ATTITUDE AND PERCEIVED BARRIERS TOWARDS RESEARCH AMONG MEDICAL STUDENTS

Huda Abbas,[1] Sundas Hamna,[2] Summaira Hassan,[3] Shanawar Saeed,[4] Ayesha Kausar[5]

ABSTRACT

Background and Objective: Research is a systematic investigation and study of materials and sources in order to establish facts and reach new conclusions. Research has been incorporated into the undergraduate medical curriculum to help future doctors become better clinicians and improve patient care. It is crucial to understand and address the attitudes and challenges faced by the medical students and healthcare providers in conducting quality research. The objective of this study was to determine attitudes and perceived barriers towards research among medical students of Quaid e Azam Medical College (QAMC) Bahawalpur.

Methods: A descriptive cross-sectional study was conducted at QAMC, Bahawalpur over a period of six months from April 2024 - September 2024 where a sample of 205 medical students was taken by using non-probability convenient sampling technique. Data were collected by online questionnaire. Frequencies and percentages were calculated and presented in the form of tables and graphs. Chi Square was applied as test of significance where needed.

Results: Regarding awareness of the research 84.4% students had the knowledge of research and 94.6% of the respondents found it helpful. 28.8% of the respondents ever participated in research. The barriers found were lack of education and skills (87.3%), while lack of personal interest (40%) for future research. Significant relationship was found between academic year and participation in research.

Conclusion: Most of the students showed positive attitude towards research. The barriers found were lack of education, skills, opportunity and personal interest.

Key Words: Research, Skills, Barriers, Medical Education, Medical Students

How to cite: *Abbas H, Hamna S, Hassan S, Saeed S, Kausar A. Attitude and Perceived Barriers Towards Research among Medical Students . JAIMC, 2024;22(4); 136-140*

Research is a structured process that uses established methods to gain new knowledge, develop science, or create inventions. In today's era of evidence-based practice, there is a strong focus on incorporating research into the undergraduate medical curriculum to help future doctors become better clinicians and improve patient care. The scientific work produced by undergraduate students reflects their critical thinking skills and research mindset. Additionally, having research experience and publications can increase a medical student's chances of being accepted into competitive postgraduate training programs.[1] Medical students are essential to the future of academic medicine and clinical practice. Therefore, teaching research skills to both undergraduate and postgraduate medical students positively impact their ability to communicate and learn in the field of research.[2]

Despite their crucial role, the number of physician investigators has been declining since the early 1990s. Given this trend, it is more important than ever for medical students to participate in clinical research. A Jordanian university survey revealed that students perceived research to be an important tool for promoting sound reasoning and for provision of health services and care.[3] Another

1-5. Department of Community Medicine, QAMC, Bahawalpur

Correspondence:
Dr. Huda Abbas, *Assistant Professor, Department of Community Medicine, QAMC. Email: hudaarshad@yahoo.com*

Submission Date: 22-11-2024
1st Revision Date: 25-12-2024
Acceptance Date: 31-12-2024

Jordanian study showed that the students considered research to be of direct importance to them & they strongly agreed on making research participation as part of their degree requirement.[4] Similarly a research in India revealed that the students considered research to be useful for their future career and that the patient outcome improves with continued medical research.[5]

Despite being included in the medical undergraduate curriculum, the declining trend in research among medical students has still not improved due to certain barriers and factors. The major barriers students encountered were the lack of time, heavy academic workload, and lack of experience or skills. A study at Saudi Arabia University revealed that the lack of time and burden of educational activities like examinations were the strongest personal barriers.[6] An international survey showed that the lack of time was the predominant barrier for conducting research in almost all of the studies, and that the lack of statistical support was a major obstacle for conducting the research.[7]

Pakistan faces numerous medical, environmental, and psychosocial challenges that need to be studied. However, like many developing countries, research here is still in its early stages. The country faces the barriers in medical research similar to other developing nations. With a few exceptions, quality research in Pakistan is limited, often hindered by poor methodology and inadequate training of researchers. Although efforts are being made to improve research training at both undergraduate and postgraduate levels, the overall research output remains low. Much of the research conducted comes from mandatory papers required for postgraduate training. It is crucial to understand and address the attitudes and challenges faced by healthcare providers in conducting quality research. Addressing this could help identify barriers and encourage more young professionals to engage in research, leading to a higher quantity and quality of studies with greater impact.

Physician-investigators are essential for connecting basic sciences with clinical practice; however, involving medical students in research can help fill this gap and improve clinical research. When medical students get involved in research projects, it can lead to more publications in medical schools. This suggests that involving undergraduates could help improve research in countries like Pakistan. Medical students can assist in research projects and eventually meet the growing need for such professionals. Their participation also helps them develop scientific and critical thinking skills, which boosts their research output later in their careers. To improve undergraduates' roles in medical research, we first need to understand their current knowledge, attitudes, and potential challenges. Previous studies have looked at these factors, but still leaving gaps in data.

METHODS

A descriptive cross-sectional study was conducted at Quaid-e-Azam Medical College, Bahawalpur over a period of six months from April 2024 to September 2024. The study population comprised of male and female undergraduate medical students aged 18 to 26 years, from all five academic years. The sample size was 205, calculated by using Raosoft sample size calculator. The sample was recruited by non-probability convenient sampling technique. The students who were under 18 years of age, and those who were unwilling to participate were excluded from the study. After taking informed consent, data were collected through an online questionnaire having two separate sections. Section 1 included questions regarding demographic details of the students while section 2 contained close ended questions regarding the attitude and barriers to research among the students. There were no conflicts of interest.

The data were entered and analyzed using SPSS software; version 26. Mean and standard deviation for age was calculated. Tables and figures were made. Frequencies and percentages were calculated for qualitative variables. The effect modifiers (age, gender) were presented using

stratification. Chi square test of significance was applied. P value of ≤ 0.05 was taken as statistically significant.

RESULTS

Among 205 medical students, 47.3% were males and 52.7% were females. Mean age was 21.66±3.56 years. Majority of respondents were from 4th year. 84.4% of the study participants had the knowledge of research. 94.6% found it useful. 71.2% had not participated in publishing a research, ever. Among those who participated in a publication, shared their experience 14.6% as nice, 17.1% as satisfactory and 5.4% of respondents found it unpleasant.

Regarding reasons for not participating in research, 33.2% of respondents cited a lack of opportunity, 10.7% found research boring and 8.8% of students found it difficult. 87.3% of the respondents identified lack of knowledge and skills as barrier while lack of personal future in research was identified by 40% of students as shown in Table 1.

Table 1: Perceived Barriers of students towards research

Perceived Barriers	Yes N (%)	Cannot Say N (%)	No N (%)
Lack of education and skills	180 (87.3)	23 (11.2)	3 (1.5)
Lack of mentorship	168 (81.6)	31 (15.1)	7 (3.3)
Lack of stimulation and support	152 (73.1)	39 (18.8)	17 (8.1)
Lack of sufficient time	132 (62.9)	41 (19.5)	37 (17.6)
Stressful curriculum	156 (75.8)	27 (13.1)	23 (11.1)
Lack of funding	158 (76)	34 (16.3)	16 (7.7)
Lack of access to resources	127 (61.1)	41 (19.7)	40 (19.2)
Lack of knowledge regarding a reason for conducting research	171 (80.7)	22 (10.3)	19 (9)
Feeling overwhelmed and unsure about how to start	165 (79)	32 (15.3)	12 (5.7)
Having no personal future in research	83 (40)	61 (29.3)	64 (30.7)
No credit for research in final exams	112 (54)	59 (28.3)	37 (17.7)

In relation to the application of research in medical profession, 94.6% of the respondents believed that research was helpful in medical profession, while 42.9% of students considered research burdensome as shown in Table 2.

Table 2: Attitude of students Towards Research

Attitude Towards Research	Yes N(%)	No N(%)
Research is helpful in medical profession	194 (94.6)	11 (5.4)
It is important for students to participate in research	193 (94.6)	12 (5.4)
Research is useful for future career	193 (94.6)	12 (5.4)
Patient outcome improves with continued medical research	191 (93.2)	14 (6.8)
All medical advances are based on proper application of scientific methodology	187 (91.2)	18 (8.8)
Research is a burden on students	88 (42.9)	117 (57.1)
Willing to participate in research or attend a conference regarding research	176 (85.9)	29 (14.1)
Research develops critical thinking	195 (95.1)	10 (4.9)
Research should be made part of curriculum	179 (87.3)	26 (12.7)

A statistically significant association was found between academic year and participation in research (p=0.001). Students in higher academic years were more likely to participate in research as shown in Table 3.

Table 3: Academic Year and Research Participation

Academic Year	No	Yes	Total
1styear	16	1	17
2ndyear	23	2	25
3rdyear	33	12	45
4th year	68	35	103
5th year	6	9	15
Total	**146**	**59**	**205**

Gender wise distribution of the respondents showed that 33% of the females and 26% of the male students ever participated in a research showing no statistically significant relationship between gender and research participation (p=0.661).

Regarding academic year and perception of no credit for research in final assesments, significant association was found (p=0.05).

Discussion

The current study aimed to explore the attitudes and perceived barriers towards research among medical students of QAMC, Bahawalpur. The findings provide valuable insight into the students' perspective on research and highlight the factors that inhibit their engagement in research activities. The study revealed that 87.3% students identified lack of education and skill as a significant barrier to research. This was in excess of 66.1% of the medical students of Nepalgung Medical College who perceived lack of skill as a significant barrier to research.[8] By this statistics it came into knowledge that research skills in medical students of Bahawalpur are way insufficient and that they hinder active participation of students in the field of medical research.

The study conducted among medical students in Jordan revealed that the lack of research opportunities (80%) was a significant barrier to students participation in research.[4] While in our study it came out to be 33.2%. It means that there are ample research opportunities for the medical students of Bahawalpur as compared to the medical students of Jordan. The study conducted in 7 medical institutes of Iraqi Kurdistan showed that lack of stimulation and support from faculty was a barrier for 36% students.[9] While in our study 73.1% students identified it as a barrier. It reveals the fact that medical students of Bahawalpur are more dependent on external stimulation and support for progressing in research as compared to those of Iraqi Kurdistan. The same study showed that lack of mentorship was perceived as a barrier by 43% of the students while in our study it turned out to be 81.6% of the students, showing that medical students of Bahawalpur lack the mentorship more and they consider it vital for doing valuable work in the field of research.

The study conducted among undergraduate medical students of Bangladesh showed that 96.7% of the students found research helpful for critical thinking.[10] This was consistent with the findings of our study where 95.1% of the students thought the same. It emphasizes that medical students of both Bangladesh and Bahawalpur were aware of the importance of the research. The same study revealed that time was considered as a barrier by 89.1% of the students whereas in our study it came out to be 62.9% which showed that students in Bangladesh were having difficulty in managing time and thus considered it as a major barrier towards participation in research.

The study done among medical students of Karachi revealed lack of funding as a barrier for 87.5% of the students.[11] While in our study it turned out to be 76%. The lack of funding is a major issue that is faced when students want to pursue research at national level.

In our study fourth-year medical students (33.9%) showed the highest level of knowledge about research. Same results were found in a study conducted among medical students in Lahore where majority (45.5%) of the fourth year students had the highest level of knowledge.[12] The reason must be that research is a part of curriculum in this year. An exposure to clinical research in earlier classes would be helpful. It should be made mandatory for graduation.

CONCLUSION

Most of the students showed positive attitudes towards research. However, the barriers found were lack of education, skills, opportunities, personal interest, sufficient time and stressful curriculum that prevented students from engaging in research.

Ethical Approval: The ethical approval was obtained vide letter no. 2703/DME/QAMC Bahawalpur.

Conflict of Interest: *None*
Funding Source: *None*

Author's Contribution

Conceptualization study design	HA, SA
Data Acquisition	HA, SA, SH
Data Analysis/ interpretation	HA, SA, SS
Manuscript drafting	HA, SA, SS
Manuscript review	HA, SA, AK

All authors read and approved the final draft.

REFERENCES

1. Orebi HA, Shahin MR, Awad Allah MT, Hegazy AH, Alshakhs MA, Alaithan AM, et al. Medical students' perceptions, experiences, and barriers towards research implementation at the faculty of medicine, Tanta university. BMC Med Educ. 2023 Nov 27;23(1):902.
2. Abushouk AI, Hatata AN, Omran IM, Youniss MM, Fayez Elmansy K, Meawad AG. Attitudes and perceived barriers among medical students towards clinical research: a cross-sectional study in an Egyptian Medical School. J Biomed Educ. 2016. (1):5490575.
3. Al-Mohtasib J, Al-Huneidy L, Taha H, Rayyan R, Mansour S, Samhouri J, Hammouri M, et al. Perceived attitudes and barriers towards medical research: a survey of Jordanian interns, residents, and other postgraduates. Korean J Med Educ. 2023 Sep;35(3):249-261.
4 Abu-Helalah MA, Alshraideh HA, Al-Abdouh AA, Dalbah TA, Badran YR, Masarweh OF, et al. Research participation among medical students in Jordan: rates, attitudes, and barriers. Int J Acad Res. 2015 Mar;7(02):14-9.
5. Vairamani CR, Akoijam BS. Knowledge, attitude and perceived barriers towards conducting research among students in a medical college, India. Int J Community Med Public Health. 2018 Jun;5(2):806-10.
6. Al Saeed AA, AlEnezi SH, Aljindan M, Alwadani F, Al Owaifeer AM. Experience, attitude, and perceived barriers towards research among ophthalmology residents in Saudi Arabia: a national cross-sectional study. Clin Ophthalmol. 2022 Feb 3:265-72.
7. Ashour L, Hatamleh H. Barriers to research participation among medical students internationally: an updated systematic review. Health Professions Educ.2024;10(1):2.
8. Shrestha M, Rupak KC, Luintel P, Joshi A, Mahat R. Knowledge, attitude and perceived barrier towards medical research among undergraduates and postgraduates medical students of Nepalgunj Medical College. J Nepalgunj Med Coll. 2022 Dec 31;20(2):54-7.
9. Mosa AA, Mahmood AJ, Farooq KF, Haji JR, Jacksi D, Mohamed Saqid DK, et al. Medical students' knowledge, attitude, practice, and perceived barriers towards medical research: a cross-sectional study. Galician Med J. 2024;31(1).
10. Ferdoush J, Johora F, Khan I, Towfiq Hossain SM, Sadia H, Jeenia FT, et al. Attitude and perceived barriers towards research among undergraduate medical students of Bangladesh. medRxiv. 2021 May 2:2021-04.
11. Bilal M, Haseeb A, Mari A, Ahmed S, Khan MA, Saad M. Knowledge, attitudes, and barriers towards research among medical students of Karachi. Cureus. 2019 Sep;11(9).
12. Khan P, Afzal MF, Hamid MH, Hanif A. Barriers to research for students: A cross-sectional survey conducted at King Edward Medical University, Lahore. 2019;33(2):13-17.