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Research Article

Awareness, Perceptions and Attitudes Towards Cadaveric Body Donation and Embalming Among First-Year MBBS Students: A Descriptive Cross-Sectional Study

Dr. Archana Kalyankar[1] and Dr. Sabreen Wajid Ali Khan[2]

[1-2]Department of Anatomy, Government Medical College, Chh. sambhajinagar, Maharashtra, India

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Corresponding Author:

Dr. Sabreen Wajid Ali Khan
Department of Anatomy,
Government Medical College,
Chh. sambhajinagar,
Maharashtra, India

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ABSTRACT

Introduction: Cadaveric dissection remains the cornerstone of anatomical education despite advances in digital learning tools. For the same body donation provides an indispensable foundation. Understanding medical students' awareness and attitudes toward body donation and embalming is important for improving ethical practices and organising donor programs.

Materials and Methods: A descriptive cross-sectional survey was conducted among first-year MBBS students at Government Medical College, Buldhana. The students were given a structured questionnaire via google forms and a total of 84 responses were recorded and analysed.

Result: Only 13.7% of students were aware of body donation prior to joining medical college while 86.3% learned about it after admission into the college. The majority (69.1%) correctly identified anatomical education and research as the primary purpose of body donation with remaining confusing it with organ transplantation. Cultural uncertainty was observed, with 47.4% of students unsure whether body donation aligned with their religious and cultural beliefs. Although appreciation toward cadavers increased after exposure, the willingness for self-donation still remained low at only 12.7%, with many students (45.6%) seeking more information regarding body donation. Sociocultural hesitation remained a major barrier to self-pledging.

Interpretation & Conclusion: The findings highlight the need for structured awareness efforts, pledge drives, and respectful donor-honouring practices. Awareness among students can also be increased by including embalming and body donation in their curriculum so that they have key information regarding it. The more the students are educated, they will be more motivated for self-donation and they in turn can become educators of their communities.

Keywords: *Body donation, Cadaver, Medical education, Embalming, Anatomy, First-year MBBS students, Awareness survey.*

INTRODUCTION

The teaching and learning of anatomy form the foundation of medical education, and cadaveric dissection remains the most effective method for understanding the complex three-dimensional organization of the human body. Despite advancements in imaging modalities, simulation, and virtual anatomy platforms, no alternative can fully replace the tactile, spatial, and emotional learning experience provided by real human cadavers. In the past the cadaver dissection was done out of curiosity to know more about the human body. The cadavers were excavated from after being buried and smuggled at high prices and dissected at dead of night1. Hare and Burke2 went to the extent of murdering innocent people and selling their bodies for dissection purpose. Through cadaveric dissection, medical students acquire not only anatomical knowledge but also essential professional attributes such as discipline, teamwork, empathy, and respect for human life.

Body donation refers to the voluntary, informed, and altruistic act of donating one's whole body after death for the purpose of medical education, training, and scientific research. The donated body is legally transferred to a recognized medical institution and preserved—most commonly by embalming—to facilitate anatomical dissection and study. Unlike organ

donation, which primarily aims at saving individual lives through transplantation, body donation serves a broader and long-term purpose by educating generations of healthcare professionals and indirectly benefiting countless patients.

In recent decades, the number of medical colleges has increased substantially, leading to a proportional rise in the demand for cadavers. However, voluntary body donation has not increased at the same pace. As a result, many medical institutions face an inadequate cadaver-to-student ratio, which may compromise the quality of anatomical training. Lack of public awareness, sociocultural and religious beliefs, myths, fear of misuse of the body, and emotional discomfort related to death are among the major barriers to body donation.

Cadaveric dissection also plays a vital role in the ethical and emotional development of medical students. Early exposure to cadavers often evokes feelings of fear, anxiety, or discomfort; however, with time and guided learning, these emotions are replaced by respect, gratitude, and professional responsibility toward the donor. Medical students, as future healthcare providers, serve as a critical link between medical institutions and society. Their knowledge, attitudes, and perceptions toward body donation significantly influence future advocacy and public awareness.

Therefore, assessing the awareness, perceptions, and attitudes of first-year MBBS students regarding body donation and embalming is essential. Understanding these factors can help in designing effective educational interventions, strengthening voluntary body donation programs, and ensuring the ethical and sustainable practice of cadaveric dissection in medical education

METHODOLOGY

A structured Google Form questionnaire was distributed to first-year MBBS students enrolled in Government Medical college, Buldhana. Participation was voluntary and anonymous.

A structured questionnaire assessed:

- Demographic details
- Awareness of body donation
- Knowledge regarding embalming
- Cultural and ethical perceptions
- Emotional experiences in the dissection hall
- Willingness for future body donation

A total of **84 responses** were analysed using descriptive statistics

RESULTS

A total of 84 first-year MBBS students completed the survey.

Demographic Profile

The demographic distribution showed a slight female predominance (51.2%) over males (46.3%)

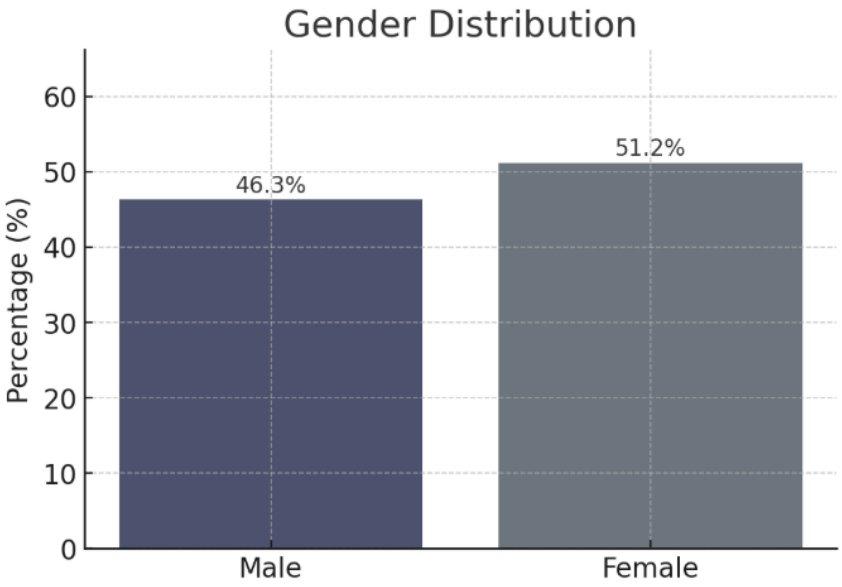

Figure 1. Gender distribution among first-year MBBS students

Awareness of Body Donation

Most students entered medical college with limited awareness of body donation, as many as 86.3% reported never having heard of it previously Only 13.7% were aware of body donation before MBBS admission. After joining the MBBS program, awareness primarily came from the medical college (76.3%), followed by social media (51.2%) and friends or family (27.5%).

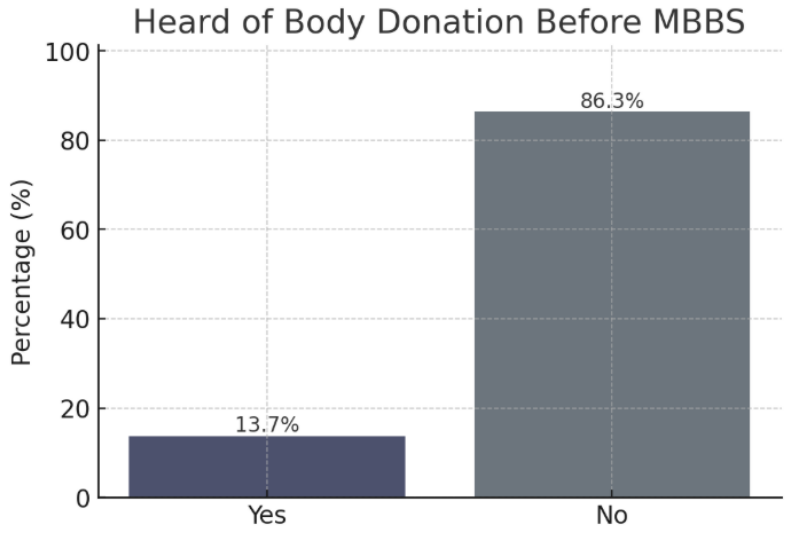

Figure 2. Awareness of body donation prior to joining medical college

Awareness and Knowledge

- Only 21.3% had heard of the term embalming before MBBS
- 84.8% correctly understood that embalming preserves cadavers
- 72.2% believed embalmed cadavers last months to years

These findings show that although pre-medical knowledge was poor, students quickly gained accurate understanding once they were exposed to cadavers and concept of embalming in first year anatomy teaching.

Purpose of Body Donation

- Majority (69.1%) correctly identified the purpose of body donation in anatomy teaching and research tool.
- 24.7% thought that it was linked to organ transplantation.

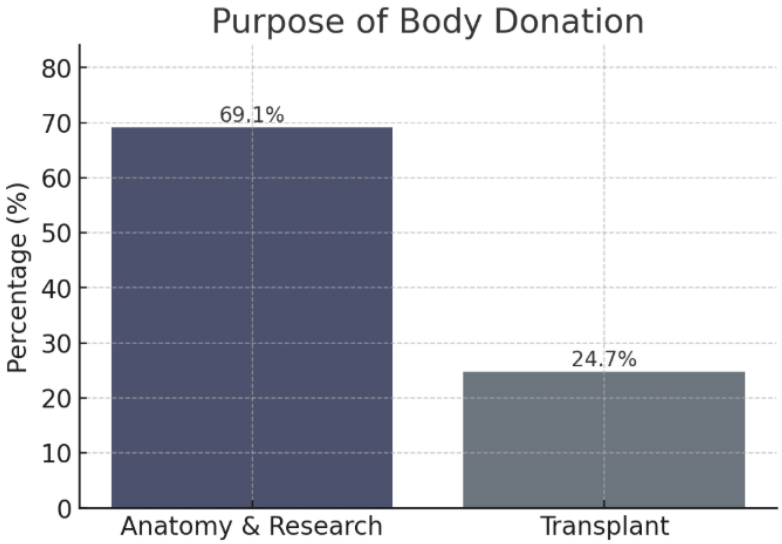

Figure 3. Knowledge regarding purpose of body donation

Cultural and Religious Perception

- For **32.1%** students body donation aligned with personal beliefs.
- **47.4%** were unsure whether it had something to do with it.
- And **20.5%** felt it conflicts with their cultural or religious background.

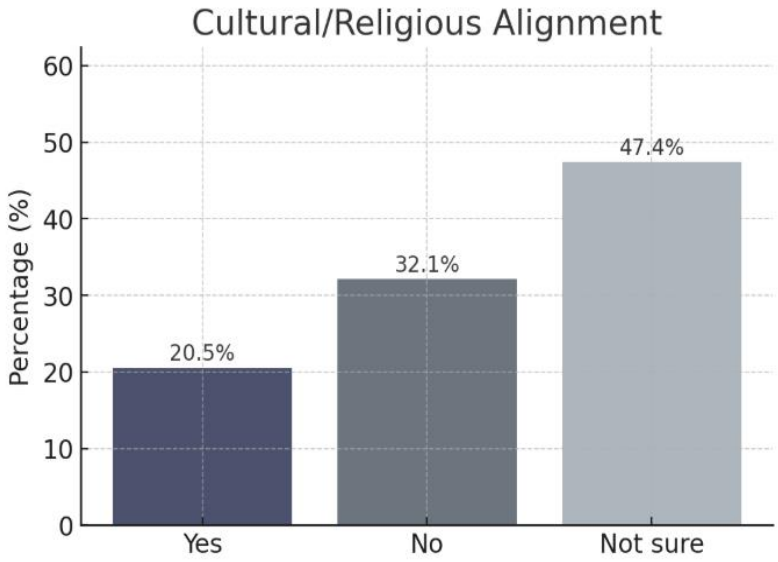

Figure 4. Cultural and religious alignment with body donation

Willingness to Donate Body

Only 12.7% expressed definite willingness to donate their bodies after death, while 45.6% needed more information. Rest 15.2% students had a definite 'no' answer with 26.6% still unsure about their willingness. The high percentage of uncertainty reflects the influence of family, religion, and lack of clear guidance.

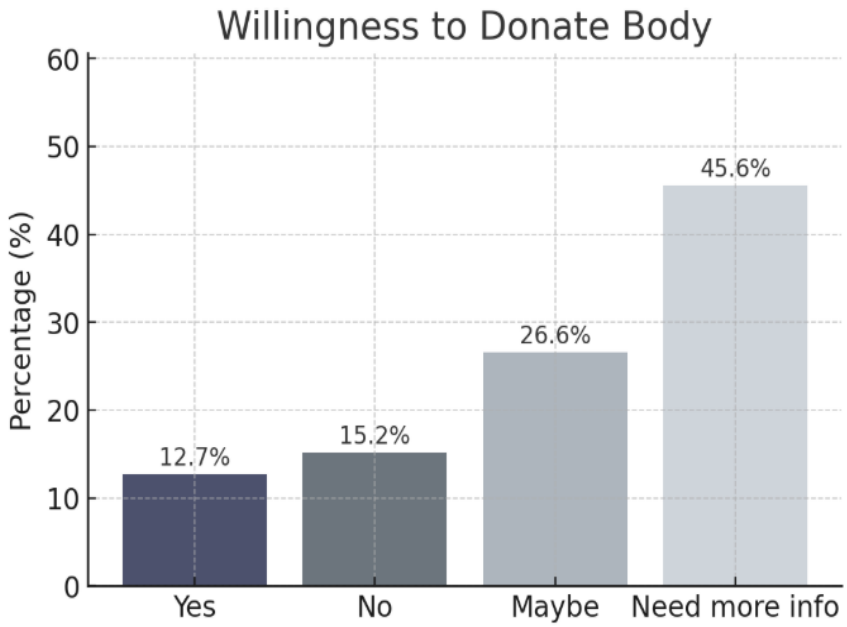

Figure 5. Willingness toward body donation

Reported Barriers

- Cultural or religious concerns: **43.3%**
- Family resistance: **28.4%**
- Fear or emotional discomfort: **26.9%**

These results highlight psychological and social factors that affect donation decisions.

Experience with Cadaveric Dissection

Almost all students (97.5%) had encountered cadaveric dissection. Emotional responses included curiosity, gratitude, respect, initial shock, and reflection on human mortality. A majority (73.1%) felt that the dissection hall environment-maintained respect for donors.

Students recommended:

- Increasing the number of cadavers per students.
- Improving ventilation to reduce formalin exposure.

- Conducting annual **donor gratitude ceremonies.**
- Creating smaller dissection groups for better learning.

Overall, the results demonstrate that although students initially lack awareness, their exposure to cadaveric learning significantly enhances appreciation toward body donation and highlights areas where institutional support and awareness programs can be strengthened so that the concept of body donation and its purpose is well informed to the community.

DISCUSSION

Anatomy, Physiology and Biochemistry are the introductory subjects to students in medical field. The major Keystone for their future. It helps them understand how the body is made up and how it works. The study of anatomy of body through dissection lays a strong foundation for future study of surgery and medicine by the medical students. The students can appreciate the key relations of complex body structure better reinforced by visual stimulation. They also can get tactile stimulation by feeling the structure such as vein, artery. The more the bodies the better as they even get exposed to various normal and abnormal anatomical variations during dissection. The Anatomy Act has enabled the medical institutions to use unclaimed and donated bodies for use in dissection.[3] But with the ever increasing number of medical institutions in India still the number of cadavers is very scarce.

The present descriptive cross-sectional study assessed awareness, perceptions, and attitudes regarding cadaveric body donation and embalming among first-year MBBS students at a tertiary care medical college. The findings reveal that awareness of body donation prior to joining medical college was markedly low, although exposure to cadaveric dissection significantly influenced students' understanding, appreciation, and respect toward donated bodies. This goes hand in hand with Abbasi et al., who in their study, have shown that a significant number of medical students have said the primary source of their awareness was the Department of Anatomy after joining the college.

In the current study, only a small proportion of students were aware of body donation before entering medical training. This finding is not consistent with observations reported in previous studies conducted among medical students in India and neighbouring countries. The findings in relation to knowledge of Kundu et al. stood at 91.6% [5]and of Singh et al. at 90% [6]. Looking at the global trends, Abbasi et al., in their study on 238 Iranian medical students, revealed that >70% were aware of Voluntary body donation.[7] One of the reasons for this discrepancy can be attributed to the fact that most of the students in the government medical college buldhana are from rural areas where body donation campaigns are a very rare entity. Also they have very strong cultural and religious views regarding body donation which clearly is highlighted by the fact that 43.3% of students don't want to donate body due to cultural barriers. This highlights the gap between societal knowledge and institutional requirements for medical education.

The majority of students correctly identified anatomical education and research as the primary purpose of body donation. This reflects the positive impact of early anatomy teaching and orientation programs in medical colleges. This is In alignment with previous studies done on Indian students, where it was found that >60% were aware of the purpose of body donation in their medical schools [11,12,13,14,15]. Cadaveric dissection remains an irreplaceable educational tool, offering three-dimensional understanding of human anatomy and enabling students to appreciate anatomical variations, relationships, and clinical relevance. Similar findings have been reported in studies where medical students demonstrated better conceptual clarity regarding body donation after formal exposure to anatomy teaching.

Awareness regarding embalming was limited prior to medical education; however, most students developed adequate understanding following exposure to the dissection hall. Embalming plays a crucial role in preserving donated bodies, maintaining tissue integrity, and ensuring safety for prolonged educational use. Improved awareness of embalming techniques also contributes to reducing fear and misconceptions associated with cadaver handling.

Cultural and religious perceptions emerged as an important influencing factor in students' attitudes toward body donation. Nearly half of the respondents were uncertain whether body donation aligned with their religious or cultural beliefs. Ciliberti et al. pointed out in their study that students who were not religious were 5.9 times more likely to donate their bodies [8] as compared to religious students. Many of the other studies have shown findings on similar lines that revealed that religion was a significant barrier in the way of body donation[[6,9,10,11]]. This uncertainty, rather than outright rejection, suggests that appropriate education, counselling, and one to one dialogue involving cultural and religious perspectives could significantly improve acceptance. Similar studies have emphasized that religious teachings often support acts of charity and altruism, including body and organ donation, but misinformation and myths continue to influence public opinion due to cultural ghosts.

Willingness to donate one's own body was low in the present study, although a substantial proportion of students expressed willingness if provided with more information. This indicates that hesitation largely stems from lack of knowledge, emotional discomfort, and family concerns rather than negative attitudes. Previous research has shown that medical students' willingness to donate increases with continued exposure, ethical discussions, and witnessing the educational value of cadavers.

The emotional response of students during initial exposure to cadaveric dissection is an important aspect of medical training. In this study, many students reported feelings of fear, anxiety, or discomfort during their first encounter with

cadavers, which gradually evolved into respect, gratitude, and professional responsibility. This transformation is a well-documented phenomenon and underscores the role of anatomy teaching in shaping empathy, ethical sensitivity, and professional identity among medical students.

Medical students serve as future healthcare providers and potential advocates for body donation. Their awareness and attitudes have a cascading effect on society, as they influence patients, families, and the community. Therefore, strengthening body donation awareness among medical students is not only essential for academic purposes but also for promoting voluntary donation within the broader population. It is better to teach one to reach the masses. When they will be well informed and have their own doubts cleared they can preach the same to community.

The findings of this study emphasize the need for structured awareness programs, inclusion of body donation topics in the foundation course, ethical discussions on donor dignity, and memorial or gratitude ceremonies for donors. Such initiatives have been shown to positively influence students' perceptions and willingness toward body donation in various studies.

The results clearly indicate that students enter medical college with limited knowledge about body donation, but exposure to anatomical dissection greatly enhances appreciation for donors. Sociocultural hesitations and lack of family understanding remain major barriers to willingness for self-donation which can easily be overcome by structured awareness campaigns.

28.4% and 43.3% of the students were unwilling to donate due to prevention by family members and due to religious barriers respectively. The observations made are similar to that of Sahana et al 4 who also stated that majority of religions in the country approve of organ and body donation while organ and body donation does not interfere with the funeral arrangements.

Educational campaigns, inclusion of body donation topics in early medical curriculum, and involvement of religious/community leaders can help reshape public perception. Respectful handling of cadavers and memorial practices strengthen the ethical foundation of medical education.

CONCLUSION

First-year MBBS students strongly value the role of donated bodies in learning, yet awareness remains insufficient before entering medical training. Colleges should implement structured body donation awareness programs, encourage pledge drives, incorporate body donation and embalming in under graduate curriculum and maintain dignified treatment of cadavers to honour the generosity of donors. Guidelines for proper handling and respect of cadavers should be made and brought into action. Now a days multimedia is a great asset in raising awareness throughout the medical field so why not it should be implemented for raising body donation awareness. The students can be given special training and education information regarding body donation and then they can in turn educate their communities.

Recommendations

1. Organize **body donation awareness seminars** for students and families
2. Conduct **tribute ceremonies** to honour cadaver donors family members
3. Decrease batch size per cadaver to enhance practical exposure
4. Improve ventilation and use safer embalming techniques
5. Provide transparent information on donation procedures and legal aspects
6. Involve the use of multimedia to raise awareness.

Limitations

Although the questionnaire assessed the overall awareness, perception attitude of cadaveric body donation and embalming of the first-year undergraduates, they did not assess the actual practice. The cohort was confined to first-year MBBS students of Government Medical College, Buldhana only hence just a single institution survey. Their comparison peers of other colleges would have given more insight on the difference by regions. Also comparison with their senior students and postgraduates of different fields who have been already exposed to dissection and clinical postings for some time now will help analyse the factors responsible for the change of attitudes and practice if any due to more exposure. Comparison with paramedical and nursing students would also reflect the real situation. Analysis was based on self-reported responses so it gives rise to the possibility of possible bias. It also lacks inferential statistical analysis.

Ethical Considerations

No personal data was collected. The study was purely educational, with anonymous participation. Formal ethical approval was not required.

REFERENCES

1. Maitreyee kar, Dipankar Bhaumik, Chinmay Kar, "Body and Organ donation: Perception among medical students and medical health professionals in a tertiary care center" International Journal of Anatomy, Radiology and Surgery, 2017.
2. C.K Parikh, Suffocation, Parikh's Textbook of Medical Jurisprudence and Toxicology, CBS Publishers, 5th Edition, Part I, Section II, Ch-8, Pg-205.

3. Bombay Anatomy Act No. XI of 1949 (The Bombay Anatomy act, 1949), Available at http://bombay highcourt.nic.in/libweb/acts/1949.11.pdf.
4. Sahana B.N, Sangeea M. Knowledge, "Attitude and Practices of medical students regarding organ donation", IJCRR Vol(7). Issue 16, Aug 2015.
5. Kundu S, Sherke A, Gurudiwan R. Attitudes and myths regarding posthumous whole body bequest and organ donation among medical professionals and health care personnel of tribal Chhattisgarh: a broad questionnaire-based review. *Sch J Appl Med Sci*. 2021;9:1093–1116.
6. Singh P, Phuyal N, Khadka S, Gurung M. Knowledge of medical students and faculties of a medical college towards human body and organ donation: a descriptive cross-sectional study. *JNMA J Nepal Med Assoc*. 2021;59:141–145. doi:10.31729/jnma.6200
7. Abbasi Asl J, Nikzad H, Taherian A, et al. Cultural acceptability and personal willingness of Iranian students toward cadaveric donation. *Anat Sci Educ*. 2017;10:120–126. doi:10.1002/ase.1634
8. Ciliberti R, Gulino M, Gazzaniga V, et al. A survey on the knowledge and attitudes of Italian medical students toward body donation: ethical and scientific considerations. *J Clin Med*. 2018;7:168. doi:10.3390/jcm7070168.
9. Mwachaka PM, Mandela P, Saidi H. Repeated exposure to dissection does not influence students' attitudes towards human body donation for anatomy teaching. *Anat Res Int*. 2016;2016:9251049. doi:10.1155/2016/9251049
10. Kar M, Bhaumik DL, Kar C. Body and organ donation: perception among medical students and medical health professionals in a tertiary care centre. *Int J Anat Radiol Surg*. 2017;6:42–47
11. Sah S, Mishra A, Bhandari K, Chandra N, Choudhary A. A survey of awareness, perception and attitude about whole body donation after death among medical, paramedical and nursing students of Hind Institute of Medical Sciences, Barabanki and Sitapur, Uttar Pradesh, India. *Int J Curr Adv Res*. 2018;7:13812–13815
12. Singh P, Phuyal N, Khadka S, Gurung M. Knowledge of medical students and faculties of a medical college towards human body and organ donation: a descriptive cross-sectional study. JNMA J Nepal Med Assoc. 2021;59:141–5. doi:10.31729/jnma.6200.
13. Saha A, Sarkar A, Mandal S. Body donation after death: the mental setup of educated people. *J Clin Diagn Res.* 2015;9(6):AC05–AC09. doi:10.7860/JCDR/2015/12246.6011.
14. Karmakar N, Chakraborty T, Datta A, Nag K, Das S, Bhattacharjee P. Knowledge, attitude, and practice regarding voluntary whole-body donation among medicos in Northeast India. *CHRISMED J Health Res.* 2020;7(2):103–109. doi:10.4103/cjhr.cjhr_41_19
15. Kl V, Kulkarni U. Life after death: knowledge, attitude and ethical perceptions of medical and engineering students on voluntary body donation. *Int J Curr Res Rev.* 2020;12(04):187–92.