

## Awareness and Willingness on Organ Donation among Undergraduate Students of Pokhara University

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### ABSTRACT

**Introduction:** Organ donation is possible only when a person allows his/her own organ to be removed and transplanted to another person legally with a consent. People's attitude toward organ donation can be influenced by various factors such as awareness related to organ donation, level of education, and religion. This study aims to assess the awareness and willingness on organ donation and identify the correlation between awareness and willingness on organ donation.

**Methods:** A cross-sectional descriptive research design was used for the study. Non-probability purposive sampling technique was used among 342 respondents. Structured self-administered questionnaire was used to collect data. Pearson correlation coefficient (r) was used to find out the relation between the variables i.e. awareness and willingness.

**Results:** In this study, 57.1% of the respondents had poor level of awareness whereas 32.7% respondents had satisfactory awareness and 10.2% had good level of awareness on organ donation. Regarding willingness on organ donation, 45.0% respondents showed willingness on organ donation and 55.0% showed no willingness on organ donation. There was low degree positive correlation ( $r=0.127$ ) between awareness and willingness of the respondents on organ donation.

**Conclusion:** The findings of the current research study concluded that more than half of the respondents had poor level of awareness and majority of respondents showed no willingness on organ donation. There is low degree of correlation between awareness and willingness of the respondents.

**Keywords:** Awareness, Bachelor level students, Organ donation, Willingness

### INTRODUCTION

Organ donation is possible when a person allows an organ of their own to be removed and transplanted to another person legally with a consent.<sup>1</sup> Attitudes toward organ donation in the general public can be influenced by factors such as level of related knowledge, level of education, and religion. Ethnicity, gender, and traditional values have also been identified as predictors of donation practice.<sup>2</sup>

Organ donation is very helpful in medical industry as it has helped in saving the lives of those who suffered due to problems of organ failure.<sup>3</sup> Organ transplantation is the most preferred treatment for many of the end-stage organ diseases as it offers a better quality of life and has a better long-term survival benefits.<sup>4</sup> Major issues in organ donation include ethical reasons, political reasons, moral and cultural inhibitions of the people though they are aware about organ donation.<sup>5</sup>

Study conducted among nursing students of Chitwan Medical College showed majority of respondents had medium level of awareness and had positive attitude regarding organ transplantation.<sup>6</sup> According to a cross

sectional study conducted in Kathmandu, more than half respondents expressed willingness to become organ donor.<sup>7</sup> Also study from Tianjin, China showed that (85.0%) of respondents were willing to donate organ and those who held negative willingness expressed that traditional values (72.0%), disfigured corpse (66.0%) and imperfect legal system (54.0%) were the main reasons.<sup>8</sup>

Study conducted in Chandigarh, India showed that, (15.0%) of respondents had inadequate knowledge about organ donation. Almost (90.0%) of respondents had not any personal experience of the organ transplant scenario. Those willing for living kidney donation, eye donation and other organ donation after death were 68.9%, 75.1% and 55.0%, respectively.<sup>9</sup>

Asian countries are amongst those where the knowledge and practice of organ donation is most lacking, where a diverse ethical perception is been observed. The lack

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of action towards organ donation is consistently seen as the major factor for the current shortage of organs for transplantation. This attitude can be a result of multifarious reasons, religious belief being one of the main. Many religions favor towards the ideology of organ donation but are hesitant about the criteria involved in this procedure.<sup>5</sup> These data supports the need to assess awareness and willingness of the public particularly among the young adult as they play a major role in educating, spreading awareness and motivating the public regarding organ donation. Hence, in this study, awareness and willingness on organ donation was assessed among undergraduate students of Pokhara University.

**METHODS**

A cross-sectional descriptive research design was used to identify awareness and willingness on organ donation among the undergraduate students of Pokhara University. Sample size of the study was calculated using Fishers’ formula  $n = Z^2pq/d^2$  and assuming expected proportion (p) 0.676<sup>6,7</sup> and allowable error 0.05 at 95 percent confidence level. The total sample was 342 final year undergraduate students which were selected purposively using non-probability purposive sampling technique. Among 342 respondents, majority (30.4%) of the respondents were from School of Engineering, one fourth (25.4%) respondent were from School of Business, one fourth (25.4%) respondent were from School of Health and Allied Sciences and minority (18.8%) of the respondents were from School of Development and Social Engineering.

Structured self-administered questionnaire was developed on the basis of literature review<sup>6,13,14</sup> and seeking the opinion of subject’s experts and research advisor. The research instrument was divided into three sections. Section-1: This section included 12 questions regarding demographic information of the respondents. Section-2: questions related to awareness on organ donation, total 15 question were included to assess the awareness level among which 4 questions allowed multiple response.

The level of awareness was classified into three levels considering Bloom’s cut off point. Respondents were said to have good level of awareness if they answer (80-100%) of the question correctly, satisfactory level of awareness for (60-79%) and poor level of awareness for less than (60.0%)<sup>10</sup>. Section-3: questions related to willingness on organ donation where willingness of respondents were measured using 4 point Likert scale that ranges from “no willingness to absolute willingness”.

Validity of the instrument was established by developing the instruments on the basis of extensive literature review and expert’s feedback. Pre-testing was performed on 10% of total sample size in another similar setting which was excluded from the study and necessary modification was done in data collection tool. Reliability of the tool was assessed using Cronbach’s alpha applying split half technique and the value was 0.76 for awareness and 0.79 for willingness.

Data was collected after getting ethical approval from Institutional Review Committee (IRC) of Pokhara University. Written official permission was taken from the director of different constituent schools. The purpose of the research was clearly explained to the respondents. Self-administered questionnaire was distributed and written and verbal consents were taken from each respondent. During data collection, orientation of 10-15 minutes was provided in each class by the researcher. Students were assured that they were free to withdraw during data collection period at any time if the desire. Anonymity was maintained by giving the instructions not to place the student’s name in the questionnaire.

After collection of data, data was entered in EPI DATA version 3.1. The entered data was exported to Statistical package for social sciences (SPSS version 16) software for analysis. Data was analyzed using descriptive statistics such as mean, frequency, percentage and represented in the form of tables. Karl Pearson correlation coefficient was used to find out the relation between awareness and willingness.

**RESULTS**

Table 1: Demographic Characteristics of Respondents n= 342

Demographic variables	Frequency	Percentage
Age		
Less than or equal to 21yrs	236	69.0
More than 21yrs	106	31.0
Mean:21.09, SD:1.115, Min:18, Max:26		
Sex		
Male	153	44.7
Female	189	55.3
Religion		
Hindu	309	90.4
Buddhist	22	6.4
Christian	7	2.0

Muslim	4	1.2	Business	87	25.4
Ethnicity			Foreign employee	33	9.6
Dalit	15	4.4	Health personnel	12	3.5
Disadvantage Janajati	11	3.2	Service	115	33.6
Religious minority	8	2.3	Others (laborer, cook- man, butcher, tailor etc.)	29	8.6
Relatively advantaged Janajati	52	15.2			
Upper cast	256	74.9			
Residence					
Rural	95	27.8			
Urban	247	72.2			
Types of family					
Nuclear	273	79.8			
Joint	62	18.2			
Expanded	7	2.0			

Among 342 respondents, majority (69.0%) were of age less than or equal to 21 years. The mean  $\pm$  SD of age of the respondents was 21.09  $\pm$  1.115 years. Regarding religion, majority (90.4%) of respondents were Hindu. Nearly three fourth of respondents (72.2%) were living in urban area. Regarding type of family, majority (79.8%) of the respondents were from nuclear family.

Table 2: Socio-Economic Characteristics of Respondents n= 342

Characteristics	Frequency	Percentage (%)
Level of education of respondent's mother		
Informal education	35	10.2
Basic education	119	34.8
Secondary education	138	40.4
Bachelors and above	50	14.6
Level of education of respondent's father		
Informal education	13	3.8
Basic education	65	19.0
Secondary education	127	37.1
Bachelors and above	137	40.1
Occupation of respondent's mother		
Agriculture	23	6.7
Household work	235	68.7
Business	29	8.5
Health personnel	4	1.2
Service	51	14.9
Occupation of respondent's father		
Agriculture	66	19.3

With regards to education, less than half (40.4%) of the respondent's mother achieved secondary level education and less than half (40.1%) of the respondent's father achieved bachelors and above education level. Regarding respondent's mother's occupation, more than half (68.7%) were housewife. On the other hand, one fourth of the respondent's father (25.4%) were involved in business.

Table 3: Awareness on General Aspects of Organ Donation n= 342

Awareness Related Questions	Frequency of Correct Responses (f)	Percentage (%)
Status of organ donation in Nepal.		
Demand of organ is greater than availability	153	44.7
Purpose of organ donation.		
For saving one's life	317	92.7
Criteria to be an organ donor.		
Must be above 18 years		60.2
Meaning of brain death.		
Irreversible loss of brain function.	219	64.0
In Nepal, criteria for living organ donation.		
Close relatives of the recipient	40	11.7
Process for being organ donor.		
Should be registered	177	51.8
Statement true for organ donation.		
Donor can change their mind even after being registered.	213	62.3
Part of eye that can be donated.		
Cornea	179	52.3
Statement true for liver donation.		
Healthy person can donate partial liver	231	67.5
Consideration made before transplantation.		
Human leukocyte antigen typing	179	52.3
Procedure carried after removal of organ.		
The incisions are repaired as that of living person.	207	60.5

The data presented in table 3 shows that among 342 respondents, less than half (44.7%) of the respondents were aware about the status of organ donation in Nepal. Most (92.7%) of the respondents thought organ donation is done for saving one's life and minority (11.7%) of the respondents were aware that only close relatives can donate their organ as a living donor. Almost half (51.8%) of the respondents were aware that to be an organ donor they should be registered as a donor.

Table 4: Awareness on Organ Donation

Awareness questions	Frequency	Percentage (%)
n= 342		
Definition of Organ donation.		
Removal of organs of human body from dead.	85	24.9
Removal of organ of the human body from living donor.	98	28.7
Removal of organ of the human body for research.	48	14.0
Removal of organ of the human body for the purpose of transplantation	292	85.4
Organ that can be donated as living donor.		
Liver	171	50.0
Kidney	312	91.2
Skin	139	40.6
Organ transplanted in Nepal.		
Eyes	234	68.4
Liver	53	15.5
Kidney	311	91.0
Requirements to be a kidney donor.		
Must be at least 18 years old.	177	51.8
Must have BMI less than 35.	105	30.7
Must be free from diabetes.	187	54.7
Must be physically and mentally healthy.	258	75.4

*\*Multiple response*

The data presented in table 4 shows that majority (85.4%) of respondents answered organ donation is removal of organ for transplantation to another person. Most (91.2%) of the respondents were aware that kidney can be donated as a living donor. Regarding the organ donation performed in Nepal, most (91.0%) respondents were aware about kidney donation, more than half (68.4%) respondents were aware about eye donation and minority (15.5%) respondents were aware about liver donation.

Table 5: Awareness level of Respondents on Organ Donation

Awareness level	Frequency	Percentage (%)
n= 342		
Good	35	10.2
Satisfactory	112	32.7
Poor	195	57.1

The data in Table 5 illustrates that more than half (57.1%) of the respondents had poor level of awareness whereas (32.7%) respondents had satisfactory level of awareness and minority (10.2%) respondents had good level of awareness on organ donation.

Table 6: Willingness on Organ Donation

Willingness category	Frequency	Percentage (%)
n= 342		
Willingness	154	45.0
No Willingness	188	55.0

The data in Table 6 illustrate the willingness on organ donation. This findings shows that among 342 respondents, less than half (45.0%) of the respondents showed willingness to participate in organ donation and more than half (55.0%) of the respondents showed no willingness on organ donation.

Table 7: Correlation between Awareness and Willingness on Organ Donation

Variables	Karl Pearson correlation coefficient (r)	P-value
n= 342		
Awareness	0.127	0.05
Willingness		

Table 7 shows that  $r = 0.127$  and  $p\text{-value} = 0.05$ , there is low degree of correlation between awareness and willingness of the respondents but is statistically significant i.e. awareness and willingness move in same direction and change in level of awareness brings change in willingness. Awareness and willingness have positive linear relationship.

## DISCUSSION

### Awareness on Organ Donation

In this study, it was found that minority (10.2%) had good awareness, followed by (32.7%) had satisfactory awareness and more than half (57.1%) respondents had poor awareness. This finding is supported by a study conducted on medical students in Malaysia and Egypt where minority (21.2%) and (36.0%) respondents had

good knowledge on organ donation respectively.<sup>11, 12</sup> This finding contradicts with that of the study conducted in Chitwan medical college, where majority (82.0%) of respondents had medium level of knowledge which may be due to difference in the characteristic of the sample.<sup>6</sup>

Among 342 respondents, less than half (44.7%) respondents were aware about the status of organ donation in Nepal. In this study, majority (92.7%) of the respondents believed the main purpose of organ donation was to save someone's life. The findings were consistent with the study conducted on adult population of Pakistan, where majority (60.0%) of the respondents believed that the basic aim of organ donation was to save someone's life.<sup>13</sup> More than half (60.2%) respondents were aware that to be an organ donor one must be above 18 years. Majority (64.0%) of the respondents were aware that brain death refers to the complete irreversible loss of brain function. Likewise, more than half (62.3%) respondents in this study believed that they can change their mind even after they signed the organ donation card. This finding is supported by a study conducted on general population in India where majority (71.0%) of respondents believed they can change their mind once they have signed the organ donation card.<sup>14</sup>

#### **Willingness on Organ Donation**

In the current study, more than half (55.0%) respondents had no willingness towards organ donation and less than half (45.0%) respondents had willingness towards organ donation. The finding of the study was different to the findings of the study conducted among post graduate students in Kathmandu, where more than half (53.2%) respondents were willing to perform organ donation.<sup>7</sup>

In this study, (45.3%) respondents showed willingness for deceased organ donation whereas only (29.9%) respondents showed willingness for living organ donation. This finding is similar to finding of the study carried out in high school students of Iran where, majority (92.0%) of respondents had willingness toward deceased organ donation and (47.0%) expressed willingness toward living organ donation.<sup>15</sup>

#### **Correlation between Awareness and Willingness on Organ Donation**

There is a weak but statistically significant correlation between awareness and willingness on organ donation i.e. with the change in level of awareness there occurs slight change in level of willingness in same direction. This finding is similar to the findings of the study conducted in Malaysia which revealed a significant positive low correlation between knowledge score and the willingness to donate organs.<sup>11</sup>

As the findings of the study concluded that majority of the respondents had poor level of awareness and showed no willingness on organ donation, the implications of this study are to emphasize the need to educate the students about organ donation and registration for organ donation through mass awareness programmes. The limitations of the study include non-probability purposive sampling technique was used and study was conducted in one institute only, so the results might not be generalizable.

#### **CONCLUSION**

The findings of the current research study concluded that more than half of the respondents have poor awareness level and more than half of the respondents do not have willingness towards organ donation. The study also revealed there is weak positive linear correlation between awareness and willingness of the respondents. This study shows that there is a great need to increase awareness and willingness on organ donation. In order to increase awareness and willingness on organ donation, public awareness campaign should be carried out covering every aspect of organ donation.

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