ORIGINAL ARTICLE

NEED ASSESSMENT OF TEACHING QUALITATIVE RESEARCH IN UNDERGRADUATE MEDICAL EDUCATION: A MIXED METHOD STUDY

Humera Adeeb[1], Syeda Saima Qamar Naqvi[2], Ihsan Ullah[3]

[1]Department of Community Medicine, Khyber Medical College Peshawar-Pakistan
[2]Baqai Medical University, Karachi-Pakistan, [3]Khyber Medical University Peshawar-Pakistan

Background: Accreditation bodies of medical education globally value competency in research that facilitates evidence-based practice of medicine. Physician-scientists need awareness of qualitative research methods for in-depth exploration of sociocultural, gender, behavioural, emotional, and religious factors affecting health that cannot be gauged by quantitative research methods. The introduction of qualitative research at the undergraduate level can enhance understanding of local populations' unique health needs and strengthen evidence-based practice. **Methods:** This was a mixed-method study conducted from July to October 2021. Four journals with dedicated student's corner/student journals were hand-searched for qualitative research articles published by students, over the past five years. Quantitative data was collected at four medical colleges of Khyber-Pakhtunkhwa for several qualitative research projects being conducted by students. Quantitative data was collected from the faculty of these colleges about the facilities of research departments. After analysing quantitative data, five semi-structured interviews via email were conducted about factors limiting qualitative research at medical colleges. Written responses were analysed for themes. **Results:** There was not a single qualitative research article published by students in local journals in five years. Out of 39 research projects by undergraduates at four medical colleges only one was qualitative. Two themes developed from qualitative data were underdeveloped research departments and a lack of attitude toward qualitative research. **Conclusion:** There is a felt need and gap to include qualitative research objectives at the undergraduate level, but before that emphasis needs to be placed on providing infrastructure, resources, and trained faculty to facilitate implementation. It will facilitate future doctors to find answers to problems impalpable by quantitative methods.

Keywords: Need assessment; Undergraduates; Qualitative research

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INTRODUCTION

The medical institutes in Pakistan are in the transition phase from a discipline-based curriculum to an integrated curriculum. This change is to align the undergraduate curriculum with the Pakistan Medical and Dental Council (PMDC) requirement for an integrated curriculum. Integration of curriculum is one of the requirements to grant World Federation for Medical Education (WFME) accreditation to PMDC.[1] The competency in necessary research skills, is required from graduates by PMDC and WFME.[2,3]

For the best decision making in healthcare, undergraduate students need to be familiar with research. Students develop interpersonal skills; professionalism, teamwork, academic writing skills, critical thinking, lifelong learning, communication and resource management.[4,5] These generic skills along with competency in scientific research are highly regarded and are relevant to patient care irrespective of speciality[5]. These skills are recognized by PMDC as essential standards.[1] Evidence-based practice guided by research competency is required to produce a "Physician Scientist". This helps in bridging the gap from bench to bedside. Addressing the declining trend of Physician-scientists is crucial to give the full benefits of research to patients.[6–8]

Research at the undergraduate level has helped students in deciding to pursue research careers more confidently [9]. Students with research experience at the undergraduate level are more likely to conduct research in future and secure an academic position in their career.[10–13] Competency in research is required and appreciated globally by most councils regulating medical education.[14]

In practice, doctors are faced with problems in research in local and global contexts that cannot be managed in the light of biomedical quantitative evidence only. There are dimensions of such problems rooted in gender, religion, ethnicity, social norms and socioeconomic factors that are impalpable. In-depth exploration of beliefs, culture, emotions, opinions, experiences and relationships of individuals that shape

this behaviour are identified by qualitative research.[15,16] There is a dearth of physician scientists to research and address health problems unique to our patients and society contextually. There is no support and incentives for pursuing research as a career for health professionals. This is predisposing and reinforcing a lack of progress in this aspect.[17] Society and patients need physicians, competent enough to bring the understanding of the local population unique needs to medical research. MBBS curriculum lacks, explicit specific qualitative research learning objectives.[2] Society and PMDC need for research competency along with WFME accreditation are driving and enabling factors. The objective of this study was to explore the need for teaching qualitative research at undergraduate level. The qualitative research competency will impart skills to graduates not only for health care demands of country but also for global competition.

MATERIAL AND METHODS

A sequential mixed method research study was conducted from July to October 2021.Ethical approval was granted via KMU/IPDM/IEC/2021/03. The first step was to map and quantify the current magnitude of qualitative research articles published by undergraduate students in the student journals and student corners of main journals. The journal issues were hand searched for qualitative articles published by students, from June 2016 to June 2020. The four journals included were Journal of Pakistan Medical Association (student corner), Student Journal of Ayub Medical College, Student Journal of Rehman Medical College and Pakistan Journal of Medicine and Dentistry (Student Corner). In the second step a quantitative survey was conducted at four medical colleges of Khyber-Pakhtunkhwa for research projects being conducted and the number of qualitative research projects for the current year by fourth year medical students. Participants were faculty working at the Community Medicine Departments of these medical colleges. Data were collected on a questionnaire sent to participants via email. The questionnaire was developed to quantitatively assess the qualitative research by the three authors. After analysing quantitative data, a qualitative study was conducted by semi-structured interviews for factors limiting qualitative research at institutes. Interview questions were developed and validated by three researchers. The questions along with participants' information sheets and consent form were sent to five participants via email and written responses were analysed for emerging themes. Each participant was given a code P1- P5. The 42 primary codes identified in written responses converged and ultimately four subthemes and two themes emerged from the transcripts.

RESULTS

Research visibility is nominal as student journals are not regularly published. Student corners of mainstream journals have mainly letter to the editors, reviews, communication and quantitative articles. The qualitative research is the most neglected area of research at undergraduate research publication as shown in (Table-1). Students in small groups conduct research in the Fourth year MBBS as part of Community Medicine curriculum. The majority of undergraduate research projects 38 (97.43%) in the Fourth year MBBS were quantitative as shown in table-2.

A total of 42 primary codes were identified from the transcripts. These 42 codes converged into four subthemes and two themes. The two major themes identified were underdeveloped research departments and lack of attitude for qualitative research (Table-3). Research departments at medical colleges were not well developed in terms of infrastructure and human resources. The faculty is not trained in qualitative research methods and considers them difficult, time consuming and lack of trend and will for qualitative research.

Table-1: Literature search for quantitative articles published by undergraduate students

Name of Journal	No of Issues	No of articles	Quantitative/reviews/letters/communication	Qualitative
Journal of Pakistan Medical Association (Student corner) (From August 2019 to July 2020)	12	32	12.	0
Student journal of Ayub Medical College (Available in 2015 only)	2	12	12	0
Student Journal of Rahman Medical College	Not available online			
Pakistan Journal of Medicine and Dentistry (student corner) (From Jan 2018-April 2020)	10	4	4	0

Table-2: Frequency and types of research projects undertaken by undergraduate students

	Frequency	Percentage
Number of Institutes	4	
Qualitative projects	1	2.57%
Quantitative Projects	38	97.43%
Total	39	100%

Table-3: Themes developed from semi-structured interviews

Theme	Subtheme	Representative quotes
1.Underdeveloped research departments	Infrastructure	"Moreover, now research is an integral component of the PRIME module for which the college is trying to establish a separate Research and Training cell" (P2) "There is no separate room, offices and tutorial rooms for research department. There is one room cum office where students can discuss their work" (P4)
	Human resource	"There is no designated faculty at research department". (P1) "The research coordinator is part of the Community Medicine department, though initially she was appointed for the said purpose only". (P1)
2.Lack of Attitude	Faculty not trained for qualitative methods	"The rest of the department wants her to share their work, so called burden of work with them". (P1) The faculty at department is reluctant to go for qualitative research. They lack knowledge and skill for it probably. (P5)
	Lack of will for qualitative research	"We hardly manage the quantitative research projects. Students are not that trained to take qualitative projects and faculty is also not interested in it". (P5) "I wonder if faculty will agree to take up qualitative projects". (P3)

DISCUSSION

Curriculum development at the undergraduate level, to incorporate explicit qualitative research learning objectives is need of the day. Themes identified in this study are partly aligned with the requirements identified in literature for teaching research methodologies at various levels of education. The intensive resources were identified by participants as main barrier to qualitative research.[18]

In a report published by World Bank Organization in 2019, the importance of providing "optimal learning spaces" in the form of architecture as well as human resources has been identified.[19,20] In medical schools, the linkage of basic, pre-clinical and clinical learning spaces has always been kept in mind while designing the infrastructure. In a study conducted in 2016, the importance of designated spaces and staff for various departments has been highlighted.[21] Same principle applies to teaching research methodologies including provision of small group discussion room with computers and internet facility. Another study conducted in 2020 discusses strategies to integrate research in clinical sciences. It emphasizes that students need to be provided with on-campus facilities to share their ideas with peers, teachers and mentors. They should also have access to designated places to conduct interviews with the patients or other subjects in both pre-clinical and clinical learning spaces.[8]

The establishment of a fully functional research department along with dedicated faulty for teaching various research methodologies has been recognized both locally and internationally.[8] However, in reality there is paucity of expert led research departments in the medical schools of Pakistan.[22] In addition, Physicians-scientists have only recently recognized the important of qualitative research in the field of medicine. This late realization has its effects on providing opportunities to the undergraduates in their early years of study, to learn about qualitative research methodology. Adam P et al, identifies this dilemma in his recent study:

"Even with advanced training, it can be difficult for clinician educators to understand and conduct qualitative research".[23]

In another study, the need for faculty development to understand how to teach qualitative research methodology has been emphasized.[24,25]

CONCLUSION

There is felt a normative need to include a course on conducting qualitative research studies in the medical colleges. Emphasis needs to be placed on providing infrastructure, availability of human resources and most importantly training the faculty to conduct this course. Training the future doctors to conduct qualitative component in their research will not only help them become better "Physician-scientist". It will also help the community in finding wide-ranging answers to different problems in relation to the science of medicine.

AUTHORS' CONTRIBUTION

HA: Literature Search, Conceptualization of study design, data collection, analysis and interpretation, write-up. SSQN: Literature Search, data collection, analysis and interpretation, write-up. IU: Data collection, analysis and interpretation, proofreading.

REFERENCES

1. PMDC. National Accreditation Framework for Medical and Dental Schools in Pakistan-2019. 2019 [Internet]. [cited 2022 Jun 22]. Available from: http://www.pmdc.org.pk/LinkClick.aspx?fileticket=Y6tXgbbhP8c%3D&tabid=429&mid=1101
2. HEC PA. Curriculum of M.B,B.S 2018 [Internet]. [cited 2022 Jun 22]. Available from: http://pmdc.org.pk/LinkClick.aspx?fileticket=EKfBIOSDTkE%3d&tabid=102&mid=556
3. WFME. World Federation for Medical Education. Basic Medical Education WFME Global Standards For Quality Improvement 2015. [Internet]. [cited 2022 Jun 22]. Available from: https://wfme.org/publications/wfme-global-standardsfor-quality-improvement-bme/?wpdmdl=831%27;return

4. Riley SC, Ferrell WR, Gibbs TJ, Murphy MJ, Cairns W, Riley SC, *et al*. Twelve tips for developing and sustaining a programme of student selected components. Med Teach 2008;30(4):370–6.
5. Abu-Zaid A. A graduate's perspective on medical student journals. J Postgrad Med 2019;65(3):169–70.
6. Yang VW. The future of physician-scientists-demise or opportunity? Gastroenterology 2006;131(3):697–8.
7. Furuya H, Brenner D, Rosser CJ. On the brink of extinction: the future of translational physician-scientists in the United States. J Transl Med 2017;15(1):88.
8. Permar SR, Ward RA, Barrett KJ, Freel SA, Gbadegesin RA, Kontos CD, *et al*. Addressing the physician-scientist pipeline: strategies to integrate research into clinical training programs. J Clin Invest 2020;130(3):1058–61.
9. 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.
10. Solomon SS, Tom SC, Pichert J, Wasserman D, Powers AC. Impact of medical student research in the development of physician-scientists. J Investig Med 2003;51(3):149–56.
11. Segal S, Lloyd T, Houts PS, Stillman PL, Jungas RL, Greer RB 3rd. The association between students' research involvement in medical school and their postgraduate medical activities. Acad Med 1990;65(8):530–3.
12. Al-Busaidi IS, Wells CI, Wilkinson TJ. Publication in a medical student journal predicts short- and long-term academic success: a matched-cohort study. BMC Med Educ 2019;19(1):271.
13. Metcalfe D. Involving medical students in research. J Royal Soc Med 2008;101(3):102–3.
14. Naveed A, Sultana F, Parveen S, Jawaad I, Saleem M, Aamer Y. Comparative Study of Competencies of a Fresh Medical Graduate in Pakistan in General and for Forensic Medicine in Specific. Pak J Med Health Sci 2018;12(3):1251–5.
15. The PME. Qualitative Research: Understanding Patients' Needs and Experiences. PLoS Med 2007;4(8):e258.
16. Cristancho SM, Goldszmidt M, Lingard L, Watling C. Qualitative research essentials for medical education. Singapore Med J 2018;59(12):622–7.
17. Iqbal MP. What ails medical research in Pakistan? Role of institutions. Pak J Med Sci 2015;31(6):1287–9.
18. Povee K, Roberts LD. Qualitative research in psychology: Attitudes of psychology students and academic staff. Aust J Psychol 2014;66(1):28–37.
19. Barret P, Treves A, Shmis T, Ambasz D, Ustinova M. The Impact of School Infrastructure on Learning A Synthesis of the Evidence. [Internet]. World Bank Publication; 2019. [cited 2021 Jun 20]. Available from: https://openknowledge.worldbank.org/bitstream/handle/10986/30920/9781464813788.pdf?sequence=2&isAllowed=y
20. World Bank. Why education infrastructure matters for learning [Internet]. 2017 [cited 2022 Jun 22]. Available from: https://blogs.worldbank.org/education/why-education-infrastructure-matters-learning
21. Akram A, Daud M, Rizwan F, Md Johar MG, Khan R. Structuring Quality Education by Proposing Physical Infrastructure of a Medical School. Educ Med J 2016;8(3):75–87.
22. Jawaid SA. What ails the Pakistani medical institutions? Pak J Med Sci 2015;31(4):747–50.
23. Sawatsky AP, Ratelle JT, Beckman TJ. Qualitative Research Methods in Medical Education. Anesthesiology 2019;131(1):14–22.
24. Lewthwaite S, Nind M. Teaching Research Methods in the Social Sciences: Expert Perspectives on Pedagogy and Practice. Br J Educ Stud 2016;64(4):413–30.
25. Pfadenhauer LM, Coenen M, Kühlmeyer K, Odukoya D, Schunk M, von Unger H. Teaching Qualitative Research Methods in Public Health and Medicine: a research oriented module. J Med Educ 2018;35(4):1–21.

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Address for Correspondence:

Syeda Saima Qamar Naqvi, Department of Medical Education, Baqai Medical University, Karachi-Pakistan
Cell: +92 321 915 8119
Email: saimaqamar24@hotmail.com