource these investigations on a case by care basis. This approach severely compromise research capability. Arunachalam<sup>7</sup> has pointed out that a large amount of dissertations that our students churn out are little more than copycat research with very little original thinking in it. Out of many

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subjects, the students are taught in MBBS curricula only community medicine devotes one or two chapters on research methodology in the form of elementary medical statistics and epidemiology. However most of the students show little interest in these classes. Medical ethics, patient's consent etc are important components of medical research today but very few colleges teach these subjects at undergraduate or post graduate levels. Poor teaching and lack of adequate number of faculties have been pointed out by early workers<sup>9-10</sup> as one of the reasons why research output itself is poor in medical colleges. After the research work is done ability to write the research paper in a short but engaging and inimitable style<sup>11</sup> makes their research paper publishable. This quality of writing do not appear suddenly but requires long practice. Without good mentoring most of the dissertations of medical postgraduates do not see the light of the day.<sup>12-13</sup>

Having a good medical record section in a medical college can provide a veritable treasure trove for medical research. Sadly however medical record section of most medical colleges are poorly maintained. Hardly any trained medical statistician are recruited by the college for these record sections. More over the basic material i.e. patients case sheets are so poorly written that very little can be extracted from these records for retrospective studies or follow up studies. In the current era of digitization the whole hospital and its record system needs to be digitized as one of the minimum important step for medical research. Digitisation improve patient care, prevents medical litigation by providing clear record and of course support research activity.

If we look at some of the best medical journals of the world i.e. The Lancet, BMJ, Annals of Int Med., JAMA or The New England Journal of Medicine, it can be easily seen that Randomized control trials (RCT) accounts for a very large number of quality papers. To produce these kind of research which is collaborative, multicentric and multispecialty with a good medical statistician who develops the programme with requisite number of patients having proper statistical power to do the trial is lacking in Indian scenario. This kind of trials could be properly done by big funding agencies

like DBT, DST, ICMR, DHR etc. or by International funding agencies. Without a properly developed infrastructure or staff base the medical colleges could ill afford to take part in these kind of trials.

Pharmaceutical companies who develop novel products are keen to give such kind of trials. Unfortunately Indian pharma companies till recently developed very few novel products on its own. Hence new trials by these companies are merely repetition trials on drugs which already underwent extensive trial abroad. Moreover because of various reasons doing RCT in India is not easy because of red tapism and involvement of multiple agencies for required permission to carry out such trials.

So what could be the solution? First and foremost the faculty of the medical colleges should feel an urge to do good quality medical research irrespective of incentives given i.e. the desire to pursue the unknown should be incentive enough. As many of the current faculty have poor idea of how to conduct good research, they themselves need research methodology training.

This could be organized by community medicine department of the medical colleges and junior faculty at least (i.e. Assistant and Associate Professors) should be urged to attend. This course should also have a segment on "How to write and criticize a research paper". National funding agencies for medical research much encourage such activities.

Medical research in a medical college should be built on day to day challenges and experiences rather than doing similar kind of work as copycat research already conducted and published from elsewhere. Medical records should be digitized with proper access codes. Students should be reared in a research environment not forgetting what our great William Osler said "Wards are greatest of research laboratories".

Without money no good research is possible now a days. Hence there should be research funds in each medical college. This fund could be developed through donations by ex-students or well wishers of the society, grateful patients etc through legacy and other instruments of donation. This is regularly seen for IITs but

unfortunately not for medical colleges in our country. Every faculty should be encouraged to write and compete for project funding at state DST level and at national government or non government funding level.

Faculty should be rewarded for publishing good quality research papers or for bringing completely funded research project to the hospital.

ICMR and DHR has already started giving small funds for MD/DM/MS/MCh/DDS/MDS dissertation. It has also set up a network of laboratories inside many medical colleges.

Advantage should be taken by the faculties of the respective medical colleges with such laboratories. Now a days most of the faculty attend at least one national / international conferences a year or every two years. Attempts should be made to forge alliance with similar medical workers to develop multicentric research activities. These kind of research activities are more likely to be funded. In addition big cities have ICMR/ DBT / CSIR / BARC centres. The scientists from such centres are very eager to do good quality research. Medical College faculties should talk or actively look for collaborations with these scientists.

In fact few medical colleges are actively utilizing such opportunities already. Traditional Medicine from India has a lot to offer to modern medicine. Hence this is also a relatively unexplored area with immense possibilities for funding and research. MCI needs to revamp its curricula at various levels as the phenomenal advances of modern medicine in different areas of biological research makes such a change necessary more often.

Medical Colleges now needs non-medical scientists cadre in different subjects. Unless MCI forces this necessity to medical colleges this will never happen. Modern research needs basic scientists in addition to doctors. AIIMS has research scientist post at various departments. Where financial crunch does not allow implementation for such posting, ICMR / CSIR / University faculty can be provided honorary adjunct faculty post. This will not only solve such problem but also will bring high power basic science centres in the country within close vicinity of medical colleges for

collaborative research of higher quality.

Several authors have suggested different solutions<sup>14-18</sup> to address the problem. Research oriented medical education, improving quality of the faculty, reducing patient load, funding for project, workshop, hand holding by eminent research organization etc.

In a recent editorial Bandewar<sup>19</sup> et al have raised certain important question regarding putting emphasis only on research and nothing else for recruitment and promotion of medical teachers as self-defeating because a medical teacher teaches, manages patients either in the ward or in the laboratory and in addition is asked to do research. Hence ideally they need to be assessed in all the three domains. However when it comes to research there is no doubt that we have to improve it for our medical teachers without any compromise on quality.

One of the challenges which we and our previous generation of teachers

facied was lack of good quality indexed national medical journals. Now many our national journals are indexed and are published by well established international publishers, so our access to publications has definitely increased. If we are ready to make changes, our medical colleges can become the engine of medical research in the country in near future.

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