#### **BIBLIOGRAPHIC INFORMATION SYSTEM**

Journal Full Title: Journal of Biomedical Research & Environmental Sciences

Journal NLM Abbreviation: J Biomed Res Environ Sci Journal Website Link: https://www.jelsciences.com

Journal ISSN: 2766-2276

Category: Multidisciplinary

Subject Areas: Medicine Group, Biology Group, General, Environmental Sciences

Topics Summation: 128
Issue Regularity: Monthly
Review Process: Double Blind
Time to Publication: 21 Days

Indexing catalog: Visit here
Publication fee catalog: Visit here

DOI: 10.37871 (CrossRef)

Plagiarism detection software: iThenticate

Managing entity: USA Language: English

Research work collecting capability: Worldwide

Organized by: SciRes Literature LLC

**License:** Open Access by Journal of Biomedical Research & Environmental Sciences is licensed under a Creative Commons Attribution 4.0 International License. Based on a work at SciRes Literature LLC.

**IndexCopernicus** 

ICV 2020:

53.77

Manuscript should be submitted in Word Document (.doc or .docx) through

#### **Online Submission**

form or can be mailed to support@jelsciences.com

• Vision: Journal of Biomedical Research & Environmental Sciences main aim is to enhance the importance of science and technology to the scientific community and also to provide an equal opportunity to seek and share ideas to all our researchers and scientists without any barriers to develop their career and helping in their development of discovering the world.

#### RESEARCH ARTICLE

# Knowledge and Attitude of Organ Donation among University Students in Pokhara

# Asmita GC1, Arati Timilsina2\* and Vikash Kumar KC3

- <sup>1</sup>Gandaki Medical College and Teaching Hospital, Pokhara, Nepal
- <sup>2</sup>Pokhara University, Pokhara, Nepal
- 3Tribhuvan University, Pokhara, Nepal

#### **ABSTRACT**

Donation of the tissue or organ of human body from a living or dead person to a living recipient in need of transplantation is organ donation. In the field of modern medicine organ transplantation is one of the greatest scientific advances and remains the most challenging and complex. It saves thousands of life. The main objective of the study was to explore the knowledge and attitude of organ donation. A descriptive cross- sectional study using self- administered questionnaire tool was conducted among 154 Bachelor level students who were selected by using non probability consecutive sampling technique. The obtained data was entered on SPSS 20 version program and analyzed and interpreted by using descriptive statistics (Frequency, percentage, mean, median, and standard deviation) and inferential statistics (chi square). The study found that 57.1 percent had moderate knowledge on organ donation and more than half (69.5%) had neutral attitude on organ donation. Knowledge on organ donation was poor. There was significant association (0.014) between ethnicity and knowledge level. The study concluded that there was moderate level of knowledge and neutral level of attitude on organ donation among bachelor level students and there was no significant association of socio-demographic variables and level of knowledge except ethnicity. It therefore suggests awareness programs on organ donation for college students to promote and upgrade their knowledge and attitude about organ donation.

# **INTRODUCTION**

The damaged or failed organ can be replaced by another well-functioning organ from a healthy donor. Organ donation can be living or deceased. Transplantation is commonly seen as best solution to end stage organ failure. For example, end stage kidney disease, can be repaired only with a kidney transplant. Otherwise, the person will die or require dialysis for many years. Approximately 25 different organs and tissues can be transplanted such as heart, kidney, liver, pancreas, cornea, bone marrow, skin, blood and ligament. In the present context the demand of organs for transplantation is more than the supply all over the world [1].

Organ transplantation saves thousands live worldwide. It is a widely adopted effective therapy for end-stage of organ failure around the world. More than 91 countries from the world are practicing this therapy. Analysis from 2010 transplant activity for 95 countries, representing nearly 90% of the worldwide population, shows that 106,879 solid organ transplants were performed worldwide: among them kidney transplantation was the highest. This activity increase 2.12% during 2009 [2].

A survey report from Global Observatory on Donation and Transplantation (GODT) found that 126,670 solid organs transplants were reported. Among them

#### \*Corresponding author

Arati Timilsina, Department of Nursing, Pokhara University, Nepal

E-mail: aratisharma2010@gmail.com

DOI: 10.37871/jbres1177

Submitted: 11 December 2020 Accepted: 28 December 2020

Published: 29 December 2020

**Copyright:** © 2020 Timilsina A, et al. Distributed under Creative Commons CC-BY 4.0

#### OPEN ACCESS

Subject: Medicine Group

Topic & Subtopic(s): Nursing

#### Keywords

- Knowledge
- Attitude
- · Bachelor level students
- Knowledge
- Organ donation

VOLUME: 1 ISSUE: 8

84,347 kidney transplants, 27,759 liver transplants, 7,023 heart transplants, 5,046 lung transplants, 2,299 pancreas transplants and 196 small bowel transplants were performed globally in 2015[3].

The incidence of organ failure is also increasing in Nepal. About 3000 people loss the function of their kidney yearly. In the same way, 1000 people loss the function of liver yearly. Similarly the estimated diabetic population who might be benefited from pancreas transplantation in Nepal is 30 percentages of 10 lakhs diabetics. Kidney transplantation was first conducted successfully in Nepal in 2008 at the Tribhuvan University. Nepali law passed to legalize transplantation with Live Donors who are close relatives to the recipients [4].

A study conducted at Karachi, Pakistan indicates that there was inadequate knowledge among 25.8% of the general population. 75.2% of the participants had positive attitude regarding organ donation [5]. Similarly a study conducted at Chitwan, Nepal found that majority (82%) of respondents had medium level of knowledge and regarding the attitude, 94% of them had positive attitude regarding organ transplantation [4]. Above findings conclude that there is good knowledge among medical students but lack of positive attitude and inadequate knowledge is found among general population.

#### **DATA AND METHODS**

The research approach used in the study was quantitative approach by using cross sectional research design. The study was conducted in September 2018 among students studying BBS third and fourth year in Prithivi Narayan Campus located at Bagar- Pokhara, Nepal as this campus is the largest government campus of this region where students from neighboring districts enroll and thus students of rural area too could be incorporated in the study. Convenient sampling technique was used to select study area. The total number of students was 280 and out of them 154 was chosen by using non-probability consecutive sampling technique. Sample size was calculated through the use of sample size calculation formula. A study conducted at Hospital Tabriz, Iran found only 34.2% of the respondent had good knowledge about organ donation [6]. Thus based on this prevalence, with 95% confidence interval with 5% allowable error, sample size estimation was done.

The researcher has constructed a self-administered questionnaire which contained questions on sociodemographic details of respondents and Knowledge and attitude of Organ donation. The questions were developed through literature review and consultation with the subject expert and research advisor. There were 8 items related to socio demographic information of students like age, sex etc. in part I and 12 items in part II which were related to knowledge of organ donation. Score 1 was to each correct response for knowledge and the cumulative score was 18.

Part III consisted of 10 statements related to attitude of organ donation in which 5 were positive and 5 were negative statements answered on 5 point Likert scale in which the response were ranged from strongly agree to strongly disagree. The participants were asked to rate the 5 level of attitude. The highest score i.e. 5 was given to strongly agree and the least i.e. 1 to strongly disagree for positive statements and vice-versa for negative statements. The highest score for attitude questionnaire was 50 which was changed to percentage for knowledge. After that, knowledge level was grouped as good knowledge for > 70%, moderate 40%-70% and poor for <40% on the basis of score percentage obtained by the respondents [7]. With regard to attitude, it was categorized as positive attitude for (>42.35), neutral for (31.53-42.35) and negative for (<31.53).

Content validity of the instrument was established by developing the instruments on the basis of literature review, opinion of subject experts and research advisors. Instrument was given to 5 experts and suggestions given by them were subsequently incorporated. The questionnaire was prepared in English language and was translated in Nepali language and was retranslated in English language to maintain accuracy. Reliability of the instrument was calculated by using Karl Pearson's correlation coefficient test by adopting Split Half technique and found reliability (r = 0.74) which is reliable for awareness tool.

Research proposal was approved from the research committee of Novel Academy. After that formal permission was taken from Prithivi Narayan Campus. The purpose of the study was explained and respondents were requested to give written consent. Anonymity and confidentiality was maintained by not including name in questionnaire and not revealing the date to other. Respondents were allowed to refuse the participation in the study at any time if they wish. After collecting the data the researcher clarified the queries of the respondents related to organ donation so that they were benefitted from the study.

The collected data were organized, analyzed and interpreted using SPSS in terms of descriptive and inferential statistics based on the objectives of the research. Chi-square test was used considering p value significant at <0.05 to assess the association between socio-demographic variable and knowledge level of Organ Donation among respondents.

# **RESULTS**

Table 1 indicates that more than half (57.14%) of the students were aged 22 and above, 63.6% of whom were female. Most of them were adherents of the Hindu faith (89.0 percent). Half of them (50 percent) were Brahmin in terms of ethnicity. More than half (56.5%) of the respondent's fathers were trained to SLC or higher and almost one-third (32.5%) of the respondent's mothers were trained to SLC or higher. More than half (57%) of the respondents came from urban municipalities, and most (89.6%) were from medium-sized



Table 1: Socio-Demographic Characteristics of Respondents.

Variable	Frequency	Percentage
Age		
≤ 21	66	42.85
≥ 22	88	57.14
Sex		
Male	56	36.4
Female	98	63.6
Ethnicity		
Brahmin	77	50
Chhetri	34	22.1
Janajati	32	20.8
Dalit	11	7.2
Religion		
Hindu	137	89
Non- Hindu	17	11
Fathers education		
No education	7	4.5
Primary education	20	13
Some secondary	40	26
SLC or higher	87	56.5
Mothers education		
No education	24	15.6
Primary education	43	27.6
Some secondary	37	24
SLC or higher	50	32.5
Residence		
Urban municipality	88	57.1
Rural municipality	66	42.9
Socio-economic status		
High	9	5.8
Medium	138	89.6
Low	7	4.5
Source of information		
Television	65	42.2
Internet	97	63
Relatives, Friends	60	39
Newspaper	35	22.7

Source: Field survey, 2018

families. 63.0 percent replied as twitter, 42.2 percent as television, 39.0 percent as family, friends and 22.7 percent as newspaper with respect to the sources of information.

Table 2 shows that three out of four (75.0%) of respondents gave the right definition of organ donation, and more than half (61.7%) of respondents said they could donate organs before and after death. As far as the organ that can be donated is concerned, 77.9% was identified as the

eye, 20.8% as the lungs. Almost three out of four (76.0%) of the brain that is correctly replied will not be donated. Much (96.8 percent) of the organ donation recorded by them is performed to save life. Likewise, most of them (94.8 percent) confirmed that a fit and stable person should donate organs. 70.5 percent replied to individuals with infectious diseases and 45.5 percent responded to individuals with active cancer with respect to not qualifying for organ donation. The majority (81.8 percent) of respondents thought that screening before organ donation was necessary and three out of four (76.6 percent) of respondents indicated that one of the two kidneys should be donated to another person during their lifetime. More than half of the respondents (66.9 percent) responded to the donor themselves.

Table 3 shows that more than half (57.1%) of the respondents has moderate knowledge level on organ donation.

The frequency and the percentage distribution of the respondents' attitude towards organ donation is shown in table 4. Half (50 percent) of the respondents endorse organ donation as a positive argument. Almost half (47.4%) of respondents strongly agreed to donate organs when they die, and only 16.2% agreed that donating organs is

Table 2: Knowledge of Respondents on Organ Donation.

Variable	Frequency	Percentage
Donation of organ legally for transplantation to another person	116	75
Organ can donate before and after death	95	61.7
Organ which can be donated*		
Corneal/eye	120	77.9
Liver	54	35.5
Kidney	105	68.2
Lungs	32	20.8
Heart	45	29.2
Brain cannot be donated	117	76
Organ donation is done to save other life	149	96.8
A fit and healthy person can donate organ	146	94.8
Not eligible for organ donation*		
Person having infectious disease	108	70.1
Newborn baby	79	51.3
Person having active cancer	70	45.5
Person having damaged organ	102	66.2
It is necessary to do screening before organ donation	126	81.8
One of your two kidneys can be donated during your life, to another person	118	76.6
No age limit for eye donation	102	66.2
Donor himself/herself should provide consent for living organ donation	103	66.9
n = 154		

n = 154

\*Multiple response questions Source: Field survey 2018

Table 3: Level of Knowledge of Respondents on Organ Donation.

Knowledge level	Frequency	Percentage
Above 70% (Good)	33	21.4
40-70% (Moderate)	88	57.1
Below 40% (Poor)	33	21.4

Source: Field survey 2018

Table 4: Attitude of Perpendents on Organ Denation

Statement	Strongly Agree	Agree	Neither disagree nor agree	Disagree	Strongly disagree
I support organ donation*	0 (0)	77 (50)	9 (5. 8)	0 (0)	68 (44.2)
I agree to donate my organ when I die*	73 (47.4)	60 (39.0)	17 (11.0)	4 (2.6)	0 (0)
I think organ donation is a frightening activity	6 (3.5)	25 (16.2)	42 (27.3)	53 (34.4)	28 (18.2)
I believe that organ donation is an unselfish act*	42 (27.3)	66 (42.9)	34 (22.1)	11 (7.1)	1 (0.6)
My family would object if I were to donate my organs	16 (10.4)	33 (21.4)	52 (33.8)	36 (23.4)	17 (11.0)
My religion does not allow me to donate or receive organ.	5 (3.2)	5 (3.2)	36 (23.4)	73 (47.4)	35 (22.7)
The health service related to organ donation of Nepal is ineffective	22 (14.3)	47 (30.5)	31 (20.1)	44 (28.6)	10 (6.5)
Including chapters on "organ donation" in school/ college will help to increase voluntary organ donation.*	49 (31.8)	77 (50.0)	20 (13.0)	7 (4.5)	1 (0.6)
There should be a provision for voluntary registration of ones name for organ donation after his/her death while issuing driving license.*	37 (24.0)	63 (40.9)	33 (21.4)	16 (10.4)	5 (3.2)
I think that the body will be disfigured when the organs are removed.	6 (3.9)	38 (24.7)	33 (21.4)	42 (27.3)	35 (22.7)

n = 154

\*Positive statements

The number in parentheses is a percentage, Source: Field survey 2018

an unselfish act. Half (50 percent) of respondents agreed that school/college organ donation chapters would help to increase voluntary organ donation. Less than half (40.9%) of respondents agreed that when issuing a driving license, there should be a provision for voluntary registration of one name for organ donation after his or her death.

Conversely, one out of four disagreed that organ donation is a terrifying practice in terms of derogatory comments, although almost half (47.4 percent) of the respondents disagreed that religion does not encourage organ donation or reception. Less than two thirds (28.6 per cent) disagreed that Nepal's organ donation-related health service was unsuccessful. Similarly, more than a fourth (27.3 percent) did not accept that when the organs were removed, the body would be disfigured.

Table 5 shows that 69.5 percent of respondents has good attitude and 14.9 has positive attitude on organ donation.

Table 6 shows that there is significant association (p =.014) between ethnicity and knowledge level of respondents on organ donation. Likewise there was no significant association of socio-demographic variables like age, sex,

religion, residence, education status of family with level of knowledge.

#### DISCUSSION

Three quarters (75%) gave the correct concept of organ donation in the current study, which contradicts the finding of the study conducted in college students of Thiruvannamalai district, Tamil Nadu [8] This contrasting result may be due to a lack of public knowledge of organ donation. The results of this study show that more than half (61.7%) of respondents said that organ can donate before and after death, which is close to the results of the study conducted in Thiruvannamalai district college student,

Table 5: Respondents Level of Attitude Regarding Organ Donation.

Attitude level	Frequency	Percentage
Positive attitude (<42.35)	23	14.9
Neutral (31.53 - 42.35)	107	69.5
Negative (< 31.53)	24	15.6

n = 154

 $MEAN \pm S.D = 36.94 \pm 5.41$ 

Source: Field survey 2018



Table 6: Association between Socio-Demographic Variable and Knowledge Level of Organ Donation among Respondents,

Variable	Knowledge	Level		Chi square	p value
	Good	Moderate	Poor	Value (χ²)	
Age					
≤21	17(11.03)	33(21.42)	17(11.03)	3.573	0.467
≥21	16(10.38)	54(35.06)	16(10.03)		
Sex					
Male	11(7.14)	33(21.42)	12(7.79)	0.18	0.914
Female	22(14.28)	55(35.71)	21(13.63)		
Ethnicity					
Brahmin	9(5.84)	48(31.16)	20(12.9)	16.023	0.014*
Chhetri	11(7.14)	16(10.38)	7(4.54)		
Janajati	7(4.54)	21(13.63)	4(2.59)		
Dalit	6(3.86)	3(1.94)	2(1.29)		
Religion					
Hindu	29(18.83)	78(50.64)	30(19.48)	5.405	0.248
Christianity	1(0.65)	7(4.54)	0(0)		
Buddhist	3(1.95)	3(1.95)	3(1.95)		
Residence					
Urban	16(10.03)	52(33.76)	20(12.98)	1.308	0.52
Rural	17(11.03)	36(23.37)	13(8.4)		
Socio-economic Status					
High	3(1.95)	4(2.59)	2(1.29)	3.057	0.548
Medium	27(17.53)	81(52.59)	30(19.48)		
Low	3(1.95)	3(1.95)	1(0.65)		
Source: Field survey 2018					

Tamil Nadu [8]. In this research, the eye, (20.8 percent) mentioned lungs, (35.5 percent) mentioned liver, (29.2 percent) mentioned heart, as far as the organ that can be donated (77.9 percent) is concerned. This result is similar to the study findings of college students in the district of Thiruvannamalai, Tamil Nadu[8]. Current research shows that 57.1 percent had moderate awareness and 69.5 percent had a neutral attitude towards organ donation, relative to the Thiruv report.

The findings of the present study revealed that more than half (50%) agreed to endorse organ donation that contradicts the results of the Bengaluru, India study [9]. Almost half (47.4 percent) strongly agreed to donate organs after death in the current survey, which contradicts the results of the Bengaluru study [9]. The present study shows that more than a third (27.3 percent) disagreed that when the organs are removed, the body would be disfigured, which contradicts the results of the study conducted in Bengaluru, India [9]. This distinction may be due to a lack of knowledge among Nepalese individuals.

The current study found that 21.4 percent had good awareness and 14 percent had a positive attitude towards organ donation, which contradicts the results of the

Bengaluru, India study [9]. The present study shows that most of the organ donation recorded (96.8 percent) is done to save life, similar to a study conducted in Thiruvannamalai district college students, Tamil.

More than half (66.2%) of the current study shows that the donor himself should give permission for a living donation, which is similar to the findings of the study conducted in Tamil Nadu, Thiruvannamalai district college students [8]. 42.2 percent heard from TV, 63.0 percent from the internet, 39.0 percent from relatives, friends, 22.7 percent from newspapers in the current survey, and this result contrasted with the study conducted in Tamil Nadu, Thiruvannsmalai district college students [8].

The present research shows that the study conducted in Chennai, Tamil Nadu, favored the donation of organs to all respondents. The current study shows that 75.0 percent were aware of the importance of organ donation, and one third (25 percent) of respondents were unaware of the real sense of organ donation, which contrasts with the results of the study conducted in Chennai, Tamil Nadu [10].

The current study shows that 66.9 percent of respondents said that it was the donor who had to take the decision and

13.1 percent said it was family members and 20 percent said it was physicians and other health workers. The current study shows that 66.9 percent said that it was the donor who had to take the decision. These results are contradictory to the findings of the analysis carried out in Chennai, Tamil Nadu [10].

The current study reveals that 21.4 percent are strong, 57.1 percent are moderate, and 21.4 percent have bad organ donation awareness. This result is contrary to the analysis carried out in Qom, Iran [11]. The current study shows that 21.4 percent had outstanding organ donation awareness. A comparable analysis was carried out in Ajman, UAE [12].

The new study indicates that 14.9 percent have a good outlook about donating organs. This finding is contrary to the results of the Turkish study [13]. This disparity may be due to a lack of knowledge among the people of Nepal about organ donation.

In the current survey, more than half of the 57.1 percent have moderate, 21.4 percent have strong, 21.4 percent have bad organ donation awareness, just 14.9 percent have a positive attitude, 15.6 percent have a negative attitude, and more than half of the respondents have a neutral attitude towards organ donation. This result is contrary to the Rural Kerala study [1].

The present study shows that 63 percent had heard from the internet, 42.2 percent had heard from television, 39 percent had heard from friends of relatives, 22.7 percent had heard from newspapers similar to the Rural Karela study [1]. The current research shows that donation awareness ranged from 77.9%, 35.5%, 68.2%, 20.8%, 29.2% on the eye, liver, kidney, lungs, heart, respectively, which is close to the study conducted in Rural Karela [1].

With regard to the relationship between sociodemographic variables and level of knowledge, there is an important association between ethnicity and level of knowledge in this study (p = 0.014). Other variables were not substantially related to the degree of information in the same way. There was no supporting literature found to compare this result.

## **CONCLUSION**

The findings of this study concluded that there is a difference between the awareness and attitude of students at the bachelor's level towards organ donation. There is a

connection between ethnicity and the level of awareness about donating organs. A healthy attitude among young people, as they are the backbone of the country, would bring change. Therefore, through an educational and awareness program, the information and attitude of students towards organ donation should be strengthened.

## **ACKNOWLEDGEMENT**

The authors will like to acknowledge all the supporting individuals and institutions.

#### References

- Enns J, Aryal G. A path to renal transplantation in Nepal. Journal of Pathology of Nepal. 2011;1:52-55. doi: 10.3126/jpn.v1i1.4453
- 2. Foundation Mohan, Cadaver organ transplantation in India, 2014.
- Mahillo B, Carmona M, Alvarez M, Marco J, Nuñez JR, López-Fraga M, Matesanz R, Domínguez-Gil B. Worldwide distribution of solid organ transplantation and access of population to those practices, Transplantation. July 2018;102:S71-S72 doi: 10.1097/01.tp.0000542650.33995.b3
- Karki S, Thapa S, Poudyal S. Knowledge and attitude of nursing students regarding organ transplantation. Journal of Chitwan Medical College. 2017 Feb;5(3):60-65. doi: 10.3126/jcmc.v5i3.16528.
- Khalid F, Khalid AB, Muneeb D, Shabir A, Fayyaz D, Khan M. Level of knowledge and attitude regarding organ donation: a community-based study from Karachi, Pakistan. BMC Res Notes. 2019 May 30;12(1):309. doi: 10.1186/s13104-019-4345-6. PMID: 31146765; PMCID: PMC6543638.
- Pouraghaei M, Tagizadieh M, Tagizadieh A, Moharamzadeh P, Esfahanian S, Shahsavari Nia K. Knowledge and Attitude Regarding Organ Donation among Relatives of Patients Referred to the Emergency Department. Emerg (Tehran). 2015 Winter:3(1):33-9. PMID: 26512367: PMCID: PMC4614608.
- Khan N, Masood Z, Tufail N, Shoukat H, Ehsan S, Zehra S. Knowledge and attitude of people towards organ donation. Journal of university Medical and Dental College. 2011;2(2):15–21.
- Banumathi P Getrude, J Harikrishnan , Jaiganesh D , Ravishankar P. A study on awareness and attitude of organ donation among arts college students of Thiruvannamalai district, Tamil Nadu. International Journal of Recent Trends in Science and Technology. 2017 Aug 4;(24):1-9. doi:10.26611/202411
- Vijayalakshmi P, Sunitha TS, Gandhi S, Thimmaiah R, Math SB. Knowledge, attitude and behaviour of the general population towards organ donation: An Indian perspective. Natl Med J India. 2016 Sep-Oct;29(5):257-261. PMID: 28098078.
- Annaduraik K, Mani K, Ramasamy J. A study on knowledge, attitude and practice about organ donation among college students in Chennai, Tamil Nadu. Journal of Medical University. 2012;3(2):59-65.
- Mohebi S, Zavareh MM, Sharifirad G, Heidari H. Knowledge and attitude about organ donation among students of Qom University of Medical science. Sci J Forensic Med. 2017;23(1):53-61.
- Haya A, Mehnaz H, Hiba A, Rabia A, Ahmed A. Knowledge and attitude of bachelor level students towards organ donation in Ajman, UAE. Gulf Medical Journal. 2016;4(2):554-556.
- Dogan P, Toprak D, Sunal N, Dogan I. Knowledge, attitude and behaviors of University students on organ transplantation. Turkey Department of Demographics and Epidemiology of Accidents. Smyrna Tip Dergisi. 2012 Mar 21;3(2):99-105.

How to cite this article: Asmita GC, Timilsina A, Vikash Kumar KC. Knowledge and Attitude of Organ Donation among University Students in Pokhara. J Biomed Res Environ Sci. 2020 Dec 29; 1(8): 452-457. doi: 10.37871/jbres1177, Article ID: JBRES1177