

## Inclusion of Bioethics in Curricula of Rawalpindi Medical University: Perception of Teachers and Students about Teaching and Learning Process - A Cross-sectional Study

Syed Tabeer Hussain Naqvi<sup>1</sup>, Saba Sajid<sup>2</sup>, Laweeza Fatima<sup>3</sup>, Ajwa Arsalan<sup>4</sup>, Imrana Saeed<sup>5</sup>, Sana Bilal<sup>6</sup>

<sup>1,2,3,4</sup>Student of Final Year MBBS, Rawalpindi Medical University

<sup>5</sup>Post-graduate Trainee, Community Medicine, Rawalpindi Medical University

<sup>6</sup>Associate Professor, Community Medicine, Rawalpindi Medical University

### Author's Contribution

<sup>1,2</sup> Conception of study

<sup>1,2,3</sup> Experimentation/Study Conduction

<sup>1,3,4</sup> Analysis/Interpretation/Discussion

<sup>2,3,4</sup> Manuscript Writing

<sup>1,2,5,6</sup> Critical Review

<sup>1,2,3,4,5,6</sup> Facilitation and Material analysis

### Corresponding Author

Syed Tabeer Hussain Naqvi,

5<sup>th</sup> Year MBBS Student,

Rawalpindi Medical University,

Rawalpindi

Email: [tabeer149@gmail.com](mailto:tabeer149@gmail.com)

### Article Processing

Received: 08/01/2025

Accepted: 25/01/2025

*Cite this Article: Naqvi STH, Sajid S, Fatima L, Arsalan A, Saeed I, Bilal S. Inclusion of Bioethics in Curricula of Rawalpindi Medical University: Perception of Teachers and Students about Teaching and Learning Process -a Cross-sectional Study. Students' Supplement. J Rawalpindi Med Coll. 2024;28(S2):3-12.*

*Conflict of Interest: Nil*

*Funding Source: Nil*

*Access Online:*



## Abstract

**Background:** The change in the trend of medicine has made it important that bioethics should be included in curricula. The paternalistic approach of doctors can be changed via teaching bioethics. Many countries are recognizing bioethics as an important part of their curricula, which has already been included in the curricula of Rawalpindi Medical University, Pakistan.

**Objectives:** The objectives of this study are to assess the perception of students about the inclusion of bioethics and hurdles encountered by teachers as educators and to identify the effective mode of teaching.

**Materials and Methods:** A six-month cross-sectional study at Rawalpindi Medical University, Pakistan, included 400 MBBS students and 23 faculty members from clinical and basic sciences. Perception of bioethics was assessed using a self-structured questionnaire with student and teacher sections. The reliability of the questionnaire was assessed (Cronbach's alpha = 0.677). Data were analyzed using SPSS version 23, with both closed and open-ended questions included.

**Results:** 56.5% (N=226) of students agree that teaching bioethics will help them develop skills to solve ethical dilemmas. 23.5% (N=94) of participants strongly agree that formal teaching of bioethics should be emphasized. 54.3% (N=217) of participants agree that assessment of bioethics should be made necessary. On the other hand, teacher analyses showed that 91.3% (N=21) agree upon the necessity of assessment of Bioethics. The only specific challenge for teachers was the lack of special training. 45.3% (N=181) of students think Role-play is the preferred method of teaching Bioethics.

**Conclusion:** It is concluded in the study that students and teachers alike consider bioethics an important part of the curricula. With the modernization and setting of different trends in the medical practice, the inclusion of bioethics is the need of the time.

**Keywords:** Bioethics, Challenges, and Perception

## Introduction

Bioethics is the crucial study of all ethical issues that arise in biomedicine and biomedical research<sup>1</sup>. Teaching biomedical ethics brings a change in doctors' paternalistic attitudes toward patients and their families.<sup>2</sup> Bioethics is a subject that needs to be reformed based on every society and setting.<sup>3</sup> It is essential to tailor the courses on bioethics based on the culture of the society.<sup>4</sup>

Recently more and more countries are recognizing the importance of bioethics for the ethical and professional training of medical students.<sup>5</sup> All aspects ranging from professional to legal settings must be conveyed well, and thus courses must begin earlier in the education.<sup>6</sup> Countries like Azerbaijan and Spain have included Ethics as a vital part of their curricula.<sup>7</sup> Studies conducted in these Spanish institutions revealed the necessity of homogeneity of such curricula.<sup>8</sup> The curriculum of equal quantity and quality must be employed to ensure adequate education of medical students.<sup>9</sup>

India is already rapidly advancing in its effort to integrate bioethics into medical education, resulting in positive results and very high student satisfaction.<sup>10</sup> According to one study in India, both students and teachers preferred to have maximum case scenario-based teaching, which has proven to facilitate higher levels of critical thinking.<sup>11</sup> This gives the students better opportunities to discuss the issues and highlight conflicts concerning ethical problems.<sup>12</sup> Similarly, a study in Spain showed that giving medical students proper courses on bioethics through problem-based learning (PBLs) brings out positive results<sup>13</sup>. Problem-based learning provides a structural approach to scenarios that equips students with the proper strategies to deal with cases.<sup>14</sup>

Universities like Aga Khan University Karachi have worked extensively on making bioethics an integral part of their medical curriculum, ensuring that students are not only skilled and competent but also ethical in their thinking and practice<sup>15</sup>. Rawalpindi Medical University is now also recognizing the importance of bioethics to improve the quality of clinical care. However, formulating and implementing the curriculum will come with its own set of challenges for both students<sup>16</sup> and teachers. It is imperative that these challenges<sup>17</sup> be recognized and addressed as timely as possible.<sup>18</sup>

Pakistan faces a unique set of challenges; it can be difficult for all Pakistani medical universities to maintain a homogenous curriculum<sup>19</sup>. The bioethics curriculum in Pakistani medical universities varies from school to school.<sup>20</sup> Some universities prioritize a culturally sensitive ethical curriculum, integrating Islamic ethics and local cultural norms into the discourse. Others follow internationally recognized bioethical principles.

The ethical curriculum of medical colleges in Pakistan must be tailored to the local culture. 98% of Pakistani patients adhere to Islamic ethical codes, meaning medical schools should reflect in their bioethical curriculum these values and sensitivities.<sup>21</sup> The integration of Islamic ethics and cultural norms into the curriculum acknowledges the importance of aligning medical practice with the beliefs and values of the local population.<sup>22</sup> This involves addressing issues such as end-of-life care<sup>23</sup>, organ donation<sup>24</sup>, and reproductive technologies<sup>25</sup> while considering religious perspectives and social traditions.

The objectives of this study are to identify the perception of undergraduate medical students,

and teachers on the bioethics curriculum in Rawalpindi Medical University and to identify effective teaching strategies to enhance the learning process of bioethics education. The need for such study stems from the fact the inclusion of bioethics as the part of curriculum and how students and teachers perceive the importance of this subject. It is also important to assess whether students are motivated and satisfied with the teaching methodologies along with teachers whether they have proper teaching resources and tools for teaching bioethics. Different teaching strategies have also been discussed to highlight the need of different aspects of course of bioethics.

## **Materials and Methods**

The study is a cross-sectional study carried out on the students of all academic years and faculty members of Rawalpindi Medical University. The sample size is 380 calculated by who sample size calculator at a 95% confidence interval and 5% margin of error with a population proportion of 50% from the reference article. Assuming a 5% sampling error, it was increased to 400 and the response rate was 100 % for the students (N=400). 23 faculty members of clinical and basic sciences participated. The data was collected in a time period of 6 months. MBBS students of all academic years and teachers of clinical and basic sciences were included in the study. Whereas students appearing for supplementary examination and faculty members on leave at the time of data collection were excluded. The questionnaire design comprised of two parts; a student questionnaire and a teacher's section, a descriptive

part based on both closed and open-ended questions.

The student sample was collected through stratified random sampling. Students from all five years of medical education at Rawalpindi Medical University were divided into five strata to ensure the inclusion of students from every year. Then, responses were collected randomly from each stratum. The students' questionnaire was sent to them through links to a Google form. The number of students who responded was 400. All respondents were included while analyzing data. The questionnaire consisted of Likert-scale questions.

The data from teachers was collected with the help of self-structured questionnaires. Teachers were divided into strata based on faculties; clinical and basic sciences. Then, responses from each stratum were collected through non-random consecutive sampling.

The questionnaire consisted of dichotomous, open, and closed-ended questions, Likert-type scale questions, and multiple-choice questions. The first part of the questionnaire consisted of closed questions to ascertain whether the teachers agreed with the importance of bioethics in the curriculum. The next part consisted of Likert-type scale questions to determine whether the teachers believed assessment to be a crucial component in learning bioethics. Lastly, teachers were asked open-ended questions regarding the best methods for assessment and the alternative methods to enhance students' knowledge of the subject.

The reliability of the questionnaires assessed using Cronbach's alpha for the students' questionnaire was 0.677. (0.6 was considered to be accepted).

## Results

Out of the total participants, 59.8% were Female and 40.3% were Male. Our findings showed that 97.8% (N=391) of students consider the importance of ethical issues in their future

practices as healthcare workers, while 2.3% (N=9) did not consider ethical issues important in future practices as healthcare workers.

**Table-I** Percentages of Participants from each year

Year of Study	Percentage (%)
1st year	15.5
2nd year	10.0
3rd year	30.3
4th year	24.3
5th year	19.9
<b>Total</b>	<b>100.0</b>

Out of total participants N=400, 94.3% of participants were able to identify the ethical issues

while 5.8% of the participants failed to identify the ethical Issues.

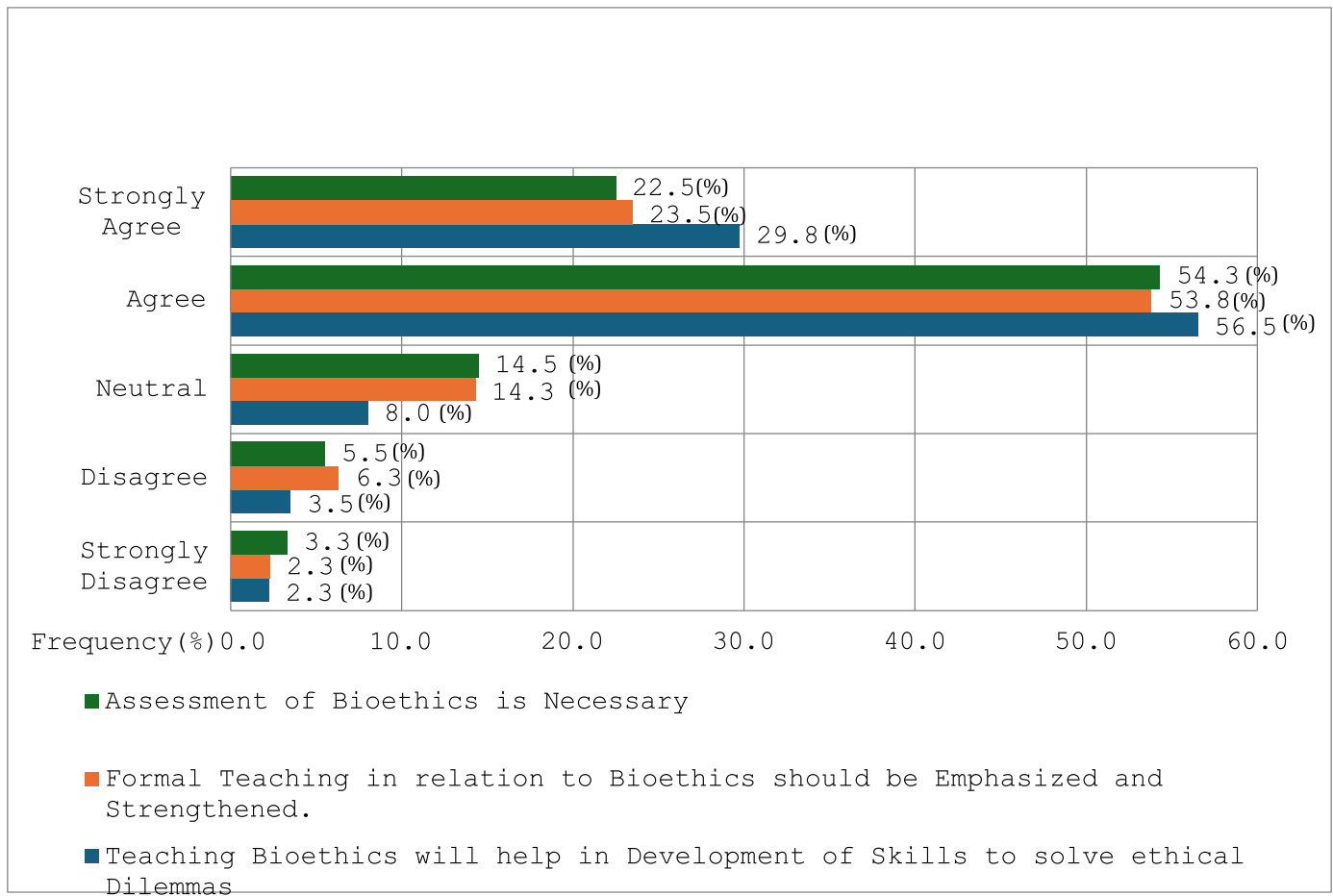
**Table-II** Preferred Bioethics Teaching-Learning Method.

Preferred Method	Percentage (%)
Audio-Visual	19.5
LGIS	7.5
SGD	5.0
Roleplay	35.3
Assessment by peer group	10.5
<b>Total</b>	<b>100.0</b>

It is obvious from the table above that N=181 (45.3%) of students' preferred method of teaching-

learning bioethics is Roleplay.

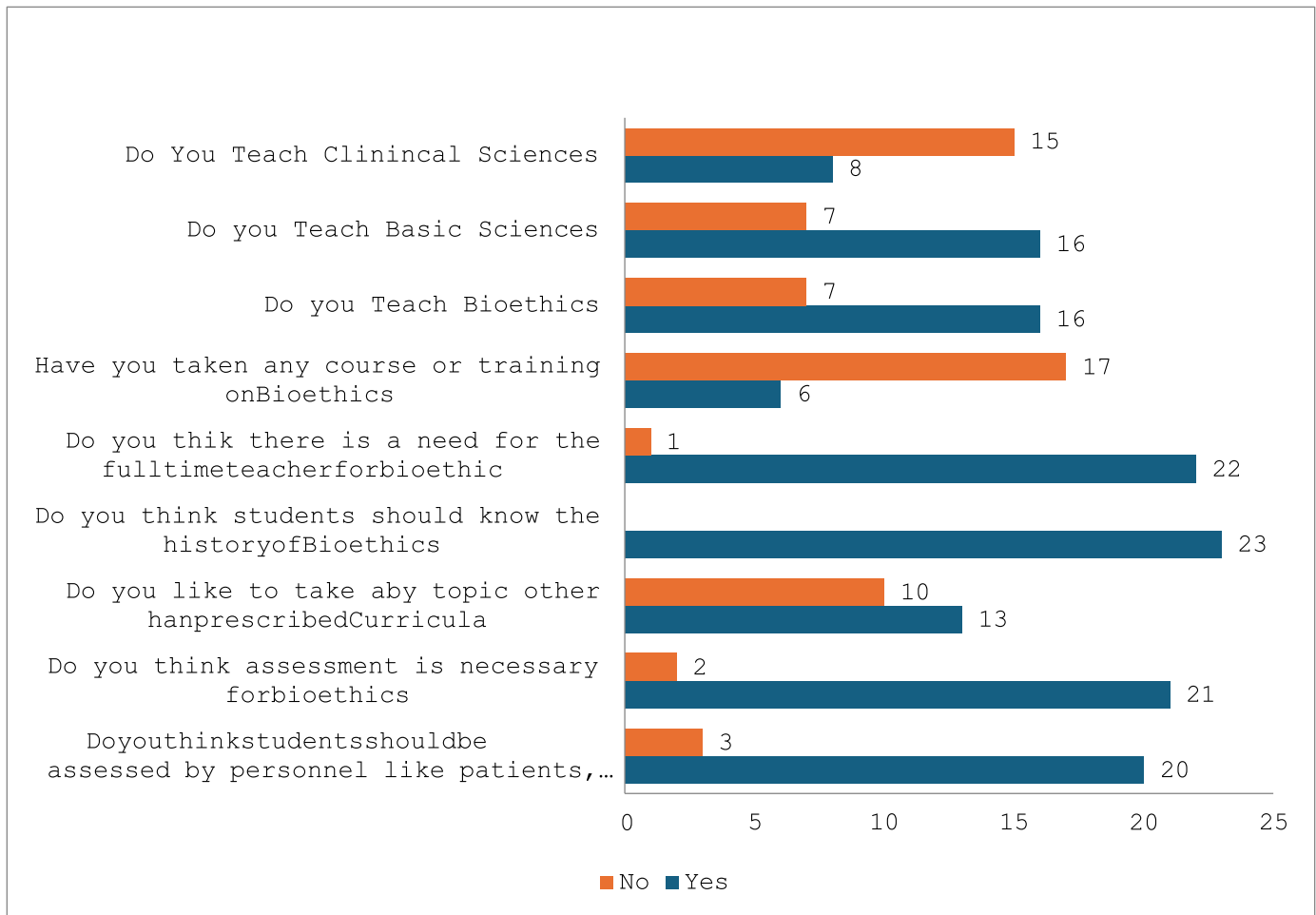




**Fig-1** Perception of Students towards inclusion of Bio-Ethics in Curriculum presented as percentage(%)

29.8% (N=119) of participants strongly agree that teaching bioethics will help them develop skills to solve ethical dilemmas. 56.5% (N=226) show agreement. 23.5% (N=94) of participants strongly agree that formal teaching of bioethics should be emphasized and strengthened. 53.85% (N=215) show agreement. 22.5% (N=90) of participants strongly agree that assessment of bioethics should be made necessary, 54.3% (N=217) show agreement.

91.3% (N=21) Teachers agree that it is necessary to conduct the assessment of bioethics, and N=20 teachers agree that the simulation of patients is an effective technique for assessment. History of Bioethics was also considered important (100%, N=23). 69.5% of the faculty teaches bioethics. However, 74% of teachers did not have any training in teaching bioethics.

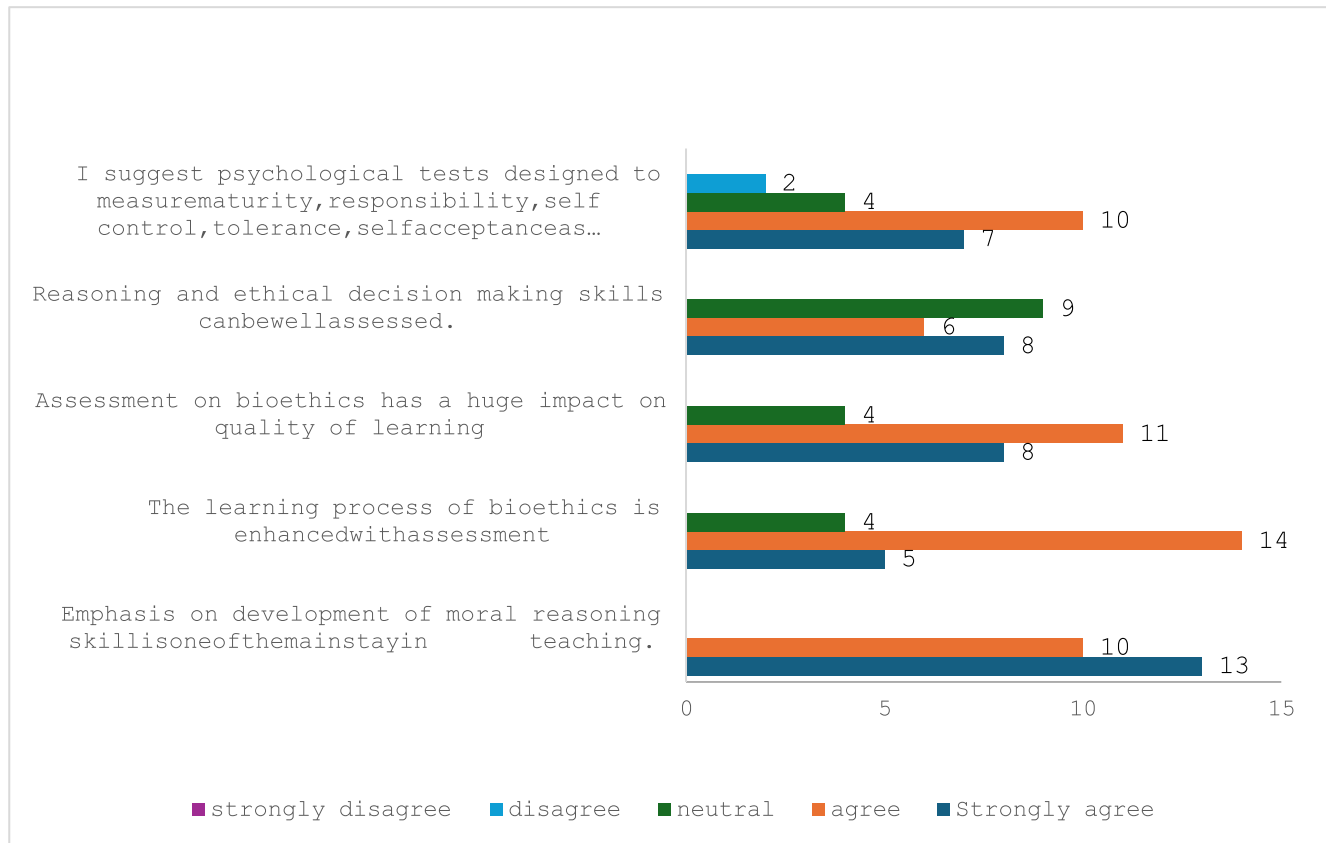


**Fig-2** Teacher's perception of teaching-learning of Bioethics as a subject presented as frequency (n)

N=13 Teachers strongly agree that emphasizing the development of moral reasoning is one of the mainstays of teaching. N=14 agree that assessment is important for the enhancement of learning of Bioethics whereas N=4 teachers were neutral about improved quality of learning by assessment.

Making the contrast between the responses of Teachers and Students, the following results can be extrapolated.

77.3 % of students and 95.6 (N=22) Teachers agree on the inclusion of bioethics as a subject. Students favored roleplaying as the effective method of teaching (45.3%) whereas, teachers favored the simulation of personnel as patients. Teachers and students alike believe that assessment of bioethics is necessary. (91% v 76.8% respectively).



**Fig-3** Teacher's Perception of Learning and Assessment presented as frequency (n)

## Discussion

Rawalpindi Medical University holds the distinction of being a highly recognized and accredited center of excellence in medical education in Pakistan, employing a modular system of evidence-based training techniques for the development of highly competent health professionals. Adding to the current curricula, the new Professor Umar Model requires teaching bioethics as an essential domain in all years of MBBS. This study evaluated the views and challenges faced by students and teachers alike, regarding the new teaching process. For reference, a similar study conducted in India has been chosen as a reference study, since Pakistani society shares many social, cultural, and moral values with its Indian counterpart.<sup>10</sup>

The current study showed that 97.8% (n=391) of the students considered teaching bioethics to be fruitful in their future practices as healthcare workers, while only 2.3% (n=9) thought otherwise. These results are consistent with a similar study conducted in eight medical schools in Portugal.<sup>26</sup>

The current study also highlighted that out of 400 participants, 94.3% (n=377) of the students were able to identify an ethical issue in case one arises in a medical setting. However, 5.8% (n=23) fail to pinpoint ethical problems. A study on how medical students perceive ethical issues conducted in Indonesia and the Netherlands discussed that there was a gap between ethical problems that were discussed during classes with

teachers and problems that students actually encounter in practice.<sup>27</sup> Regional Peculiarities should be kept in review when the curricula of bioethics were devised as shown in the analyses of Final Year Students' outlook on ethical dilemmas and moral reasoning in the study conducted by Aga Khan University.<sup>28</sup> This shows that there is undoubtedly a great need for improving how bioethics is taught, evaluated and assessed in undergraduate years.

Furthermore, the study shows that 77.3% (n=309) of medical students agree that formal teaching of bioethics should be strengthened. A study on the new ethics curriculum in Indian medical colleges concluded that a significant body of students (p<0.05) recognized the importance of bioethical knowledge and its impact on their career, and favored interactive forms of teaching over passive forms like didactic lectures.<sup>29</sup>

An eye-opening research based in a private medical college in Pakistan revealed that 71% of students and 100% of the teachers preferred video-enhanced PBL sessions over the conventional paper-based PBL methods.<sup>30</sup> In this study, 76.8% (n=307) of students also agreed that assessment of bioethics should be made necessary which is consistent with the results of the parent study.<sup>10</sup>

One of the biggest challenges in the present system is the professional conduct of medical students, highlighting the need to improve how bioethics is taught and assessed in undergraduate years. To optimize the effectiveness of this teaching endeavor and ensure enduring educational outcomes, the utilization of active learning methodologies becomes imperative.<sup>31</sup>

Lectures have long been deemed as an archaic form of teaching, with many of the respondents,

students, and teachers alike, preferring to stick to newer and more effective teaching methods.<sup>32</sup>

In this study, 73.9 percent of the teachers preferred teaching methods which included Case-Based Learning (CBL), Problem-Based Learning (PBL), and bedside teaching methods. On the contrary, only 13 percent of the respondents preferred teaching methods which included mini-lectures, seminars, and videos. These findings are consistent with AlMahmoud whose study also proved that students preferred interactions with patients in routine training situations.<sup>33</sup>

Meanwhile, in this study, 34.8 percent of the teachers suggested interactive teaching lessons as an alternative to teaching bioethics with PBLs and SGDs being picked as the second option by 21.7 percent of the teachers. These teaching methods have been proven to report higher learning gains and better understanding among students.<sup>2</sup> These results align with Fawzi et al's work which found that 60% of the surveyed group favored an integrated ethics course.<sup>34</sup>

However, at the same time, it should be noted that teachers form half the equation, which necessitates a primary focus on faculty training and a comprehensive understanding of the curriculum. In the current study, we found an alarming situation concerning teacher training. Only 6 (26%) of the respondents had taken a course on bioethics training, which necessitates a prompt call to action to train educators to deliver the best possible training. Previous studies have shown a similar lack of proper training for the faculty. A study at the Fatima Memorial Hospital College of Medicine and Dentistry, Lahore, showed that about 71.25% of the clinical teachers and 28.8% of the basic subject teachers have never attended any medical education program.<sup>35</sup> Georgetown

University, US also had similarly discouraging results.<sup>36</sup>

That said, the current curriculum needs to be optimized for implementation. 21.7 percent of the teachers in the current study suggested proper workshops while the remaining 30.4 percent suggested bioethics should be taught as a separate subject while being integrated with other clinical subjects. This falls in line with what D'Souza has proven in their study where an integrated approach to teaching bioethics reported higher gains and student satisfaction.<sup>4</sup> Recent efforts to design a bioethics curriculum at Aga Khan University embodied a similar approach.<sup>15</sup> On the other hand, 47.8 percent of the respondents suggested no changes. However, it's essential to highlight that the recommendation against making changes stems largely from teachers' lack of familiarity with the bioethics curriculum, rather than reflecting their level of satisfaction.

87 percent of the teachers also expressed a desire for students to be assessed by patients, non-teaching staff, and peers. This aligns with what Ghosh et al has presented in his study, which examined the perception of medical faculties regarding the role of written examination in the assessment of bioethics in Indian medical schools.<sup>39</sup>

## Conclusion

The teaching of bioethics remains a challenge, requiring tailored strategies to enhance its effectiveness in medical education. This study highlights the perceptions of students and teachers regarding the bioethics curriculum at Rawalpindi Medical University, with many teachers expressing a willingness to expand topics beyond the prescribed syllabus. While the study provides valuable insights, it is limited to a single institution and lacks a comparative

analysis between student and teacher perspectives. Future research involving multiple institutions and a comparative approach can offer a more comprehensive understanding of bioethics education. As a pioneering study in this domain, it lays the groundwork for further exploration of effective teaching strategies and curriculum development.

## References

1. Norman G. Medical education: past, present, and future. *Perspectives on Medical Education*. 2012 Feb 7;1(1):6-14.
2. de Lemos Tavares AC, Travassos AG, Rego F, Nunes R. Bioethics curriculum in medical schools in Portuguese-speaking countries. *BMC Medical Education*. 2022 Mar 22;22(1):199
3. Lynoe N, Lofmark R, Thulesius HO. Teaching medical ethics: what is the impact of role models? Some experiences from Swedish medical schools. *Journal of Medical Ethics*. 2008 Apr 1;34(4):315- 6.
4. D'Souza RF, Mathew M, D'Souza DS, Palatty P. Novel horizontal and vertical integrated bioethics curriculum for medical courses. *Medical Teacher*. 2018 Jun 3;40(6):573-7.
5. Burling SJ, Lumley JS, McCarthy LS, Mytton JA, Nolan JA, Sissou P, et al. Review of the teaching of medical ethics in London medical schools. *Journal of Medical Ethics*. 1990 Dec 1;16(4):206-9.
6. Graham HJ. Patient confidentiality: Implications for teaching in undergraduate medical education. *Clinical Anatomy*. 2006;19(5):448-55.
7. Greenberg RA, Kim C, Stolte H, Hellmann J, Shaul RZ, Valani R, et al. Developing a bioethics curriculum for medical students from divergent geopolitical regions. *BMC Medical Education*. 2016 Jul 27;16(1).
8. Ferreira-Padilla G, Ferrández-Antón T, Lolas-Stepke F, Almeida-Cabrera R, Brunet J, Bosch-Barrera J. Ethics competences in the undergraduate medical education curriculum: the Spanish experience. *Croatian Medical Journal*. 2016 Oct;57(5):493- 503.
9. Lewin L. UME-21 and teaching ethics: a step in the right direction. *Family Medicine*. 2004 Jan;36 Suppl(S36-42).
10. Ganguly B, D'Souza R, Nunes R. Challenges in the Teaching-Learning Process of the Newly Implemented Module on Bioethics in the Undergraduate Medical Curriculum in India. *Asian Bioethics Review*. 2023 Apr;15(2):155-68.
11. Haley CM, Brown B, Koerber A, Nicholas CL, Belcher A. Comparing Case-Based with Team-Based Learning: Dental Students' Satisfaction, Level of Learning, and Resources Needed. *Journal of Dental Education*. 2020 Apr;84(4):486-94.
12. Bosch-Barrera J, HC BG, Capella D, De Castro Vila C, Farres R, Quintanas A, Ramis J, Roca R, Brunet J. Teaching bioethics to students of medicine with problem-based learning (PBL). *Cuadernos de bioetica: revista oficial de la Asociacion Espanola*

- de Bioetica y Etica Medica. 2015 May 1;26(87):303-9.
13. Ghias K, Ali SK, Khan KS, Khan R, Khan MM, Farooqui A, Nayani P. How we developed a bioethics theme in an undergraduate medical curriculum. *Medical teacher*. 2011 Dec 1;33(12):974-7
  14. Jin J, Bridges SM. Educational Technologies in Problem-Based Learning in Health Sciences Education: A Systematic Review. *Journal of Medical Internet Research*. 2014 Dec 10;16(12):e251.
  15. Ghias K, Ali SK, Khan KS, Khan R, Khan MM, Farooqui A, et al. How we developed a bioethics theme in an undergraduate medical curriculum. *Medical Teacher*. 2011 Dec;33(12):974-7.
  16. Johnston C, Houghton P. Medical students' perceptions of their ethics teaching. *Journal of Medical Ethics*. 2007 Jul 1;33(7):418-22.
  17. Mills S, Bryden DC. A practical approach to teaching medical ethics. *Journal of Medical Ethics*. 2009 Dec 21;36(1):50-4.
  18. Campbell AV, Chin J, Voo TC. How can we know that ethics education produces ethical doctors? *Medical Teacher*. 2007 Jan;29(5):431-6.
  19. Ferreira-Padilla G, Ferrández-Antón T, Lolas-Stepke F, Almeida-Cabrera R, Brunet J, Bosch-Barrera J. Ethics competences in the undergraduate medical education curriculum: the Spanish experience. *Croatian Medical Journal*. 2016 Oct;57(5):493- 503.
  20. Hassenfeld I, O'Donnell J, Epstein L, Engel J, Johnston MA, Taylor G, et al. A process for developing a curriculum in ethics and human values. *Journal of Cancer Education*. 1991;6(4):209-12.
  21. Dahnke MD. Devotion, Diversity, and Reasoning: Religion and Medical Ethics. *Journal of Bioethical Inquiry*. 2015 Sep 1;12(4):709-22.
  22. Umran Al-Umran K, Al-Shaikh BA, Al-Awary BH, Al-Rubaish AM, Al-Muhanna FA. Medical ethics and tomorrow's physicians: an aspect of coverage in the formal curriculum. *Medical Teacher*. 2006 Jan;28(2):182-4.
  23. Akdeniz M, Yardımcı B, Kavukcu E. Ethical considerations at the end-of-life care. *SAGE Open Medicine*. 2021 Jan;9:205031212110009.
  24. Aulisio MP, DeVita M, Luebke D. Taking values seriously: Ethical challenges in organ donation and transplantation for critical care professionals. *Critical Care Medicine*. 2007 Feb;35(Suppl):S95- 101.
  25. Martins V, Santos C, Ricou M, Bataglia P, Duarte I. Bioethics Education on Medical Students: Opinions About Ethical Dilemmas. *SAGE Open*. 2021 Oct;11(4):215824402110571.
  26. Muhaimin A, Willems DL, Utarini A, Hoogsteyns M. What Do Students Perceive as Ethical Problems? A Comparative Study of Dutch and Indonesian Medical Students in Clinical Training. *Asian Bioethics Review*. 2019 Nov 27;11(4):391-408
  27. Muhaimin A, Willems DL, Utarini A, Hoogsteyns M. What Do Students Perceive as Ethical Problems? A Comparative Study of Dutch and Indonesian Medical Students in Clinical Training. *Asian Bioethics Review*. 2019 Nov 27;11(4):391-408
  28. Jafarey A, Farooqui A. Original Articles Ethical Dilemmas and the Moral Reasoning of Medical Students Ethical Dilemmas and the Moral Reasoning of Medical Students [Internet]. [cited 2023 Sep 3].
  29. Sharma S, Sharma R, Khyalappa R, Sharma S, Kandoth S. Student perceptions: Background to a new ethics curriculum in Indian medical colleges. *Journal of Education and Health Promotion*. 2021;10(1):284.
  30. Fatima S, Ghias K, Jabeen K, et al. (January 06, 2019) Enhancing Cognitive Engagement of Pre-clinical Undergraduate Medical Students via Video Cases and Interactive Quizzes in Problem-based Learning.
  31. Akhund SA. Medical Students' Academic Achievement Differences in Annual and Semester- Based Examination Systems: Anatomy Subject Scores As an Example. *Cureus*. 2021 Nov 20
  32. Knight JK, Search for more papers by this author, Wood WB, Dulai KS, McDaniel MA, Tracy CB, et al. Teaching more by lecturing less [Internet]. 2017
  33. AlMahmoud T, Hashim MJ, Elzubeir MA, Branicki F. Ethics teaching in a medical education environment: preferences for diversity of learning and assessment methods. *Medical Education Online*. 2017 Jan;22(1):1328257
  34. Fawzi MM. Medical ethics educational improvement, is it needed or not?! Survey for the assessment of the needed form, methods and topics of medical ethics teaching course amongst the final years medical students Faculty of Medicine Ain Shams University (ASU), Cairo, Egypt 2010. *Journal of Forensic and Legal Medicine*. 2011 Jul;18(5):204-7.
  35. Manzoor I, Zeeshan S, Iqbal A, Sarfraz F. Needs assessment for establishing faculty development program in a private medical college at Lahore. *Journal of Ayub Medical College Abbottabad*. 2018 Nov 27;30(4):539-43.
  36. Sulmasy DP, Dwyer M, Marx E. Knowledge, confidence, and attitudes regarding medical ethics: how do faculty and housestaff compare?. *Academic Medicine*. 1995 Nov 1;70(11):1038-40.
  37. AHSIN, S., SHAHID, A., GONDAL, G. Teaching communication skills and medical ethics to undergraduate medical student. *Journal of Advances in Medical Education & Professionalism*, 2013; 1(3): 72-76

