

Perspectives of Medical Students on Voluntary Body Donation: A Questionnaire-Based Cross-Sectional Study.

Dr. Shobhana Medhi¹, Dr. Aditya Madhab Baruah², Dr. Anuradha Baruah³, Dr. Indra Nath Sutia⁴

¹Assistant Professor, Department of Anatomy, Tezpur Medical College & Hospital, Tezpur.

²Associate Professor, Department of Forensic Medicine & Toxicology, Fakhruddin Ali Ahmed Medical College and Hospital, Barpeta, Assam.

³Professor & Head, Department of Anatomy, Assam Medical College & Hospital, Dibrugarh, Assam.

⁴Professor & Head, Department of Anatomy, Lakhimpur Medical College & Hospital, Lakhimpur, Assam.

KEYWORDS

voluntary body donation, body donation, medical education, attitudes, willingness, perspectives, medical students

ABSTRACT

Introduction: Voluntary Body Donation (VBD) plays a vital role in medical education and research. However, willingness to donate is influenced by socio-cultural, religious, and educational factors. This study evaluates medical students' knowledge, attitudes, and willingness toward VBD in India and compares the findings with global trends.

Objectives: 1. To assess the knowledge, attitudes, and willingness of medical students toward Voluntary Body Donation (VBD) in the Indian context. 2. To identify factors influencing medical students' willingness to donate their bodies for medical education and research. 3. To evaluate the role of religious beliefs, cultural influences, and personal ethics in shaping students' perspectives on VBD. 4. To compare the findings with existing global literature on medical students' perspectives on body donation. 5. To explore potential strategies to improve awareness and acceptance of VBD among medical students in India.

Methods: A questionnaire-based cross-sectional study was conducted among medical students in Assam, India. Data were collected on demographics, knowledge, attitudes, and willingness to donate. Statistical analysis, including chi-square tests, was performed to assess associations between key variables.

Results: A total of 456 medical students participated in the study, providing insights into their knowledge, attitudes, and willingness toward Voluntary Body Donation (VBD). The findings reveal significant associations between willingness to donate and factors such as gender, religious background, and knowledge levels, highlighting key influences on students' perspectives. A significant association was observed ($p = 0.0207$), with female students showing higher willingness to donate. Religious background had a strong impact ($p = 0.00009$), with higher opposition among Christians, Buddhists, and Muslims. No significant

correlation was found ($p = 0.0877$), suggesting that cultural and emotional factors outweigh knowledge in decision-making.

Conclusion: Knowledge alone is insufficient to drive VBD decisions. Integrating culturally sensitive discussions on ethical and religious aspects of donation in medical curricula is essential. Future research should focus on longitudinal studies to assess evolving attitudes toward VBD among medical students.

Main Article:

Introduction:

Voluntary Body Donation (VBD) is an essential contribution to medical education and research, providing an irreplaceable resource for anatomical studies, surgical training, and forensic investigations. Despite its significance, the willingness to donate one's body after death is influenced by multiple socio-cultural, religious, and educational factors (1,2). Medical students, as future healthcare professionals, play a crucial role in promoting body donation, yet their attitudes and perceptions toward VBD remain an area of concern.

Globally, studies have reported varying levels of willingness to donate bodies among medical students. In Canada, Bardell et al. (3) found that while students had high levels of knowledge regarding body donation, only a fraction were willing to pledge their bodies. Similar trends were observed in the United Kingdom and Australia, where religious and cultural beliefs emerged as significant deterrents to body donation (4,5). Research in Qatar highlighted gender differences in attitudes toward body and organ donation, with female students expressing greater willingness compared to their male counterparts (6).

In India, despite increasing awareness about organ and body donation, religious beliefs and cultural norms continue to influence attitudes toward donation. Studies in Kerala and Tamil Nadu have shown that while medical students possess adequate knowledge about donation, their willingness to donate remains inconsistent (7,8). This gap suggests that knowledge alone is insufficient to drive donation decisions and that cultural and emotional factors play a significant role.

Aim:

This study aims to analyze and assess the attitudes and willingness of medical students toward VBD in the Indian context and compare these findings with global trends. Understanding these

perspectives can help in formulating targeted educational interventions that address the barriers to donation and promote a more accepting attitude among future healthcare professionals.

Objectives:

1. To assess the knowledge, attitudes, and willingness of medical students toward Voluntary Body Donation (VBD) in the Indian context.
2. To identify factors influencing medical students' willingness to donate their bodies for medical education and research.
3. To evaluate the role of religious beliefs, cultural influences, and personal ethics in shaping students' perspectives on VBD.
4. To compare the findings with existing global literature on medical students' perspectives on body donation.
5. To explore potential strategies to improve awareness and acceptance of VBD among medical students in India.

Methods:

Study Design and Setting: This was a questionnaire-based cross-sectional study, conducted among students in a medical college in Assam, India.

Study Population and Sampling: The study included medical students across different academic years. Participants were selected using a convenience sampling method, and those who voluntarily agreed to participate were included in the study.

Data Collection Tool and Procedure: A structured questionnaire was developed using Google Forms to collect data. The questionnaire consisted of sections covering:

- Demographic details
- General Outlook towards voluntary body donation: Awareness, knowledge, attitude and perception.

The questionnaire link was shared with students through institutional communication channels. Participants were given sufficient time to complete the form, and responses were collected anonymously.

Ethical Considerations: The study was conducted after obtaining ethical clearance from the Institutional Ethics Committee. Informed consent was obtained from all participants before they filled out the questionnaire. Participation was voluntary, and confidentiality was strictly maintained.

Data Analysis: The collected data were exported from Google Forms into Microsoft Excel and analyzed using descriptive and inferential statistics. Categorical variables were presented as frequencies and percentages, while associations between variables were assessed using chi-square tests or other appropriate statistical methods.

Results:

Demographic Characteristics: A total of 456 medical students participated in the study. The gender distribution was nearly equal, with 231 males (50.7%) and 225 females (49.3%). Majority of respondents belonged to the Hindu religion (362, 79.4%), followed by Muslims (68, 14.9%), and smaller representations from Christianity, Buddhism, Sikhism, and indigenous faiths. Most students were from Assam (391, 85.7%), with participants also from Rajasthan, Bihar, and other Indian states.

Understanding of Voluntary Body Donation (VBD): When asked about their knowledge of VBD and its significance, a large proportion of students (240, 52.6%) reported being somewhat knowledgeable, while 110 students (24.1%) considered themselves very knowledgeable. However, 96 students (21.1%) admitted to having limited knowledge, and a small fraction (10 students, 2.2%) reported having no knowledge at all.

Attitudes Toward Voluntary Body Donation:

General Opinion on VBD: Majority of students (223, 48.9%) strongly supported the concept of VBD, while 123 (27.0%) somewhat supported it. However, 108 students (23.7%) remained neutral, and 2 students (0.4%) strongly opposed body donation.

Willingness to Donate Their Own Body: When asked if they would personally consider donating their body for medical education and research: 205 students (44.9%) responded "Yes, Maybe", showing potential interest. 167 students (36.6%) responded "No, Probably Not", expressing hesitation. 46 students (10.1%) responded "No, Definitely Not", indicating strong unwillingness. Only 38 students (8.3%) responded "Yes, Definitely", showing firm commitment to VBD.

Statistical Associations

Chi-square tests were conducted to examine the relationships between gender, religion, knowledge levels, and willingness to donate:

1. Gender and Willingness to Donate: Statistically significant association ($p = 0.0207$) was observed. Female students were more willing to donate compared to males, who showed

slightly higher opposition.

2. Religious Background and Willingness to Donate: Highly significant association ($p = 0.00009$).

a) Higher opposition was noted among Buddhists (50%), Christians (26%), and Muslims (25%).

b) Greater willingness was observed among Hindus (9.1%), Sikhs (100%), and followers of indigenous faiths (100%).

3. Knowledge Level and Willingness to Donate: Not statistically significant ($p = 0.0877$): Awareness of VBD did not strongly predict willingness to donate.

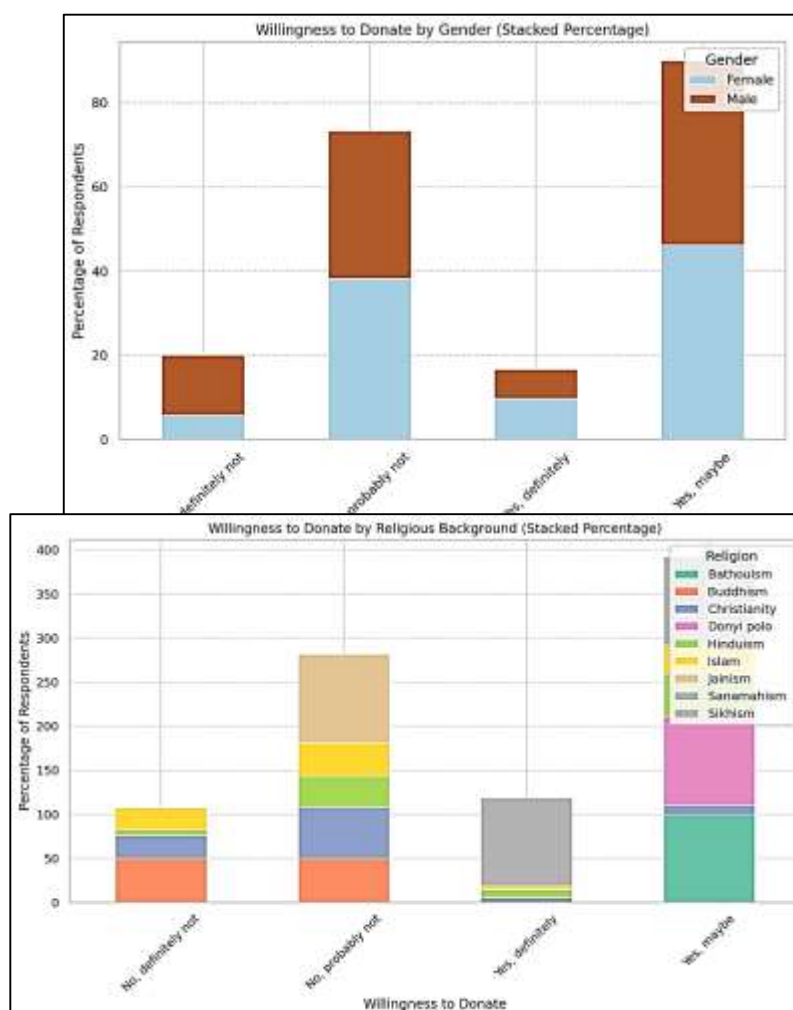
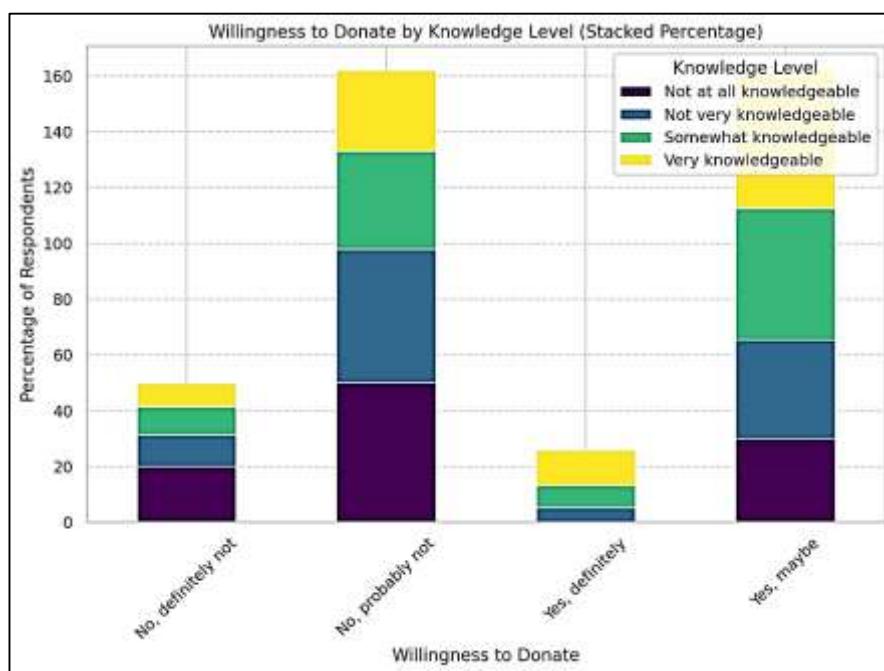


Fig.: Stacked bar chart representing the statistical association between gender and willingness to donate.

Fig.: Stacked bar chart representing the statistical association between religious



background and willingness to donate.

Fig.: Stacked bar chart showing the statistical association between knowledge level and willingness to donate.

Discussion:

Our study highlights key factors influencing medical students' willingness towards Voluntary Body Donation (VBD), including gender, religious background, and knowledge levels.

Gender Differences in Willingness to Donate

Female students exhibited slightly higher willingness to donate compared to males, which aligns with previous research showing that women generally have more positive attitudes toward organ and body donation (1,2). Studies suggest that this difference may stem from higher empathy levels, altruistic tendencies, and a greater inclination towards prosocial behaviors among females (3). Similar findings were observed in Qatar, where female medical students demonstrated greater openness toward body and organ donation than males (4).

Religious Influence on Body Donation

Religious background significantly influenced willingness to donate, with students from certain religious groups displaying lower inclination towards VBD. This is consistent with studies

indicating that religious beliefs serve as one of the strongest predictors of donation decisions (5,6). Research in Australia and the UK shows that specific religious groups hold concerns about bodily integrity and resurrection, leading to reluctance in pledging their bodies for medical education or transplantation (7,8). Furthermore, South Asian religious communities often exhibit lower acceptance rates of donation due to spiritual and cultural considerations (9).

However, not all religious perspectives oppose body donation. Some scholars highlight that Islamic and Christian viewpoints may support organ and body donation as acts of charity, provided that ethical guidelines are followed (10,11). Given these findings, religion-sensitive educational programs may be necessary to address misconceptions and increase acceptance.

Knowledge Level and Its Limited Impact

Surprisingly, higher knowledge about VBD did not significantly correlate with willingness to donate. Similar findings have been reported in previous studies where awareness alone was insufficient to increase donation rates (12,13). A study among medical students in Canada found that although 90% were well-informed about organ donation, only 60% were willing to pledge their bodies (14). This suggests that personal values, cultural influences, and emotional comfort with the idea of body donation play a more dominant role than knowledge alone.

Studies also show that educational interventions alone do not necessarily increase donor registrations, highlighting the need for targeted awareness campaigns that address both emotional and ethical concerns (15). Workplace-based donation promotion projects have shown effectiveness in some settings (16), but further studies are needed to determine their impact on medical students' willingness for VBD.

Comparison with Global Trends

Similar patterns have been observed internationally:

- In Europe and the US, factors such as religion, personal ethics, and familial influence strongly shape donation decisions (17).
- In Qatar and other Middle Eastern countries, lack of clarity in religious rulings has led to hesitancy among medical students despite high knowledge levels (4).
- A study in Saudi Arabia also found that misconceptions about body donation remain widespread, leading to lower participation rates (18).

Implications for Medical Education

Given the findings, there is a strong need for targeted educational initiatives that address the

emotional and ethical concerns surrounding body donation. Efforts should be made to incorporate discussions on religious and cultural perspectives into medical curricula to foster informed decision-making among students.

Study Limitations and Prospects for Future Research

This study has certain limitations. First, it was conducted in a single medical college in Assam, which may limit the generalizability of the findings to other regions with different cultural and educational backgrounds. Second, the use of a self-reported questionnaire may have introduced response bias, as participants might have provided socially desirable answers. Additionally, while the study examined key factors influencing willingness toward Voluntary Body Donation (VBD), qualitative insights into students' deeper motivations and concerns were not explored.

Future research should consider a multi-institutional approach to capture diverse perspectives across different medical colleges in India. Longitudinal studies could assess how medical education and exposure to cadaveric dissection influence students' attitudes over time. Further, qualitative studies incorporating focus group discussions or in-depth interviews may provide a richer understanding of the ethical, emotional, and cultural dimensions shaping VBD decisions. Expanding the study to include the perspectives of faculty members and the general public could also offer a more comprehensive view of the factors influencing body donation trends.

Conclusion:

The findings of this study highlight that while medical students generally acknowledge the importance of Voluntary Body Donation, their willingness to pledge their own bodies remains influenced by gender, religious beliefs, and cultural perceptions. The comparison with global trends suggests that these factors are not unique to India but are observed in different cultural contexts worldwide. In line with studies from Canada, Australia, and the UK, our results reinforce that knowledge alone does not necessarily translate into a willingness to donate (3,4,5). Instead, deeply rooted personal and societal beliefs continue to shape students' decisions regarding body donation.

Religious background emerged as a significant factor in willingness to donate, mirroring global studies that have identified religious concerns as barriers to organ and body donation (5,6). Additionally, the observed gender differences in our study align with research in Qatar and other regions, where female students have shown a higher inclination toward donation than their male counterparts (6).

Given these insights, there is a pressing need to integrate culturally sensitive and ethically grounded educational programs into medical curricula. Addressing religious concerns, discussing the ethical significance of body donation, and providing exposure to donation-related narratives could help bridge the gap between knowledge and willingness to donate. Future research should focus on longitudinal assessments to evaluate how medical education influences students' attitudes toward body donation over time.

By fostering informed and positive attitudes toward body donation, medical institutions can ensure a sustainable supply of cadavers for medical education while respecting the socio-cultural beliefs of individuals.

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