

Ethical Principles for Medical Student Recruitment in Education Research in Pakistan: A Systematic Review

Noor-i-Kiran Naeem^{1*}, Hamza Rana², Asfandyar Anwer³, Zil-e-Fatima Naeem³

¹Department of Medical Education, ABWA Medical College, Faisalabad, Pakistan.

²Department of Gastroenterology, Aziz Fatimah Hospital, Faisalabad, Pakistan.

³Department of Nephrology, Services Hospital, Lahore, Pakistan.

Correspondence:

Noor-i-Kiran Naeem
noorikiran@yahoo.com

Received: 6 January, 2023

Accepted: 6 April, 2023

DOI 10.51846/jucmd.v2i2.2253

Abstract

Objective: With the increasing publication in medical education research in Pakistan, this systematic review aims to identify both addressed and un-addressed ethical issues for student recruitment in medical education research.

Methodology: After key search terms finalisation selection criteria were defined for the systematic review. The finalised keywords were put in data bases of Pub-Med, Pakmedinet, and ERIC, revealing a total of 12084 articles. Google Scholar was used as grey literature search leading to 2509 articles. 10056 out of 10087 were removed upon initial screening. A total of 31 met the eligibility criteria according to PRISMA guidelines, out of which 23 were excluded leaving a final count of 8 articles to be included in the study.

Results: The ethical issues identified in the selected studies were, Distributive Justice, Autonomy, Rights to withdraw, Coercion into Study, Confidentiality, Informed Consent, Equity in participant selection, Awareness of research participation. Four out of eight studies failed to openly declare the rights of the students to participate voluntarily, while five out of eight studies failed to declare students having rights to withdraw. Three out of eight studies lacked distributive justice of educational content among different groups whereas two studies lacked methodological rigor on participant selection.

Conclusion: During the recruitment of students for research, researchers need to be aware of ethical issues and devise a strategy to address them. These issues should be thoroughly addressed before Institutional Review Boards approve data collection. Institutes promoting such research can train and educate researchers by practicing ethical research protocols.

Keywords: Medical students, Recruitment, Medical education research, Research ethics

Introduction

Medical education research often involves medical students, the main stakeholder in the educational processes. The research can range from descriptive studies to case studies from student perception studies to studying the impact of any educational intervention in teaching or learning strategies. In all these researches, the selection of study participants is contextual. While involving medical students in this research becomes crucial as they are the major stakeholders, justifying their selection and the methods involved may become challenging for the educators doing such research. There are multiple methodological and ethical issues that may arise while recruiting medical

students as study participants in research. Students may feel bound to participate in research, thereby making them “captive participants”.¹ Captive participants are deemed to be those individuals who are independent or restricted relationships with the researcher. Their ability to consent voluntarily is compromised or limited by their vulnerability to the researcher's power.² Most commonly occurring cases include students in research where their teacher is conducting research or even trainees of a ward where the supervisor is conducting research. The involvement of students in such cases may lead to a feeling of “coercion” where the voluntary participation of the students seems compromised.³

Another ethical issue that may arise may include a breach of trust between the teacher and his students while he is conducting research and yet depriving a group of an educational strategy that may benefit him. This issue of selected beneficence and compromised justice to all may seem to violate the fundamental human rights which in turn marks a question in the integrity of research ethics using students as participants.⁴ When teachers assume the role of researchers in education research conflict of interest may need to be addressed.

Analysing the same issues through the lens of ethics these issues can be found in the basic ethical framework of the principles of autonomy, beneficence, no maleficence and justice are commonly referenced.³ However, no hierarchy of these principles is provided to guide decision making in the research process. On the other hand principles of utilitarianism imply that faculty who recruit students as participants and rely on the coercive aspect of the relationship to encourage participation are justified if the findings of the studies are important to the discipline and to society as a whole. Lastly, within deontological framework, researchers give priority to giving respect to their participants and make sure that their identities are kept confidential and anonymous.

Several methodological issues may arise while using medical students in research. In interventional studies the identity of the participants may be difficult to stay hidden from the teach-



This is an open access article distributed in accordance with the Creative Commons Attribution (CC BY 4.0) license <https://creativecommons.org/licenses/by/4.0/> which permits any use, share — copy and redistribute the material any medium or format, adapt — rem transform, and build upon the materi for any purpose, as long as the author and the original source are properly cited. © The Author(s) 2021

ers, compromising the freedom of speech that the students could use at the time of data collection.² The same is the case for conducting focus groups for such students. Additionally, teachers may have issues at the time of participant allocation to a specific group of teaching or learning strategies under study.

It is important that the educators conducting medical education research know the ethical and methodological issues that may be encountered while recruiting medical students. A review is warranted to see which of these issues have been addressed and left out in medical education research in Pakistan as a number of articles using medical students as participants in education research has been on the rise. Hence this reviewed aimed aims to identify both addressed and unaddressed ethical issues for student recruitment in medical education research.

Methodology

This systematic review aimed to identify the ethical issues which were addressed or not addressed among the selected original articles related to medical education research in Pakistan between 2016 to 2021. The study objective used PCC criteria to identify the participants (medical students) context using students as study subjects and concept (research ethics). Key search terms were defined as “Medical students, recruitment, medical education research, ethical principles or research ethics” keeping in mind the main research question which was “What ethical principles have been considered in medical education research trials, recruiting medical students as study subjects?”. Secondary research question was “Which ethical issues have not been addressed while recruiting medical students as study subjects in medical education research?”. After key search terms finalisation, selection criteria were defined for the systematic review.

Table 1. Selection Criteria for Studies Identified in Review.

| Selection Criteria for studies identified in review | |
|---|--|
| Article Selection Criteria (Upon title and abstract search) | |
| 1. | Articles in English Language |
| 2. | Last Five years |
| 3. | Original articles |
| 4. | Studies conducted in Pakistan |
| Full Text Inclusion Criteria | |
| 1. | Studies with planning and implementation of in-class experimentation. |
| 2. | Studies using students as research participants evaluates teaching strategy or resource. |
| Full Text Exclusion Criteria | |
| 1. | Knowledge, Attitude, and Practices studies involving students. |
| 2. | Studies regarding students’ perspectives, or opinion. |
| 3. | Prevalence/Frequency studies |

Literature Search

The finalised keywords were put in data bases of PubMed, Pa-

kmedinet and ERIC revealing a total of 12084 articles. Google Scholar was used as grey literature search leading to 2509 articles. 10056 out of 10087 were removed upon initial screening. (See Figure-1). A total of 31 met the eligibility criteria out of which 23 were excluded leaving a final count of 8 articles to be included in the study. (Annex 1 for detailed chart of selected articles data).

Results

The systematic review led to identification of eight original articles related to medical education research, recruiting students as study participants. Following themes were obtained after review of the selected articles pertaining to ethical issues related to student recruitment. A brief explanation in context of research practices is also mentioned below in Table 2.

Table 2. Identified Ethical Principles with Definitions for Student Recruitment in Medical Education Research

| Ethical Principle | Meaning in Context of Research |
|-------------------------------------|---|
| Distributive Justice | Research Methods ensuring equal distribution of all educational related resources. |
| Autonomy | Allowing students to decide whether to participate in study or not- Voluntary Participation |
| Rights to withdraw | Open statement for rights to withdraw declared in study or not. |
| Coercion into Study | Leading the students to participate in research due to the educational post, researcher is holding. e.g. Being teacher, managing grades/attendances |
| Confidentiality | Keeping identities and data confidential in research especially when researcher is the primary teacher to these students. |
| Informed Consent | Informing students about research in detail for taking consent to involve in study. |
| Equity in participant selection | Making sure that population selection and allocation of groups is not biased or conflicting in any way |
| Awareness of research participation | Making sure students are briefed about research process, their data usage, implication on their academics |

The table above highlights various types of ethical issues identified in the selected studies. As seen from above table four out of eight studies failed to openly declare the rights of the students to participate voluntarily with five out of eight studies failed to declare students having rights to withdraw. Three out of eight studies lacked distributive justice of educational content among different groups whereas two studies lacked methodological rigour on participant selection.

Table 3. Identified Unresolved Ethical Issues for Student Recruitment in Medical Education Research.

| Ethical Principle | Unresolved Ethical Issues |
|-------------------------------------|---|
| Distributive Justice | <ul style="list-style-type: none"> Deprivation of learning experience.^{5,6} Deprivation of resources.⁷ |
| Autonomy | <ul style="list-style-type: none"> Not explicitly declared.⁸ No voluntary participation.^{7,9,10} |
| Rights to withdraw | <ul style="list-style-type: none"> Not mentioned.^{5,6,9} |
| Coercion into Study | <ul style="list-style-type: none"> Assumption to include all in study.^{5,9} Was the participation kept mandatory for the course?¹⁰ |
| Confidentiality | <ul style="list-style-type: none"> As also declared in the study, some students were uncomfortable to present in front of all seniors.¹¹ Videotaping was done for role plays.¹¹ |
| Informed Consent | <ul style="list-style-type: none"> Not informing them about research intent.⁹ Informed Consent not mentioned to be taken.^{7,12} |
| Equity in participant selection | <ul style="list-style-type: none"> Different groups of students, final year having more experience but getting low score gives credibility issue to the institution.¹³ Sampling techniques not clearly mentioned.⁵ |
| Awareness of research participation | <ul style="list-style-type: none"> Lack of awareness of the study being conducted.¹² Lack of awareness of research process.⁹ Lack of awareness of implication of performance on their academic record.⁹ Lack of awareness of assessment data being taken for research. |

Three out of eight studies addressed issues of distributive justice with resource provision involving same teacher in teaching all groups, and having a cross over design to allow participants to experience both experiences mentioned in study. Issues of confidentiality was mentioned in one study with informed consent declared to be taken in two studies. Participant selection was addressed in two studies, with only one study providing details of the research process to make participants aware of research process and implication. None of the studies mentioned any strategies to promote voluntary participation rights to withdraw or avoiding coercion into study.

We identified some strategies from relevant literature for addressing ethical issues for student recruitment in Medical Education Research. For Distributive Justice the ethical practices identified were providing resources to all the students.¹² Same

teacher, teaching all to maintain uniformity⁵ flipping over of groups by a cross-over design.¹⁰ To maintain confidentiality, names of the students were not disclosed¹³ informed consent was obtained^{5,10} for equity in participant selection same cognition level taken and randomized sampling via computer generated numbers have been done in the past¹⁰ for awareness about research participation students were assured in one of the studies that these marks would not be counted towards their summative scores.¹⁰

Discussion

This systematic review aimed to highlight the ethical issues that the medical education researchers/educators may encounter while conducting studies involving students as research participants in their research. Table-4 shows common principles of research ethics as proposed in an ethical framework for student recruitment in medical education research.^{1,13,14} Much of the issues identified in this systematic review revolve around the issues of respect maintaining confidentiality and justice. What remains debatable is that despite the fact whether the researchers are aware of such issues while involving medical education research.

Table 4. Ethical Framework Proposed for Student Recruitment in Medical Education Research.¹

| Core Principle | Considerations for Students |
|----------------|--|
| Respect | Free, informed and ongoing consent Freedom of consent may be undermined if, Enrolled by either their teacher or the position in authority. Their willingness to participate in the study is informed to their faculty or peer |
| Welfare | Confidentiality Must be crucial if the faculty enrolled in the study have a dual role. Might breached if the inclusion criteria does not fit for all. |
| Justice | Protection of vulnerable groups vulnerability, Is defined by limited decision-making capacity. May stem from undue influence exerted either by faculty, peers or disproportionate incentives |

Strategies to address ethical issues in involving Students in medical education research should include,

Role of Institutional Ethical Review Boards

Research proposals submitted to an institution for institutional review constitute a key safety net for researchers involving captive groups in their research: The review protects both researchers and participants. An effective institutional review is not only necessary for the integrity and ethical values of the human participants but also possess a critical minimal insight to the risk of certain factors to the participants.

Use of participants from captive populations

Faculty members should also devise strategies to collaborate with students and faculty members of other institutes.¹⁵ Prior to starting any project, explicit informed consent should be obtained from students before using any products of their learning such as assignments, journals, and reflective learning.

Voluntary and informed consent

It may be easier to obtain consent from a dependent, captive, or status participant in a research project because of the relationship and the participant's desire to meet the expectations of the more powerful faculty member who is also a researcher.^{2,16} Through intermediaries, faculty power can be reduced in student-faculty relationships. Although according to the Nuremberg code, it is a researcher's integral duty and responsibility to ascertain the signing an agreement of the informed consent.^{17,18}

Data collection

Before collection of data, faculty should always consider the tools used for the inspection of data either by conducting an interview, analysis of document and observation might affect the participation of the student in the study. In such cases, the employment of a research assistant is essential.

Confidentiality and Ethical Principles

The confidentiality of the data should be maintained at any cost especially while conducting a qualitative study in which the researcher has to quote the findings of the participants. The data should be reported in such a way that the identity and participation of the participants should not be disclosed.¹⁸ The researcher should ensure a careful and confidential reporting of the demographic data. In some cases, identifying details from qualitative data may be replaced with generic descriptors in parentheses to prevent disclosure of participant identities.

Conclusion

Medical educational researchers might face an ethical dilemma while conducting research that uses the students as participants including informed consent, distributive justice, confidentiality, and issues with coercion. Medical Education Researchers may face an ethical dilemma when they conduct research by using students as participants including issues with coercion, informed consent, student autonomy, confidentiality, and distributive justice. During the recruitment of students for research, researchers need to be aware of ethical issues and devise a strategy to address them. These issues should be thoroughly addressed before Institutional Review Boards approve data collection. Institutes promoting such research can train and educate researchers by practicing ethical research protocols

References

1. Tulyakul P, Meepring S. Ethical issues of informed consent: Students as participants in faculty research. *Global Journal of Health Science*. 2020 Feb 15;12(3):86.

2. Ferguson LM, Yonge O, Myrick F. Students' involvement in faculty research: Ethical and methodological issues. *International Journal of Qualitative Methods*. 2004 Dec;3(4):56-68.

3. Sarpel U, Hopkins M, More F, Yavner S, Pusic M, Nick M, et al. Medical students as human subjects in educational research. *Medical Education Online*. 2013 Jan 1;18(1):19524.

4. Tomalka JA, Pelletier AN, Fourati S, Latif MB, Sharma A, Furr K, Carlson K, Lifton M, Gonzalez A, Wilkinson P, Franchini G. The transcription factor CREB1 is a mechanistic driver of immunogenicity and reduced HIV-1 acquisition following ALVAC vaccination. *Nature immunology*. 2021 Oct;22(10):1294-305.

5. Faisal R, Khalil-ur-Rehman BS, Shinwari L. Problem-based learning in comparison with lecture-based learning among medical students. *J Pak Med Assoc*. 2016 Jun 1;66(6):650-3.

6. Shah I, Mahboob U, Shah S. Effectiveness of horizontal peer-assisted learning in physical examination performance. *Journal of Ayub Medical College Abbottabad*. 2017 Oct 15;29(4):559-65.

7. Imran SS, Khan O. Effect of sleepiness on academic performance of medical students. *Rawal Medical Journal*. 2019 Jan 12;44(4):844-.

8. Ayuob NN, Qadi MA, El Deek BS, Boker AM. Evaluation of a communication skills training course for medical students using peer role-play. *J Pak Med Assoc*. 2017 May 1;67(5):745-51.

9. Sarwar S, Ali S, Ikram N, Khurram AB, Sheikh AK, Abdullah M. Effect of Problem Complexity on Group Learning and Problem Solving Skills of Medical Students. *Journal of Rawalpindi Medical College*. 2016 Jun 30;20(2).

10. Rafi A, Rauf A, Anwar MI. Significance of actually drawing microscopic images and its impact on students' understanding of histology. *Journal of the Dow University of Health Sciences (JDUHS)*. 2017 Dec 9;11(3):77-81.

11. Takács T, Czar D. Enhancing Professional Communication Skills in Teaching English for Specific Purposes. *International Journal of Second and Foreign Language Education*. 2021 Jun 25;1(2):48-59.

12. Ayub M, Toba H, Yong S, Wijanto MC. Modelling students' activities in programming subjects through educational data mining. *Global Journal of Engineering Education*. 2017;19(3):249-55.

13. Reid AM, Brown JM, Smith JM, Cope AC, Jamieson S. Ethical dilemmas and reflexivity in qualitative research. *Perspectives on medical education*. 2018 Apr;7:69-75.

14. Rudisill LJ. Enhancing a Middle School Student's Self-Management Skills in the Classroom.

15. Ferguson LM, Myrick F, Yonge O. Ethically involving students in faculty research. *Nurse Education Today*. 2006 Dec 1;26(8):705-11.

16. Ferguson LM, Yonge O, Myrick F. Students' involvement in faculty research: Ethical and methodological issues. *International Journal of Qualitative Methods*. 2004 Dec;3(4):56-68.

17. Grant RW, Sugarman J. Ethics in human subjects research: do incentives matter?. In *The Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine* 2004 Jan 1 (Vol. 29, No. 6, pp. 717-738).