

A CROSS-SECTIONAL STUDY ON KNOWLEDGE AND ATTITUDE REGARDING ORGAN DONATION AMONG COLLEGE STUDENTS OF AIZAWL, MIZORAM

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Abstract: Organ donation is a vital life-saving intervention for patients with end-stage organ failure, yet the shortage of donors remains a significant public health challenge. This study aimed to assess the knowledge and attitudes regarding organ donation among college students in selected colleges of Aizawl, Mizoram. A quantitative descriptive cross-sectional design was adopted, involving 170 students aged 18–24 years. Data were collected using a structured questionnaire comprising socio-demographic variables, knowledge-related questions, and a 5-point Likert scale to assess attitudes. Descriptive and inferential statistics were used for analysis. The findings revealed that all participants were aware of organ donation; however, detailed knowledge was lacking in important areas such as brain death, donor eligibility, and donation procedures. Overall, 26.5% of students had adequate knowledge, 45.9% had moderate knowledge, and 27.6% had inadequate knowledge. Regarding attitudes, 78.2% demonstrated a neutral attitude, 18.8% had a negative attitude, and only 2.9% showed a positive attitude toward organ donation. No significant association was found between knowledge and attitude ($p = 0.229$). However, age and semester of study were significantly associated with both knowledge and attitude levels. The study concludes that although awareness of organ donation is universal among students, detailed knowledge is insufficient and attitudes remain largely neutral. Targeted educational and awareness programs are recommended to improve understanding and encourage more positive attitudes toward organ donation.

Keywords: organ donation, knowledge, attitude, college students, awareness

INTRODUCTION

Organ transplantation is a life-saving medical procedure involving replacement of a failing organ with a healthy organ from a living or deceased donor. It is performed in end-stage organ failure and is regarded as one of the most significant advances in modern medicine for improving survival and quality of life^[1]. Despite improvements in surgical techniques, immunosuppression, and post-operative care, a major global challenge persists in the form of organ shortage. The demand for transplantable organs continues to far exceed availability, resulting in prolonged waiting lists and increased mortality^[2]. In India, deceased organ donation rates remain low despite legislative measures such as the Transplantation of Human Organs and Tissues Act, which aims to regulate transplantation and promote ethical donation practices. This gap is largely influenced by sociocultural beliefs, misconceptions, fear of organ misuse, and inadequate awareness regarding brain death and legal procedures^[3]. Knowledge and attitude are important determinants of willingness to donate organs. Adequate awareness improves positive attitudes toward donation, whereas misinformation and lack of knowledge contribute to reluctance^[4, 5]. College students represent an important group in this context due to their receptiveness to new ideas and potential influence on society. However, studies indicate that gaps in knowledge and misconceptions regarding organ donation still persist among students^[6].

NEED FOR THE STUDY

The persistent shortage of transplantable organs remains a critical public health concern, limiting the effectiveness of life-saving organ transplantation worldwide. Although transplantation medicine has advanced significantly, the gap between organ demand and supply continues to widen, leading to prolonged waiting periods and avoidable deaths among patients with end-stage organ failure. In India, the organ donation rate remains critically low at approximately 0.26 per million population, indicating a substantial gap between the

need for and availability of transplantable organs ^[10]. Previous studies have identified inadequate knowledge and unfavorable attitudes as major barriers to organ donation. A study among university students reported that only 34.1% had good knowledge regarding organ donation, while awareness of brain death was extremely low at 7.53% ^[2]. Similarly, a study conducted in Jordan found that although most participants had heard about organ donation, their understanding of brain death and the organ donation process remained limited, and higher levels of knowledge were associated with more positive attitudes toward organ donation ^[1]. These findings indicate that insufficient awareness and persistent misconceptions continue to hinder organ donation practices. College students represent an important target group for organ donation awareness because they are educated, socially active, and capable of influencing attitudes and decisions within their families and communities. However, limited evidence is available regarding the knowledge and attitude of college students toward organ donation in North-Eastern India, particularly in Mizoram ^[3]. Therefore, the present study was undertaken to assess the knowledge and attitude regarding organ donation among college students in Aizawl, Mizoram. The findings of the study may help identify existing knowledge gaps and misconceptions and provide a basis for developing targeted educational interventions and awareness programs to promote organ donation and improve donor participation in the region.

OBJECTIVES:

1. To assess the knowledge regarding organ donation among college students of Aizawl, Mizoram.
2. To determine the attitudes regarding organ donation among college students of Aizawl, Mizoram.
3. To evaluate the association between knowledge and attitudes regarding organ donation among college students of Aizawl, Mizoram.
4. To examine the association between students' knowledge regarding organ donation with selected socio-demographic variables.
5. To find out the association between students' attitudes regarding organ donation with selected socio-demographic variables.

HYPOTHESIS

H₁: There is a significant association between knowledge and attitude regarding organ donation among college students of Aizawl, Mizoram

H₂: There is a significant association between the level of knowledge regarding organ donation with selected socio-demographic variables among college students of Aizawl, Mizoram.

H₃: There is a significant association between the level of attitudes regarding organ donation with selected socio-demographic variables among college students of Aizawl, Mizoram.

CONCEPTUAL FRAMEWORK

This study is based on J. W. Kenny's (1991) Open System Framework³. A conceptual framework provides a structured approach for understanding relationships between variables and guiding the research process. It helps in identifying key variables, formulating hypotheses, and interpreting study findings. In this study, the framework includes input (socio-demographic variables), throughput (knowledge and attitude regarding organ donation), and output (level of knowledge and attitude). It provides a clear roadmap for conducting and analysing the study.

Input: Input refers to factors that influence the study participants. In the present study, input includes socio-demographic variables of college students in Aizawl, Mizoram, such as age, gender, semester, religion, family type, and place of residence. These factors may influence students' exposure to information and their knowledge and attitudes regarding organ donation.

Throughput: Throughput refers to the process of converting input into measurable outcomes. In this study, it includes assessment of knowledge and attitude regarding organ donation using a structured knowledge questionnaire and a 5-point Likert scale.

The knowledge tool assesses understanding of organ donation, including meaning, types, eligibility, legal and ethical aspects, and myths. The attitude scale assesses willingness, support, cultural and emotional acceptance of organ donation.

Output: Output refers to the final results obtained from the study. In this study, it includes the level of knowledge (inadequate, moderate, adequate) and attitude (negative, neutral, positive) regarding organ donation among college students in Aizawl, Mizoram.

Feedback: Feedback refers to the use of study findings to improve future actions. In this study, feedback is based on the identified levels of knowledge and attitude and their association with socio-demographic variables. The findings help identify gaps and misconceptions and can guide future awareness programs, educational interventions, and policy planning on organ donation.

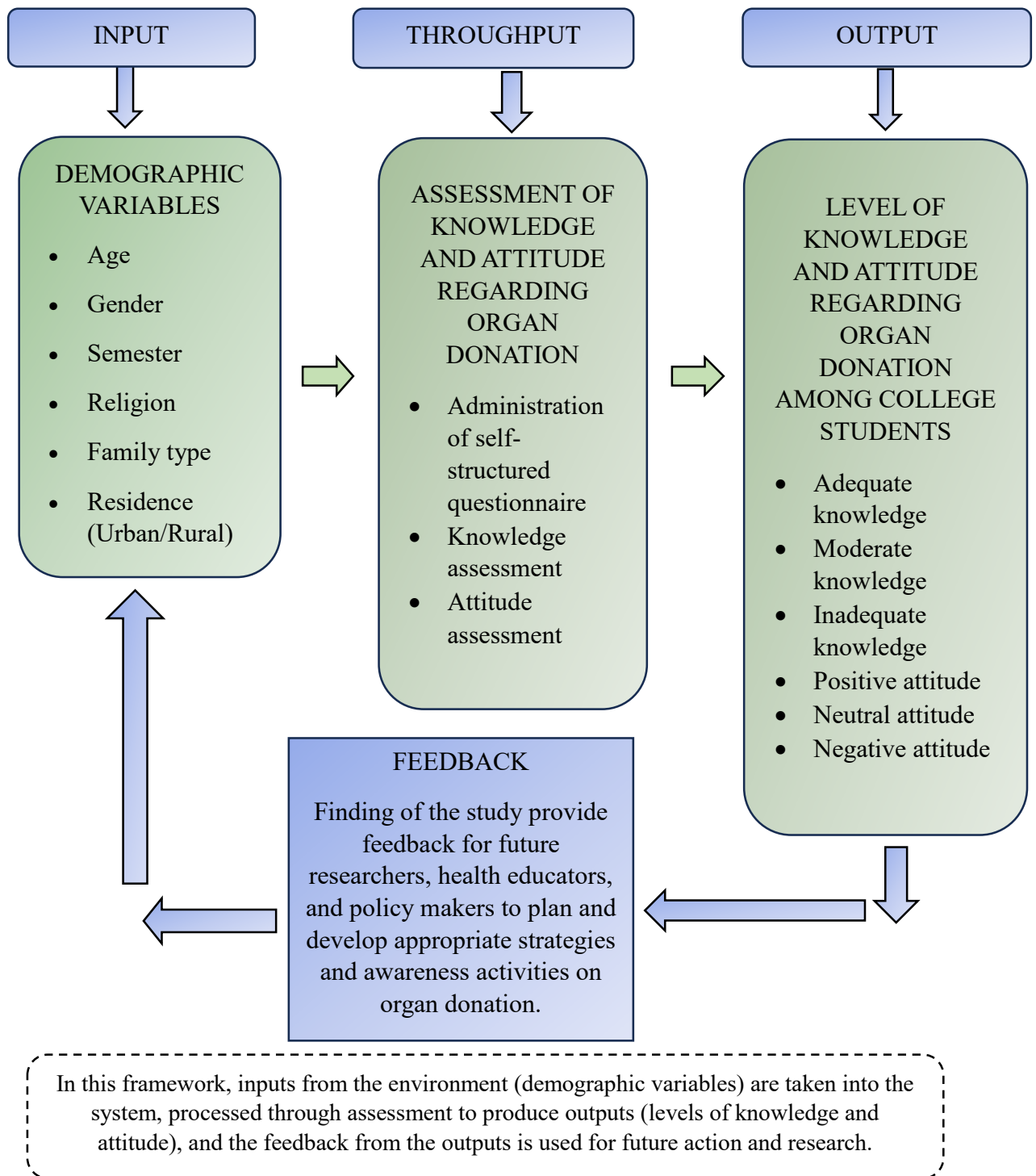


Fig 1: Conceptual framework on knowledge and attitude regarding organ donation among college students, based on open system theory of Ludwig Von Bertalanffy and J. W. Kenny.

RESEARCH METHODOLOGY

- **Research approach:** Quantitative approach
- **Research design:** Descriptive cross-sectional design
- **Study setting:** Government J. Thankima College and Ramhlun North College, Aizawl, Mizoram
- **Population:** College students
- **Sample size:** 170 students
- **Sampling technique:** Convenience sampling

Sample criteria:

Inclusion Criteria:

- Students of all genders who are enrolled in undergraduate programs at Government Aizawl North College Ramhlun, and Government J. Thankima College, Chaltlang, Aizawl, Mizoram.
- Students aged between 18 to 24 years at the time of data collection.
- Students who are able to read and write in both English and Mizo.
- Students who are present and available during the period of data collection.
- Students willing to provide written informed consent to participate in the study.

Exclusion Criteria:

- Students who have previously participated in any study related to organ donation.
- Students who have already given their legal authorization to donate their organs.
- Students who are physically or psychologically unfit to participate at the time of data collection.

Description of Tool

The tools used in this study were developed after an extensive review of relevant literature (research and non-research studies) and consultation with experts in nursing and medical fields.

Three tools were developed:

Tool I: Socio-demographic profile of respondents.

Tool II: Structured knowledge questionnaire regarding organ donation.

Tool III: Structured 5-point Likert scale to assess attitude regarding organ donation.

Data collection procedure

Ethical approval for the study was obtained from the Institutional Ethics Committee (IEC) of RIPANS, followed by formal permission obtained from the Principals of Government Aizawl North College, Ramhlun, and Government J. Thankima College, Chaltlang, Aizawl, Mizoram. Eligible students were identified with the help of college authorities, and a convenience sampling technique was used. The researcher explained the purpose of the study to the participants and obtained written informed consent. Confidentiality and anonymity were ensured. Data were collected using a self-structured questionnaire for socio-demographic and knowledge assessment, followed by a 5-point Likert scale to assess attitude toward organ donation. Data collection was conducted on 1st and 2nd April 2026 at both colleges and completed without difficulty.

RESULT AND DISCUSSION

Table 1: Socio-demographic variables of college students under study

n=170			
Variable	Category	f	%
Age	18-20	72	42.4
	21-22	82	48.2
	23-24	16	9.4
Gender	Male	89	52.4
	Female	81	47.6
Semester	2nd Semester	57	33.5
	4th Semester	57	33.5
	6th Semester	56	32.9
Religion	Christianity	152	89.4
	Hindu	9	5.3
	Muslim	2	1.2
	Others	7	4.1

Family	Nuclear family	22	12.9
	Joint family	61	35.9
	Single Parent	87	51.2
Resident	Rural	86	50.6
	Urban	84	49.4

Table 1 presents the sociodemographic characteristics of the participants. Nearly half (48.2%) were aged 21–22 years, while a small proportion (9.4%) were aged 23–24 years. The gender distribution was nearly equal, with 52.4% males and 47.6% females. Participants were almost evenly distributed across semesters. The majority were Christians (89.4%), followed by Hindu (5.3%), Muslim (1.2%), and others (4.1%). Regarding family type, 51.2% belonged to single-parent families, 35.9% to joint families, and 12.9% to nuclear families. Residence was also evenly distributed, with 50.6% from rural and 49.4% from urban areas.

n=170

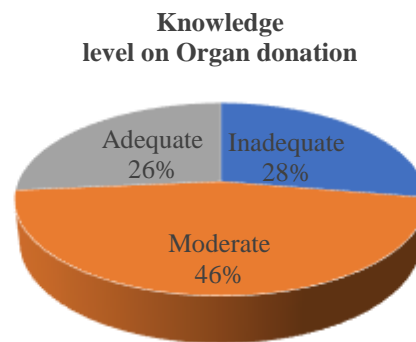


Figure 1: Distribution of level of knowledge regarding organ donation among college students under study

According to Figure 1, the majority of participants had a moderate level of awareness about organ donation (46%), with inadequate knowledge (26%) and Adequate knowledge (28%) following. Therefore, the majority of the students have an average level of knowledge regarding Organ donation.

n=170

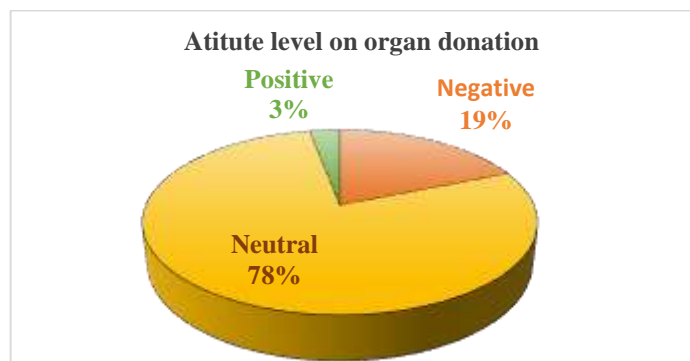


Figure 2: Distribution of level of attitude regarding organ donation among college students under study

The participants' general attitudes toward organ donation are displayed in figure 2. The majority of participants (78%) were neutral. Just a small percentage of individuals expressed a good attitude (3%), whereas a smaller fraction displayed a negative attitude (19%). Majority of the participant attitudes were mostly neutral and showed little variance. Overall, the findings imply that individuals' opinions toward organ donation are neither strongly positive nor negative. This demonstrates a lack of interest or commitment to organ donation.

Table 2: Association between knowledge with attitude regarding organ donation among college students n=170

Knowledge Level	Attitude Level			p-Value
	Negative	Neutral	Positive	
Inadequate	12	33	2	0.229
Moderate	15	60	3	
Adequate	5	40	0	

Table 2 shows the association between knowledge and attitude regarding organ donation. Fisher’s exact test revealed no statistically significant association between knowledge and attitude ($p = 0.229$). Although participants with average and good knowledge showed a slightly higher proportion of neutral and positive attitudes than those with inadequate knowledge, the difference was not significant. Hence, the null hypothesis was not rejected, indicating that knowledge level did not influence attitude toward organ donation among the study participants.

Table 3: Association between knowledge with selected socio-demographic variables regarding organ donation among college students n=170

Variables		Knowledge Level			p-Value
		Poor	Average	Good	
Age	18-20	26	31	15	0.039*
	21-22	14	42	26	
	23-24	7	5	4	
Gender	Male	25	39	25	0.834
	Female	22	39	20	
Semester	2 nd Sem	18	24	15	0.048*
	4 th Sem	16	24	17	
	6 th Sem	13	30	13	
Religion	Christian	41	71	40	0.904
	Hindu	4	3	2	
	Muslim	0	1	1	
	Others	2	3	2	
Family	Nuclear family	4	15	3	0.123
	Joint family	22	23	16	
	Single Parent	21	40	26	
Residence	Rural	29	36	21	0.201
	Urban	18	42	24	

*p value <0.05

The results presented in Table 4 show the association between knowledge regarding organ donation and selected socio-demographic variables among college students. A statistically significant association was found between knowledge and age ($p = 0.039$), with students aged 21–22 years demonstrating higher levels of knowledge compared to other age groups. A significant association was also observed between knowledge and semester of study ($p = 0.048$), with students in higher semesters showing better knowledge levels than those in lower semesters. However, no statistically significant association was found between knowledge and gender ($p = 0.834$), religion ($p = 0.904$), family type ($p = 0.123$), or place of residence ($p = 0.201$), indicating comparable knowledge levels across these variables.

Table 4: Association between attitude with selected socio-demographic variables regarding organ donation among college students
n=170

Variables		Attitude Level			p-Value
		Negative	Neutral	Positive	
Age	18-20	23	47	2	0.039*
	21-22	7	72	3	
	23-24	2	14	0	
Sex	Male	18	68	3	0.834
	Female	14	65	2	
Semester	2 nd Semester	32	25	0	0.048*
	4 th Semester	0	57	0	
	6 th Semester	0	51	5	
Religion	Christian	29	119	4	0.904
	Hindu	2	6	1	
	Muslim	0	2	0	
	Others	1	6	0	
Family	Nuclear family	4	18	0	0.123
	Joint family	10	50	1	
	Single Parent	18	65	4	
Residence	Rural	10	74	2	0.201
	Urban	22	59	3	

*p value <0.05

The information presented in Table 4 shows the association between attitude regarding organ donation with selected socio-demographic variables among college students. A statistically significant association was found between attitude and age ($p = 0.039$) and semester of study ($p = 0.048$), indicating that attitude towards organ donation varied significantly with age and academic level. However, no statistically significant association was found between attitude and sex ($p = 0.834$), religion ($p = 0.904$), family type ($p = 0.123$), or residence ($p = 0.201$), suggesting that attitude was independent of these socio-demographic factors

DISCUSSION

The present study revealed that although awareness of organ donation was universal among college students, the overall level of knowledge was only moderate. While most participants were familiar with the basic concept of organ donation, significant knowledge gaps were identified regarding brain death, legal aspects of donation, organ viability, and transplantation procedures. Similar findings were reported by Saikia et al., who found that awareness regarding organ donation was high among students despite inadequate knowledge of important aspects of organ donation and transplantation.^[3] These deficiencies may be attributed to reliance on informal sources of information, such as social media and mass media, rather than structured educational programmes. The findings highlight the need for educational initiatives that emphasize the clinical, ethical, and legal aspects of organ donation.

Despite recognizing organ donation as a life-saving and socially beneficial practice, most participants demonstrated a neutral attitude, and only a small proportion expressed a positive attitude toward donation. Concerns related to organ misuse, body disfigurement, mistrust in the healthcare system, and emotional discomfort appeared to influence participants' perceptions. Similar findings were reported by Hasan et al., who identified fear, misconceptions, and sociocultural concerns as important barriers to positive attitudes toward organ donation among university students.^[6] These findings suggest that improving knowledge alone may not be sufficient to foster positive attitudes toward organ donation.

The present study found no significant association between knowledge and attitude, indicating that greater knowledge does not necessarily lead to a more favourable attitude toward organ donation. A similar finding was reported by Joseph et al., who observed that willingness to donate organs was influenced by factors such as personal beliefs, family influence, and trust in healthcare services rather than knowledge alone.^[13] The results underscore the complex nature of organ donation decision-making and the importance of addressing both cognitive and emotional determinants of behaviour.

The findings related to the association between knowledge and selected demographic variables revealed a significant association between knowledge and factors such as age and semester of study. Similar findings were reported by Gupta et al., who found that educational exposure and academic progression were significantly associated with knowledge regarding organ donation among college students.^[7]

The findings related to the association between attitude and selected demographic variables revealed a significant association between attitude and factors such as age and semester of study. Similar observations were reported by Kasana et al., who found that individuals with greater educational exposure demonstrated more favourable attitudes toward organ donation.^[15]

Overall, the findings of the present study indicate that although awareness of organ donation is high among college students, important knowledge gaps and predominantly neutral attitudes still exist. Therefore, structured educational programmes, awareness campaigns, and interactions with healthcare professionals should be encouraged to improve knowledge and foster positive attitudes toward organ donation among young adults.

IMPLICATIONS

Nursing Education: Curriculum should include detailed content on organ donation, brain death, legal aspects, and transplantation procedures. Regular awareness programmes are needed to improve knowledge and attitudes.

Nursing Practice: Nurses should educate patients and the community, address myths, and promote accurate information regarding organ donation.

Nursing Administration: Administrators should organise training sessions and awareness campaigns in collaboration with healthcare organisations.

Nursing Research: Further studies with larger samples and interventional designs are recommended to assess effectiveness of awareness programmes and explore attitudes in depth.

Policy Making: Government and health authorities should strengthen educational initiatives on organ donation in academic institutions to improve awareness and encourage positive attitudes.

RECOMMENDATIONS

- The study can be replicated on large sample to validate and generalize its findings.
- The study may be undertaken in different settings especially urban and rural areas.
- A study can be conducted to assess effectiveness of an information leaflet on knowledge and attitude of students regarding organ donation.
- Comparative studies may be undertaken to compare the knowledge and attitude regarding organ donation among different groups of students.

CONCLUSION

This study revealed that college students in Aizawl, Mizoram, possess a moderate level of awareness regarding organ donation; however, knowledge of critical aspects such as brain death, legal regulations, and organ viability remains inadequate. Participants generally exhibited a neutral attitude toward organ donation, with willingness to donate being influenced by fears, misconceptions, religious beliefs, and mistrust of the healthcare system. While knowledge was not significantly associated with attitude, age and semester of study showed significant relationships with both variables. These findings underscore the need for targeted educational interventions, awareness campaigns, and curriculum-based programs to enhance knowledge and promote positive attitudes toward organ donation among college students.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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