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Knowledge, Attitude and Practice on Medical Research: The Perspective of Medical Students

R. Jamuna Rani and M. Priya

Department of Pharmacology, SRM Medical College, Kattankulathur, India.

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This descriptive cross sectional study was conducted to assess the level of knowledge, attitudes and practices towards research among Undergraduate Medical students. This study also focused to emphasize the need of Research Methodology training programs for undergraduate medical students. About 308 undergraduate medical students of S.R.M. Medical College, Chennai were given a structured questionnaire to evaluate their knowledge, attitudes and practices about medical research. A total of 301 returned the completed questionnaires and were included in the analysis. Data collected was subjected to descriptive analysis. About 68.4% of students are interested in participating in research and 9.3% of them actively participated in research projects. Lack of knowledge about research methodology (40.86%), lack of time (39.86%), Lack of guidance (14.2%) and lack of financial support (4.6%) were considered as the obstacles to carry out research projects by the interested students. In conclusion even though a fair number of undergraduate students interested in research, a very few actively participate in research projects. This was probably due to lack of knowledge about research methodology and lack of time.

Key words: Undergraduate medical research, Medical students, perceptions.

The word 'research' is derived from the French word "recherche" meaning "to go about seeking". [1] In its broadest sense it means 'any gathering of data, information and facts for the advancement of knowledge' and defined as 'a studious inquiry or examination aimed at the discovery and interpretation of facts'[2]

Research is an important component of evidence based medicine[3].An inquiring, analytical mind; an unquenchable thirst for new knowledge; and a heartfelt compassion for the ailing-these are prominent traits of a Doctor. A doctor should provide effective treatments based on the 'best available evidence' and should contribute to the generation of evidence by conducting research.[4] Medical research is important in providing better solution to the existing medical problems as well as tackling new threats to the global health. As physicians and scientists of tomorrow, the medical students should get involved in research early and update themselves to the advancement of medicine. History have shown us that Islets of Langerhans as well as Insulin are some of the groundbreaking discoveries contributed by medical students[5]

In India, undergraduate medical research is dwindling every day and in a pathetic state. The opportunities to under graduate medical students for research are limited and the situation is worsened because it is not an integrated part of medical curriculum.[5,6,7] Most of the students are exam oriented and least interested to take up research project. Students seeking admissions to medical colleges are extraordinarily bright, but only a very

* To whom all correspondence should be addressed.
Mob.: +91-9840279010, 9943258278;
E-mail: drheartbeat@gmail.com;
jrs_durai@yahoo.co.in

few medical students are motivated in research. But the situation of the global undergraduate medical research is different. Developed countries have research programs for medical students in academics. In many countries, it is mandatory for students to have publications to their credit before appearing for final examination.[8, 9, 10]

A review of literature showed data regarding awareness and practice of medical research among undergraduate medical students is lacking. So we did this cross sectional study to assess the knowledge, attitude and practice of research among undergraduate medical students in a medical college of South India.

MATERIALS AND METHODS

This cross sectional study was done for a period of three months from September to November 2012, after obtaining approval from Institutional Ethics Committee. About 308 under graduate medical students pursuing 2nd and 3rd year of MBBS participated in the study. Informed verbal consent was obtained. We developed a validated structured questionnaire, taking guidance from the previous literature[11,12]. The questionnaire has several parts. The demographic information regarding age, gender and year of study was received. Then knowledge and attitude on research methodology and statistics were assessed. The third part is the practice of research by participating in workshop, conference, publication and prior training in research methodology was asked.

Statistics

The data collected was analyzed using descriptive statistics using Microsoft excel software and expressed in percentage.

RESULTS

Of the 308 undergraduate students participated, a total of 301 returned the completed questionnaire and included in analysis. 133 (49.1%) were male and 178 (59.14%) were female. Mean age of the sample was 19.0 ± 1.5 years. 161 students were pursuing second year and 140 students were in third year MBBS respectively.

Table 1 shows the knowledge score on research among undergraduate medical students.

The responses regarding attitude of students towards research are summarized in table 2.About 95.6% of students thought that medical students can participate in research and 68.4% of students are interested in participating in research and a majority (80.4 %) agreed that they require guidance to conduct research projects.

Response of undergraduate students regarding practice of research was given in Table 3.Only 9.3% of the students said that they participated in research, 3.3% of them presented

Table 1. Knowledge assessment of Medical Research among undergraduate medical students

Questions	No of correct Response (%)	No of negative Response (%)
1. How will you define research hypothesis?	87 (28.9%)	214 (41.1%)
2. Have you heard about ICMR?	174 (57.8%)	217 (42.2%)
3. Have you heard about STS project fund to ICMR?	77 (25.4%)	224 (74.4)
4. Whom to seek approval for research projects ?	87(28.9%)	214 (71.1%)
5. What is known as informed consent in research?	173 (57.5%)	128 (42.5%)
6. How will you measure outcome of research?	175 (58.13%)	126 (41.86%)

Table 2. Attitude assessment of medical research among undergraduate medical students

Questions	No of correct Response (%)	No of negative Response (%)
1. Do you think medical students can participate in research?	287 (95.6)	14 (4.5%)
2. Are you interested in participating in research projects?	206 (68.4)	95 (31.54)
3. Do you require guidance to conduct your project?	242 (80.4%)	59 (19.6%)

Table 3. Practice of medical research among undergraduate medical students

Questions	No of correct Response (%)	No of negative Response (%)
1. Have you ever participated in research projects?	28 (9.3%)	273 (90.69%)
2. Have you heard about UG medical conferences?	187 (62.1%)	114 (37.9%)
3. Have you presented any paper/poster work in conferences?	10 (3.23%)	291 (96.67%)
4. Have you written any Research paper of your projects?	05 (1.6%)	296 (98.4%)

research paper in conferences and only 1.6% of the students published their research work in journals.

The reasons for not carrying out research projects given by the students were outlined in figure 1.

Lack of knowledge (40.86%), Lack of time (39.86%) and lack of guidance (14.2%) were the major reasons cited by the undergraduate students for not participating in research projects.

About half of the undergraduate medical students (52.9%) felt that learning subjects itself time consuming and 34.8 % of them stated that lack of research curriculum in their syllabus is also the hindrance for not carrying out research project, which is shown in figure 2.

Two third of the students participated in the study (69.1%) were interested in attending research methodology training program to gain knowledge on research which is given in figure 3.

A majority of students about 68.7%

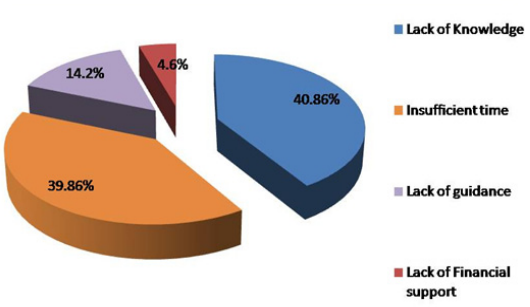

Fig. 1. Reasons given by students for not carrying research project

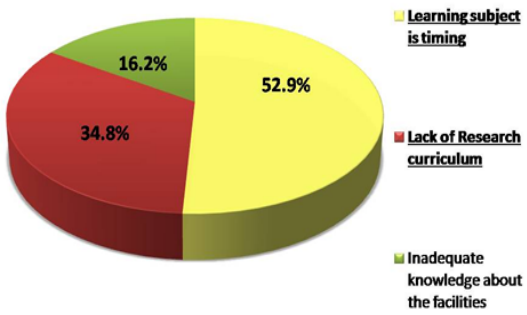

Fig. 2. Hinderance to carry out research project

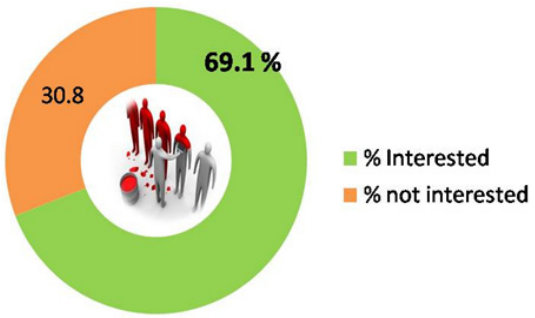

Fig. 3. Percentage of students interested in attending research methodology training program

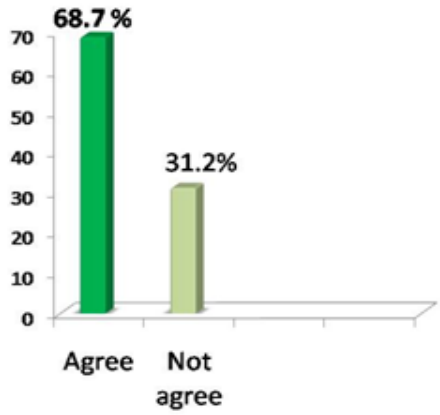

Fig. 4. Research methodology syllabus in Undergraduate curriculum

stated that research methodology syllabus and to do a research project can be made mandatory in undergraduate medical curriculum, which is shown in figure 4.

DISCUSSION

This cross sectional study was carried out to highlight the discrepancy between attitude and practice of research among undergraduate medical students and an attempt to create awareness regarding research for medical students. Our study shows that even though the knowledge domain on research was fair which is given in table 1 and most of the undergraduate medical students (68.4%) are interested in participating in research, a very few (9.3%) of them actively participated in research which is given in table 2 and table 3.

India has the largest number of recognized medical colleges in the world.[13] The number of medical colleges has doubled in the past 10 years.[14] Currently 335 medical colleges are recognized by the Medical Council of India (MCI).[15] The orientation of the curriculum is very theoretical and not much stress is laid on research. [16] Research and academics are complimentary to each other. They stimulate the interests in each other and doing research does not affect the academics.

Research project help the student to develop critical analysis and thinking .[17, 18] Students should be provided incentives, including financial ones, to undertake research. It is important to make the presentation of the research work in various national/regional medical conferences. We live in the era of publish or perish, so it is equally important for the medical students to write for publications of their research in journals.

Apart from gaining the knowledge - the research experience, paper presentation and publication will have an additional advantage in getting residency through USMLE. Having a publication in a peer reviewed journal and preferably Medline indexed journal increases the chance of getting residency in US. [10]

Medical students are made mandatory to conduct research during post graduate period without having prior exposure about research methodology in undergraduate life. [19] Lack of research curriculum and lack of time were also cited as a hurdle in the present study by most of the students as given in figure 2. The students stated that research methodology can be incorporated as a part of the curriculum as shown in figure 4.

This study showed various key findings about the awareness and practice of research among undergraduate medical students that would be of interest to medical educators and policy makers. The Board of Governors of the MCI recently came out with 'Vision 2015', contains many notable recommendations for the improvement of the current system including research methodology training as an elective.[20,21] If these are implemented as mandatory in curriculum, the impact of improvement in Indian medical research will be felt globally.

CONCLUSION

There is a need to emphasize the importance of research among the undergraduate medical students as imparting research at the early stage has a bright future. Focus should be made on integrating research syllabus and skills in MBBS curriculum. With little motivation and encouragement for research among undergraduate medical students will excite their mind for exploring unknown domains of research and generation of new knowledge.

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