

Knowledge and Attitude Regarding Organ Donation Among Nursing Students with A View to Developing an Information Pamphlet: A Cross-Sectional Study

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Abstract:

➤ *Background:*

Organ failure is one of the leading causes of morbidity and mortality worldwide. Conditions such as renal disease, heart failure, and corneal blindness affect millions of people each year. For many of these patients, organ transplantation remains the only standard treatment that can restore normal function and improve quality of life. Over the last few decades, advances in surgical techniques, immunosuppressive therapy, and post-operative care have made organ transplantation safer and more successful.

➤ *Material and Methods:*

This study used a quantitative, descriptive cross-sectional design and included 156 undergraduate nursing students from Sharda University. The sample was obtained using non-probability convenience sampling. A self-designed questionnaire was used, comprising questions on sociodemographic variables and knowledge of organ donation, as well as an attitude scale on organ donation. To examine associations between knowledge and demographic variables, between attitude and demographic variables, and to compute descriptive statistics such as frequencies and percentages, we applied the chi-square test.

➤ *Results:*

The findings revealed that out of 156 participants, 42 (26.9%) had excellent knowledge, 64 (41%) had good knowledge, 30 (19.2%) had average knowledge, and only 20 (12.8%) had poor knowledge about organ donation. Moreover, the findings also revealed that, out of 156 participants, 100 (64.1%) had a positive attitude, 52 (33.3%) had a neutral attitude, and only 04 (2.6%) had a negative attitude about organ donation. The study showed a positive correlation between knowledge and attitude regarding organ donation ($r = 0.262$). The study also found that gender ($p = 0.002$), previous knowledge ($p = 0.031$), and information source ($p = 0.001$) were significantly associated with knowledge levels, while age, semester, religion, and area of residency were not. The study also revealed that no demographic variables were significantly associated with attitude levels.

➤ *Conclusion:*

The study concludes that the majority of nursing students lack proper knowledge regarding organ donation. The research finds that nursing students need organised, accessible, student-centred educational materials, such as an information pamphlet, to reinforce knowledge and promote positive attitudes toward organ donation. The information pamphlet created as part of this research is a useful tool to address this gap and provide nursing students with proper knowledge.

Keywords: Organ Donation, Knowledge, Attitude, Nursing Students, Information Pamphlet.

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I. INTRODUCTION

Organ donation is the process by which a living or deceased person donates an organ or tissue for transplantation into another person suffering from organ failure. Organ transplantation is one of the greatest achievements of modern medical science. It has become an effective therapeutic option for patients with end-stage kidney, liver, heart, lung, and other organ diseases. The availability of appropriate donor organs is a key determinant of transplantation success. However, worldwide organ supply and demand differ greatly (World Health Organization, 2023). The rising incidence of chronic diseases, road traffic accidents, and congenital disorders has led to an increased demand for organ transplantation. Despite advances in medical technology and supportive legislation, the rate of organ donation in many countries, including India, remains inadequate. The main barriers affecting the rates of donation are the lack of awareness, misconceptions, cultural beliefs, religious concerns, and lack of knowledge about organ donation (Shaheen and Souqiyyeh, 2010). Nurses play an integral role in the organ donation process through patient and family education, emotional support, and organ procurement. As future healthcare providers, nursing students should have appropriate knowledge and a positive attitude toward organ donation. Public opinion and information can greatly affect people's awareness and attitudes toward donation. Assessing nursing students' attitudes and understanding of organ donation helps identify educational needs and develop effective interventions, such as information pamphlets, to increase awareness and promote positive attitudes toward organ donation (Manzari et al., 2012).

II. MATERIALS AND METHODS

➤ Study Design and the Participants

This study used a quantitative, descriptive cross-sectional design at Sharda University. The Study population comprised 156 undergraduate nursing students studying at Sharda University, Greater Noida, Uttar Pradesh, India. Participants were selected using non-probability convenience sampling.

➤ Data Collection Procedure

Data were collected through a self-structured questionnaire consisting of socio-demographic variables, knowledge-related questions on organ donation, and attitude questions to assess attitudes toward organ donation. We obtained written informed consent from all participants before data collection.

➤ Questionnaire Design and Validation

The questionnaire consisted of three sections: demographic characteristics, a knowledge questionnaire on organ donation, and an attitude scale. Nursing experts

validated the tool. The experts made necessary modifications based on their suggestions to ensure the items were clear, relevant, and appropriate.

➤ Inclusion Criteria

Students of BSc. Nursing at Sharda School of Nursing Science and Research, Sharda University, Greater Noida, Uttar Pradesh. Students willing to participate in the study.

➤ Exclusion Criteria

Students who are not available at the time of data collection

➤ Sample Size Calculation

The sample size was calculated using the formula:

$$n = \frac{Z^2 pq}{d^2}$$

Where $Z = 1.96$ at 95% confidence level, $p = 0.886$, $q = 1 - p = 0.114$ and $d = 0.05$ (allowable error)

$$n = \frac{(1.96)^2 \times 0.886 \times 0.114}{(0.05)^2}$$

$$n = 155$$

The final sample size became 156 participants.

• Study Variable

Information booklet about Organ Donation

• Demographic Variables

Age, gender, religion, area of residency, information/knowledge related to Organ donation, source of information related to Organ donation, and whether the participant has registered for Organ donation.

➤ Ethics Committee Approval

The Institutional Ethics Committee of Sharda University approved the study (Ref No SU\SMS&R\76-A\2026\127). The study followed the Declaration of Helsinki. The researchers obtained written and oral informed consent from participants.

➤ Data Management and Statistical Analysis

Data were entered in Microsoft Excel and analyzed using SPSS software. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used for descriptive analysis. The chi-square test was used to determine associations between knowledge level and selected demographic variables, and between attitude level and demographic variables. Statistical significance was considered at $p < 0.05$.

III. RESULTS

Table 1 Frequency and Percentage Distribution of Socio-Demographic Characteristics (n=156)

S. No	Variables	Frequency	%
1	Age in Years		
	17-18	9	5.8%
	19-20	48	30.8%
	21-22	72	46.2%
	23 and above	27	17.3%
2	Gender		
	Male	43	27.6%
	Female	113	72.4%
3	Semester		
	2nd Semester	49	31.4%
	4th Semester	18	11.5%
	6th Semester	45	28.8%
	8th Semester	44	28.2%
4	Religion		
	Hindu	131	84.0%
	Muslim	7	4.5%
	Christian	12	7.7%
	Others	6	3.8%
5	Area of Residency		
	Urban	107	68.6%
	Rural	34	21.8%
	Semi Urban	15	9.6%
6	Do you have any information or knowledge regarding organ donation?		
	Yes	128	82.1%
	No	28	17.9%
7	What is the source of information regarding organ donation?		
	Neighbours, family members	4	2.6%
	Multimedia	15	9.6%
	Health organisation and professionals	83	53.2%
	Internet	54	34.6%

Table No. 1 showed that most participants were aged 21–22 years (46.2%), and 72.4% were female. Most subjects were 2nd-semester dents (2%). The data indicated that most participants were Hindu (84%). Most participants lived in

urban areas (68.6%). Regarding awareness, the study found that most participants (82.1%) were familiar with organ donation. For most, 53.2% of participants learned about organ donation from health organizations and professionals.

➤ Section B: Analysis of Knowledge Regarding Organ Donation

Table 2 Assessment of Knowledge Regarding Organ Donation (n=156)

Level of knowledge	Range of scores	Frequency	Percentage
Excellent Knowledge	16 – 20	42 (26.9%)	26.9 %
Good Knowledge	11 – 15	64 (41%)	41 %
Average Knowledge	07 – 10	30 (19.2%)	19.2 %
Poor Knowledge	0 – 6	20 (12.8%)	12.8 %

Table No. 2 depicts the knowledge regarding organ donation among undergraduate nursing students. 26.9% (42) of the sample had Excellent Knowledge, 41% (64) had Good

Knowledge, 19.2% (30) had average knowledge, and 12.8% (20) had Poor Knowledge regarding Organ Donation.

➤ *Section C: Analysis of Attitude Regarding Organ Donation*

Table 3 Assessment of Attitude Regarding Organ Donation (n=156)

Level of Attitude	Range of Scores	Frequency	Percentage
Positive Attitude	37 – 50	100	64.1%
Neutral Attitude	24 – 36	52	33.3%
Negative Attitude	10 - 23	04	2.6%

Table No. 3 shows that attitudes regarding organ donation among undergraduate nursing students were as

follows: 64.1% (100) had a Positive Attitude, 33.3% (52) had a Neutral Attitude, and 2.6% (04) had a negative attitude.

➤ *Section D Association between Knowledge Regarding Organ Donation with Selected Demographic Variables*

Table 4 Association between Knowledge Level and Selected Demographic Variables (n=156)

	Excellent Knowledge	Good Knowledge	Average Knowledge	Poor Knowledge	Chi square(χ^2)	P value(p)
1. Age in Years						
17-18	5(3.2%)	1(0.6%)	3(1.92 %)	0	$\chi^2=16.83$	p=0.51
19-20	16(10.25%)	18(11.53%)	7(4.48%)	7(4.48%)		
21-22	15(9.61%)	32(20.51%)	12(7.69%)	13(8.33 %)		
23 and Above	6(3.84%)	13(8.33%)	8(5.12 %)	0		
2. Gender						
Male	7(4.48 %)	13(8.33%)	16(10.25%)	7(4.49%)	$\chi^2=14.71$	p=0.002**
Female	35(22.43%)	51(32.69%)	14(8.97%)	13(8.33%)		
3. Semester						
2nd Semester	17(10.89%)	12(7.69%)	11(7.05%)	9(5.76%)	$\chi^2=13.21$	p=0.15
4th Semester	3(1.92%)	9(5.76%)	2(1.28%)	4(2.56%)		
6th Semester	11(7.05%)	24(15.38%)	8(5.12%)	2(1.28%)		
8th Semester	11(7.05%)	19(12.17%)	9(5.76%)	5(3.2%)		
4. Religion						
Hindu	36(23%)	51(32.69%)	26(16.66%)	18(11.53%)	$\chi^2=4.35$	p=0.88
Muslim	1(0.6%)	3(1.92%)	2(1.28%)	1(0.6%)		
Christian	4(2.56%)	6(3.84%)	1(0.6%)	1(0.6%)		
Other	1(0.6%)	4(2.56%)	1(0.6%)	0		
5. Area of Residency						
Urban	32(20.51%)	44(28.2%)	18(11.53%)	13(8.33%)	$\chi^2=4.82$	p=0.56
Rural	5(3.2%)	14(8.97%)	9(5.76%)	6(3.84%)		
Semi-Urban	5(3.2%)	6(3.84%)	3(1.92%)	1(0.6%)		
6. Do you have any information or knowledge regarding organ donation?						
Yes	35(22.43%)	57(36.53%)	24(15.38%)	12(7.69%)	$\chi^2=8.87$	p=0.031*
No	7(4.48%)	7(4.48%)	6(3.84%)	8(5.12%)		
7. What is the source of information regarding organ donation?						
Neighbours, family members	1(0.6%)	1(0.6%)	1(0.6%)	1(0.6%)	$\chi^2=31.18$	p=0.001***
Multimedia	1(0.6%)	3(1.92%)	3(1.92%)	8(5.12%)		
Health organisation and professionals	24(15.38%)	32(20.51%)	20(12.82%)	7(4.48%)		
Internet	16(10.25%)	28(17.94%)	6(3.84%)	4(2.56%)		

(p<0.05= significant, S: Significant, NS: Non-significant)

Table No. 4 findings revealed significant associations between knowledge about organ donation and gender (p = 0.002), previous knowledge (p = 0.031), and information source (p = 0.001). Females, students with previous knowledge, and those who received information from health organisations and professionals had higher knowledge. There

was no significant relation between age (p = 0.51), semester (p = 0.15), religion (p = 0.88), and area of residency (p = 0.56) and knowledge levels, which meant that there was no association between knowledge levels and age, semester, religion, and area of residency.

➤ *Section E: Association between Attitude Regarding Organ Donation with Selected Demographic Variables*

Table 5 Association between Attitude Level and Selected Demographic Variables

	Positive Attitude	Neutral Attitude	Negative Attitude	Chi square(χ^2)	P value(p)
Age In Year					
17-18	6(3.84%)	3(1.92%)	0	$\chi^2=11.59$	p=0.07
19-20	28(17.94%)	20(12.82%)	0		
21-22	49(31.41%)	22(14.1%)	1(0.6%)		
23 and Above	17(10.89%)	7(4.48%)	3(1.92%)		
Gender					
Male	27(17.3%)	15(9.61%)	1(0.6%)	$\chi^2=0.07$	p=0.96
Female	73(46.79%)	37(23.71%)	3(1.92%)		
Semester					
2nd Semester	25(16%)	23(14.17%)	1(0.6%)	$\chi^2=9.35$	p=0.15
4th Semester	11(7.05%)	7(4.48%)	0		
6th Semester	35(22.43%)	9(5.76%)	1(0.6%)		
8th Semester	29(18.58%)	13(8.33%)	2(1.28%)		
Religion					
Hindu	86(55.12%)	41(26.28%)	4(2.56%)	$\chi^2=3.35$	p=0.76
Muslim	3(1.92%)	4(2.56%)	0		
Christian	8(5.12%)	4(2.56%)	0		
Other	3(1.92%)	3(1.92%)	0		
Area of Residency					
Urban	69(44.23%)	36(23%)	2(1.28%)	$\chi^2=1.26$	p=0.86
Rural	22(14.1%)	11(7.05%)	1(0.6%)		
Semi-Urban	9(5.76%)	5(3.2%)	1(0.6%)		
Do you have any information or knowledge regarding organ donation?					
Yes	85(54.48%)	39(25%)	4(2.56%)	$\chi^2=3.22$	p=0.20
No	15(9.61%)	13(8.33%)	0		
What is the source of information regarding organ donation?					
Neighbours, family members	3(1.92%)	0	1(0.6%)	$\chi^2=10.86$	p=0.09
Multimedia	8(5.12%)	7(4.48%)	0		
Health organisation and professionals	54(34.61%)	27(17.3%)	2(1.28%)		
Internet	35(22.43%)	18(11.53%)	1(0.6%)		

(p<0.05= significant, S: Significant, NS: Non-significant)

Table No. 5 findings revealed that some demographic variables were not significantly related to Attitude about organ donation. There was no significant relation between age (p = 0.07), gender (p = 0.96), semester (p = 0.15), religion (p = 0.76), area of residency (p = 0.86), previous knowledge (p = 0.20), and source of knowledge (p = 0.09) and attitude

regarding organ donation, which meant that there was no significant relation between the attitude about organ donation and all the demographic variables like age, gender, semester, religion, area of residence, previous knowledge and source of information.

➤ *Section – F: Correlation between Knowledge and Attitude Regarding Organ Donation*

Table 6 Correlation between Knowledge and Attitude Regarding Organ Donation

Variables	Attitude Score
Knowledge Score (r)	0.262**
p-value	0.001

Table 6 shows a positive correlation between knowledge and attitude regarding organ donation (r = 0.262). The p-value of 0.001 is less than the conventional significance level of 0.05, indicating the correlation is statistically significant.

IV. DISCUSSIONS

The present study found that 67.9% had good knowledge about organ donation, supported by Alwahaibi, Al Ghawi and Al-Badi (2025), who also conducted a cross-sectional study and reported that 67.5% of participants had

good knowledge about organ donation. In contrast, Bhagya Laxmi and Hemalatha (2019) found that 7.5% had adequate knowledge, contrary to the present study's findings. The current study found a positive correlation between knowledge and attitude regarding organ donation, similar to Alwahaibi, Al Wahaibi, and Al Abri (2023), which also found that those with higher knowledge had higher attitude levels regarding organ donation. The present study findings also indicated that gender, previous knowledge, and information source were found to have a significant relationship with knowledge regarding organ donation. But age, semester, religion, and area of residency were not significantly associated with knowledge levels. At the same time, Bhagya Laxmi and Hemalatha (2019) reported that gender and educational qualification were significantly related to knowledge.

The information indicated that 64.1% of participants had a positive attitude, contrary to the study by Alwahaibi, Al Ghawi and Al-Badi (2025), which reported that 67.5% of participants had a negative attitude toward organ donation. The findings showed that demographic variables were not significantly related to attitude toward organ donation.

➤ Practice Implications

Nurses are leading the way in educating patients, families, and the community about the benefits, processes, and ethical considerations of organ donation. They should provide accurate information, dispel misconceptions, and support individuals and families through educational resources like the information pamphlet. Evidence-based practice requires staying up to date with organ donation policies, legal guidelines, and transplantation procedures. Nurses can be important educators and advocates to increase awareness and willingness to donate organs.

➤ Implication for Health Education

The nursing curriculum should include a comprehensive component on organ donation and transplantation to prepare students with the knowledge needed for professional practice. The information pamphlet developed in this study can serve as an educational resource for classroom teaching, clinical training, and awareness programs. Nursing colleges should organise educational activities such as competitions and awareness programs to improve positive attitudes toward organ donation.

V. CONCLUSION

This research finds that nursing students need organised, available, student-centred educational materials, such as an information pamphlet, to reinforce knowledge and foster a positive attitude toward organ donation. The information pamphlet created as part of this research is a useful tool to address this gap and provide nursing students with proper knowledge.

➤ Limitation of the Study

The research was restricted to BSc. Nursing students from a single institution, reducing the external validity of the results; the sample was fairly modest in size (n=156). Self-reported responses may have introduced response bias.

➤ Future Scope of the Study

Future studies should use larger samples from multiple institutions. Future studies should also conduct interventional studies assessing the effectiveness of educational programs on organ donation awareness.

➤ Author's Contribution

Nitika Thakur conceptualized and supervised the study. Deepanshu and Anshika conducted data collection and statistical analysis. All authors contributed to manuscript preparation. Nitika Thakur critically revised the manuscript for important intellectual content. All authors read, approved, and agreed to be accountable for the final version of the manuscript.

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➤ Conflict of Interest

There is no conflict of interest.

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