

Original Article

Attitudes and perceptions towards research among final year medical students in a private medical college of coastal Karnataka: A cross-sectional study

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Abstract :

Introduction : Research experience gained by medical students during their under graduate tenure plays a significant role in their future endeavours in the field of medical research. The present study was a cross-sectional study conducted to know the attitudes and perceptions towards research among final year medical students in a private medical college.

Methods : A total of 220 students participated in the study.

Results : The majority of the students agreed that research is important in the medical field (88.6%, 195/220). The majority also believed that research methodology to be part of medical curriculum (72.7%, 160/220). 31.8% (70/220) felt that Research methodology will be helpful to enter competitive exams (USMLE, PLAB). The barriers for conducting research as believed by students were: Lack of interest (32.7%, 72/220), Lack of time (31.4%, 135/220), Inadequate knowledge about research methodology (51.4%, 113/230), Lack of guidance by faculties (27.7%, 61/220), Lack of research curriculum (34.1%, 75/230) Inadequate facilities for research (35.5%, 78/220), Inadequate financial support (30.9%, 68/220) and others 2.9% (6/220). Of the participating students, 23.2% (51/220) participated in research during medical school, while 76.8% (179/220) did not.

Conclusion : Medical colleges should emphasize more on research among the undergraduate students. There is a need to reform the medical curriculum with more weightage towards research methodology.

Introduction

The rapid expansion and progress in biomedical research is expected to transform medical care so Health research training has been recognized as an important component of medical education¹. Guiding basic science research into clinically relevant directions and designing and evaluating new therapies based on basic scientific discoveries is dependent on contribution of physician-investigators in translating progress in basic science into clinical practice by defining physiological and pathological implications at the molecular level^{2,4}.

Literature says that postgraduate research initiatives and future career achievements in academic medicine are

closely associated with research experience gained during medical school⁵⁻⁷. To attain a sustainable improvement in health research, the development of research capacity is imperative at the individual and institutional levels⁸. Initiatives are being taken to motivate medical students to undertake careers in research to fill the void of physician-scientists in developing countries⁹.

Various strategies are being employed for this purpose, which include mandatory and elective research assignments, student sections in indexed journals, organization of student scientific conferences, moulding of medical curriculum to integrate capacity building for research and holding of workshops on different aspects of

conducting research¹⁰. Postulated explanations for the decline in the number of physician-scientists in the medical practice¹¹ include less financial incentive, family, practice philosophy and inadequate exposure to research before career paths are determined^{12,13}.

It appears crucial to experience research during medical school given the demands and competing interests of formulating an undergraduate medical curriculum and the attitudes of other learners during medical training¹⁴. The objective of our study was to explore perceptions, attitudes and practices toward research among senior medical students.

Methodology

We conducted a cross-sectional study among third and fourth year MBBS students at KS Hegde medical college, Mangalore during August 2014, to find out their perceptions, attitudes and practices towards research.

Data collection

A pre-tested semi structured questionnaire was administered to all the available students of third and fourth year MBBS, after obtaining their informed consent. To estimate the time required to complete the questionnaire and determine the comprehension of the questions by the participants, the study was pilot tested before distribution so that it could be refined accordingly. The questionnaire was then modified based on the lacunae found in the pilot study. The final self-administered pre-tested, semi structured questionnaire consisted of 18 questions, which required approximately 10 min to answer.

Questionnaire

A subject information sheet was attached to each questionnaire with a short description of the aim of the study and instructions on how to complete the questionnaire. The questionnaire was subdivided into 4 categories after the initial socio-demographic information of the participants. The first part included the attitude of medical students towards the importance of research and its impact on their career. The second part highlighted their perception towards research and third part focussed

about the important obstacles in conducting research. The last section contained questions about practicing research and their experiences in this aspect.

Statistical analysis

Version 16 of the Statistical Package for the Social Sciences (SPSS) software was used for statistical analysis. Data was expressed as frequencies and percentages.

Ethical clearance

Ethical clearance for the study was obtained from Institutional ethical committee of KS Hegde Medical Academy, Nitte University

Results

A total of 220 students participated in the study. The age group of the students ranged from 20 to 27 years. Demographic variables of the study participants is shown in Table 1

The individuals sampled included 107 males (48.6%). Forty four percent were fourth year students. Regarding interest in residency programs, 59.1% (130/220) were interested in a medical specialty residency, 31.8 (70/220) were interested in a surgical specialty residency, and the rest were either undecided or interested in a Para-clinical residency program. Table 2 depicts the attitudes and perceptions towards research among final year medical students

The majority of the students agreed that research is important in the medical field (88.6%, 195/220). The majority also believed that research methodology to be part of medical curriculum (72.7%, 160/220). Few students (35.9%, 79/220) believed that conducting research should be mandatory for all medical students. 31.8% (70/220) felt that Research methodology will be helpful to enter competitive exams (USMLE, PLAB). The reasons for conducting research is depicted in the table 3

The barriers for conducting research as believed by students were: Lack of interest (32.7%, 72/220), Lack of time (31.4%, 135/220), Inadequate knowledge about research methodology (51.4%, 113/230), Lack of guidance

by faculties (27.7%, 61/220), Lack of research curriculum (34.1%, 75/230) Inadequate facilities for research (35.5%, 78/220), Inadequate financial support (30.9%, 68/220) and others 2.9% (6/220). The main barriers for conducting research is depicted in Table 4

Of the participating students, 23.2% (51/220) participated in research during medical school, while 76.8% (179/220) did not. The types of research projects that students participated in included case reports (2.3%, 5/159), clinical trials (2.7%, 6/51), case control studies (5.5%, 12/220) and cross-sectional studies (67.9%, 108/159) (Fig. 2). 6.8% (15/220) presented research paper in conference among this group, 5.9% (13/220) have presented 2 papers and 0.9% (2/220) presented one. 5.9% (13/220) have publications with everyone having one each. Table 5 depicts the experience of students in conducting research.

Table 1 : Demographic characteristics of students (N=220)

	Subgroup	Frequency	Percentage
Gender	Male	107	48.6
	Female	113	51.4
Class	3rd year	122	55.5
	4th year	98	44.5
Age	20-23	200	90.9
	24-27	20	9.1

Table 2 : Attitudes and perceptions towards research among final MBBS students (N=220)

	Subgroup	Frequency	Percentage
Residency likely to pursue in future	Medical	130	59.1
	Surgical	70	31.8
	Para clinical	2	0.9
	Not decided	18	8.2
Research plays important role in medical field	Agree	195	88.6
	Disagree	4	1.8
	Neutral	21	9.5
Research methodology be part of medical curriculum	Agree	160	72.7
	Disagree	22	10.0
	Neutral	38	17.3
Research to be mandate for all students	Agree	79	35.9
	Disagree	48	21.8
	Neutral	93	42.3
Physician should be well acquainted Research knowledge	Agree	146	66.4
	Disagree	15	6.8
	Neutral	59	26.8
Interested in research	Yes	144	65.5
	No	76	34.5

Table 3 : Reason for conducting research

Reason for conducting research	Frequency	Percentage
Interested in building a career in research	53	24.1
Would be helpful for academics	81	36.8
Helpful to enter competitive exams (USMLE, PLAB)	70	31.8
To attain research publications	40	18.2
Other reasons	9	4.3

*Multiple responses were allowed

Table 4 : Barriers for conducting research

Barriers for conducting research	Frequency	Percentage
Lack of interest	72	32.7
Lack of time	135	31.4
Inadequate knowledge about research methodology	113	51.4
Lack of guidance by faculties	61	27.7
Lack of research curriculum	75	34.1
Inadequate facilities for research	78	35.5
Inadequate financial support	68	30.9
Others	6	2.9

*Multiple responses were allowed

Table 5 : Experience of students in research

Experience in research	Subgroup	Frequency	Percentage
Ever done a research project	Yes	51	23.2
	No	169	76.8
Nature of research project done	Cross sectional	32	14.5
	Cohort	0	0
	Case control	12	5.5
	Clinical trial	6	2.7
	Case report	5	2.3
Presented research paper in conference	Yes	15	6.8
Having publications	Yes	13	5.9
Number of research papers presented	1	13	5.9
	2	2	0.9
Number of publications	1	13	5.9

Discussion

Perceptions, attitudes and practices of senior medical students toward research is the main area of focus in this study. Since understanding the perceptions and attitudes of students toward this issue can lead to improvement of research practices among future physicians, this topic is extremely important.

Important obstacle to learning associated with poor performance in research is the negative attitudes of medical students toward research¹⁴. Most of the medical

students are not aware of why research is crucial to health care. One of the reasons for such negative attitudes is lack of student conferences and research workshops on how to write and organize research papers¹⁴. The encouragement of those young researchers is not sufficient. One of the barriers to pursuing research during medical school due to the busy curriculum is lack of time¹⁴. This factor results in a decreased number of medical students interested in participating in research.

Our results are comparable to the results of a study performed in Canada. This study found that although the majority of medical students felt that participation in research activities was likely beneficial to their education, only 44% felt that research will play a significant role in their future career, and only 38% agreed that more time should be set aside in medical school to facilitate more research experience¹⁴. In our study, the majority believed that research was important in the medical field (88.6%, 195/220) and a boosting factor for their careers, but only 23.2% (51/220) participated in research during medical school.

The experience can help improve a student's skills in searching and critically appraising the medical literature and independent learning even if research experience as a student does not lead to a career in academic medicine^{15,16}. Also to help identify future careers, establish important contacts and secure better residency positions, such exposure to research as a student will be valuable.

Given the many benefits of doing a research project as a student, in our study, 35.9% (79/220) agreed that research should be mandatory for all medical students, not surprisingly, 97% of students included in an American study considered research a useful alternative to electives¹⁵. In the Canadian study, 43% stated that they had no significant involvement in research projects during medical school, and 24% had no interest in any research endeavours¹⁴.

However, in Germany, medical students authored 28% of the publications of one institution, including first authorship in 7.8% of papers¹⁷. Research is not considered a

part of the medical curriculum in many developing countries. 91% of interns reported no research experience in medical school in a study from India¹⁸. Thus, students in India are rarely exposed to research at the stage of their academic development when such exposure could encourage further research¹⁹.

In the Canadian study, 43% of respondents agreed that the main reason to participate in research during medical school was to facilitate acceptance into a residency of choice¹⁴.

In our study, the motives behind conducting research during medical school included the following: Interested in building a career in research (24.1%, 53/220), would be helpful for academics (36.8%, 81/220), helpful to enter competitive exams like USMLE, PLAB (31.8%, 70/220), to attain research publications (18.2%, 40/220) and other reasons (4.3%, 9/220).

In the Canadian study, lack of time was a significant barrier to pursuing research during medical school as only 31% of all respondents felt there was adequate allotted time for research endeavours¹⁴. Furthermore, only 15% of respondents felt that there was sufficient training in research methodology in medical school, and only 25% agreed that there was adequate training in the critical appraisal of scientific literature.

Another perceived barrier to participation in research was the difficulty in attaining a research supervisor; only 44% of respondents agreed that it was relatively easy to find a research mentor¹⁴. The barriers to participating in research in our study included Lack of interest (32.7%, 72/220), lack of time (31.4%, 135/220), Inadequate knowledge about research methodology (51.4%, 113/220), lack of guidance by faculties (27.7%, 61/220), lack of research curriculum (34.1%, 75/220), inadequate facilities for research (35.5%, 78/220), inadequate financial support (30.9%, 68/220) and others 2.9% (6/220).

In order to motivate students to participate in research, finding ways to overcome the obstacles students face is the main way out. Students should be encouraged to

participate in research.

Conclusion

Medical schools should update their curricula to include teaching of research methodology, to allocate specific time for research and to require research experience for all medical students. To the best of our knowledge, this study

is the first to evaluate the perceptions, practices, obstacles and attitudes toward research among medical students in the south Asia. We not only addressed a previously neglected issue in our region but also attempted to comprehensively assess this issue to find ways to overcome the obstacles faced by students. These efforts could lead to an increased involvement of medical students in research.

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