

Perception and Concerns of Undergraduate Medical Students Toward Research: A Cross-Sectional Study

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ORIGINAL ARTICLE

ABSTRACT

Introduction or Background: Training of undergraduate (UG) medical students in research methodology is an important but a highly neglected part in the medical curriculum. The UG students even though they are motivated are not involved in research projects. Proper knowledge about the research will not only help in improving the problem-solving abilities of the students but will also motivate them to choose research as a career. This study was undertaken to identify the diversity in knowledge about research and also to look at the obstacles they are facing to take up research.

Objectives: To assess the perceptions and concerns of UGs toward medical research.

Methodology: This questionnaire-based, cross-sectional study was carried out at Adichunchanagiri Institute of Medical Sciences, BG Nagara, Karnataka. A total of 235 UG students were involved in the study. A pre-tested, self-administered, semi-structured questionnaire was devised to collect information regarding the awareness and concerns of the students about research. The student participation was voluntary.

Results: A total of 235 students responded to the questionnaire from III year (24.3%), V year (40.4%), VII term (26%), and VIII and XI term (9.3%). 96.6% perceived research is beneficial in the medical field and research should be included in curriculum (83.4%). 95.5% felt research activities help in better understanding of the subject and research is important for keeping update in the clinical field (94%). Only 23.5% of students were involved in research activities, and the majority (74.9%) were unaware of funding agencies. Among the UG students, the most important determinant for poor research is a lack of motivation (27.7%) followed by research being not a part included in the curriculum (16.6%).

Conclusion: Research skill training workshops and integration of research in UG curriculum may motivate the future doctors to inculcate research in their professional careers.

KEY WORDS: Biomedical research, medical students, motivation, problem-solving.

Introduction

Training of undergraduate (UG) medical students in research methodology is an important yet highly neglected part in the medical curriculum.^[1] In India, research methodology is not included as a part of the medical curriculum and the research programs are given lowest priority.^[2] Poor training in research skills is one of the main factors responsible for the decline in

the number of medical researchers worldwide.^[3] The UG students though motivated toward research are not involved in research projects in medical colleges due to the lack of awareness about the research activities, lack of time, lack of appropriate guidance, funding and many other factors around them.^[4] Proper knowledge about research methodology not only helps in improving the problem-solving abilities of the students but also motivates them to choose research as a career in future.^[5] The presentation of research work and publication of the scientific article in the peer-reviewed index journal will also have advantages of further pursuing higher studies through residency in the United States.^[6]

This study was taken up to identify the diversity in knowledge about research among students and also

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to look at the obstacles they face if they choose to take up research.

Methodology

A descriptive cross-sectional questionnaire based study was conducted at Adichunchanagiri Institute of Medical Sciences, BG Nagara, Karnataka involving II, III and IV year UG medical students. The first year students were excluded from the study as they are new to the medical field. Participation was voluntary and institutional ethical approval was taken before the commencement of the study.

The questionnaire was devised to collect the information regarding perceptions and concerns like awareness about the need for research, benefits of research, research as career options and so on. The semi-structured questionnaire had a mix of 12 open or closed ended questions. Multiple response options were designed to each question using inputs from a pilot study involving UG students. The questionnaire was distributed at the end of a lecture class, the study was explained to the students, and they were informed not mention their personal information to maintain confidentiality. The questionnaire copies were distributed and collected back after 30 min.

Results

All the 235 students answered the questionnaire and hence the response rate was 100%. The majority of the students were women ($n = 150$, 63.82%). Among the 235 students, 64.7%, 26%, and 9.3% were from II, III, and IV year MBBS, respectively (Figure 1).

As final year students were shortly facing the university examination, they were not available for answering the questionnaire, resulting in lower participation from that group.

The survey revealed that only 23.5% of students were involved in research activities during their UG education. The percentage of students involved in UG research showed an increase from 2nd to final year MBBS but never exceeded the percentage of students who were not involved in research (Figure 2).

Discussion

In today's world of medicine, research in medical education place a pivotal role in developing critical thinking, self-directed learning, critical appraisal of medical literature, professional decision making,

and acquiring analytical skills among the health-care providers that enable overall patient care. However, in the current scenario, there is a disparity between perception and practice of medical research among the UGs. This study intends to highlight the perceptions and concerns of UG medical students toward research.

In this study, students perceive research is beneficial (96.6%) and is as an important tool in the medical field, hence it should be included in the curriculum as it helps in better learning and understanding (95.5%) and updating current knowledge (94%) (Table 1). Yet there is a lack of involvement in UG medical research, which has been attributed to number of factors, most important being the lack of motivation (27.7%) (Table 2). The second most common reason for not taking up research was a lack of knowledge about UG research (22.2%). In contrast to our study, Oliveira *et al.* reported most important barrier for not taking up research as "lack of time" (67.7%), followed by non-availability of a supervisor willing to orient and develop research (21.2%).^[7]

Alghamdi *et al.* in a similar study among senior students reported a lack of training courses (88.8%) and lack of professional supervisors (84.7%) as the major barriers.^[8]

More than 50% of students were uninterested in taking up research as their career even though many have opined that research is a good career option for doctors. This is in contrast to study by Harsha Kumar *et al.* where it was reported that "students felt that research as a career was neither financially rewarding nor had the status."^[9]

A number of other studies have also reported poor awareness and involvement of UGs in medical research which has been attributed to multiple reasons. The paucity of time in the present curriculum may be the primary obstacle in UG medical research. Another principle difficulty faced by UGs is lack of motivated faculty or insufficient time available for professors to mentor the students as well as poor institutional support in terms of infrastructure. Another false perception by the students regarding research is that it is only suitable for those who want an academic career since researchers may be isolated from patients and clinical practice.^[10-12]

In certain countries where there is higher involvement of UGs in research, the primary

Table 1: Perceptions of medical students about research

Perceptions	Yes response (%)
Research in medical field is beneficial	96.6
Research helps in better learning	95.5
Research is essential to update clinical knowledge	94
Research cannot be combined with clinical practice	46.4
Research as a future career option	43
Awareness about funding agencies for research	24.7
Research is suitable only for those who want academic career	23.4
Research career has less financial gains	14.4

Table 2: Principal reasons for not conducting research during UG education according to medical students

Reasons	Percentage
Lack of motivation for doing research	27.7
Lack of knowledge about UG research	22.2
Research is not a part of curriculum	16.6
No definite reason	13.2
Lack of interest in doing research	12.3
More than one of the above reasons	10.0
Total	100

UG: Undergraduate

reasons for conducting research are for embellishing the resume, preference given to research-oriented students for residency positions or mandatory research activities in institutions.^[11,13]

As reported by many authors, students worldwide are aware of the importance and are motivated to conduct research, but they lack opportunities and training.^[14] There is an urgent need to emphasize the importance of research among UGs and implement training programs in research methodology for both mentors and UGs and to improve the current curriculum of traditional training to reality of evidence based scientific practice and research in medicine. Focus should be to include research as part of UG curriculum as this will help not only in the professional life of medical practice but also to conduct quality research during post-graduate curriculum.

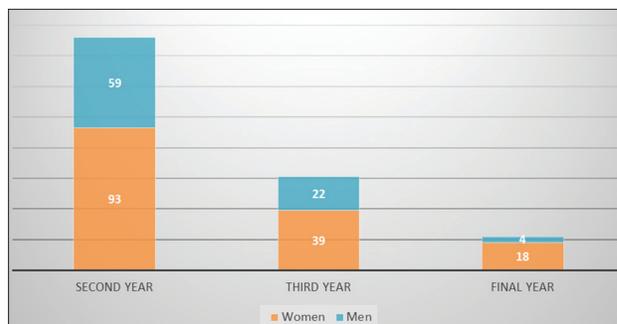


Figure 1: Number of MBBS students participated in the study

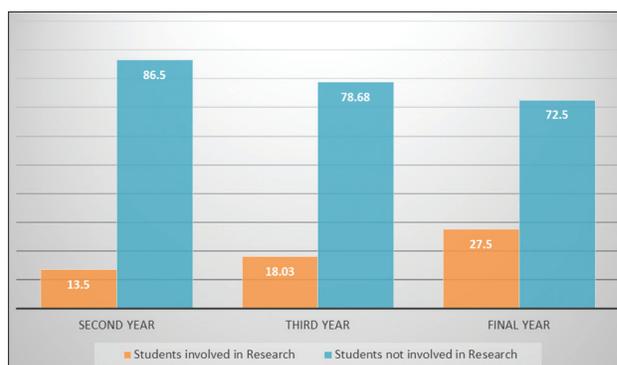


Figure 2: Percentage of MBBS students involved in undergraduate research according to the course year

The training programs in research skills should also incorporate intellectual aspects of research such as a focus on developing hypothesis, research question, analyzing data and interpreting the results.^[10] Emphasis should be toward introducing and illustrating translational research.^[11] The issue of limited time available for faculty to guide and mentor should be addressed.

Conclusion

In UG medical students the two most important factors for not taking up research are a lack of motivation and proper knowledge about the research in our study. It is the responsibility of all medical educators to reiterate the importance of research and inculcate research attitude among UG students. The policymakers should integrate research activities in the UG curriculum and make participation mandatory.

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