

Knowledge and Attitude on Organ Donation among College Students of Sivasagar District, Assam with a View to Develop an Information Booklet

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Abstract: *A quantitative survey approach with descriptive correlational research design was adopted for the study. A multi stage stratified random sampling technique was used to draw 166 students from four selected colleges of Sivasagar District, Assam. Data collection was done by using Structured Self-Administered Questionnaire and Three-point Likert scale. The data collected was analyzed in terms of descriptive and inferential statistics. Result showed that majority of the subjects i.e., 131(79%) college students had Moderately adequate knowledge, 20(12%) students had Adequate knowledge and 15(9%) college students had Inadequate knowledge regarding organ donation. Majority i.e., 98(59%) college students had Moderately favourable attitude, 37(22.3%) students had favourable attitude and 31(18.7%) college students had Unfavourable attitude regarding organ donation. There was a significant moderately positive correlation ($r=0.373$) between knowledge and attitude on organ donation among college student at $p<0.05$ level of significance. A significant association was found between knowledge and selected demographic variables like age, education, stream of education, occupation of father and source of information of college students at $p<0.05$ level. A significant association was also found between attitude and selected demographic variables such as age, gender, religion, education, stream of education, and occupation of mother, and source of information of college students at $p<0.05$ level.*

Keywords: Knowledge, Attitude, Organ donation, College students

1. Introduction

Background of the study

Organ donation is the donation of biological tissue or an organ of the human body, from a living or dead person to a living recipient in need of a transplantation. Organ donation plays a vital role in saving patient's lives, who are on end stage organ failures, on the edge of life and death. It is estimated that more than 28,000 lives are saved every year by organ donors.^[1] Organ donation is more important than many of us realize--for society and for the individuals it directly affects. Today there are 1,60,000 people in India in need for organ donation and only 12,000 donors available. According to the World Health Organization, only around 0.01 percent of people in India donate their organs after death.^[2] Organ donation provides a life giving, life enhancing opportunity to those who are at the end of the line for hope. Every year World Organ Donation Day is observed on 13th of August. In our country it is celebrated on 27th of November as National Organ Donation Day. The aim of this day is to motivate normal human beings to pledge to donate organs after death, and to spread awareness about the importance of organ donation. Broadly organ donation can be classified under two types. Living Donor Organ Donation and Deceased Donor Organ Donation. A living donor is a person, who has freely consented to remove their organs or tissue during their lifetime. Between 1998 and 2008, there were more than 91,000 living donations. In 2006, nearly 46 percent of organ donors were living donors, and accounted for 21.6 percent of all organs donated.^[3] A deceased donor is a person who has

suffered brain death or cardiac death. The person's consent can be gained during their lifetime if they have reached the age of majority and are willing to donate their organs after death. It is estimated that India has a deceased donation rate of about 0.3 per million population compared to some western countries – US has a donation rate of 26 per million population, Spain has 35, and Croatia has 36.5. But in the recent years India has seen a significant increase in the number of organ donors. As per National Organ and Tissue Transplant Organization's recently available data, 2017 recorded 905 donors, almost a three-fold increase from 313 in 2013.^[4] Organ donation and Transplantation is completely a legal procedure. The primary legislation related to organ donation and transplantation in India is The Transplantation of Human Organs and Tissues Act passed in 1994, which aim is regulation of removal, storage and transplantation of human organs for therapeutic purposes and prevention of commercial dealings in human organs. There are some government agencies such as National Organ and Tissue Transplant Organization (NOTTO) and Regional Organ and Tissue Transplant Organization (ROTTO). NOTTO functions as apex center for coordinating all activities and networking for procurement and distribution of organs and tissues and maintaining registry of organs and tissues donation and transplantation in the country.^[5] There are five ROTTOs in India which is responsible for activities of coordination as well as networking for procurement, distribution and transplantation of organs and tissues between their respective state organizations. There are other non-governmental and private organizations too that have been working to spread

awareness around the cause; such prominent organization are Zulee Foundation, Mohan Foundation, Gift Your Organ Foundation, Narmada Kidney Foundation, Amit Gupta Foundation etc in North-east region. The organ donation decision is a complex one, based strongly on personal beliefs. There are some factors, such as religious and cultural beliefs, that are seemingly intractable and are often cited as reasons for a refusal to donate. Interventions to better engage the community, including disadvantaged and minority groups, to foster trust and provide information represent promising opportunities of promoting organ donation in the future.

2. Literature Review

Annadurai K, Mani K, Ramasamy J, Sai S, Nadu T (2012) conducted a cross-sectional study among 440 students aged 18 years and above in Hindustan Arts & Science College, Chennai, Tamil Nadu in order to assess the knowledge, attitude and practice about organ donation among college students in Chennai, Tamil Nadu. The study results found that though all the participants were aware of the term organ donation, knowledge about different aspects was low. 86.1% of students were not aware of legislation. 75% of students were in favor of organ donation, but only about 2% were registered for organ donation.^[6]

Balwani MR et al. (2015) conducted a study on attitude and awareness towards organ donation in western India. A sample size of 250 selected through Convenience sampling technique. Data collection was carried out via face-to-face interviews based on a pre-tested questionnaire in selected public areas of Ahmedabad, Gujarat state of India. The study result showed that about 86% of participants were aware of the term organ donation but knowledge about its various aspects was low. About 48% aware people heard about organ donation through medical fraternity, whereas only about 21% became aware through mass media. Around 78 participants felt that they would donate organs to persons irrespective of their religion. About 81% of aware people were opinion that consent for organ donation after death should be given by family members. The study recommended that effective campaign needs to be driven to educate people with relevant information with the involvement of media, doctors and religious scholars.^[7]

Sindhu A, Ramakrishnam TS, Khera A, Singh G (2017) conducted a descriptive cross-sectional study on knowledge of medical students regarding organ donation in a selected college of Western Maharashtra with a sample size of 169 final year MBBS students. The study results showed that 87% of the students had correct knowledge regarding brain death occurring after road traffic accident, 54.45% of students were not aware that an individual suffering from infectious disease cannot donate organs, 41.1% of the students were aware of the time interval between harvesting and transplanting the organ, 48.5% of students did not know how to register oneself as an organ donor. The study concluded that there is an urgent need for addressing the knowledge gap which will help in improving the organ donation rate in our country.^[8]

Hemamalini M, Rajathi S (2020) conducted a descriptive cross-sectional study on Attitude and willingness towards

organ donation among higher secondary students. The study was conducted in Valluvar Gurukulam Matriculation School after obtaining permission from the school authorities. The samples comprised 120 students selected by a non-probability convenient sampling technique. The results found that the majority, 71% of students had a favourable attitude, 21% of students had a neutral attitude and only 8% of the students had an unfavourable attitude towards organ donation. 72% of the students were willing to donate their organs. while the remaining 28% of students had dilemmatic views regarding organ donation.^[9]

3. Research Methodology

Research Approach: Quantitative survey approach

Research Design: Descriptive correlational study design was adopted

Settings: Selected colleges of Sivasagar District, Assam

Population: The study population was comprised of college students studying in Higher Secondary and Degree Courses with arts and science stream in selected colleges of Sivasagar District, Assam.

Sample size: In the present study, sample size was comprised of 166 subjects.

Sampling technique: Four college were selected conveniently and multistage random sampling technique was used to select the subjects from all four colleges in proportionate numbers.

Sampling criteria

- **Inclusion criteria:** Students who were willing to give consent and participate in the research study and who were available at the time of data collection.
- **Exclusion criteria:** Students who were acutely sick at the time of data collection.

Variables

- **Research variables:** Knowledge and Attitude
- **Demographic variables:** Age, gender, religion, education, stream of the study, type of family, occupation of father, occupation of mother, monthly family income, source of information on organ donation.

Data collection Tools and Techniques: Socio-demographic proforma to collect the demographic characteristics of the respondents under study. Structured self-administered questionnaire to assess the knowledge on organ donation among college students and Three-point Likert scale to assess the attitude of college students on organ donation.

4. Results

Section I: Frequency and percentage distribution of college students according to socio-demographic variables.

Table 1: Distribution of college students according to socio-demographic variables, (n=166)

S. No	Demographic variables	Frequency (f)	Percentage (%)
1.	Age in years		
	15-17 years	61	36.7
	18-20 years	82	49.4
	> 21 years	23	13.9
2.	Gender		
	Male	74	44.6
	Female	92	55.4
3.	Religion		
	Hinduism	135	81.3
	Islam	31	18.7
	Christian	0	0
	Any others	0	0
4.	Education		
	HS 1 st year	28	16.8
	HS 2 nd year	22	13.3
	Degree 1 st year	44	26.5
	Degree 2 nd year	40	24.1
	Degree 3 rd year	32	19.3
5.	Stream of education		
	Science	82	49.4
	Arts	84	50.6
6.	Type of family		
	Nuclear family	130	78.3
	Joint family	36	21.7
7.	Occupation of father		
	Govt sector	33	19.9
	Private sector	23	13.9
	Self employed	41	24.7
	Daily wages	52	31.3
	Unemployed	17	10.2
8.	Occupation of mother		
	Govt sector	17	10.24
	Private sector	14	8.43
	Self employed	16	9.63
	Daily wages	21	12.7
	Homemaker	98	59
9.	Monthly family income		
	≥ 1,23,322	7	4.2
	61,663 – 1,23,321	13	7.8
	46,129 – 61,662	29	17.5
	30,831 – 46,128	29	17.5
	18,497 – 30,830	40	24.1
	6,175 - 18,496	15	9
	≤ 6,174	33	19.9
10.	Source of information on organ donation		
	Mass media	74	44.6
	Print media	24	14.5
	Friends and relatives	43	25.8
	Any other	25	15.1

Section II: Assessment of knowledge of college students on organ donation.**Table 2.1:** Mean, median, mode, standard deviation, skewness, kurtosis, minimum score, maximum score of knowledge of college students regarding organ donation, (n=166)

Mean	Median	Mode	Standard deviation	Skewness	Kurtosis	Min.	Max.
12.77	13	14	2.520	-0.600	.304	5	18

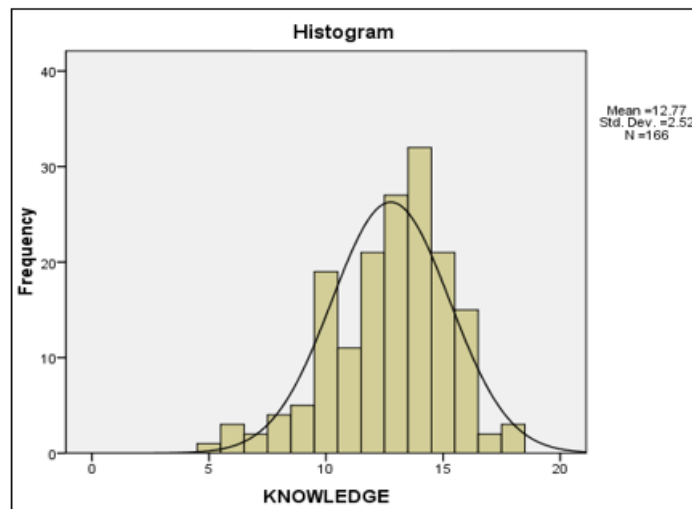


Figure A: Histogram and Normal Probability Curve showing Knowledge scores of college students on organ donation.

Mean $\pm$ SD is 12.77 ± 2.520 which indicated that the distribution is spread out. The distribution curve is unsymmetrical as the mean, median, and mode occurred at different points. The kurtosis value is 0.304 which indicated

that that the distribution was not flat, it is near normal and the curve is mesokurtic curve. The distribution is moderately negatively skewed and the value of skewness is -0.600.

Table 2.2: Distribution of the level of knowledge of college students on organ donation, n=166

Level of Knowledge	Frequency (f)	Percentage (%)	Mean	SD	Mean	SD
Inadequate knowledge (<10)	15	9	7.60	1.35	12.77	2.520
Moderately adequate knowledge (10-16)	131	79	12.80	1.63		
Adequate knowledge (>16)	20	12	16.40	.75		
Total	166	100				

Data presented on table 2.2 depicts that majority i.e., 131(79%) college students has Moderately adequate knowledge followed by 20(12%) students has Adequate knowledge and 15(9%) college students has Inadequate knowledge regarding organ donation. The mean knowledge

score of college students on organ donation are found to be 12.77 with Standard Deviation 2.520

Section III: Assessment of attitude score of college students on organ donation

Table 3.1: Mean, median, mode, standard deviation, skewness, kurtosis, minimum score, maximum score of attitude of college students regarding organ donation

Mean	Median	Mode	Standard deviation	Skewness	Kurtosis	Min.	Max.
44.06	44	44	3.858	-.387	-.432	35	51

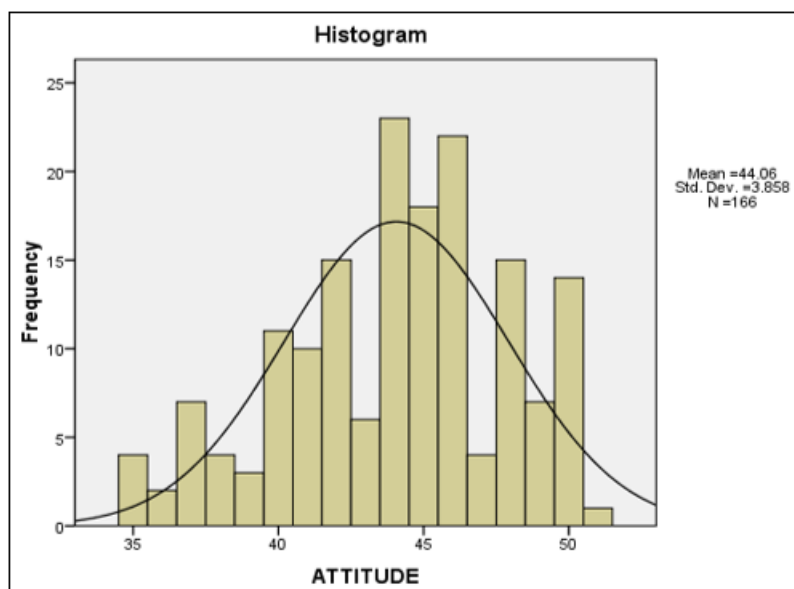


Figure B: Histogram and Normal Probability Curve showing attitude scores of the college students regarding organ donation

Mean $\pm$ SD = 44.06 $\pm$ 3.858 which indicates that the distribution is quite spread out. Most of the respondent's attitude scores are close to average. Attitude of college students score distribution curve is almost symmetrical as Mean=44.06 and Median=44. This indicated that the number

of college students who scores more than average equals the number scored less than average. The kurtosis value is -.432 indicated thin tail of the curve than the normal leading to less negative occurrence. Skewness value is -.387 which is almost negligible.

Table 3.2: Distribution of the level of attitude of college students on organ donation, n=166

Level of attitude	Frequency (f)	Percentage (%)	Mean	SD	Mean	SD
Unfavorable attitude (<40)	31	18.7	38.06	1.80	44.06	3.858
Moderately favorable attitude (40-48)	98	59	44.08	1.75		
Favorable attitude (>48)	37	22.3	49.02	.95		
Total	166	100				

Data presented on table 3.2 shows majority i.e., 98(59%) college students has Moderately favourable attitude followed by 37(22.3%) students has favourable attitude and 31(18.7%) college students has Unfavourable attitude regarding organ donation. The mean attitude score of college students on organ donation are found to be 44.06 with Standard Deviation 3.858.

Section IV: Correlation between knowledge and attitude on organ donation among college students

Table 4: Correlation between knowledge and attitude on organ donation among college students, n=166

Correlation	Mean	SD	Pearson correlation coefficient (r) value	p value	Remarks
Knowledge	12.77	2.520	0.373	0.001*	S
Attitude	44.06	3.858			

*Significant at p<0.05 level of significance

S- Significant

The data presented in the Table 4 shows that the calculated value of correlation coefficient 'r' is found to be 0.373 and p value 0.001. This indicated that there is a significant moderately positive correlation between knowledge and attitude on organ donation among college students at p<0.05 level of significance.

Section V: Association between knowledge of the college students on organ donation with selected socio-demographic variables.

Table 5: Association between knowledge on organ donation among college students with selected demographic variables, n=166

Demographic variables	χ^2 value	df	p value
Age	14.93	4	0.005*
Gender	2.988	2	0.224 ^{NS}
Religion	3.123	2	0.210 ^{NS}
Education	26.66	8	0.001*
Stream of education	7.295	2	0.026*
Type of family	0.763	2	0.683 ^{NS}
Occupation of father	33.05	8	0.001*
Occupation of mother	7.406	8	0.494 ^{NS}
Monthly family income	13.44	12	0.338 ^{NS}
Source of information	23.42	6	0.001*

*p<0.05 level of significance

NS-Non significant

Table 5 depicts the association between knowledge on organ donation among college students with selected demographic variables which was tested by using chi-square test. Results showed that age, education, stream of education, occupation of father and source of information of college students are found statistically significant association at p<0.05 level.

Section VI: Association between attitude on organ donation among college students with selected demographic variables.

Table 6: Association between attitude on organ donation among college students with selected demographic variables n=166

Demographic variables	χ^2 value	df	p value
Age	15.54	4	0.004*
Gender	11.20	2	0.004*
Religion	23.83	2	0.001*
Education	41.29	8	0.001*
Stream of education	6.304	2	0.043*
Type of family	1.189	2	0.552 ^{NS}
Occupation of father	11.62	8	0.169 ^{NS}
Occupation of mother	28.78	8	0.001*
Monthly family income	15.42	12	0.219 ^{NS}
Source of information	13.71	6	0.033*

*p<0.05 level of significance

NS-Non significant

Table 6 depicts the association between attitude on organ donation among college students with selected demographic variables which was tested by using chi-square test. Results showed that age, gender, religion, education, stream of education, and occupation of mother, and source of information of college students are found statistically significant association at p<0.05 level.

5. Discussion

Discussion as per the objectives of the study

Objectives 1: To assess the knowledge on organ donation among college students.

Discussion of findings in relation to other study findings

The findings of the present study showed that out of 166 students majority i.e., 131(79%) students had moderately adequate knowledge, 20(12%) students had adequate knowledge and 15(9%) students had inadequate knowledge on organ donation.

The findings of the present study is supported by a study conducted by **Anderson B (2018)** on Assessment of knowledge and attitude regarding organ donation among students in selected colleges of Kanyakumari district showed that majority, i.e., 75.6% of participants had moderate knowledge on organ donation, 14.4% of participants had adequate knowledge and 10% participants had inadequate knowledge on organ donation.^[10]

Objectives 2: To determine the attitude on organ donation among college students.

Discussion of the findings in relation to other study findings:

The findings of the present study showed that out of 166 college students' majority i.e., 98(59%) of college students had moderately favourable attitude, 37(22.3%) had favourable attitude and 31(18.7%) had unfavourable attitude regarding organ donation.

The findings of the present study is similar with the study findings conducted by **Anderson B (2018)** on assessment of knowledge and attitude regarding organ donation among students in selected colleges of Kanyakumari district showed that majority, i.e., 72.4% moderately favourable attitude, 17.2% of them had favourable attitude, and 10.4 % unfavourable attitude towards organ donation.^[10]

Objective 3: To estimate the correlation between knowledge and attitude on organ donation among college student.

Discussion of the findings in relation to other study findings:

the findings of the present study showed that there is a significant moderately positive correlation between knowledge and attitude on organ donation among college students.

The present study findings are similar with the study conducted by **Sanjaykumar A (2018)** on knowledge and attitude regarding organ donation among college students selected college, Salem showed that there was a positive correlation between knowledge and attitude score of college students where the r value was 0.29.^[11]

Objective 4: To determine the association between the knowledge and selected socio- demographic variables.

The finding of the present study showed that there is significant association between knowledge on organ donation among college students with selected demographic variables such as age, education, stream of education, occupation of father and source of information of college students.

Similar findings are reported in a study conducted by **Kumar Vijaya MB (2016)** to assess the knowledge of undergraduate students regarding organ donation in selected colleges at Abu Road, Rajasthan. The study findings revealed that there was association between knowledge score and selected demographic variables such as education, occupation of parents and previous knowledge on organ donation at 5% level of significance.^[12]

Objective 5: To determine the association between the attitude and selected socio- demographic variables.

The finding of the present study showed that there is significant association between knowledge on organ donation among college students with selected demographic variables such as age, gender, religion, education, stream of education, occupation of mother and source of information of college students.

These findings of the study were also comparable with a study done by **Khalid F, Khalid AB, Muneeb D, Shabir A, Fayyaz D & Khan M (2019)** on level of knowledge and attitude regarding organ donation Karachi, Pakistan. The result found that there was an association found between attitude score and gender ($p=0.026$) and occupation ($p=0.049$).^[13] Another study conducted by **Tagizadieh A, Shahsavari Nia K, Moharamzadeh P, Pouraghaei M, Ghavidel A, Parsian Z, Mahmoodpoor A (2018)** on Attitude and Knowledge of Medical Students of Tabriz University of Medical Sciences Regarding Organ Donation showed that there was a significant association of attitude score of students with religion and source of information regarding organ donation.^[14]

6. Conclusion

The study shows that the learning needs of the college students on organ donation. A well-organized approach (advertisements, campaigns, exhibitions and lectures) is required to improve the awareness, knowledge and attitude on organ donation among the students.

7. Recommendations

- The same type of study can be conducted on (a) large sample size (b) students of various other departments like engineering, agriculture, pharma etc.
- An exploratory study to assess the misconceptions regarding organ donation.
- Repetitive periodic educational sessions regarding organ donation should be carried out to ensure that the public are aware about organ donation.

8. Nursing Implications

- **Nursing practice:** Nurses are positioned to play a crucial role in educating nursing students about latest guidelines on organ donation, process of brain death, convincing the family members to donate the organs of brain dead, knowledge on preserving the organs after donation, knowledge of the guidelines to transport the organs, etc.
- **Nursing education:** Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, morals, beliefs and habits. Nursing educator can plan, develop and utilize various methods like seminars, workshop, debates to enhancing and updating an individual's knowledge attitude on organ donation.
- **Nursing administration:** Nursing administration plays an important role in the supervision and management of nursing professionals in order to improve their knowledge, skills and make them aware of the latest advancement in the field of technology. The nurse

administrator should make provision of in-service education program for the nurses to enhance knowledge and attitude of staffs regarding organ donation, so that they can spread their knowledge to the patient and also the community.

- **Nursing research:** Nursing research helps in the professional and personal growth. The findings of the present study certainly increase the body of knowledge and can be used as reference material in the future.

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