

TEMPORAL ANALYSIS OF RESEARCH AWARENESS AND INTEREST: A COMPARATIVE STUDY ACROSS VARIOUS ACADEMIC YEARS AT FOUNDATION UNIVERSITY MEDICAL COLLEGE, ISLAMABAD, PAKISTAN

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ABSTRACT

Objective: To compare the awareness and interest of research among different years of MBBS students at Foundation University Medical College, Islamabad, Pakistan.

Study Design: Cross-sectional study.

Place and Duration of Study: Foundation University Medical College (FUMC), 04 months (March-July 2023).

Materials and Methods: Ethical Approval was obtained by the ethical review committee of FUMC. A self-structured, pre-tested questionnaire was used for data collection from 255 students through a random stratified sampling technique. Awareness or knowledge was classified into two groups: good and poor knowledge expressed in percentages while attitude or interest in research was measured on a Likert scale and scores were categorized accordingly. A Chi-square test was applied in order to determine the association of awareness and interest in research among different academic years of MBBS.

Results: Total 255 MBBS students participated in the research, 51 from each academic year. Out of them, 135 were female and 120 were male. The interest of students in research significantly increased with increasing levels of academic year with a maximum number of students interested in research from the final year (78%) followed by second year (73%); ($p=0.001$). The awareness of students in research significantly improved with increasing levels of academic year with a maximum awareness shown by fourth year students (92%) followed by fifth year (78%); ($p=0.001$).

Conclusion: More than half of the students had good understanding of research and they displayed a positive attitude towards it. This is a promising finding as it suggests that students were not only knowledgeable about research but also had a positive outlook towards it. However, despite the positive attitude towards research, there may be several factors that prevented many students from conducting research. The majority of the students who participated in research projects were from the fourth and final year of because it was a mandatory part of their academic curriculum.

Key words: *Attitude, Knowledge, Practice, Research.*

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INTRODUCTION

Medical research has always been a crucial and basic component of advancing science, uncovering new knowledge^{1,2}. Health-related research is constantly expanding and evolving into a more diverse field of study³. Research activity has been integrated

as an essential part of the educational programs of medical universities in which it is mandatory for every medical student to carry out one research project throughout their academic years^{4,5}. The medical students of under-developed countries have little knowledge and awareness in the field of exploration and analysis⁶. Studies have shown that by introduction of research oriented medical education in undergraduate's curriculum will nurture their research skills, giving them an insight into research methodology and exploration of biomedical research covering every aspect of clinical sciences. This will enhance their involvement in research at postgraduate level^{4,7}. Research means working in a scientific way to search for the truth of any problem. It is a step-by-step process involving; identification of problem, literature review, collection and analysis of the data, and presentation of a scientific solution⁸.

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PubMed listed paper analysis showed that America had 68% contribution in global research whereas Europe, Asia and Africa had 19%, 13% and 0% respectively. Multiple investigations were conducted to examine how medical students perceived, approached and took interest in research⁶. Medical students from Ontario, Canada's third and fourth academic years exhibited a noticeable variation in their behaviors and interests regarding research⁹. According to a survey conducted at Gothenburg Medical Science University, Sweden, with response rate of 42%, 16% of students were involved in active research projects and 36% showed interest in conducting research during medical studies¹⁰. Another study conducted in Canada showed that despite 87% of respondent's involvement in research project to some extent prior to attending college of Medicine, 24% of medical students indicated that they harbored little interest in participating in research activities, and 43% stated they had not been engaged in much of it throughout their curriculum⁹. A study, conducted in Poland, showed significant level of students' interest and attitude toward research and their engagement in investigational projects and intention to continue³. Lack of sufficient training, time, and research opportunities were identified to be the perceived hurdles in the way to research for the students¹¹. According to a study conducted in Kolkata, West Bengal, India, students had a strong understanding of research need but lacked the knowledge about how and in what manner it is conducted⁷. Students at a Saudi Arabian University showed some strong enthusiasm for research with a higher percentage of females¹². A study conducted at Ayub medical college, Pakistan showed that although 62.3% of students were aware of the importance of research, the biggest obstacles in doing research were lack of funding and student engagement⁶. Another study conducted at Dow medical college, Karachi, showed approximately 2/3rd of students having good attitude and participation in medical investigation solely because of getting admission into a residency program. The most cited barriers towards research were shortage of time, inadequate supervision and little opportunities and chances offered in medical setups¹. Medical students believed that research is useful and related to their daily life but at the same time they regarded it stressful and not worthwhile to pursue it as a career¹³.

With this context, we evaluated and compared the knowledge and interests of medical students of Foundation University Medical College (FUMC), Islamabad.

MATERIAL AND METHODS

A quantitative, cross-sectional study was conducted among medical students of FUMC, Islamabad from March to July 2023. Ethical Approval was obtained on 20th March 2023 by the ethical review Committee of Foundation University Medical College (FUMC).

The sample size was calculated to be 255 using Rao Software, with an estimated total population of 750 MBBS students, considering an anticipated frequency of 50%, keeping the margin of error of 5% and the confidence level of 95%.

Sample collection was done, using the stratified random sampling technique and was divided into 5 strata according to academic years of study. Each stratum consisted of 51 participants selected from their respective academic years of the MBBS program. Verbal informed consent was taken for the study. Confidentiality of data was ensured.

All medical students who had more than 60% attendance were included in the study. All medical students who were not willing to participate were excluded.

A thorough literature search was done to develop a questionnaire, incorporating different questions related to the knowledge and interest of students in research. The questionnaire included demographic information (gender and academic year of study) and two sections; section-1 contained multiple choice questions related to knowledge of research and practice while section-2 consisted of questions based on a Likert scale to assess students' interest towards research. After content validity was done by three subject specialists, the questionnaire was pre-tested on a group of students aiming to identify the questions that best aligned with our research objectives. To evaluate the reliability of our

questionnaire we conducted an analysis using Cronbach's alpha scale which was 0.80.

Data Analysis: The data was analyzed using SPSS version 21. Frequency & percentages were calculated for the categorical variables including gender, academic year of study, interest and knowledge of students in research. Chi-square test was applied to determine the association of knowledge and interest towards research among students of different academic years.

RESULTS

The total number of participants in the research was 255, (51 from each class). Out of them, 135 (53%) were females and 120 (47%) were males.

CAPSULE SUMMARY

- Awareness and interest of research among different years of MBBS students from one medical college were compared.
- More than half of the students had good understanding of research and displayed a positive attitude towards it.
- Some factors prevented students from conducting research.
- Most of the students participated in research projects because it was a mandatory part of their academic curriculum.

Concerning “Interest in Research”, in 1st academic year, out of 51 students, 41% were interested in research. In the 2nd year, 73% of students showed their research interest. In the 3rd year, 67% of students were interested in research. In the 4th year, 65% students were interested. Finally, in the 5th year, the research interest among students rose to 78%. Comparative analysis showed that the interest of students in research significantly increased along with increasing academic year with a maximum number of students interested in research from the 5th year followed by the 2nd year; (p=0.001) (Figure 1).

LEVEL OF INTEREST AMONG DIFFERENT YEARS OF MBBS AT FUMC

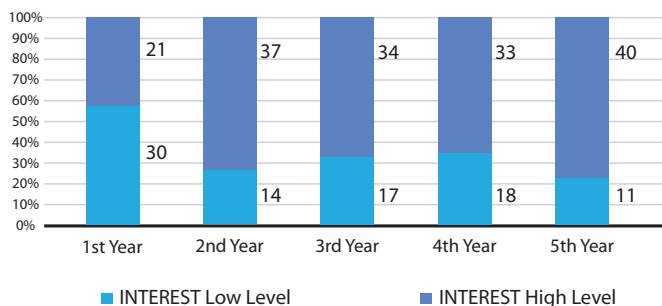


Figure 1: Level of interest in research among different academic years of students of MBBS

Regarding awareness of research, in the 1st academic year of MBBS, out of 51 students, 21% had good awareness. In the 2nd year, 35% had good awareness. Moreover, in the 3rd and 4th years, awareness regarding research rose to 51% and 92% respectively. Lastly, in the 5th year, 78% of students had good awareness. Comparative analysis revealed that the awareness of research in students significantly increased along with increasing levels of class with a maximum awareness showed by 4th year students followed by the 5th year. (p=0.001) (Figure 2).

LEVEL OF KNOWLEDGE AMONG DIFFERENT YEARS OF MBBS AT FUMC

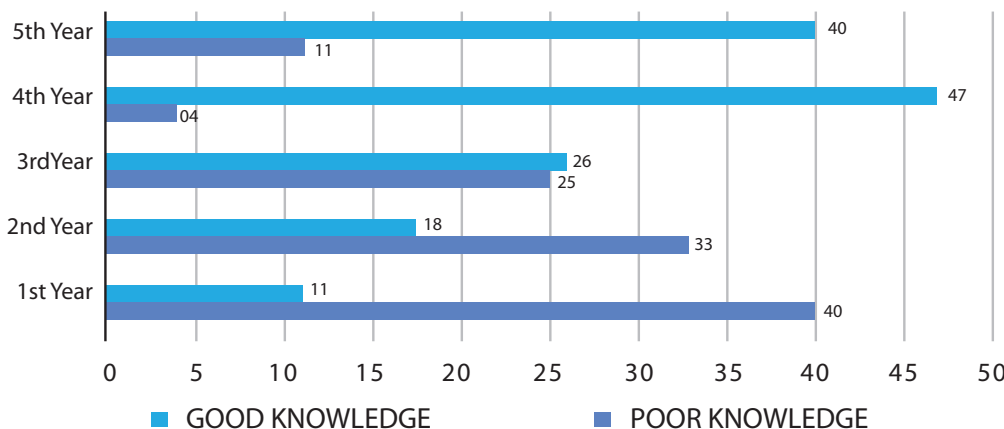


Figure 2: Level of knowledge of research among different academic years of students of MBBS

DISCUSSION

Knowledge and attitude are crucial for research¹². Research training in Pakistan has not yet been sufficiently addressed. This study aimed to assess the comparison of interest and awareness regarding research among the medical students of FUMC, Islamabad.

In our findings the total knowledge score regarding research among medical students was not very satisfactory (52%). This was found comparable to a study conducted at the Agha Khan university, Pakistan, which also did not report a good level of knowledge towards research (49%)². This finding was in contrast to a study in India that showed a good knowledge of the undergraduates regarding research¹⁴. Our research knowledge scores were consistent with the research conducted at the Brookfield school of Medicine, Ireland, in which the students had a lesser understanding of the concept of medical research⁵.

Regarding the attitude of the medical students towards research, in our study 25.5% of the students stated that participating in a research activity was only a waste of time. This attitude could relate to another research carried out at the Dow University, Karachi Pakistan, that revealed a mean attitude regarding research score of undergraduate students, better in comparison with the postgraduate ones and that the advancing age & education level had a negative impact on the knowledge & attitude towards research. This was probably due to the workload of further studies decreasing the inspiration and available time thus leading to the belief that research had a little role in their careers¹⁵. More than half (59.2%) of the students agreed that they would like to participate in research whether it was compulsory for their academic year or not. This result was similar to the result obtained at a medical college in India where majority of the students recognized the significance of research in clinical practice¹⁴. A high number (86%) of the respondents agreed that every medical student should be having knowledge of the scientific method of research. This

is in accordance with a study conducted at the Nottingham medical school, UK, which also found that 86% of the students realized that research exposure was very beneficial for medical students¹⁶. A UK based study revealed that taking up of research opportunities by undergraduates was dissatisfying¹⁷. Our research findings, however, showed the average attitude score of undergrads to be evidently higher. Encouragingly in our study, out of 255 medical students, good attitude towards medical research has been shown in 69.5% of the students. This result was in consistence with the research carried out in Saudi Arabia where good attitude towards research was shown by 70% of the medical students¹².

A big number (83.9%) of the students of our study agreed that doing research was beneficial for their future career. A similar result was found in another study done in Africa by Nel et al, which showed the significance of research participation acknowledged by 74% of studied subjects, 81.6% of the participants agreed that research training should be offered to all the students in study classes¹¹. This was in accordance with one of the suggestions given in the research conducted at a university in Sudan in which it was suggested that there was a requirement to educate the students about the importance of research in Medicine¹⁸. In our study, interest and awareness level of medical students towards research remarkably increased with the advancing undergraduate academic year. This was in consistence with the study conducted in Croatia in which Vujaklija et al stated that they had recorded an increase in the attitude score towards research as the junior students moved to senior levels¹⁹. Total 59% of the students stated that they would like to take part in research whether it was compulsory or not. This finding was opposed to the study conducted at a Sudanese university in which the main motive to conduct research was its compulsion in the syllabus which was also comparable with the Saudi study (78.5 %) ²⁰. Regarding the attitude towards research, our findings indicated that majority had a positive attitude towards research (69.5%), which is consistent with other studies , like by Vodopivec et al. and Khan et al^{21,2}.

According to our study, with their interest in research in the early classes, awareness of research increased massively in students of the 4th and final academic year. These research results were similar to research conducted at the Ayub Medical College in Pakistan in which it was found that barely any student had a research experience before they took part in a compulsory curriculum research in 4th academic year⁶. Also, this was consistence with the study conducted in Canada in which (43%) of the students had not made any significant research contributions⁹.

CONCLUSION

This study aimed to understand the medical student's interest regarding research and their research awareness. A strong direct relationship of interest and awareness in research was observed with ascending academic years of MBBS at FUMC indicating that with advancing academic years the awareness and interest regarding research among the medical students increases.

LIMITATIONS

A smaller sample size of the study could be a limitation. Thus, the results of this study cannot be labelled for all medical students in Pakistan. Self-selection bias could also be a limitation factor because those participants who chose to take part in this study may be more familiar with the concept of research.

RECOMMENDATIONS

Future research needs to involve multiple colleges in order to evaluate the degree of generalizability of our results.

AUTHORS' CONTRIBUTION

Mahnoor Tariq Awan, Sawera Allahdad, Abdul Rehman	Drafting the Article
Muhammad Ali Bin Jabir, Abdul Rauf, Ayesha Amjad, Attia Habib Afsar, Abdul Rasheed Talha	Analysis and interpretation of data
Nosheen Zaidi, Attia Habib Afsar	Conception and design
Nosheen Zaidi, Attia Habib Afsar, Ayesha Amjad, Sawera Allahdad, Mahnoor Tariq Awan, Muhammad Ali Bin Jabir, Abdul Rauf, Abdul Rasheed Talha, Abdul Rehman	Acquisition of data
Nosheen Zaidi	Critical revision

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