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Original Research Article

Attitude of Medical Educators towards Educational Research

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Abstract:

Background: In the last four decades, western medical schools have witnessed an exponentially increased progress in the field of medical educational research to pave the way for better learning, teaching and assessment of the various medical subjects. However the developing countries like India couldn't reflect the similar change. Unless we have knowledge about the attitudes of the medical educators towards educational research, the actions towards improving research in medical education cannot be planned and implemented in an institution.

Objectives: The Research article aimed to know the perception of the educators towards the medical education research in the institution and there-by identifying the barriers. To know the attitude of medical teachers towards educational research. To assess the relationship of age, gender, years of experience, subject of teaching, training in medical education technology and their attitudes towards educational research. To identify the barriers in conducting the medical education research.

Methodology: The attitude of the medical teachers towards education research was ascertained through a 17 item likert scale, where in the participants had to give their opinion regarding 17 statements on education research based on whether they strongly disagree, disagree, agree, strongly agree or are neutral about the statement. The total score of the likert scale (MEATER score: Medical Educators' Attitude Towards Educational Research) were then compared for the age groups, gender, professional year of teaching, designation and attendance in the MET workshop. The participants were also asked for the common barriers that they notice while planning educational research.

Results: In all 103 participants successfully submitted their completely filled forms. The mean age of the 103 participants was 40.40 ± 9.23 and the male (n=62) / female (n=41) ratio was found to be 1.51. The mean MEATER score of the 103 participants was 66.17 ± 11.85, range being 29-79. In our study we found that the age and the designation does influence the attitude towards educational research. Participants with ages more than 40 years and those on the post of professors had more favourable attitude towards educational research. Also the participants who had attended MET workshop were more favourable towards educational research as compared to those who had not. The subject that they teach, whether pre-clinical, para-clinical or clinical and their gender did not influence the attitudes towards educational research. Educational research is very infrequently conducted as only 3.8% participants had done so. Among the barriers lack of time was the most common barrier.

Conclusion: In our study we found that the age, designation and attendance in MET workshop does influence the attitude towards educational research. Educational research is very infrequently conducted as only 3.8% participants had done so. Among the barriers lack of time was the most common barrier.

Keywords: Medical educators, Educational research, Medical teacher, Likert Scale, MEATER score.

Introduction

Systematically conducted research is essential for the progress of any field of science and the field of medical education is no exception. In the last four decades, western medical schools have witnessed an exponentially increased progress in the field of medical educational research to pave the way for better learning, teaching and assessment of the various medical subjects. However the developing countries like India couldn't reflect the similar change [1]. Although teaching medical students is the prime responsibility of a medical educator and Medical council of India has always propelled the medical education technology related events, the research in the field of medical education in India is still in its infancy. To understand the barriers behind this lag, one has to study the attitudes of the medical teaching fraternity towards the educational research. Unless we have knowledge about the

attitudes of the medical educators towards educational research, the actions towards improving research in medical education cannot be planned and implemented in an institution. The project is aimed to know the perception of the educators towards the medical education research in the institution and there-by identifying the barriers. Identification of such barriers can arm the policy decision makers to modify the design of medical education technology workshops and thereby promote the educational research among the medical educators [2]. The Aim was the study to assess the attitude of medical educators towards educational research The Objectives was the study to know the attitude of medical teachers towards educational research. To assess the relationship of age, gender, years of experience, subject of teaching, training in medical education technology and their attitudes towards educational research. To identify the barriers in conducting the medical education research.

Methodology

The project started after receiving clearance from the institutional ethics committee for research on human subjects. It was a cross-sectional study involving the educators of various medical subjects of the MBBS curricula in the institute of Sri Aurobindo Institute of Medical Sciences, Indore. After informing about the study and receiving consent from the participants (medical teachers) they were administered a semi-structured proforma containing demographic details, a scale to assess the attitude towards educational research and query pertaining to barriers in performing educational research. The attitude of the medical teachers towards education research was ascertained through a 17 item Likert scale, where in the participants had to give their opinion regarding 17 statements on education research based on whether they strongly disagree, disagree, agree, strongly agree or are neutral about the statement. MEATER (Medical Educators' Attitude Towards Educational Research) is an adaptation of a validated scale Educators Attitude towards Educational Research (EATER) which was suitably modified and was vetted by educational experts as per the needs of medical teacher and has been pilot tested on 10 medical teachers [3]. Their responses were then scored from 1 to 5 for each statement with a score of 5 for most favorable attitude and score of 1 for the least favorable attitude. The total score of the Likert scale (MEATER score) were then compared for the age groups, gender, professional year, designation and attendance in the MET workshop [4]. The participants were also asked for the common barriers that they notice while planning educational research. The common barriers asked were lack of motivation, time finances, skills, knowledge, resources, incentive/recognition and cumbersome procedures. The participants were also given an option to mention any other barrier, not listed in the options, if any.

Results

In all, 154 subjects were approached for the study of which 7 subjects refused to consent citing time and confidentiality reasons. Of the remaining 147 subjects, 107 subjects returned the questionnaire successfully. Four forms were incomplete and hence were not considered for analysis. The remaining successfully returned and completed forms (n=103) were statistically evaluated initially with descriptive statistics for calculating means and standard deviation and then the t-test and one way ANOVA was used for testing the statistical significance where ever required. A p value of < 0.05 was considered to be significant.

The mean age of the 103 participants was 40.40 ± 9.23 and the male (n=62) / female (n=41) ratio was found to be 1.51. The mean MEATER score of the 103 participants was 66.17 ± 11.85, range being 29-79.

When the MEATER scores were compared for the age groups of ≤ 40 years and > 40 years **(Table 1),** the subjects of age group > 40 years had significantly favourable ($p< 0.05$) MEATER score (70.23 ± 9.62) as compared to those in the age group of ≤ 40 years (63.15 ± 12.51). Similarly the MEATER scores were also compared for the gender and it was found that there was no statistically significant difference between the MEATER scores of males (66.19 ± 11.27) and females (66.20 ± 12.84).

Table 1: Distribution of MEATER scores across the age groups and gender.

Variables		n	MEATER Scores (Mean ± SD)	P value
Age	≤ 40 yrs	59	63.15 ± 12.51	0.0023*
	> 40yrs	44	70.23 ± 9.62	(t = 3.1240 df = 101)
Gender	Males	62	66.19 ± 11.27	0.9995
	Females	41	66.20 ± 12.84	(t = 0.0007 df = 101)

n: no. of subjects, * P value < 0.05 was considered significant, df: degree of freedom, SD: standard deviation

The MEATER scores were also compared depending on whether the participants assessed belong to the pre-clinical, para-clinical or clinical subjects and also depending on their designation

(Table 2), whether they were as assistant professor, associate professor or a professor. It was found that there was no statistically significant difference ($p > 0.05$) between the MEATER scores of participants of the pre-clinical (71.66 ± 4.67), para-clinical (65.78 ± 11.78) or clinical subjects (64.63 ± 13.03). However there was a statistically significant difference ($p < 0.05$) on comparing the MEATER scores of Assistant professors (62.59 ± 12.80), Associate professors (67.32 ± 11.04) and Professors (71.56 ± 8.59). Further on post-hoc Tuckey HSD test, it was found that the significant difference was found between the MEATER scores of Assistant Professors and Professors ($p < 0.01$).

Table 2: Distribution of MEATER scores across the subject groups and designation

Variables		n	MEATER Scores (Mean ± SD)	P value
Subjects Groups	Pre-Clinical	18	71.66 ± 4.67	0.087204 (df = 2)
	Para-Clinical	28	65.78 ± 11.78	
	Clinical	57	64.63 ± 13.03	
Designation	Asst Professor	47	62.59 ± 12.80	0.006668* (df=2)
	Assoc Professor	31	67.32 ± 11.04	
	Professor	25	71.56 ± 8.59	

n: no. of subjects, * P value < 0.05 was considered significant, df: degree of freedom, SD: standard deviation

The MEATER scores of the participants were then compared for whether they have done MET workshop or not (Table 3). It was found that the MEATER scores of the participants who had attended the MET workshop (66.97 ± 11.59) was significantly more favorable ($p < 0.05$) as compared to the participants who are yet to attend the MET workshop (59.55 ± 12.45).

Table 3: Distribution of MEATER scores depending on whether the participants have attended MET workshop or not

Variable		n	MEATER Scores (Mean ± SD)	P value
MET workshop	Done	92	66.97 ± 11.59	0.0491* (t = 1.9920 df = 101)
	Not Done	11	59.55 ± 12.45	

n: no. of subjects, * P value < 0.05 was considered significant, df: degree of freedom, SD: standard deviation

Individual items of the MEATER scale were assessed to identify the attitudes of respondents item-wise with score of 1&2 being considered not favorable, score of 3 being considered neutral and score of 4&5 being considered favorable (Table 4). It was found that among all the items, the participants were most favorable to the items of "Training in educational research can help medical teacher improve their teaching" (93%) and "Careful analyses of their own UG/PG experiences is an important learning experience for medical teachers" (93%) whereas the participants attitude was most unfavourable for the item of "I regularly visit professional websites to learn about latest developments in the field of medical education techniques" (32%).

Table 4: Item wise analysis of attitude of the participants towards educational research

Sr	Items	Unfavorable (n) %	Neutral (n) %	Favorable (n) %
1	Training in educational research can help medical teacher improve their teaching.	(1) 0.9%	(6) 5.8%	(96) 93%
2	Medical Teachers can achieve a better understanding of research findings through training in educational research methods.	(10) 9.7%	(14) 13.5%	(79) 76.6%
3	Training in educational research can improve medical educators' skills to do research in their fields.	(10) 9.7%	(13) 12.6%	(80) 77.6%
4	Medical teachers who keep up with research in the educational field tend to be better teachers than those who do not.	(11) 10.6%	(19) 18.4%	(73) 70.8%
5	Reading educational research is an effective means to become a successful medical teacher.	(11)10.6 %	(11) 10.6%	(81) 78.6%
6	Medical teachers can learn very little by doing their own research.	(7) 6.7%	(13) 12.6%	(83) 80.5%
7	Careful analyses of their own UG/PG experiences are an important learning experience for medical teachers.	(1) 0.9%	(6) 5.8%	(96) 93%
8	Observing classes of other faculty collegues are of little use to	(9) 8.7%	(26)	(68) 66%

	shape one's teaching practice.		25.2%	
9	Most educational research findings are not applicable in medical colleges.	(19) 18.4%	(18) 17.4%	(66) 64%
10	Senior Professors/researchers who do research do not really know the practical conditions in medical colleges.	(13) 12.6%	(20) 19.4%	(70) 67.9%
11	Terminology used in educational research reports are too technical and difficult to understand.	(10) 9.7%	(14) 13.5%	(79) 76.6%
12	I would read more educational research reports if they were easier to understand.	(10) 9.7%	(13) 12.6%	(80) 77.6%
13	My college management encourages me to engage in educational research-related activities.	(11) 10.6%	(19) 18.4%	(73) 70.8%
14	My management provides me with the time and the resources for educational research.	(11) 10.6%	(11) 10.6%	(81) 78.6%
15	I collect my own data in my class to assess/revise my teaching techniques.	(7) 6.7%	(13) 12.6%	(83) 80.5%
16	I regularly read academic journals in the field of educational research.	(13) 12.6%	(20) 19.4%	(70) 67.9%
17	I regularly visit professional websites to learn about latest developments in the field of medical education techniques.	(33) 32%	(32) 31%	(38) 36.8%

n- no. of subjects

On enquiring about whether anybody has any publication on educational research, it was found that only 4 participants (3.8%) had conducted an educational research, suggesting the unpopularity of educational research among the medical teachers.

On enquiring about the possible barriers for conducting educational research, most the faculty reported multiple barriers (Table 5). The maximum percentage of participants reported lack of time as the most important barrier (73%) followed by lack of recognition/incentive (39.8%), lack of motivation (28.1%), lack of skills (17.4%), lack of knowledge (16.5%), lack of resources (8.7%), lack of finances (5.8%) and finally cumbersome procedures (3.8%) in the descending order.

Table 5: Common barriers for conducting educational research

Sr. No.	Barrier	n	Percentage
1	Lack of Motivation	29	28.1%
2	Lack of Time	76	73.7%
3	Lack of Finances	6	5.8%
4	Lack of skills	18	17.4%
5	Lack of Knowledge	17	16.5%
6	Lack of Resources	9	8.7%
7	Lack of Incentives/ Recognition	41	39.8%
8	Cumbersome procedures	4	3.8%

n- no. of subjects

In our study we found that the age and the designation does influence the attitude towards educational research. Participants with ages more than 40 years and those on the post of professors had more favorable attitude towards educational research. Also the participants who had attended an MET workshop were more favorable towards educational research as compared to those who had not. The subject that they teach, whether pre-clinical, para-clinical or clinical and their gender did not influence the attitudes towards educational research. Educational research is very infrequently conducted as only 3.8% participants had done so. Among the barriers lack of time was the most common barrier.

Discussion

A self-designed MEATER scale was used to assess the attitude of medical teachers towards education research and the obtained MEATER scores were then compared for age groups, gender, subject groups, designation and whether they have attended the MET workshop or not. The response rate was quite low as out of 147 subjects consenting to participate, only 103 participants successfully returned the completed forms. In our study we found that the age and the designation does influence the attitude towards education research. Participants with ages more than 40 years and those on the post of professors had more favorable attitude towards educational research. Also the participants who had attended MET workshop were

more favorable towards educational research as compared to those who had not. The subject that they teach, whether pre-clinical, para-clinical or clinical and their gender did not influence the attitudes towards educational research. It was found that among all the items, the participants were most favorable to the items of "Training in educational research can help medical teacher improve their teaching" and "Careful analyses of their own UG/PG experiences is an important learning experience for medical teachers" whereas the participants attitude was most unfavourable for the item "I regularly visit professional websites to learn about latest developments in the field of medical education techniques". Educational research is very infrequently conducted as only 3.8% participants had done so. Among the barriers lack of time was the most common barrier for educational research followed by lack of recognition/incentive, motivation, skills, knowledge, resources, finances and finally cumbersome procedures in the descending order.

Published research on resident and medical student research in specialty training, however, has revealed conflicting opinions on its usefulness, with as many as 75% of residents preferring to participate in other academic pursuits over research [5]. Additional solutions suggested to counteract this reluctance of practicing physicians to produce clinical research or basic science output include MD-PhD programs, subspecialty fellowships that encourage research, and medical scientist training programs that increase exposure to research at the medical school level [6]. Moreover, there has been a notable shift in the curriculum of medical schools toward incorporating early research experience for medical students [7]. In addition to encouraging interest in medical or basic science research as an academic career, the goal of allowing research experience during medical school education is to help students develop an appreciation for research methodology and subsequently engage in critical evaluation of the medical literature [8].

A total of 932 students (response rate: 58%) from all six years were invited to participate, according to a study by Hren D et al. primary outcome indicators Scores on an attitude scale comprised of forty-five Likert-type comments and a knowledge exam with eight multiple-choice questions.

All students received an average attitude score of 166 ± 22 out of a possible 225, which is indicative of a favorable attitude toward science and scientific inquiry. On eight questions, the students' average score on the knowledge test was 3.2 ± 1.7. The majority of medical students have favorable opinions on science and medical science research. A favorable attitude toward science is correlated with taking a research methodology course [9].

Response rates to other studies [10] measuring undergraduate students' attitudes toward research were higher (100 and 74%, respectively). Based on their scores and relatively low obstacles score, students in the Dina El Achi et al. study demonstrated a positive perception, attitude, and practice towards medical research [11]. While there aren't any papers that address this subject among undergraduate students, comparable studies have been carried out among medical students. A number of these studies found that medical students had a favorable attitude toward medical research [12]. Prior studies did not take obstacles scores into consideration, although the majority did identify similar barriers including a lack of time and mentorship and assistance [13].

Outcomes: What this study adds

1. As the age and experience of faculty increases, the attitudes towards education research become more favourable. There is a need to boost the attitude of educational research among the younger faculty.
2. Attendance in MET workshop does help in fostering favourable attitude towards educational research.
3. Educational research is very rare among the medical faculty.
4. Lack of time is the commonest barrier for conducting educational research and hence more time should be made available to faculty to improve the educational research.

Limitations:

A small sample size had been covered up in this study, large size required to better outcomes.

My Reflections:

- What was good: It was a unique study as literature search did not yield many similar studies. It is the need of hour as educational research has been neglected all through and unless we have the data about the attitudes of the faculty and knowledge about the barriers, it won't be possible to improve the educational research in an institute,
- What could have been differently: A larger sample size covering multiple colleges could have been done.
- The road ahead: Plan to conduct a workshop on educational research: concept and methodology with the help of some like-minded people in the institute.

Conclusions

In our study we found that the age and the designation does influence the attitude towards education research. Participants with ages more than 40 years and those on the post of professors had more favorable attitude towards educational

research. Also the participants who had attended an MET workshop were more favorable towards educational research as compared to those who had not.

The subject that they teach, whether pre-clinical, para-clinical or clinical and their gender did not influence the attitudes towards educational research.

Educational research is very infrequently conducted as only 3.8% participants had done so. Among the barriers lack of time was the most common barrier.

Implications

The study displays the poor state of educational research in a medical institute as it is rarely done. Although some people have a favorable attitude towards educational research, the identified barriers prevent them from doing the educational research actively. The identified barriers should be improved and the attitudes of especially the younger faculty towards educational research should be promoted. Medical teachers who had attended MET workshop were more favorable towards educational research, which suggests that teachers should be more and more encouraged to be a part of MET related activities. Such institutional capacity building mechanism can help remove the barriers of lack of skills and lack of knowledge thereby promotes educational research.

Evidence based education through educational research is the way forward for a good quality evidence based medical practice – there by leading to the ultimate goal effective health delivery. Unless we encourage good quality evidence based medical education, national health would be a major sufferer.

Linking educational research outcomes with placements and promotions can be a way ahead for promoting educational research. At present the policy referred for placement and promotion of medical teachers vide TEQ regulations mandates requisite number of publications in specialty journals. Computing the indexed educational research publications to be at par with these scientific specialty indexed journals would definitely motivate the medical teachers to participate in educational research. Further research funding organizations should also identify educational research as an essential area of need and if possible some funds be ear marked for the educational research domain.

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