Original Research Article

Are Medical Undergraduates Involved in Research? : A Cross Sectional Study in a Government Medical College in Telangana

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Received: 17-09-2021 / Revised: 15-10-2021 / Accepted: 28-11-2021

Abstract

Background: Research experience gained by the medical students during their undergraduate days plays a major role in their attitude towards research during the postgraduate period. Medical students have a limited understanding on research and translation of theory into practical is neglected in medical curriculum of developing world. This study aims at assessing the knowledge, attitude and barriers towards conducting research among the medical undergraduates of a government medical college in Telangana. **Methods**: A cross sectional study was conducted among 171 third year medical students of Kakatiya Medical College, Warangal, Telangana from August to October 2021. A pretested, semi structured questionnaire was used for data collection. Data was analyzed using SPSS version-20.0 and descriptive statistics were used to summarize it. **Results:** Out of 171 students, more than 90% of them had poor knowledge on research and 67.1% were interested in research. Only 2.3% have conducted research projects. Lack of guidance (89.5%), lack of knowledge (86.5%) and lack of time (48%) are some of the barriers faced by the students. **Conclusion:** This study revealed that students are having poor knowledge despite of having positive attitude towards research. Training of faculties, adequate motivation and guidance are needed to improve the indulgence of students in research activities.

Keywords: Research, Interest, Medical Undergraduate students, Guidance.

Introduction

Advances in health technology are enabling a transformation in health research that could facilitate studies that were not feasible in the past and thus leading to insights and improvement in health and healthcare for individuals and populations. Medical colleges are engines of medical research anywhere in the world. Inspite of numerous medical colleges in India churning out more than 60,000 medical graduates annually, the country contributes very little for research activity. Studies have pointed out that poor teaching and lack of adequate number of faculties as one of the reasons why research output itself is poor in medical colleges [1,2].

There is a mandatory provision of writing a thesis/research project during post-graduation, which give an opportunity for conducting research, but somehow most of the their research is just for the sake of research. Study by Arunachalem S has pointed out that a large amount of dissertations that our students churn out a little more than copycat research with very little original thinking in it [3]. Efforts must be made to increase research output by encouraging student research through various programs like mentored student projects [4]. A study done in United States showed that undergraduate research experience inspired the students to carry out research at a postgraduate level [5].

Research projects can help the students to develop critical analysis, thinking and also enhances their skills in searching literature and independent writing.

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But in the present times, medical field has become more or less static owing to the fact that undergraduate medical students do not opt for a future in the research field. Hence this study was aimed to assess the knowledge, attitude and barriers faced by the medical undergraduate students in conducting research.

Materials and Methods

A cross sectional study was carried out among 171 students of 3rd year MBBS of Kakatiya Government Medical College, Warangal, Telangana from August to October 2021. Prior permission from institutional ethical committee was obtained. Informed consent was obtained from the students. Only the students who were willing to participate were included in the study.

Incomplete questionnaires were removed. A semi-structured, pre-tested questionnaire was prepared with the help of previous literature to assess the knowledge, attitude and barriers perceived regarding research. The questionnaire consists of four domains. First domain is about the general information of the students like age and gender. The second domain contains questions testing the knowledge about research. The third domain is about the attitude, interest and experience in research. The fourth domain is about the barriers perceived by the students in conducting research. Out of total 206 students, 171 participated in the study. Data was entered in MS excel sheet and exported to SPSS version 20.0 for analysis. Descriptive statistics were used to summarize the data.

Results

In this study 63(36.8%) males and 108(63.2%) females were participated. They were in the age group of 20 to 24 years with an average of 21.3±0.79.

Table 1: Knowledge about research among study population

Questions	Answered Correctly	Wrong Answers
Name any one type of research	08 (4.7%)	163 (95.7%)
Name any one type of sampling	04 (2.3%)	167 (97.7%)
Name a software used for data analysis	04 (2.3%)	167 (97.7%)
Full form of IEC	02 (1.2%)	168 (98.2%)
What is ICMR STS?	19 (11.1%)	152 (88.9%)
Name any one online database for searching literature	14 (8.2%)	157 (91.8%)

As **Table 1** shows the assessment of students regarding their knowledge on research. More than 90% of the students gave wrong answers and had poor knowledge on research. The most common source of information about research was internet (91.2%) followed by faculty (5.3%) and friends (3.5%). Out of 171 students, 69(40.4%) were interested in taking medical branches for PG, while 55(32.3%) have not decided yet and 47(27.5%) preferred surgical field.

Table 2: Attitude towards research among study population

Attitude towards research	Agree	Disagree	Neutral
Research is mandatory for medical students	80 (46.8%)	20 (11.7%)	71 (41.5%)
Research should be included in UG curriculum	134 (78.4%)	09 (5.3%)	28(16.4%)
Research is waste of time	03 (1.8%)	149 (87.1%)	28(16.4%)
Research helps in better understanding of the subjects	155 (90.6%)	02 (1.2%)	14(8.2%)
Research will contribute to innovation in the medical field.	150 (87.6%)	01 (0.6%)	20(11.7%)
Research is difficult to conduct	71 (41.5%)	29 (17%)	71(41.5%)
Research should be only for PG students	04 (2.3%)	131 (76.6%)	36(21.1%)
Research should be learned only by the people who want a career in research	15 (8.8%)	122 (71.3%)	44(25.7%)

As **Table 2** shows the attitude of the students towards research. Majority of the students (78.4%) agreed that research has to be included in UG curriculum. 90.6% of the students felt research helps in better understanding of the subject. About 87.1% of the students disagreed to the statement that research is a waste of time. 87.6% of the students felt that research will contribute to innovations in the medical field.

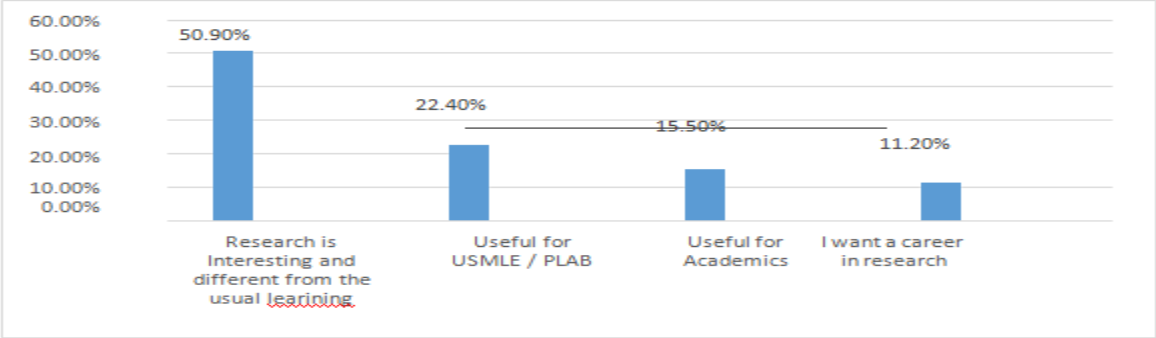

Fig 1: Reasons for interest in research

Figure 1 shows the various reasons for interest towards research. Out of the total 171 students, 115(67.1%) were interested to conduct research while 56(32.9%) were not interested in engaging in research.

Table 3: Barriers for conducting research among study population

Barriers	Agree	Disagree	Neutral
Lack of guidance	153 (89.5%)	52 (30.4%)	37 (21.6%)
Lack of knowledge	148 (86.5%)	04 (2.3%)	19 (11.1%)
Lack of adequate facilities	135 (78.9%)	11 (6.4%)	25 (14.6%)
Lack of motivation from faculties	101 (59.1%)	34 (19.9%)	36 (21.1%)
Lack of recognition for our work	99 (57.9%)	21 (12.3%)	51 (29.8%)
Lack of financial support	97 (56.7%)	35 (20.5%)	39 (22.8%)
Lack of time	82 (48.0%)	52 (30.4%)	37 (21.6%)

As **Table 3** shows the barriers perceived by the students to conduct research. The common barriers faced was lack of guidance (89.5%), lack of knowledge (86.5%), lack of adequate facilities (78.9%) and lack of motivation from faculties (59.1%). The proportion of students who have conducted a research or published their work was very less in this study. Only 4(2.3%) of the students have conducted research so far and only 2(50%) have a publication.

Discussion

This study was conducted among 171 medical undergraduate students to assess their knowledge, attitude and barriers towards research. In our study it was found that majority of the students have inadequate knowledge on research. The finding was similar with a study done among medical students by Vairamani CB and Akoijam BS [6]. One of the reasons could be lack of research orientation and training in MBBS curriculum. In this study, internet (91.2%) was the major source of information for the students. This can also be a main reason for lack of proper scientific knowledge on research.

In this study, majority of the students had positive attitude towards research. 90.6% of the students felt that research helps in better understanding of the subjects and 87.6% of the students felt that research will contribute to various innovations in medical field. These

findings are consistent with a study done in central India by Kasulkar AA et al [7]. In this study, 67.1% of the students showed interest in conducting research. Despite the positive attitude towards research only 4(2.3%) of the students have conducted a research project. Similarly a study done by Chelliyan VG et al [8]. showed that more than half of the students have carried out at least one research project (59%). In our study majority of the students considered lack of guidance (89.5%) as the main barrier in conducting research. Similarly, in a study done by Sharma SK et al [9] the most common barrier faced was lack of time (75%) followed by lack of guidance (67%).

The other barriers faced by the students in our study were lack of knowledge, lack of financial grants, lack of adequate facilities and also lack of time. The findings were supported by studies done in south India, Arabian countries and Canada [10-13] Some students felt that there was lack of motivation from faculties, lack of financial support and lack of time to conduct research. These factors contribute to lack of interest in research which in turn leads to inadequate knowledge on research and lack of involvement in research projects. A study from Pondicherry, India showed that a perceived lack of recognition was the constraint in students opting for a research career among a majority of respondents [14] This perceptual gap is the first obstacle to medical research flourishing among undergraduates. All medical colleges should have an undergraduate research monitoring board to guide and encourage the spirit of students that fuels good research.

Research is useful both professionally and academically. It is time that attention is focused right from the entry of the UG student to the medical course till the end of training of a postgraduate resident to create an ambience, an interest, and an inclination towards research and allow for sufficient time in the curriculum to enable this.

Limitations

The main limitation in this study could be selection bias where only the students who were willing to participate in the study were included. As the study was done in a particular medical college, the results cannot be generalized.

Conclusion

Most of the students had poor knowledge on research. Despite the positive attitude towards research only a few have conducted research projects and published them. Main source of information regarding research being the internet and lack of guidance could be the important factors leading to reduced participation of students in research projects.

Recommendations

Research is an ongoing process and it has to be learnt gradually from the undergraduate level. Faculties should be adequately trained in research methodology and research orientation should be included in the UG curriculum. Studies related to the opinion of medical students towards research should be conducted internally within the colleges at regular intervals and the barriers faced by the students should be discussed with the administration.

Acknowledgement

We would like to thank the medical undergraduates for participating in the study.

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Conflict of Interest: Nil Source of support: Nil