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Medical ethics education and awareness: Insights from a study among pakistani medical students and faculty members

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Abstract

This study investigated the knowledge and attitudes towards medical ethics among medical and dental students and faculty members at five medical universities in Karachi, Pakistan. Utilizing a cross-sectional, questionnaire-based design, the research included 438 participants. The study found that while a majority of participants were aware of the four basic principles of medical ethics, only 15.3% could correctly identify all of them. The primary mode of ethics education was through lectures and seminars, with less emphasis on interactive learning methods. The study also revealed a significant gap in faculty engagement and understanding of medical ethics. Although the majority of participants were aware of their institution's ethics committee, a significant proportion were unaware of its existence. The study highlights the need to enhance faculty engagement, address gaps in comprehensive understanding, adopt more interactive teaching methods, and increase the curricular emphasis on medical ethics in Pakistan.

Keywords: Medical ethics awareness; Healthcare professional ethical competencies; Bioethics; Medical education; Ethics knowledge gap

1. Introduction

Ethics is a dynamic concept with a long history, dating back to the days of Hippocrates. The four fundamental principles of medical ethics, as introduced by Beauchamp and Childress, are: (1) Autonomy, which entails the rights of patients and physicians, (2) Beneficence, which involves acting in the best interest of the patient, (3) Nonmaleficence, which implies doing no harm (or the least harm possible), and (4) Justice, which refers to fairness and treating all individuals equally [1]. These principles have provided guidelines in the field of moral ethics, which has since developed into a full-fledged discipline in most developed countries [2].

Bioethics is the aspect of moral and ethical values that governs the medical profession and its allied fields, influencing critical thinking, decision-making, research, and medical education [3]. While medical universities are responsible for imparting knowledge, compassion, and good communication skills to their students, little attention is often placed on medical ethics and professionalism. Studies have shown that medical students have a limited understanding of ethics and receive minimal training on the various moral issues pertaining to medical treatment and research [4].

Lack of exposure to the healthcare system, its medico-legal aspects, and the social issues that impact communities are the reasons why medical students in Pakistan often score poorly in ethics and behavioral sciences in international licensing exams [5].

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As doctors enter their professional careers, they often find themselves embroiled in complicated, confusing moral dilemmas where they are expected to make the correct decisions. Truth-telling, maintenance of privacy and confidentiality, substitute decision-making, obtaining consent, conflict of interest, end-of-life issues, research ethics, and resource allocation are some of the numerous ethical challenges that form part of the daily life of every doctor [6].

Although ethics is a part of the undergraduate medical curriculum in all medical colleges of Pakistan, studies have reported that attendance in such sessions is generally low, and proper guidelines are needed to ensure appropriate ethical training in Pakistani medical schools [7]. Therefore, the aim of this study was to assess the current knowledge and attitudes regarding bioethics among faculty members and undergraduate medical and dental students in Pakistan.

2. Materials and Methods

The study was conducted using a cross-sectional, questionnaire-based design at five medical universities in Karachi, Pakistan: Bahria University Health Sciences, Ziauddin University, The Aga Khan University, Dow Medical University, and Jinnah Sindh Medical University Dental College. A sample size of 500 participants was determined using the WHO software [8], and a non-probability convenience sampling technique was used to recruit the study participants. All medical and dental students, as well as faculty members, from the participating universities were included in the study, while nursing students, physical therapy students, administrative, and healthcare staff were excluded. A self-administered, structured questionnaire with two sections, comprising sociodemographic data and questions assessing knowledge and attitudes regarding ethics was developed with the help of prior research studies. [4, 6, 7, 9] The questionnaire was piloted among ten participants and after determining its validity in the local setting (cronbach's alpha <0.7) it was disseminated among the participants to collect data on the participants' knowledge of biomedical ethics principles and their attitudes towards the ethical duties of doctors and the inclusion of medical ethics in the curriculum. Ethical approval was obtained, and written informed consent was obtained from the participants. The collected data was entered and analyzed using STATA version 13, with descriptive statistics, one-way ANOVA, and independent t-test used to assess the relationships between sociodemographic characteristics and attitudes towards medical ethics, considering a p-value less than 0.05 as statistically significant.

3. Results

The study included 438 participants, with the majority being male, constituting 304 (69.4%) of the total. Among participants, 131 (45%) most of them belong to academic year 1, and very few participants, 9(3%) are from academic year 5. Notably, more than half of the participants were students, while 147 (33.5%) were faculty. Most of our participants were from urban areas 358 (81.7%), and only 80 (18.2%) were from rural areas. In our study around 291(66.4%) participants are from the MBBS program and 95 (21.6%) are from the BDS program (Table **1**).

Table 1 Sociodemographic characteristics of participants

Variables	**n (%)**
Gender	
Male	304(69.4)
Female	134(30.5)
Area	
Rural	80(18.2)
Urban	358(81.7)
Status	
Faculty	147(33.5)
Student	291(66.4)
Program	
BDS	95(21.6)
MBBS	343(78.3)

Academic Year	
Year 1	131(45.0)
Year 2	24(8.2)
Year 3	73(25.0)
Year 4	54(18.5)
Year 5	9(3.0)

Table **2** shows that 100 (22.8%) of the participants stated that ethical knowledge must be followed by doctors and 137 (31.2%) of the participants said it's very important. More than half number of the participants received medical ethics knowledge from lectures 252 (57.7%) followed by Seminars 112 (25.5%) and few participants received ethical knowledge from medical journals 9 (2%). The majority of the participants, 312 (71.2%), were aware of the college's ethics committee. 267 (67.8%) were aware of four basic principles of medical ethics, however only 67 (15%) had the correct response regarding all four basic principles (Table **2**).

Table 2 Awareness and importance of medical ethics among medical professionals/students.

Variables	**n(%)**
Teaching Hours	
1-2 hours	326(74.4)
4-6 hours	40(9.1)
6-10 hours	40(9.1)
10-12 hours	11(2.5)
>12 hours	10(2.2)
Don't know	11(2.5)
Teaching Format	
Discussion groups	14(3.2)
Seminars	44(10.0)
Both	10(2.2)
Lectures	350(79.9)
All	16(3.6)
Others	4(0.9)
Teaching Staff	
Non-medical staff/ guest lectures	20(4.5)
Clinical staff	126(28.7)
Preclinical staff	283(64.6)
Others	9(2.0)
Attendance Mandatory	
Yes	342(78.0)
No	82(18.7)
Don't know	14(3.2)
It is Examined	

Yes	267(60.9)
No	160(36.5)
Don't know	11(2.5)
How important is knowledge and implementation of medical ethics among doctors?	
Not important	90(20.5)
Marginally important	111(25.3)
Very important	137(31.2)
Must know and follow	100(22.8)
Sources of Medical Ethics Knowledge	
Lectures	252(57.5)
Seminars	112(25.5)
Clinical discussions	38(8.6)
Online sources	14(3.2)
Media	13(2.9)
Medical journals	9(2.0)
Awareness of the medical ethics committee in your college	
Yes	312(71.2)
No	112(25.5)
Don't know	14(3.2)
Are You Aware of the Four Basic Principles of Medical Ethics	
Yes	297(67.8)
No	116(26.4)
Don't Know	25(5.7)
Correct All Three Basic Principles of Medical Ethics	
Yes	67(15.3)
No	370(84.6)

Table **3** shows the attitudes of participants toward core values for the guidance of doctors. Many of the participants had positive attitudes towards core values for the guidance of doctors.

Table 3 Medical student's attitudes of core values for guidance of doctors

Items	**Strongly Agree n (%)**	**Agree n (%)**	**Neutral n (%)**	**Disagree n (%)**	**Strongly Disagree n (%)**
The physician is required to uphold a high level of respect for both human life and the individual as a whole.	318(72.6)	85(19.4)	18(4.1)	9(2.0)	8(1.8)
The physician must remain updated and adhere to contemporary medical knowledge, consistently enhance their skills, and seek assistance if necessary.	348(79.4)	75(17.1)	7(1.6)	1(0.2)	7(1.6)

The physician must abstain from recommending or administering any deleterious substances and should provide assistance without respect to the patient's financial capacity, ethnic background, or religious convictions.	347(79.2)	69(15.7)	12(2.7)	3(0.6)	7(1.6)
The physician is responsible for safeguarding the patient's confidentiality and establishing a suitable communication style.	356(81.2)	64(14.6)	9(2.0)	6(1.3)	3(0.6)
It is recommended that the physician consults a third party when examining a patient of the opposite sex.	338(77.1)	68(15.5)	19(4.3)	7(1.6)	3(0.6)
In the presence of patients or other members of the healthcare staff, he or she should refrain from criticising another health personnel.	344(78.5)	77(17.5)	11(2.5)	1(0.2)	5(1.1)
He/she should strictly follow the fundamental principles and seek advice if uncertain.	349(79.6)	76(17.3)	7(1.6)	2(0.4)	4(0.9)

The relationship between sociodemographic characteristics and attitudes towards medical ethics among participants is shown in Table **4**. Regarding the attitudes of participants toward core values for guidance, there was no significant difference in the attitude score of participants between education programs. However, the attitude score towards core values are significantly difference between academic years (p value =<0.001), status (p value = 0.036) and gender (p = value= 0.032).

Table 4 The relationship between socio-demographic characteristics and attitudes towards medical ethics

Variable	**Mean (SD)**	**P-value**
Year of Academics		
Year 1	33.4 (2.5)	<0.001
Year 2	33.0 (3.1)	
Year 3	31.0 (3.9)	
Year 4	33.3 (4.3)	
Year 5	32.3 (3.0)	
Program		
BDS	32.4 (3.7)	0.068
MBBS	33.1 (3.5)	
Status		
Faculty	33.5 (3.6)	0.036
Student	32.7 (3.5)	
Gender		
Female	32.4 (3.6)	0.032
Male	33.3 (3.5)	

4. Discussion

Medical ethics is a critical component of healthcare education, equipping future practitioners with the necessary knowledge, skills, and attitudes to navigate the complex ethical dilemmas they may encounter in clinical practice [10]. A comprehensive understanding of medical ethics principles, such as respect for autonomy, beneficence, non-

maleficence, and justice, is essential for making well-informed decisions that prioritize patient welfare [1]. The present study aimed to investigate the awareness and attitudes towards medical ethics among medical and dental students, as well as faculty, at medical institutions in Pakistan. This research provides important insights into the current state of medical ethics education and knowledge within the healthcare ecosystem of the country.

The study found an impressive response rate from students (66.4%), suggesting a positive outlook towards medical ethics within this group. This aligns with previous studies conducted in Pakistan, which have also reported that a majority of students recognize the importance of medical ethics education [4, 11-13]. In contrast, the relatively lower response rate from faculty (33.5%) indicates a need to enhance faculty engagement and understanding of medical ethics. This finding is corroborated by a more recent study by Nasir et al. [14], which highlighted the need to strengthen medical ethics education among healthcare professionals in Pakistan, as only 41% of physicians had received formal training in this domain.

While a significant proportion (67.8%) of participants were aware of the four basic principles of medical ethics, only 15.3% were able to accurately identify all the principles. This discrepancy between awareness and in-depth knowledge has also been observed in studies from other countries, such as Portugal [15] and Saudi Arabia [16], suggesting a widespread challenge in ensuring comprehensive understanding of medical ethics among healthcare professionals and students. The study found a heavy reliance on didactic lectures and seminars as the primary mode of ethics education, with less emphasis on interactive, case-based learning. This over-reliance on passive teaching methods has been reported in studies from other countries as well, such as Nigeria [17] and Spain [18], indicating a need to revisit the pedagogical approaches in medical ethics curricula.

The study found no significant correlation between socio-demographic factors and attitudes towards core ethical values, aligning with the conclusions of Seoane et al. [18] This suggests that ethical competencies may be more influenced by the depth and quality of ethics education rather than individual student characteristics, underscoring the importance of ensuring equitable and comprehensive ethics training across all student cohorts.

The majority (71.2%) of participants were aware of the existence of their institution's ethics committee, which is higher than the awareness reported among medical students from Germany [19], India [20], Bangladesh, [21] and Nepal [22]. However, a significant proportion (25.5%) were unaware of any ethics committee, highlighting the need for better communication and transparency efforts by healthcare institutions.

The limited teaching hours dedicated to medical ethics (1-2 hours per day) suggest a need to increase the curricular emphasis on this crucial aspect of medical education. Experts recommend integrating ethics education longitudinally throughout medical training to reinforce core principles and allow students to develop their ethical competence over time [10].

5. Conclusion

The findings of this study provide valuable insights into the current state of medical ethics education and knowledge among healthcare professionals in Pakistan. While the positive outlook among students is encouraging, the study highlights the need to enhance faculty engagement, address gaps in comprehensive understanding, adopt more interactive teaching methods, and increase the curricular emphasis on medical ethics. Implementing these improvements can better equip future healthcare practitioners with the necessary ethical competencies to navigate the complex challenges they may face in clinical practice.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare that they have no conflicts of interest.

Statement of ethical approval

The study obtained approval from the Ethics Research Committee, ensuring the study was conducted ethically. The participants were informed about the study objectives, and their written consent was obtained prior to data collection.

Statement of informed consent

Participants provided written informed consent after the purpose of the study and the protocol were explained to them.

Author Contributions

SP conceived, designed the study and wrote the final manuscript. UA conducted the data collection and performed the data analysis along with UAC, AA drafted the initial manuscript. HBS, M and RA assisted in data collection and writing. All authors read and approved the final manuscript.

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