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A study to assess the awareness regarding organ donation among nursing students in selected nursing colleges of Jaipur

Nisha Lamoria[1,*] | Nemi Chand Jat[1]

[1]S. N. Institute of Nursing Sciences, Nirwan University Jaipur, Jaipur – 303305, Rajasthan (India)

*Corresponding author: nishalamoria16@gmail.com

Abstract: Due to a large gap between the need for organs and the number of available organs, organ donation in India presents a challenge to the public's health. The gap arises due to the lack of knowledge about organ donation and the enduring myths that affect the public's view on organ donation. The nursing students will be the health-care providers of the future and will therefore have an important part to play in raising awareness of organ donation. The aim of this study was to determine how much knowledge nursing students in selected nursing colleges in Jaipur have about organ donation and how that knowledge relates to their demographic characteristics. A quantitative descriptive study was conducted with 100 nursing students selected by convenience sampling. A structured questionnaire with 30 multiple-choice questions about organ donation was used to collect data. Results indicated that 45% of nursing students had good knowledge, 30% had average knowledge, and 25% had poor knowledge, with an average score of 14.55±1.90 (48.5%). Knowledge of organ donation was found to be significantly associated with parental education, area of residence, parental occupation and previous knowledge but not with age, gender or religion. The results of this study suggest that structured educational programs and integrated curricula would increase the level of knowledge about organ donation in nursing students and promote their ability to act as advocates for organ donation.

Keywords: Organ donation, Knowledge and awareness, Nursing education, Public health

Introduction:

Organ donation is voluntarily providing an individual organ or tissue to someone else for medical purposes without compensation; as such, the procedure is used to save a life (transplantation) when someone has lost all functions that are supported by the failing organ. There have been improvements in medical practices, which have led to better transplant results. However, due to much larger demand than available donors, organ shortages are becoming a global health issue.

Organ failure in India is increasing due to the increased number of people afflicted with chronic diseases and due to traumatic injuries related to motor vehicle accidents, and is becoming a concern due to its rapid rise in the number of Indians needing organ transplants. Even though there is a growing need for organs, the organ donation rate in India is still very low, approximately 0.34 donors per million, and is much lower than that of most developed countries. A significant reason behind this low organ donation rate is due to the lack of education, knowledge, and understanding of organs donated for transplantation; this is

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especially true following brain death. In India, there is a national framework, the Transplantation of Human Organs Act (THOA),enacted in 1994 and later amended, governing the process of obtaining organs after brain death. Although there has been legislative action concerning organ donation in India through the THOA, and brain death has been legally defined under the THOA, the level of awareness and understanding of brain death and organ donation is still low among the general public.

The knowledge, attitudes, and beliefs surrounding organ donation greatly influence the decision-making process about whether or not to donate one's organs, as do the social, cultural, religious, and educational factors which encourage or discourage organ donation (Woodman et al., 2022). Misconceptions about organ donation, along with a lack of accurate information and fear, continue to create barriers for individuals considering becoming organ donors. Therefore, increasing awareness and developing a positive attitude towards organ donation is an important strategy to address the issue of organ donation shortages in India. Spanish medical students generally have a favourable attitude towards organ donation, although 20% are not in favour (Ríos et al., 2019).

Nursing is one of the most critical roles within the healthcare system, and the nurse is usually the first contact a patient and their family has with the healthcare system. As advocates for their patients, nurses are in a unique position to educate people about organ donation, dispel myths surrounding organ donation, and help individuals make informed decisions about donating their organs. In addition to being future providers of care, nursing students should also have the knowledge and a positive attitude towards organ donation so they can successfully support organ donation advocacy and public education efforts. After 2013, there was a notable increase in the cadaveric organ donation rate. The selection of more non-RTA brain death donors than RTA donors, our transplant teams' acceptance of elderly population donors (>60 years), early detection of possible organ donors, and improved protocol-based management of cadaver organ donors could all be contributing factors (Zirpe et al., 2020).

While many studies have looked at organ donation awareness levels of health care professionals and college students in India, there is very little research specifically examining nursing students, particularly those from the states of Rajasthan and Jaipur, which indicates that there is a significant gap in knowledge (Radunz et al., 2012). Understanding the current level of knowledge and awareness of organ donation for nursing students is critical to identifying gaps in their knowledge and to develop specific educational interventions for nursing students.

In light of this, the study described in this article intends to provide a better understanding of the current level of knowledge and awareness about organ donation among nursing students from selected nursing colleges located within Jaipur District (Rajasthan). The study will help identify areas where there are weaknesses in the knowledge level of nursing students; therefore strengthening the education provided in nursing and ultimately improving the potential to increase support for organ donation in the future.

Need of the study:

Importance of the study to our society has grown considerable, as organ donation is a major concern within India due to a high volume of patients experiencing end-stage organ failure and an ongoing deficiency of available organs. Despite modern technology in transplantation

and a legalised framework necessitated by the THOA, India's rate of organ donations remains incredibly low. A major cause of this issue has been a lack of knowledge and a high incidence of misconceptions relating to organ donations and the definitions surrounding brain deaths.

According to the Global Observatory on Donation and Transplantation, India's rate of organ donation has risen from 0.05 per million people to 0.8 per million people in a duration of few years. However, India's organ donation rates contrast sharply with Croatia's 36.5 donors, Spain's 35.3, donors and the United States 26 donors per ten lakh populations, respectively. Consequently, the shortfall in organ transplants leads to around 20 deaths daily due to the scarcity of available organs (Jain and Bhalla, 2023).

As the educator, advocate, and the facilitator between the medical team and families, nurses are an integral part of today's healthcare community, and nursing students especially. Some examples of how nurses can have a direct impact on the process of organ donation are: by receiving valid information regarding organ donation that will aid in the process of providing consent and by generating public support for the use of organs after a person has died through their attitude and confidence (Bathija et al., 2017). Because of these examples, it is crucial that nursing students are knowledgeable and supportive of organ donation before entering into the workforce as a healthcare professional.

Evidence suggests that there are gaps in both knowledge and awareness about organ donation among health care trainees. The nursing curriculum does not devote sufficient time to organ donation and transplantation, as such, nursing students may not be prepared to address patient and family issues, to identify potential donors and to participate in an effective manner in organ donation programs.

In nursing students in 2024, while most believed that they were aware of organ donation many had a general understanding but lacked depth regarding the legal and practical aspects. Therefore, this study emphasised the importance of structured education programs and curriculum integration in nursing colleges in Jaipur, so that future nursing professionals would be well prepared and able to competently promote organ donation.

There is little information regarding organ donation awareness and knowledge for nursing students on a regional basis, particularly in Rajasthan and Jaipur. By identifying these gaps, educational planning and strengthening curricular development will be facilitated.

This study, therefore, aims to evaluate the level of knowledge and awareness of organ donation among nursing students in selected nursing colleges in Jaipur. The results will be valuable in developing structured, tailored educational approaches for improving nursing curriculum and preparing nursing students to be actively involved in promoting organ donation in the future.

Aims and objectives:

The aim of the present study was to assess the level of knowledge regarding organ donation among nursing students in selected nursing colleges of Jaipur. The study also sought to determine the association between the level of knowledge regarding organ donation and selected demographic variables of the nursing students.

Methodology:

Research approach and design:

This research study was designed to measure how much nursing students from a group of chosen nursing schools across the Jaipur District in Rajasthan had learned about organ donation by using a descriptive cross-sectional quantitative design. It provided an opportunity for examining existing knowledge levels and identifying associations between various demographic factors while gathering data from a single occasion.

Study setting and population:

The chosen nursing colleges that were part of this research study were located in the Jaipur District, Rajasthan. Study Colleges included Tagore Nursing College as the location to conduct a pilot study of the research tool's clarity and feasibility while using Rajasthan College of Nursing for the actual research study to address the research question. The study was to identify all registered nursing students in nursing schools across the Jaipur District; therefore, the study's target population would include all nursing students who were present at the time of the data collection period and offered to be willing participants during that time, and the study's accessible population would include those nursing students who volunteered to participate in the study and provided their consent to complete the survey.

Sample size and sampling technique:

The sample of 100 nursing students was chosen from the sample population of the main study by using a non-probability convenience sampling method. The sample size was considered large enough to provide an accurate description of nursing students' knowledge of organ donation and the demographic factors associated with it and provided a path for further research in this area.

Inclusion and exclusion criteria:

This study recruited nursing students enrolled in the selected college at the time of data collection, who were willing to participate, and could read and write in either Hindi or English. Any student that did not wish to participate or was absent from the time of data collection, would be excluded.

Data collection tool:

Data was collected through the use of a structured self-administered questionnaire, which was developed after an extensive review of appropriate literature and discussions with subject matter experts in this area. The tool was divided into two sections. The first section contained demographic information on participants: age, sex, religion, parents' educational level and occupation, area of residence and previous knowledge of organ donation. The second section of the instrument contained thirty multiple choice questions regarding participant's awareness and understanding of various aspects of organ donation, including brain death and the legal aspects of organ donation as outlined by the Transplantation of Human Organs Act and the general principles of organ transplantation. For every correct answer, the participant received 1 mark, for a total score of 30, where knowledge scores were categorized as Poor ($\leq$ 50%), Average (51 - 65%) and Good ($\geq$ 65%).

The reliability of the instrument was determined by using the split-half method, resulting in a reliability coefficient of $r = 0.79$, which was considered to be an adequate level of internal consistency.

Data collection procedure:

Ethics Approval for Data Collection was obtained Obtained from the Institutional Ethics Committee, College of Nursing, Rajasthan prior to the commencing of Data Collection. All participants would have given their written informed consent to participate in this study after being fully informed about the study and being assured of confidentiality and anonymity. The data collection for the study took place between 01 February and 01 March 2025, over a period of one month. The investigator administered the questionnaires, provided standardised written instructions for completion of questionnaires, and retrieved completed questionnaires on the same day of administration to prevent the occurrence of contamination of information.

Ethical considerations:

Participants in the study were allowed to withdraw from their involvement in the study at their discretion. Respondents were not penalised in any manner for their withdrawal from participation. Data confidentiality was maintained throughout the data collection process; therefore, there would have been no personal identifiers associated with respondent's data once it was collected; this ensures that once data analysis has been completed, individual respondents cannot be identified.

Data analysis:

The data collected were assigned codes so that they could be easily entered into a master data sheet and analysed utilising Statistical Package for the Social Sciences (SPSS), version 26. The data would be analysed using descriptive statistics (Frequency, Percentage, Mean, Median, Standard Deviation) to give a summary of participants' demographic characteristics and knowledge scores (Table 1). Inferential statistics (Chi-Square Test) will be utilised to examine the association between participants' knowledge levels and selected demographic variables. Statistically significant results are defined as $p < 0.05$.

Results:

Table 1: Frequency and percentage distribution of nursing students according to demographic variables **N=100**

S. No.	Variables	Frequency	Percentage
	Age (in years)		
1	17 – 19	37	37%
	20 – 22	23	23%
	23 – 25	25	25%
	26 – 28	15	15%
	Gender		
2	Male	45	45%
	Female	55	55%
	Religion		
3	Hindu	43	43%
	Muslim	32	32%
	Christian	15	15%
	Other	10	10%
4	**Educational status of parents**		

	No formal education	23	23%
	Secondary education	37	37%
	Higher secondary education	27	27%
	Graduation and above	13	13%
5	**Area of living**		
	Urban	36	36%
	Rural	44	44%
	Semi urban	20	20%
6	**Occupation**		
	House wife	24	24%
	Services (Govt./Private)	39	39%
	Business	12	12%
	Other	25	25%
7	**Previous knowledge**		
	Yes	55	55%
	No	45	45%

Table 2: Level of knowledge of the nursing students regarding organ donation **N=100**

S. No.	Level of knowledge	Ranges	Frequency	Percentage
1	Poor	<50%	25	25%
2	Average	51 – 65%	30	30%
3	Good	>65%	45	45%

According to data compiled in Table 2, out of 100 nursing students, 25% (n=25) had very little knowledge about organ donation, 30% (n=30) had some understanding of organ donation and 45% (n=45) possessed a solid understanding of organ donation.

Table 3: Knowledge score of nursing students regarding organ donation **N=100**

S. No.	Aspect	Max. Score	Mean	Mean percentage	Median	Standard Deviation
1	Level of knowledge	30	14.55	48.5%	14	1.90

Table 3 provides statistical details regarding the knowledge scores derived from a structured questionnaire containing thirty questions. The overall mean score was 14.55 (SD=1.90) with a median of 14; this represents an average percentage of 48.5%. It should also be noted that although 45% of students had “good” knowledge based on categorical data, the overall mean percentage shows that most students' knowledge was only moderate at best, indicating that while there was a significant percentage of students scoring relatively high, the average score of the total population still remains less than 50%. These findings suggest that additional education must be provided in order to enhance organ donation knowledge within the nursing education program.

In Table 4, it can be seen that Chi-square statistical tests were used for the associations between organ donation knowledge and parental education ($\chi^2 = 21.52$, df = 6, p = 0.002), area of residence ($\chi^2 = 10.97$, df = 4, p = 0.03), parental occupation ($\chi^2 = 13.07$, df = 6, p =

0.04), and prior knowledge ($\chi^2 = 6.06$, df = 2, p = 0.048); however no significant association was found for age ($\chi^2 = 2.01$, df = 6, p = 0.91), gender ($\chi^2 = 1.65$, df = 2, p = 0.44), and religion ($\chi^2 = 5.27$, df = 6, p = 0.51).

Table 4: Association of Level of knowledge of nursing students with selected demographic variables **N=100**

S. No.	Variables	DF	χ^2 Value	Table Value	Remarks
1	Age	6	2.01	12.59	NS
2	Gender	2	1.65	5.99	NS
3	Religion	6	5.27	12.59	NS
4	Educational status of parents	6	21.52	12.59	S
5	Area of living	4	10.97	S	S
6	Occupational status of parents	6	13.07	12.59	S
7	Previous knowledge	2	6.06	5.99	S

Discussion:

The study of organ donation knowledge among nursing students revealed that nearly half (45%) of nursing students were found to have good knowledge, with an additional 30% displaying average knowledge, and the rest (25%) having poor knowledge. The overall average score of 14.55 ± 1.90 indicates a moderate level of knowledge. Parental education, area of residence, parent's occupation, and prior knowledge of the subject matter were also significant factors related to having good organ donation knowledge. Higher levels of education by the parent(s) and living in an urban area are likely to provide better access to these types of information and more supportive educational environments. The findings of this study support the conclusions made from studies in India and from studies conducted internationally (Murphy et al., 2020) regarding the importance of education regarding organ donation and the role of nursing students as future healthcare professionals promoting organ donation through advocacy. Including structured organ donation education in nursing education will dispel the myths regarding organ donation and educate nursing students to be advocates for organ donation.

Limitations:

The findings of this study may not be applicable to other groups of nursing students since it was conducted at one nursing college. The sample size was limited to only a small group, possibly leading to sampling error. The researchers used non-probability convenience sampling, which resulted in selection bias. The data was obtained from participants through a self-administered questionnaire which may result in response bias. Due to the cross-sectional nature of this study design, the effects of intervention on individual student's knowledge and skill development could not be assessed.

Conclusion:

The findings of this research show that nursing students in the participating nursing colleges of Jaipur have a moderate level of knowledge about organ donation, but less than half of students exhibited good knowledge. Although organ transplantation medicine has improved

over time, and a legal infrastructure is present in India, a significant knowledge gap still exists in the future nursing workforce. There are a number of important factors influencing knowledge as shown in this research, including parental education, geographic area, parental occupation, and prior exposure to information about organ donation. These findings demonstrate the importance of socio-educational background on organ donation knowledge.The findings have highlighted the need for further development of a formalised educational programme regarding organ donation and brain death in nursing education. More theoretical and practical exposure of nursing students to these subjects will adequately prepare them to become informed educators and advocates and support organ donation on a national basis. Future research is recommended to evaluate the effectiveness of targeted education programs on organ donation and develop evidence-based policies and curriculum changes to improve organ donation in India by evaluating larger, multi-centre samples with intervention designs.

References

Bathija, G. V., Ananthesh, B. G., & Bant, D. D. (2017). Study to assess knowledge and attitude towards organ donation among interns and post graduates of a medical college in Karnataka, India. *Natl J Community Med*, *8*, 236-240.

Jain, M., & Bhalla, S. (2023). Organ Donation Landscape in India: Challenges, Governmental Interventions, and Role of NGOs: A Comprehensive Analysis. *International Journal of Social Relevance & Concern*, *11*, 1-11.

Murphy, M. D., Pinheiro, D., Iyengar, R., Lim, G., Menezes, R., & Cadeiras, M. (2020). A data-driven social network intervention for improving organ donation awareness among minorities: analysis and optimization of a cross-sectional study. *Journal of medical Internet research*, *22*, e14605. https://doi.org/10.2196/14605

Radunz, S., Juntermanns, B., Heuer, M., Frühauf, N. R., Paul, A., & Kaiser, G. M. (2012). The effect of education on the attitude of medical students towards organ donation. *Annals of transplantation*, *17*, 140-144. https://doi.org/10.12659/aot.882648

Ríos, A., López-Navas, A., López-López, A., Gómez, F. J., Iriarte, J., Herruzo, R., ... & Parrilla, P. (2019). A multicentre and stratified study of the attitude of medical students towards organ donation in Spain. *Ethnicity & health*, *24*, 443-461. https://doi.org/10.1080/13557858.2017.1346183

Woodman, A., Al-Jamea, L. H., Al Zahrani, E. M., Elsafi, S. H., Waheed, K. B., Al-Yami, F. S., ... & Al-Attar, B. (2022). Knowledge, attitude, and behavior toward organ donation and transplantation among medical students in the Eastern Province of Saudi Arabia. In *Transplantation Proceedings*, *54*, 1690-1696. Elsevier. https://doi.org/10.1016/j.transproceed.2022.05.034

Zirpe, K. G., Suryawanshi, P., Gurav, S., Deshmukh, A., Pote, P., Tungenwar, A., & Malhotra, R. (2020). Increase in cadaver organ donation rate at a tertiary care hospital: 23 years of experience. *Indian journal of critical care medicine*, *24*, 804-808. https://doi.org/10.5005/jp-journals-10071-23578