

# Fostering Educational Research among Medical Teachers: Evaluation of a Faculty Development Program in India

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## ABSTRACT

**Introduction:** Medical education can be enormously benefitted from research. Since clinicians/medical teachers are directly involved in teaching learning processes, they should participate in Educational Research (ER) practices to generate evidence and insights about teaching learning. Faculty Development Program (FDP) has a positive influence amongst health professionals and therefore can prove to be of consequence in instilling a strong educational research culture.

**Aim:** Present study was undertaken to evaluate the efficacy of a Faculty Development Fellowship Program in Medical Education to foster educational research culture amongst medical teachers.

**Materials and Methods:** Study utilized the Kirkpatrick model of program evaluation for evaluating the fellowship program. It aimed to evaluate the third level of the model i.e., “Change

in Behaviour” of participants (n=40) after completion of the course. The tool used was a pre-validated survey questionnaire consisting of five items.

**Results:** Study population was sparsely aware about educational research and had never attempted the same (100%) before joining the fellowship program. A 32.5% faculty with average professional experience of seven years undertook new educational projects after the fellowship and knowledge gained during fellowship program helped them in guiding educational research (coded into four categories) at their workplaces.

**Conclusion:** There is a need, to direct effort towards focused training for educational research through FDPs for medical teachers. This will encourage academicians and clinicians to become active in ER and guide policies in Teaching Learning Practices in Medical Education.

**Keywords:** Fellowship, Medical education, Program evaluation

## INTRODUCTION

Medical education is a complex and demanding process, which can benefit enormously from meticulous research. As envisaged in AMEE Medical Education Guide No. 20, apart from the 12 roles of a medical teacher; his/her role as an educational researcher cannot be denied [1]. The time is ripe to introspect medical education in India, which was established years ago. Decision to take a fundamentally different course requires evidence, guided by contemporary innovation and understanding about aspirations of the society along with demands of the profession. Generation of scientific data by medical teachers for such reforms through Educational Research (ER) can prove to be the most significant approach.

In Indian medical schools, there are very sparse endeavors to encourage health professionals for indulging in educational research. Generally, they prefer to seek guidance from research that deals with concrete issues arising in disease-oriented approaches and do not make much use of ER; though it has a wider “social impact” for its ability to bring about changes in teaching and subsequent clinical practice [2].

Faculty Development Program (FDP) by and large has a positive influence and is met with high satisfaction amongst professionals [3,4]. It is a planned program to improve an individual's knowledge and skills in teaching, educational research, administration and to prepare Institution and faculty members for various roles [5]. In medical education, FDP is aimed to sensitize, equip and empower medical teachers for discharging their professional responsibilities [6]. One such FDP is Fellowship in Medical Education (FIME) launched by Medical Council of India (MCI) in 2014, which includes dissemination of the concept of ER and Scholarships along with a compulsory educational project. In the present study, it was hypothesized that such FDPs can promote in-depth understanding of ER and motivate medical teachers to practice action research at

their workplace. Aim of the study was to evaluate the efficacy of the fellowship course in fostering the culture of research in education amongst medical teachers. Primary objective was to analyse the change in behaviour regarding ER amongst faculties who underwent the fellowship program.

## MATERIALS AND METHODS

The course was launched by Medical Council of India (MCI) in 2014. The duration of the course was one year (Jan 2015- Dec 2015 and July 2015-June 2016) that mandates a short educational project of six months. It specifically emphasizes on educational research methodologies and scholarships apart from sharpening teaching and leadership skills.

This was an evaluation study, conducted at MCI nodal center for faculty development, Jawaharlal Nehru Medical College (JNMC), Wardha, Maharashtra, India; one of the ten nodal centers to run this program. The study included two batches of FIME; one enrolled in January 2015 (out of 20 participants registered 18 were included as two of them left the course midway) and another in July 2015 (22 participants). It aimed to evaluate the third level of Kirkpatrick model for program evaluation i.e., “Change in Behaviour”, after the completion of course i.e., after one year. It was targeted to emphasize the importance of learning transfer process in making training truly effective [7,8].

After ethical clearance by Institutional Ethical Committee, participants who were enrolled for the advance course (n = 40) by purposive sampling were surveyed regarding their awareness about educational research and taking up any educational research project in the past (first two items depicted in [Table/Fig-1]) before the course. After one year of successful completion of the fellowship program, they were surveyed again. The survey questionnaire was pre-validated by the resource persons of the nodal center for faculty

development. Post-FIME items sought responses on: 1) Taking up educational projects at respective institutes; 2) Adopting new modalities of teaching learning in their specialties; 3) Instigating or being a part of ER initiatives at respective institute; and 4) Application of the knowledge gained regarding ER. The data of both the surveys were collected using "survey monkey software". The survey was aimed to generate qualitative data with exploration about their engagement with ER before and after completion of the course. Scholarships generated out of their educational projects (as a part of fellowship program) were recorded [Table/Fig-1].

## RESULTS

Data was analysed quantitatively and qualitatively. The response rate was 100% and 80% for close-ended and open-ended items, respectively.

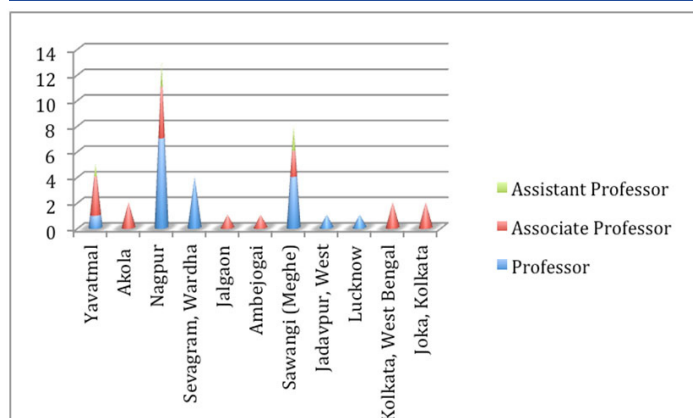
The 40 participants were from different medical schools with average working experience of seven years (Assistant to Associate professors) and 12 years for Professors; as depicted in [Table/Fig-2].

All participants had completed the short-term educational projects as a part of fellowship program, which were mostly based on Teaching Learning and Assessment among undergraduate (66 %) and post-graduate (31%) medical students and a few on University policies and faculty development.

There were 40 responses for quantitative items and 32 responses for qualitative items. The open-ended responses are categorized and depicted in [Table/Fig-3]. The subsections for the responses are done for the sake of analysis. Frequency of responses is mentioned in brackets against each response. A 77.5% of faculty members who completed the fellowship program were initially unaware about the concept of ER. None of the faculty undertook educational project prior to fellowship program. In response to whether the Educational Research Project of Fellowship is presented/published/submitted for publication; 52.5% faculty got their project work published and 40% (16) of them presented it in National conference. A 32.5% (13) faculty member mentioned to have undertaken new ER projects at their workplace which were mostly action research pertaining to integrated teaching in undergraduate medical curriculum (30%),

Sr. No.	Period of Survey	Items
1	Pre- FIME	Were you aware of Educational research before?
2	Pre- FIME	Did you undertake any Educational research in the past?
3	Post- FIME	Please elaborate whether your Educational Research Project of FIME is presented / published/ submitted for publication. Give relevant details.
4	Post - FIME	Did you undertake any other Educational research project at your workplace after completing FIME? Give details.
5	Post-FIME	Did the knowledge shared at FIME regarding Educational Research helped you in handling projects/ guiding projects at your workplace? In what way?

[Table/Fig-1]: Survey questionnaire items for Educational Research.



[Table/Fig-2]: Region-wise and Designation-wise distribution of participants.

Thematic segregation	"Did the knowledge shared at FIME, regarding Educational Research helped you in handling projects/guiding projects at your workplace? In what way?"
Motivation to conduct ER	"Yes, This motivated me to take other project on medical education. It was really a good learning experience [3]." "I have been able to motivate other faculty of my department for educational research." "It has encouraged me to think about how I can do relevant research along with my regular teaching learning activities" [2].
Undertaking Educational research	"Yes definitely it helped me in handling this ongoing project. It helped me to frame a proper research question. How to frame the aims,. It helped me understand study design, selection of students. It also helped me to frame the feedback questionnaires, data collection and data analysis." "Yes.... As my work is in progress I am able to apply the knowledge gain from FIME for this project." "Yes, It has helped & got direction, how to start a project, aspect to be stressed upon." "It has helped in planning for educational research in my department" [9]. "Yes. It help me in deciding the research question and to develop a methodology" [3].
Guide Educational research	"Yes definitely, by using better terminologies and using better statistical methods" [2]. "It has become easy to guide the post-graduate student in right perspective." [7]. "I have been able to incorporate component of learning for the staff of other projects." "I have been included in Medical education unit of our Institute. I can guide others in educational research of other faculty members in MEU" [3].
Understand Educational research	"Yes. It had changed my view to deal with qualitative research" [2]. "Yes, Difference between Medical Research and Educational Research helped a lot in my project as well guiding a project as well"[4]. "I realized that educational research is no different from clinical research and it is important to undertake ER as responsible teachers and facilitators"

[Table/Fig-3]: Thematic segregation of qualitative data.

Communication skills (23%), Interactive Teaching methods (23%), Quiz as a TL Method (15%), and collaborative learning (8%).

Response to "whether the knowledge regarding Educational Research shared at FIME, helped in handling projects/guiding projects at your workplace" was affirmative by 97.5% of faculty. The open-ended responses regarding how it helped them in handling projects/guiding projects at workplace were categorized into four groups viz., 1) Motivation to conduct ER; 2) Practice ER; 3) Guide ER; and 4) Understand Educational research. [Table/Fig-3] depicts the frequently occurring responses and few significant ones, based on which thematic areas were categorized.

## DISCUSSION

As per the findings from the present study, most of the faculty involved in medical education were not aware, or even if aware, had never attempted ER at their workplaces. Till date, FDP in Medical education in India has been mostly associated with orientations regarding curricular aspects, psychomotor, interpersonal and leadership skills. This is the first FDP, initiated by MCI, which has given due prominence to ER. In the present study, 100% study population had never attempted ER, however, after completion of the fellowship program, it was found that 32.5% faculty mostly junior to mid-cadre level with average professional experience of seven years, undertook new research projects, which were of relevance to their respective specialties at workplace. This suggests the impact FDPs can have in fostering scientific enquiry in teaching learning amongst health professionals. Medical education in India strongly needs analytical and interventional studies to fathom educational theories and principles. The circumstantial applicability and relevance, can only be better understood by those who are directly involved in the TL processes i.e., Medical Teachers. The transformational change cannot be brought overnight on assumptions, rather; it has to be scientifically proven in contextual terms. ER, with relevant

research question and scientific rigour, can provide insight into, and better understanding of various aspects of teaching and learning in medicine [9,10]. The qualitative data extracted in the present study favoured the impact of ER culture through FDP program. The responses portrayed better understanding of ER, increased motivation to conduct ER at workplaces and guide educational as well as clinical research since the course elaborated on research methodology per se.

### The Probable Reasons for the Gap

A study by Mohsen Tavakol et al., stated several possible reasons for educators not opting for ER. Firstly, because, clinical teachers have not been primarily employed to conduct research in medical education; Secondly, educational research does not have a strong base in medical policy making and its findings do not appear to have such an immediate effect as those of disease-oriented research; Most importantly, clinical teachers are not oriented about ER and theory, which relates to teaching and learning in medicine. In addition to these, they are rarely trained in medical education principles [11]. This finding was reflected in the fact that most clinical teachers do not have the methodological expertise to design appropriate ER studies. Furthermore, there is a limited knowledge of qualitative research methods in medical education [12,13].

### Faculty Development and Leadership: A Plausible Solution

As observed in the present study, FDP helped to instigate scientific enquiry amongst educators regarding teaching learning in Medicine. These trained faculties can lead the way and motivate other medical teachers to undertake educational research. Though beyond the scope of present study, there are evidences suggesting the need for medical leaders who have personal qualities and interest in education and could empower other health professionals for enhancing research in medical education [14,15]. Indian medical schools can generate such leaders by launching integrated fellowship programmes and workshops in medical education research in order to inspire academicians and clinicians to become more scholarly in relation to the education of health professionals [15,16].

Medical Education Units (MEU) have been established in Indian medical schools with an important mission to conduct research and provide scientifically sound information that advances medical education [17]. They are expected to play a key role in creating a research culture by motivating and hand holding of medical teachers. The efforts of MEU, though is largely dependent on Institutional culture of scholarship, faculty development initiatives and opportunities for advanced training [18]. Faculty development programs can be a promising approach to foster ER culture by generating leaders in the field. Institutional support can persuade these leaders to establish a trend of evidence based teaching learning and assessment practises in medical education.

### LIMITATION

The current study takes into account only two batches that limit the sample size. The tool utilised to assess the "change in behaviour"

was survey which rather serves as surrogate evidence. More valid tools like direct observation and workplace surveys can be explored for direct evidences. Moreover, the change in behaviour should be observed overtime with interrupted intervals for better implication.

### CONCLUSION

Given the limited knowledge about medical education research and scholarships amongst medical teachers in India, there is a perceived need to direct efforts towards focused training. FDPs may play a vital role and encourage academicians/clinicians to become involved in ER or undertake research training. Provision of resources, support for scholarly dissemination and award towards notable achievements will encourage practice. A strong leadership should be emphasized to foster ER culture amongst medical teachers.

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