

INTEREST IN RESEARCH AMONG MEDICAL STUDENTS: CHALLENGES FOR THE UNDERGRADUATE EDUCATION

Fatima Muhammad¹, Iqbal Wahid¹, Saiqa Saleem², Syed Abir Hussain³, Zaheer Babar⁴, Syed Hassan Jan⁵

¹Medical Education Department, Northwest School of Medicine Peshawar Pakistan.

²Dental Education Department, Frontier Medical & Dental College, Abbottabad.

³Community Dentistry Department, Frontier Medical & Dental College, Abbottabad.

⁴Community Dentistry Department, KMU Institute of Dental Sciences, Kohat.

⁵Oral Biology Department, Frontier Medical & Dental College, Abbottabad.

ABSTRACT

Objective: To assess research related activities at undergraduate level in private and public medical colleges of Pakistan.

Materials and Methods: This was a cross-sectional study in which a questionnaire was applied to medical students at different medical colleges including public and private that are Khyber Medical College, King Edward Med College, Federal Medical & Dental College, NWSM and Rehman Medical College. Sample Size was 496 Students participated in the study, sample size was calculated on WHO calculator. Sampling Technique was Convenience sampling technique.

Results: This was cross sectional study. A total sample size was 496 in which the mean age of the participants was 22.2 + 8.3 years. While distributing the patients with regards to gender, we observed that in our study 42.14% of the sample was male and 57.86% were female gender. 67% of students were following integrated while 33% conventional type of curriculum and 55% were satisfied with the research content available in their curriculum. About 74% of students said that research classes started from 1st or 2nd year; however, 58% reported there was no faculty available for teaching research in their institute.

Conclusion: This study provides a baseline evidence regarding challenges to research during undergraduate medical programs including lack of research faculty, student journals and no assessment of students regarding research. Moreover, it reveals that medical students are likely to undertake and continue research at both undergraduate level and after graduation but there are no guided and mentored research activities available.

Keywords: Medical Schools; Biomedical Research; Medical Education; Motivation; Learning; Career Choice

INTRODUCTION

The question of whether a research component should be an essential part of medical curriculum has been debated in the past and is still controversial.¹ Health research training is an important part of un-

dergraduate medical education. Medical research at undergraduate level has been given poor importance in developing countries.^{2,3} The current undergraduate academic programs in Pakistan are not producing enough personnel for research purposes in the various medical fields. This curriculum does not motivate students' interests in research during their study in medical school and hence they are less likely to attempt and avail a research experience.³⁻⁵ As most students entering medical school are unaware of how scientific research functions and its importance,

Correspondence:

Dr. Iqbal Wahid

Assistant Professor/Assistant Director Medical education and Research

Email: dr.iqbal@nwgh.pk

Contact: +923469033380

interest in scientific activity tends to emerge during the course. The factors leading to the emergence of this interest are unknown. However, the influence of a scientific methodology course⁶ and the opportunity to participate in scientific research during the entire degree tend to produce more researchers than limited participation during part of the higher education course.⁷ Efforts must be made to increase research output, by encouraging student research through various programs like mentored student projects. The objective of the study is to assess research related activities and students perspectives at undergraduate level in private and public medical colleges of Pakistan.

MATERIALS AND METHODS

This was a cross-sectional study in which a questionnaire was applied to medical students at different medical colleges including public and private that are Khyber Medical College, King Edward Med College, Federal Medical & Dental College, NWSM and Rehman Medical College.

A total Sample Size was 496 Students participated in the study, sample size was calculated on WHO calculator. Sampling Technique was Convenience sampling technique. Inclusion Criteria was all the 1st 2nd and 3rd year Medical students in both public and private medical colleges of Peshawar, Lahore and Islamabad and exclusion Criteria include all those students who were not willing to participate. Ethical Approval was granted from NWSM and respective Administrations of Medical Colleges. A well-structured and self-reporting survey questionnaire was used as an instrument to collect data and examine. The questionnaire was accompanied by clear instructions on how to answer the questions and a properly written consent was obtained. Descriptive statistics were performed to generate frequency tables for all

the variables. Data results were displayed in the form of plain text and graphs. Multiple response technique was used to identify overall response rate on SPSS version 20.

RESULTS

Total same size was 496. The mean age of the sample was 22.2 + 8.3 years. While distributing the patients with regards to gender, we observed that in our study 42.14% of the sample was male and 57.86% were female gender. 67% of students were following integrated while 33% conventional type of curriculum and 55% were satisfied with the research content available in their curriculum. 74% of students said that research classes started from 1st or 2nd year; however, 58% reported there was no faculty available for teaching research in their institute. A total 89% said they do not have any publications till date and 75% reported they do not attend any research symposia or workshops and Female students were likely to do research for interest in research or to increase knowledge and experience while majority of male students reported they do research for CV or for USMLE. A total 72% agreed that research be taught right from 1st year and be included as regular part of assessment. A total 79% said they are doing and plan to continue doing research after graduation ($F > M$).

DISCUSSION

This was a cross-sectional study in which a questionnaire was applied to medical students at different medical colleges including public and private that are Khyber Medical College, King Edward Med College, Federal Medical & Dental College, NWSM and Rehman Medical College. Total same size was 496. The mean age of the sample was 22.2 + 8.3 years. While distributing the patients with regards to gender, we observed that in our study 42.14%

Table: 1 Research Activities among Different Medical Colleges

Variables	NWSM	RMC	Federal Med & Dental College	King Edwards	KMC
Standardized Research Curriculum	19.7%	21.6%	0.00%	45.6%	13.1%
Satisfaction from Research Content in Curriculum	23.1%	24.9%	0.00%	39.6%	12.5%
Faculty Available for Research	43.5%	14.7%	0.00%	8.5%	33.3%
Research Classes from 1st Year	35.9%	32.6%	6%	16.8%	8.7%
Availability of Student Journal	24%	20%	2.5%	36.9%	16.6%

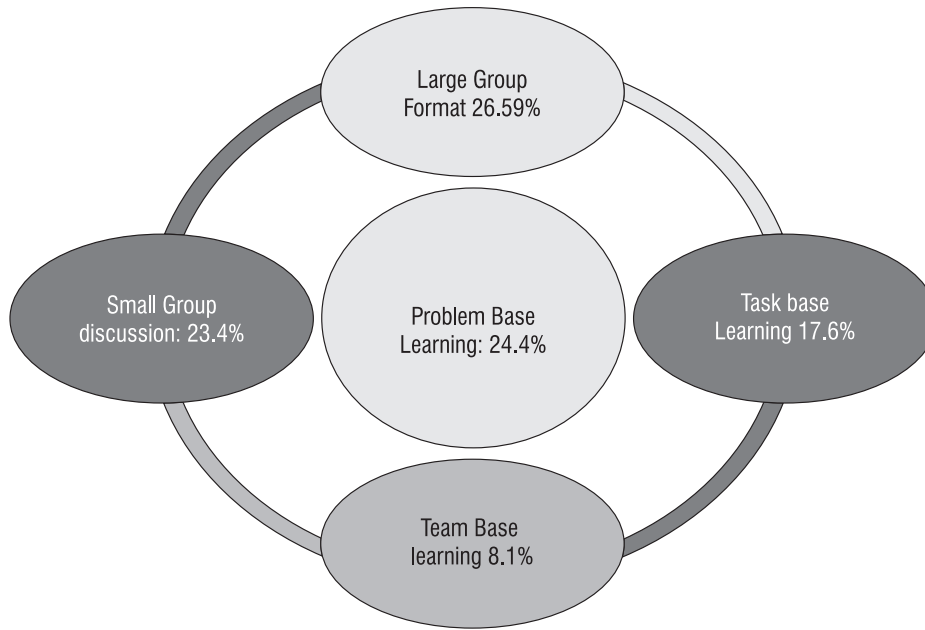


Fig 1: What type of teaching Methodology used for Research in your Institute? (after multiple response technique analysis)

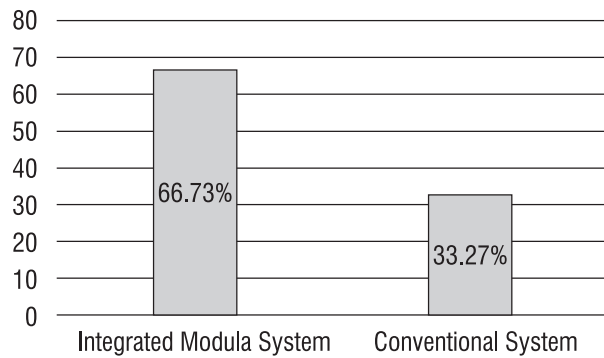


Fig 1: Type of curriculum

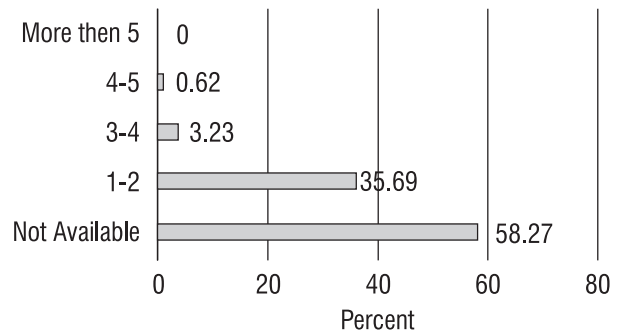


Fig 3: Number of faculty available for teaching Research subject only

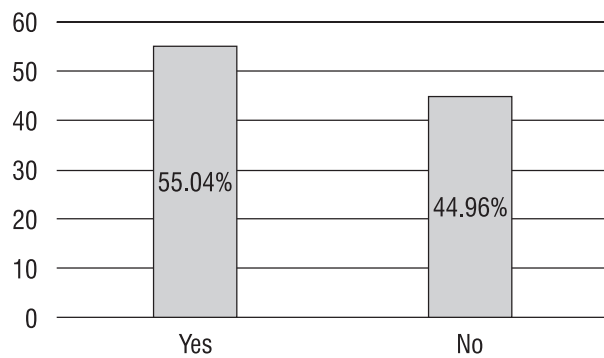


Fig 2: Are you satisfied from research contents available in curriculum

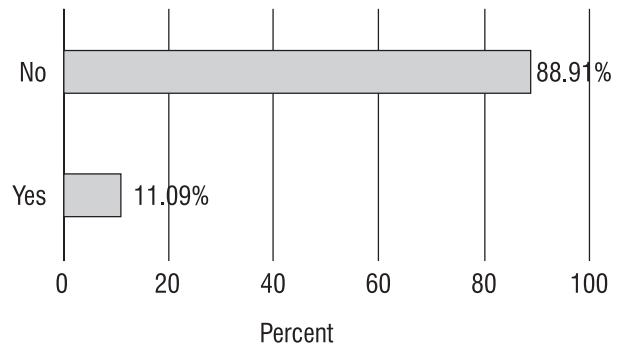


Fig 4: Do you have any studies published in a scientific journal

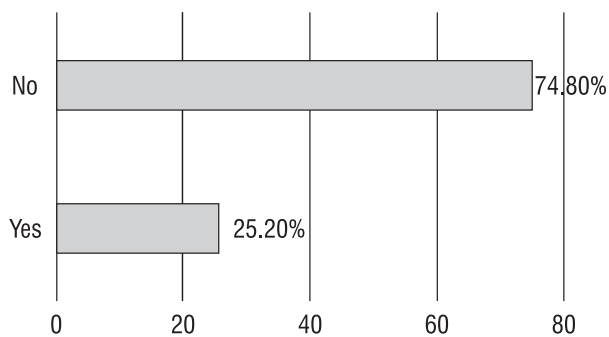


Fig 5: Do you attend any Research symposium or work shop during study

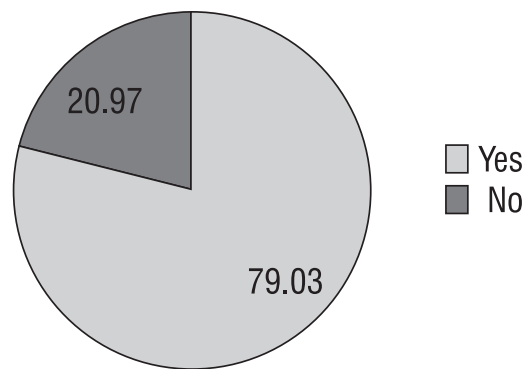


Fig 8: Do you work or plan to work with research during your undergraduate program

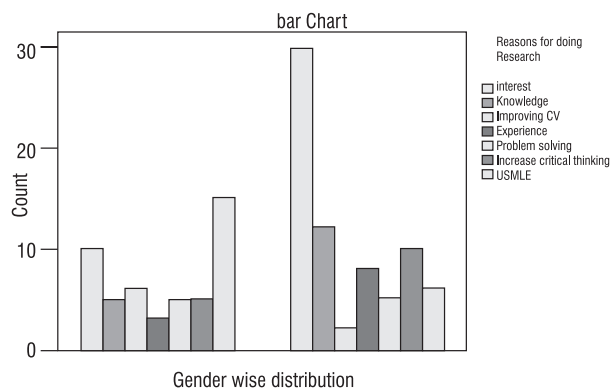


Fig 6: Gender wise distribution

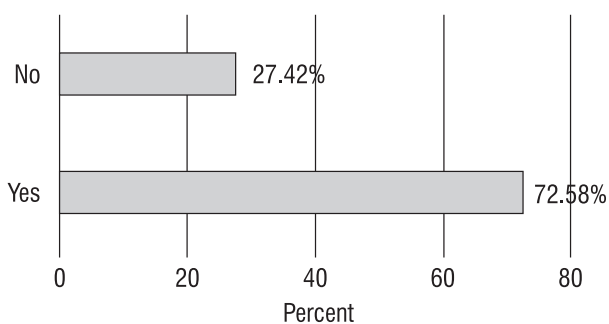


Fig 7: Do you think that assessment for research should be done regularly from 1st year to final year

of the sample was male and 57.86% were female gender. 67% of students were following integrated while 33% conventional type of curriculum and 55% were satisfied with the research content available in their curriculum. 74% of students said that research classes started from 1st or 2nd year; however, 58% reported there was no faculty available for teaching research in their institute. A total 89% said they do not have any publications till date and 75% reported they do not attend any research symposia or workshops and Female students were likely to

do research for interest in research or to increase knowledge and experience while majority of male students reported they do research for CV or for USMLE. A total 72% agreed that research be taught right from 1st year and be included as regular part of assessment. A total 79% said they are doing and plan to continue doing research after graduation (F>M). The advancement of scientific studies in the biomedical areas has increased the need to recruit more and more health professionals to the area of research.⁸ Preliminary studies demonstrate high levels of interest in research among medical students, with the intention of integrating scientific activity with their curricular activity. However, many of them do not understand the benefits of research during their training period.⁹ Despite growing interest over time during the medical course, a decreasing number of new medical researchers have effectively been verified in recent years.¹⁰ We also noted that a portion of the respondents to the survey already had published scientific studies. Depending on the characteristics of certain studies in the health area, some of which were undertaken over a long period of time and therefore sometimes involving a rotating team of researchers, we should also consider that other students who were possibly participating in research projects at the time the questionnaire was applied could have their work published by the end of their undergraduate program, or even afterwards. Most of the students who participate in scientific studies choose research in clinical areas.⁸ Previous studies have already shown that medical students in the first years, who are studying basic sciences, are more eager to participate in clinical trials than students carrying out medical rotations.¹¹ Payment is also an important motivational factor for research.⁵ Some medical students consider scientific research crucial

for their future medical activity,¹² with 80% of them stating their interest in putting into practice what they learned in their respective study has increased. Better guidance for medical students to conduct scientific studies is also considered crucial, so that they can publish their work and maintain their interest in science.¹² Even those who do not wish to pursue an academic career can benefit from the experience of scientific research in their professional practice given that nowadays professionals who know how to search scientific information and to critically evaluate it are essential.

Limitations of the study was that the data were collected using a non-validated, self-applied questionnaire. The sample was comprised of respondents who volunteered to the survey, which in itself may have selected individuals already predisposed to the field of research. However, as the objective of this work was to provide an overview about interest in research, and given that we achieved a number of respondents according to that specified initially in the methodology, these possible limitations do not negate the value of the study's findings.

CONCLUSION

This study provides a baseline evidence regarding challenges to research during undergraduate medical programs including lack of research faculty, student journals and no assessment of students regarding research. Moreover, it reveals that medical students are likely to undertake and continue research at both undergraduate level and after graduation but there are no guided and mentored research activities available.

REFERENCES

1. Deo MG. Need for research oriented medical education in India. *Indian J Med Res* 2009; 130: 105-7.
2. Frishman WH. Student research projects and theses: should they be a requirement for medical school graduation? *Heart Dis.* 2001; 3:140-4.
3. Bangash MA. Pragmatic Solutions for Problems in the Undergraduate Medical Programs in Pakistan available at <http://www.jpma.org.pk/PdfDownload/2317>
4. Dave V, Abraham RR. Fostering research skills in undergraduate medical students through mentored students projects. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/22610733>
5. Burgoyne LN. Undergraduate medical research: the student perspective. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/20844608>
6. Vujaklija A, Hren D, Sambunjak D, Vodopivec I, Ivanis A, Marusić A, et al. Can teaching research methodology influence students' attitude toward science? Cohort study and nonrandomized trial in a single medical school. *J Investig Med.* 2010; 58(2):282-6.
7. Laskowitz DT, Drucker RP, Parsonnet J, Cross PC, Gesundheit N. Engaging students in dedicated research and scholarship during medical school: the long-term experiences at Duke and Stanford. *Acad Med.* 2010; 85(3):419-28.
8. Zier K, Friedman E, Smith L. Supportive programs increase medical students' research interest and productivity. *J Investig Med.* 2006; 54(4):201-7.
9. Mostafa SR, Khashab SK, Fouaad AS, Abdel Baky MA, Waly AM. Engaging undergraduate medical students in health research: students' perceptions and attitudes, and evaluation of a training workshop on research methodology. *J Egypt Public Health Assoc.* 2006; 81(1-2):99-118.
10. Houlden RL, Raja JB, Collier CP, Clark AF, Waugh JM. Medical students' perceptions of an undergraduate research elective. *Med Teach.* 2004; 26(7):659-61.
11. Mowla A, Nabavizadeh SA, Bajestan MN, Tavakoli A, Seifi A, Tavakoli A. Payment as motivator in Iranian medical students' attitudes toward research. *South Med J.* 2006; 99(12):1403.
12. Ley TJ, Rosenberg LE. Removing career obstacles for young physician-scientists - loan-repayment programs. *N Engl J Med.* 2002; 346(5):368-72.