

Perception and Willingness Regarding Organ Transplantation/donation among Medical Students of Maharajgunj Medical Campus: A Cross-sectional Study

Amit Sharma Bhattarai,¹ Bidur Adhikari,² Deepak Raj Joshi,³ Alisha Yadav,⁴ Pankaj Joshi,¹ Bashu Dev Parajuli,¹ Megha Koirala,¹ Kushal Jung Karki,⁴ Krishna Prasad Subedi,⁴ Gentle Sunder Shrestha,⁵ Anil Shrestha,¹ Shreejana Singh⁶

¹Department of Anaesthesiology, Maharajgunj Medical Campus, Institute of Medicine, Kathmandu, Nepal, ²Department of Anatomy, Maharajgunj Medical Campus, Institute of Medicine, Kathmandu, Nepal, ³Department of Community Medicine, Maharajgunj Medical Campus, Institute of Medicine, Kathmandu, Nepal, ⁴Maharajgunj Medical Campus, Institute of Medicine, Kathmandu, Nepal, ⁵Department of Critical Care Medicine, Maharajgunj Medical Campus, Institute of Medicine, Kathmandu, Nepal, ⁶Department of Research, Institute of Medicine, Kathmandu, Nepal.

ABSTRACT

Background: Organ transplant is the procedure of replacing a failing or damaged organ with a functioning one. Positive attitude and awareness about donation are a must for donor organs to be available. This study explored the level of knowledge, perception and willingness regarding organ donation among medical students in Nepal.

Methods: A descriptive cross-sectional study was conducted with 180 medical students using a self-administered questionnaire. Descriptive statistics were used, and Pearson correlation was applied to examine the relationship between knowledge and perception of organ transplantation. Independent samples t-test and ANOVA was used to compare scores among year of study and gender.

Results: Results indicated that 86.1% of participants were aware of the need for organ donation, and 83.3% knew that both living and deceased individuals could be donors. While 93.9% believed in the need for effective laws, 72.8% perceived risks for donors. However, only 74.4% were willing to donate their organs, though 91.7% expressed willingness to promote organ donation among friends and family. Participants showed a positive perception towards organ donation.

Conclusions: Despite a high level of awareness and knowledge regarding organ donation, participants exhibited a lower level of willingness to donate organs. Perceived risks for donors and a lack of robust laws and regulations presented significant barriers. Nevertheless, an inclination to promote organ donation was observed. This underlines the need for enhanced education and policy reform to increase organ donation rates.

Keywords: Awareness; knowledge; organ donation; organ transplantation; perception.

INTRODUCTION

Organ transplantation, often the last resort for end-stage organ failure,^{1,2} faces a critical challenge: a severe shortage of donor organs globally, with less than 10% of needed transplants performed annually.^{3,4} Despite advancements since Joseph Murray's pioneering work, the gap persists,^{5,6} urging supportive transplantation laws.⁷ Although both the living and deceased can donate organs,⁸ the World Health Organization advocates for

the latter.⁹ Still, the overall rate of organ donation is very low in Asia.¹⁰

While factors like education and religion influence attitudes, research remains limited.¹¹ Therefore, awareness campaigns, particularly targeting university students, hold promise, given their potential to influence familial perspectives.^{12,13}

Recognizing the pivotal role of medical students in public

Correspondence: Dr Bidur Adhikari, Department of Anatomy, Maharajgunj Medical Campus, Institute of Medicine, Kathmandu, Nepal. Email: bidur.adhikari@mmc.tu.edu.np,

education,^{14,15} this questionnaire-based study aims to assess their knowledge, perceptions and willingness towards organ donation. By understanding their stance, strategies can be devised to enhance advocacy, that could relieve the organ shortage crisis.

METHODS

A quantitative descriptive cross-sectional study was conducted among bachelor level students currently enrolled in the second, third, and fourth years of the MBBS program at Maharajgunj Medical Campus, Institute of Medicine, Maharajgunj, Kathmandu, Nepal. Convenience sampling was utilized to select 180 participants, excluding students unwilling to participate. Knowledge and perception regarding organ transplantation/donation were assessed using a self-administered questionnaire comprising 11 knowledge-oriented questions and 11 questions probing perception (Annex). This structured questionnaire was adapted from Kipkulei JC¹⁶ according to the objectives of the study by using Kobo tool box application.¹⁷ Knowledge scores were determined based on total correct answers following the method of Fan et al.¹⁸ and perceptions scores were given as per Boone and Boone.¹⁹ Less than 50% of mean perception score was considered low, 50-75% medium, and more than 75% high. Perception was evaluated using a 5-point Likert scale, with scores below 50% indicating negative perception and scores above 50% indicating positive perception.²⁰ The questionnaire, structured into three parts (demographics, knowledge, and perception), underwent content validation and pre-testing. Data collection, after obtaining approval from the Institutional Review Committee of IOM (Reference number: 266(6-11)E2 078/079, included informed consent and ensured anonymity. Data analysis was done after entry into Epidata version 3.1²¹ and involved descriptive statistics and inferential tests, such as independent samples t-test and ANOVA, to explore relationships between knowledge, perception, gender, and year of study.

RESULTS

Of the total 180 participants, 137(76.1%) were male and 43(23.9%) were female. Most of the students (77, 42.8%) were from second year while 47 (26.1%) were from third year and 56 (31.1%) were from fourth year. The distribution of ethnicity and religion of the participants shows that most of the participants were Hindus (92.8%) and Brahmins/ Chhetris (54.4%).

Most of the participants were from nuclear families

(143, 79.4%) while 36 (20%) were from joint or extended families. Interestingly, most of the participants were from outside the Kathmandu valley (146, 81.1%). Monthly income of most of the families was NPR 50,000 to 100,000 (119, 66.1%), 41 (22.8%) participants stated that their families earned NPR 100000 to 500,000 monthly while 16 (8.9%) replied that theirs was more than NPR 500,000.

A majority of students (141, 78.3%) responded that organ donation means removal of tissue/ part of tissue from living or deceased while a small proportion responded it as removal of organ/ part of organ from either living (17, 9.4) or deceased (21, 11.7%) only.

Most of the participants agreed that organ donation is done to save a life (177, 83.1%) and in a multiple-choice question regarding the organs that can be donated, most of them selected “eye, liver, heart, and kidney” (figure 1).

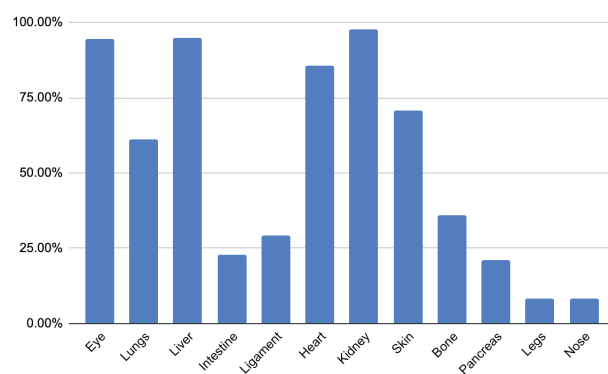


Figure 1. Responses to the multiple response question “What are the organs that can be donated/ transplanted?”

Most of the participants (155, 86.1%) were aware of the need for organ donation and 150 (83.3%) knew that both living and deceased donors can donate organs. Only a few (10, 5.6%) thought that brain death is reversible while 159 (88.3%) thought that a single donor can donate organs to multiple recipients. Most of the participants were knowledgeable about eligibility of organ donation (figure 2).

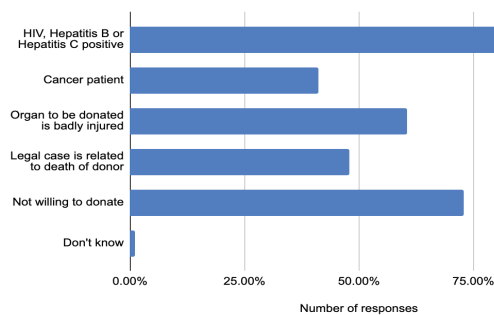


Figure 2. Responses to the multiple response question “Organ donation/ transplantation cannot be done if donor is:”

Although most of the participants (176, 97.8%) knew that there is a law for organ donation/ transplantation

in Nepal and most (163, 90.6%) thought that those laws are active, 169 (93.9%) believed that effective laws regarding organ donation are still lacking. Only nine participants (5%) thought that organ donation can be done even if the donor hadn't given consent and 131 (72.8%) thought that there is a risk for donors in organ donation.

Despite their background and knowledge about the issue, only 134 participants (74.4%) were willing to donate their organs if needed but 164 (91.7%) would promote organ donation and transplantation among their friends and family.

The perception of participants regarding organ donation, assessed using responses on a five-point Likert scale, was as shown in figure 3.

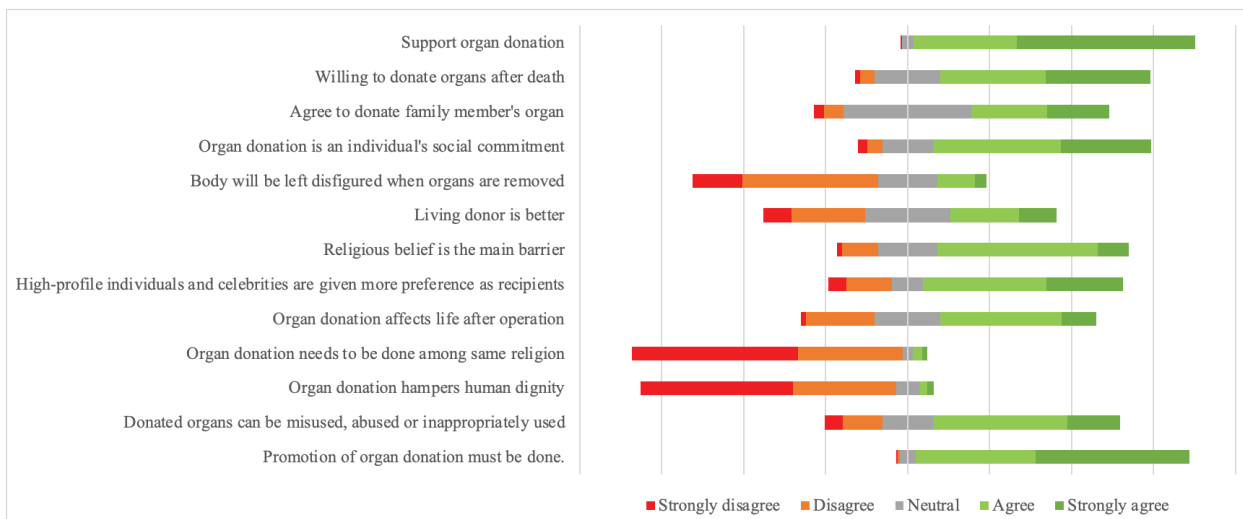


Figure 3. Perception of different aspects of organ donation by participants.

When the correct responses were scored and knowledge scores added, the mean knowledge score was 24.97 ± 2.42 out of a total of 34. This showed that the students had medium level of knowledge. Similarly, the mean perception score was 28.43 ± 6.06 out of a total of 65. Both the mean knowledge score and perception score showed significant difference between male and female (table 1).

Table 1. Difference of scores in male and female participants.

	Male (mean \pm SD)	Female (mean \pm SD)	p-value
Knowledge score	25.21 \pm 2.43 (n=137)	24.18 \pm 2.25 (n=43)	0.015
Perception score	28.95 \pm 6.22 (n=136)	26.79 \pm 5.24 (n=43)	0.042

The knowledge score showed significant increases with each year of education while the perception score showed only a significant difference between the second-year students and others (table 2).

Table 2. Knowledge scores of students from each year of study compared.

Year (I)	Year (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Second	Third	-1.13705*	.41143	.017	-2.1095	-.1646
	Fourth	-2.31981*	.39036	.000	-3.2425	-1.3972
Third	Second	1.13705*	.41143	.017	.1646	2.1095
	Fourth	-1.18275*	.43970	.021	-2.2220	-.1435
Fourth	Second	2.31981*	.39036	.000	1.3972	3.2425
	Third	1.18275*	.43970	.021	.1435	2.2220

* Significant difference at the 0.05 level.

Interestingly, the mean perception score was significantly higher in those who would not donate their own organs and among those who would not promote organ donation in their friends and family. Also, there was no significant correlation between the knowledge score and perception score of the participants (p-value of Pearson correlation = 0.181).

DISCUSSION

In this cross-section study including a sizeable population of medical students, participants took part in a questionnaire-based survey to assess their knowledge and perception regarding organ donation. We distributed questionnaires and collected responses from second, third- and fourth-year medical students. We omitted first year students as they have limited clinical exposure and final year students who have a decent clinical exposure to avoid bias in the results.

After pretesting the questionnaire, a few confusing questions were altered and questionnaires rewritten for these questions.

The questionnaire was divided into three parts. Part I consisted of eight questions related to demographics and general information of the participants. Part II consisted of 18 questions related to the assessment of the level of knowledge regarding organ donation and transplantation (ODT) of the participants. Part III consisted of 13 questions on a five-point Likert scale ranging from "strongly agree" to "strongly disagree" assessing the perception towards ODT. The questions included for the assessment of perception towards ODT included the willingness to donate own and family members' organs, social issues, religious issues and other relevant questions regarding perception.

The responses received (76.1% male and 23.9% female), reflects the pattern of gender distribution amongst medical students of the campus.

Regarding the knowledge of organ donation, most of the

participants believed that organ donation is tissue/part of tissue removed from the living or deceased individual. Similarly, most of them believed that organ donation is done to save someone's life. Regarding the knowledge about donatable organs, most of the participants checked kidneys, eyes, liver and heart in that order. This may be due to the fact that donation of these organs is frequently discussed in the hospital and media as well. Besides this, the center in which they have their clinical posting does kidney and liver transplant on a regular basis.²² Regarding the contraindication to organ donation, most of them believe that active infections (like HIV and hepatitis) and unwilling donors are the major ones.

The knowledge score showed significant increases with each year of education on a one-way ANOVA test (p-value < 0.001). This may be due to the fact that there is more clinical exposure leading to more knowledge regarding ODT. This is in contrast with the study done at the University of Leeds in 2012 where they did not find any significant difference in level of knowledge regarding ODT with increasing years of medical school.²³ This could be due to the fact that organ donation was in common practice in UK when the study was conducted while it is still in its infancy in Nepal at the moment.

When the correct responses were scored and knowledge scores added, the mean knowledge score was 24.97 ± 2.42 out of total 34. The mean knowledge score showed significant difference among male and female participants. The discrepancies in knowledge may be attributed to different cultural and traditional values, religious beliefs and ideals.²⁴

Varying results have been seen with studies done in similar settings in Saudi Arabia where female participants had more knowledge than males whereas a study by Wolide et.al indicated that male participants had higher score.^{25,26} On the contrary, no significant difference has been found in other studies done in different settings.^{27,28}

Similarly, the cumulative perception score was 28.43 ± 6.06 out of a total 65. The reason for this cumulative perception score can be explained by the fact that our study showed only medium level of knowledge regarding ODT. This correlates with the studies done on medical personnel (nurses and medical students) where the negative perception is lower compared to the general population.^{14,29,30}

The negative perception usually found is the result of myths and misunderstandings about organ donation and transplantation.³¹ The current study found that a quarter of the participants were not willing to donate their own organs despite high level of knowledge seen in the study. This could be a direct influence of societal norms and the uncertain legal status of ODT in Nepal. Moreover, many studies done regarding this subject matter shows that the willingness is more or less directly related to educational level of the participants be it in medical field or general population.^{32,33}

As the current study was confined within a single medical school, a larger sample size and study in other medical schools is needed to make the findings more generalizable. Besides this, a study incorporating other streams of medical science like nursing, dental, lab students could help form a composite outline of further research in similar setting across multiple centers to obtain a robust data regarding the knowledge and perception.

The study also recommends that the government should enact and enforce laws and policies that support organ donation and protect the rights and interests of donors and recipients. Apart from this, actively involving the awareness aspect of organ donation in medical curriculum will help to improve existing state of awareness and perception amongst medical students.

CONCLUSIONS

The study revealed that medical students in Nepal have a high level of awareness and knowledge about organ donation, but a low level of willingness to donate their own organs. The main barriers to organ donation

were the perceived risk for donors and the lack of effective laws and regulations. The study also found that medical students have a positive attitude towards organ donation and would encourage others to donate their organs. The study suggests that more education and awareness campaigns are needed to increase the organ donation rate among medical students and the general population.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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