

A Comparative Study to Assess the Knowledge on Organ Donation among Indian and Foreign Students in a Selected Degree Colleges, Bengaluru

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ABSTRACT

Background: We all should give what we have decided in our hearts to give, not reluctantly or under compulsion, for God loves a cheerful Giver. The loss of one life could be the beginning of another. Organ donation is a gift that anyone can give and it has no cost and can be tremendously powerful. Organ donation is defined as the removal of tissues from the human body, from a living or dead person. Transplantation is an operation which involves the replacement of diseased and defective organs and tissues with healthy ones from donors.

Materials and Methods: The method used in the study was a Descriptive Research approach with Descriptive Comparative Research design, 120 samples of Indian (60) and Foreign (60) students were selected by using Probability sampling technique.

Results: The findings of the study revealed that out of 120 students the score of the total mean of knowledge of Indian and Foreign students on organ donation was 17.03(47.3%) and 14.93(41.5%). The study showed that Indian students were having more knowledge than Foreign students. The Chi square test was carried out and it was found to be significant at $p < 0.05$ level. The study also showed that there is a significant relationship between the level of knowledge among Indian and Foreign students towards organ donation.

Conclusion: Clinically this study plays an important role in breaking down the barriers and increasing the donation rate by raising awareness about the need for organ and tissues donation among the peoples and providing educational services on organ donation for all medical, nursing, allied health staff that come into contact with the donation process.

Keywords: Organ donation, Indian and Foreign students, Awareness, knowledge, Transplantation

INTRODUCTION

A few minutes of your time may save many lives, while death takes you away, your organs can stay and save another life. ^[1] The measure of life is not its duration but its donation. Life is a dynamic process. It starts from birth and the death of individuals. In India every year nearly 500,000 people die because of non availability of organs and this number is expected to grow due to scarcity of organ

donors. Anyone can be organ donor. One organ donor can save more than 8 lives in his life by donating his well function organs. Today most government bodies encourage organ donation to save human life. Most of the major religions also support the selfless act of organ donation. ^[1] Saving human life is one of the most righteous acts that one can ever consider in his or her lifetime. Organ donation makes it possible for an individual to get involved in this selfless act

of saving human life. There is no age restriction when it comes to body donation. In most cases, individuals below the age of 18 require parent's approval before considering this act. [2] The Government of India enacted the law, "The Transplantation of Human Organs Act (THOA)", in 1994 which allows organ donation and legalized the concept of "Brain Death" as criteria for organ donation. According to the law, the privileged or Right on the decision of organ donation rests with the next kin of the deceased person. [3] However, this concept has not caught on well in India and in turn is perpetuating the commercial sale of human organs due to the widening gap between the demand and supply. 1000 of lives are lost in India annually from heart and liver failure since transplantation of unpaired organs like heart, liver and pancreas is either difficult or impossible from living donors this is only possible on a large scale if these organs are available from cadaver donors. Organ registry ensures the proper organ donation as well as the fair use of donated organs in the future but however people needs to be aware of it. An organ donation drive of DAAN, Partnered with HCL technologies, Chennai police, Apollo Group of Hospitals, Indian Medical association, Cadaver Transplant programme had received more than 12900 pledges in March 2012. However campaign run by the Times of India in 2013 and Mohan Foundation had received more than 50,000 pledges for organs. [4]

The objectives of the study was

- to assess the knowledge on organ donation among Indian and Foreign students
- to compare the knowledge scores of Indian and Foreign students on organ donation
- to find the association between knowledge scores on organ donation with the selected demographic variables

LITERATURE REVIEW

The Review of Literature for the present study is divided into the following sub-headings:

Part-A: Studies related to Organ Donation

Part-B: Studies related to Types of Organ Donation

Part-C: Comparative Studies related to Organ Donation

Part- A: Studies related to organ donation

1. A research article was published in a journal on "A Study to assess the knowledge regarding organ donation among B.Sc. Nursing students first year at Sree Balaji college of nursing Chrompet", Chennai, India, 2017. The present study was conducted at Nursing, Chennai. The sample for the study consisted of 30 students from first year b.sc nursing. The instrument used for collection of data was a questionnaire method in English to assess the knowledge of students regarding organ donation. The findings were (60%) have inadequate knowledge, (33%) have moderate knowledge and (7%) of them has adequate knowledge. The study concluded that frequent awareness programmes are essential among adolescents on organ donation. [5]
2. The International Journal of Scientific Research published a research article on "A study to assess the level of knowledge and attitude regarding organ donation among Nursing students in Matha college of Nursing at Manamadurai", India 2017. The research design adopted for this study was descriptive design. The setting of the study was in Matha College of Nursing at Manamadurai. The sample size consists of 50. Purposive sampling technique was used for sample selection. The reliability of the tool was tested by test-retest method. The results regarding knowledge 40(80%) students had moderately adequate knowledge, regarding attitude about 10(20%) students had strongly positive attitude, 34(68%) students had positive attitude and 6(12%) students had neutral attitude and none of them had negative and strongly negative attitude towards organ

donation. The study concluded with the findings that most of the students had moderately adequate knowledge about organ donation and also most of the students had positive attitudes towards organ donation. This reveals that major problem is lack of information about organ donation. [6]

Part-B: Studies related to Types of Organ Donation

3. A study was done on the attitude of health professionals toward cadaveric tissue donation. 2009. An anonymous survey composed of 23 questions was given to health professionals from 2 university hospitals with donation experience. Among 600 distributed questionnaires 514 completely answered surveys was collected. Study concluded that 93% and 92% accepted the opportunity to receive an organ or tissue transplantation, respectively. The acceptance of a tissue varied according to the type: cardiovascular, 93%; ocular, 94%; skin, 89%; and musculoskeletal, 87%. Participant acceptance of a relative's tissue donation was 74%, refusal was 22%, and with doubts was 4%. [7]
4. A study was carried out on the awareness and knowledge on eye donation among university students. 2009. Four hundred (400) students studying first year Medicine Dentistry, Laboratory Technology, Pharmacy, Biomedicine and Bioengineering degree courses in the University of Malaya were taken as a sample. Study concluded that the majority of the students (344, 86%) in this study were aware about eye donation; the awareness was higher in biomedical (77.1%) and medical students (76.7%) compared to the others (55.9%-70.7%). [8]

Part-C: Comparative Studies related to Organ Donation

5. A journal article, International Journal of health science, Qassim university published a comparative cross sectional

- study among Saudi nursing and medical students knowledge and attitude on organ donation, June 2016. The aim of this study was to compare prevailing knowledge and attitude of undergraduate female Saudi nursing and medical students' toward organ donation. A cross sectional questionnaire using 29 item were used to compare their knowledge and attitude about organ donation. Results shows the Level of knowledge of nursing group were significantly lower ($p=0.000$) than medical group while no significant difference in attitude score ($p=0.591$) between the two groups were found. Major source of knowledge for nursing was media (65.2%) and college/university for medical (50.8%) group. This study ascertains the need of an effective educational program for nursing students of Saudi Arabia to improve their knowledge regarding organ donation and to raise organ procurement. [9]
6. A comparative study was carried out to assess the Knowledge, Attitude and Practice Regarding Organ Donation among Indian Dental Students and to compare the knowledge, attitude, and practice regarding organ donation among undergraduate dental students, 2016. A cross-sectional study was conducted among 298 undergraduate dental students of the Panineeya Institute of Dental Sciences and Hospital, Hyderabad, India. A 27-item self-administered questionnaire was given to the samples. The study concluded that there was an average level of knowledge and low levels of positive attitude and practice habits among studied dental students towards organ donation and transplantation. [10]

MATERIALS & METHODS

Research approach adopted for the present study is Descriptive Research approach. Descriptive comparative study design was used in the present study to

assess the knowledge on organ donation among Indian & Foreign students, in selected degree colleges, Bengaluru. The study was conducted at selected Acharya Institute of Graduate studies (AIGS), Soldevanahalli, Hesaraghatta Road, Bengaluru. In the present study the dependent variable refers to the knowledge of Indian and Foreign students and the Independent variables refers to the socio demographic variables (age, gender, religion, educational status, degree, marital status, previous knowledge, source of information on organ donation). The target population for the study was 60 Indian and 60 foreign students (120) of age group from 18-25yrs from Acharya Institute of Graduate studies (AIGS), Bengaluru. Probability sampling purposive technique was used to select the samples. The reliability of the tool was computed by using Split half technique. The tool was reliable and was practicable and the estimated reliability of the tool was 0.89 for knowledge.

Statistical Analysis

The Pilot study was conducted in the R.R Institute of Management studies (RRIMS), Chikkabanavara, Bengaluru. Probability sampling purposive technique was used to select the samples. Results showed that the settings, samples and tool were feasible enough to conduct the main research study. Data analysis were done by using descriptive and inferential statistics. The pre-test mean score percent was 39.2% of Indian students and 45.4% of foreign students. Thus it showed that the mean score percent of knowledge among foreign students was more than the Indian students. The unpaired t-test was carried out and it was found to be significant at $p > 0.05$ level. The pilot study revealed that foreign students are having little more knowledge than the Indian students on organ donation and it was statistically significant. It also revealed that the tool is reliable and the study is feasible and practicable. Teachers and participants were informed about the purpose of the study. For Main study,

Informed consent was taken from participants of Acharya Institute of Graduate studies (AIGS), Bengaluru. Number of samples selected per day was 120.

Data analysis methods:

After coding the collected data, it was transferred to the master coding sheet. Then both descriptive and inferential statistics were used for analysis of the data. The knowledge scores of the Indian and Foreign students were analyzed in terms of Frequency, Percentage, mean and mean percentage and standard deviation. The comparison of Indian and Foreign students knowledge scores were determined by using correlation coefficient "r" value. Further, Chi-square was employed to measure the association between knowledge level and selected demographic variables. The test results were subjected for testing at 0.05% level of probability. The outcome of the result interpreted using diagrams and graph.

RESULT

The analysis and interpretation of this study are based on data collected through a structured knowledge Questionnaire among Indian and Foreign students from Acharya Institute of Graduate Studies (AIGS), Bengaluru (N=60+60=120). The results were computed using descriptive and inferential statistics.

The substantive summary of the analysis was under the following sections

Section A: Describing the frequency and percentage distribution of Socio-demographic variables of Indian and Foreign students

Section B: Overall and aspect wise knowledge scores level of Indian and Foreign students on organ donation

Section C: Comparison of knowledge scores on organ donation in between Indian and Foreign students

Section D: Association between knowledge scores on organ donation and selected demographic variables

Section-A: Frequency and Percentage Distribution of Demographic Variables of Indian and Foreign Students

SL.No	Demographic variables	Indian students (60)		Foreign students (60)	
		I	%	F	%
1.	Age in years				
	18-20 years	18	30.0	8	13.3
	b.21-23 years	42	70.0	52	86.7
2.	Gender				
	Male	43	71.7	43	71.7
	Female	17	28.3	17	28.3
3.	Educational qualification				
	Diploma	-	-	-	-
	Graduate	60	100.0	60	100.0
	Post graduate	-	-	-	-
4.	Degree				
	B.Sc	-	-	-	-
	BA	12	20.0	19	31.7
	BCA	40	66.7	2	3.3
	BBA	8	13.3	39	65.0
5.	Religion				
	Hindu	60	100.0	-	-
	Muslim	-	-	20	33.3
	Christian	-	-	8	13.3
	Others	-	-	32	53.3
6.	Marital status				
	Married	-	-	-	-
	Unmarried	60	100.0	60	100.0
7.	Previous knowledge regarding organ donation				
	Yes	43	71.7	45	75.0
	No	17	28.3	15	25.0
8.	If yes, then specify (n=43)&(n=45)				
	Academic information	17	39.5	22	48.9
	Net surfing	9	20.9	10	22.2
	Electronic media	5	11.6	-	-
	Family members/relative	3	7.0	-	-
	Friends/ neighbors	6	14.0	5	11.1
	Health personnel	3	7.0	8	17.8

Table-1 gives a description that

Age: Out of 120 respondents 30.0% (18) of Indian and 13.3% (8) of foreign respondents are in the age group of 18-20 years, 70.0% (42) of Indian and 86.7% (52) of foreign respondents are in the age group of 21-23 years.

Gender: 71.7% (43) of Indian and 71.7% (43) of foreign respondents are males as compared to 28.3% (17) of Indian and 28.3% (17) of foreign respondents are females.

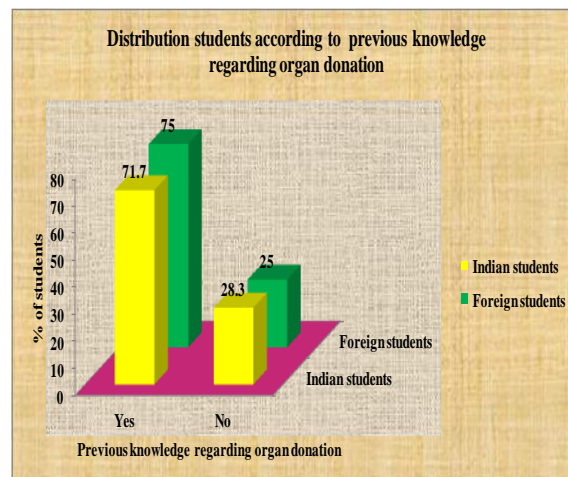
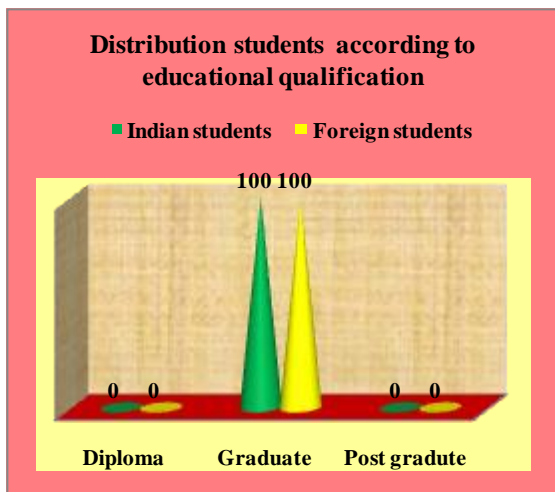
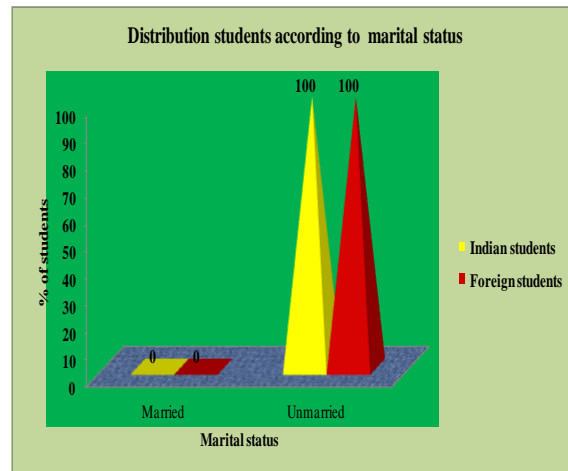
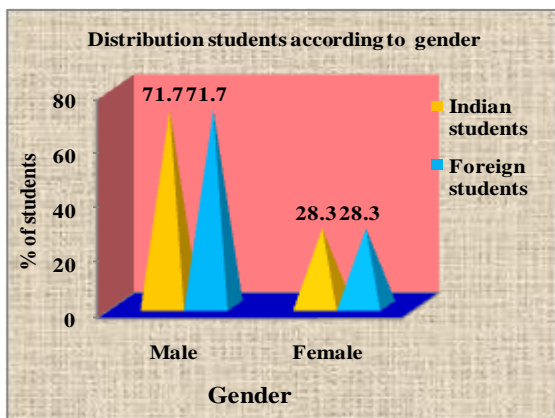
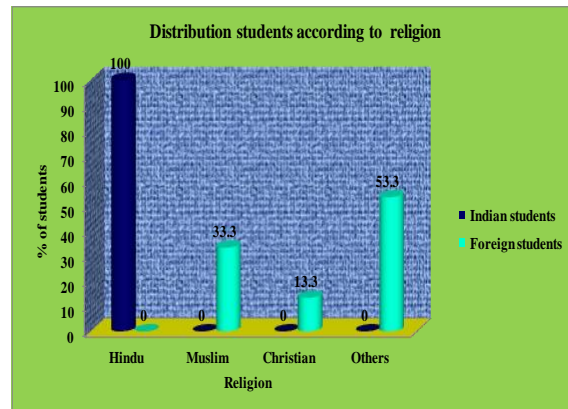
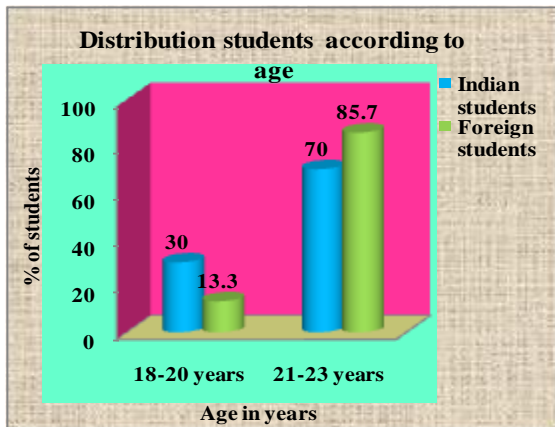
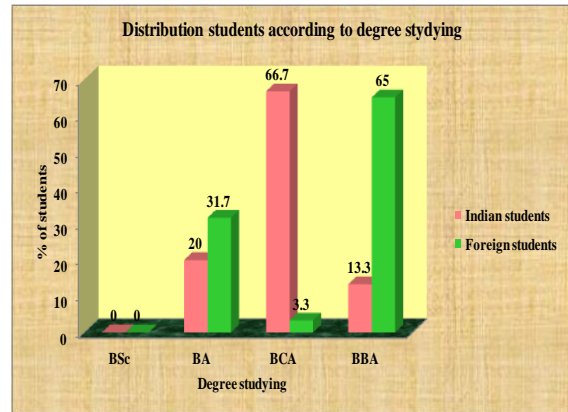
Educational qualification: 100.0% (60) of Indian and 100.0% (60) of foreign respondents are graduated. 20.0% (12) of Indians and 31.7% (19) of Foreign were from BA, 66.7% (40) of Indian and 3.3% (2) of Foreign were from BCA, 13.3% (8) of Indian and 65.0% (39) of Foreign were from BBA degree courses from Acharya Institute of Graduate Studies (AIGS), Bengaluru.

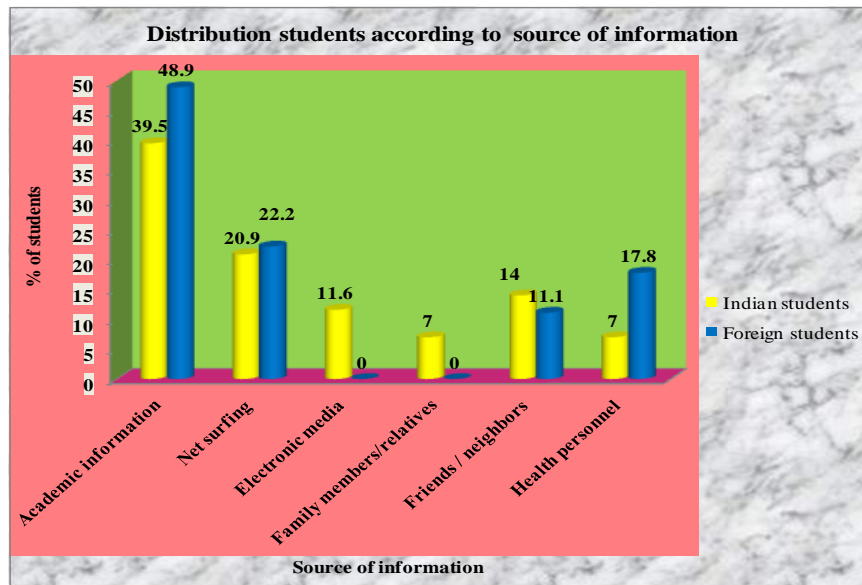
Religion: 100.0% (60) of Indians were Hindus, 33.3% (20) of Foreigners were Muslims, 13.3% (8) of Foreigners were Christians, and 53.3% (32) of foreign respondents belongs to other religion.

Marital status: 100.0% (60) of Indian and 100.0% (60) of foreign respondents are unmarried.

Source of Information: Majority of 71.7% (43) of Indian and 75.0% (45) of Foreign respondents were had previous knowledge regarding organ donation whereas 28.3% (17) of Indian and 25.0% (15) of Foreign respondents had no any previous knowledge on organ donation. Majority of 39.5% (17) of Indian and 48.9% (22) of Foreign respondents received information on organ donation from the academic background, 20.9% (9) of Indian and 22.2% (10) of Foreign respondents received information on organ donation through Net surfing, 11.6% (5) of Indian respondents received

information on organ donation through electronic media, 7.0% (3) of Indian respondents received information on organ donation through family members or relatives, 14.0% (6) of Indian and 11.1% (5) of Foreign respondents received information on organ donation through friends or neighbors, 7.0% (3) of Indian and 17.8% (8) of Foreign respondents received information on organ donation through Health personnel.





Section-B:

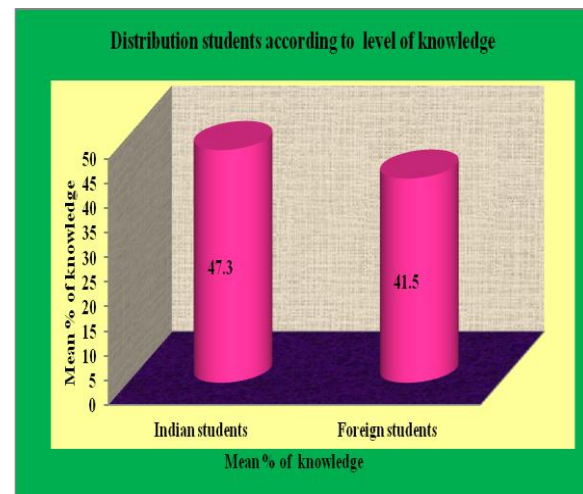
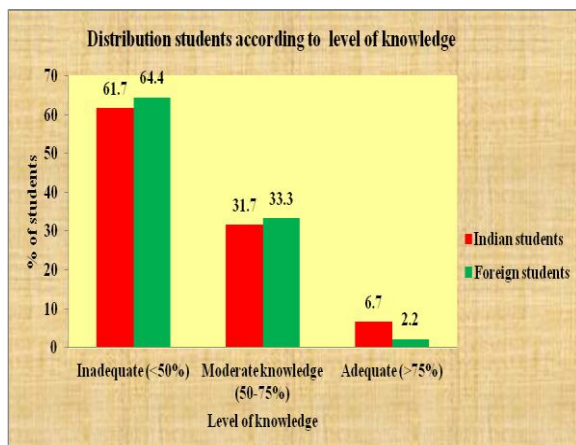
Table-2.1: Overall and aspect wise knowledge scores level of Indian and Foreign students on organ donation n =120

Sl no	Level of knowledge	Indian students		Foreign students	
		Frequency	Percentage	Frequency	Percentage
1	Inadequate (<50%)	37	61.7	29	64.4
2	Moderate knowledge (50-75%)	19	31.7	15	33.3
3	Adequate (>75%)	4	6.7	1	2.2
4	Over all	60	100	60	100

The above table 2.1 shows that a majority 37(61.7%) had inadequate knowledge, 19(31.7%) of them had moderate knowledge and 4(6.7%) of them had adequate knowledge among Indian students. But among Foreign students 29(64.4%) of them had inadequate knowledge, 15(33.3%) had moderate knowledge and 1(2.2%) of them had inadequate knowledge. The proportion of students according to level of knowledge on organ donation is similar among Indian and Foreign student.

Table-2.2: Mean standard deviation and mean percentage of knowledge on organ donation n=120

SL. No.	Group	Max score	Knowledge			
			Range	Mean	SD	Mean %
1	Indian students	36	9-32	17.03	5.74	47.3
2	Foreign students	36	2-30	14.93	5.19	41.5



The above table 2.2 shows the mean, SD and mean score percent of knowledge on organ donation among Indian and Foreign students. The Indian students were within

the range of 9-32 with mean 17.03 and SD of 5.74. The mean score percent was 47.3%. But the Foreign students were within the range of 2-30 with mean 14.93 and SD 5.19. The mean score percent was 41.5%. The mean and mean score percent of knowledge among foreign students was more than Indian students.

Section-C

The table 3.1 represents the mean knowledge regarding organ donation. The unpaired t-test was carried out and it was found to be significant at $p < 0.05$ level. It provides the evidence that the Indian and

Foreign students were significantly differs in knowledge regarding organ donation. It implied that knowledge on organ donation among Indian students was significantly more than the knowledge on organ donation among foreign students.

Table-3: comparison of knowledge scores on organ donation in between Indian and Foreign students n=120

SL. No.	Group	Mean	SD	Unpaired t-value	p-value
1	Indian students	17.03	5.74	2.868*	p<0.05
2	Foreign students	14.93	5.19		

*Significant at $p < 0.05$ level, 12df

Section-D

Table-4: Association between knowledge scores on organ donation and selected demographic variables

SL.No.	Demographic variables	Indian students (60)		Level of knowledge				Chi-square value	p-value
		I	%	Inadequate		Moderate & Adequate			
				I	%	I	%		
1.	Age in years							1.212, df=1, NS	p>0.05
	a.18-20 years	18	30.0	13	35.1	5	21.7		
	b.21-23 years	42	70.0	24	64.9	18	78.3		
2.	Gender							0.081, df=1, NS	p>0.05
	Male	43	71.7	27	73.0	16	69.6		
	Female	17	28.3	10	27.0	7	30.4		
3.	Educational qualification							Non-Significant	
	Diploma	-	-	-	-	-	-		
	Graduate	60	100	37	100	23	100		
	Post graduate	-	-	-	-	-	-		
4.	Degree							8.602, df=2, S	P<0.05
	B.Sc	-	-	-	-	-	-		
	BA	12	20.0	3	8.4	9	39.4		
	BCA	40	66.7	28	75.7	12	52.2		
	BBA	8	13.3	6	16.2	2	8.7		
5.	Religion							Non-Significant	
	Hindu	60	100	37	100	23	100		
	Muslim	-	-	-	-	-	-		
	Christian	-	-	-	-	-	-		
	Others	-	-	-	-	-	-		
6.	Marital status							Non-Significant	
	Married	-	-	-	-	-	-		
	Unmarried	60	100	37	100	23	100		
7.	Previous knowledge regarding organ donation							0.093, df=1, NS	p>0.05
	Yes	43	71.7	26	70.3	17	73.9		
	No	17	28.3	11	29.7	6	26.1		
8.	If yes, then specify (n=43)							12.703, df=5, S	P<0.05
	Academic information	17	39.5	8	30.3	9	52.9		
	Net surfing	9	20.9	5	19.2	4	23.5		
	Electronic media	5	11.6	5	10.2	0	0		
	Family members/relatives	3	7.0	2	7.7	1	5.9		
	Friends/ neighbors	6	14.0	3	11.5	3	17.6		
	Health personnel	3	7.0	3	11.5	0	0		

Note: S-Significant ($p < 0.05$), NS-Not significant ($p > 0.05$).

The above table presents the outcomes of Chi-square analysis for association between knowledge on organ donation and selected demographic variables of Indian students. Of the

variables accounted for association, degree studying (Chi-square =8.602, df=2) and source of information on organ donation of Indian students (Chi-square =12.703, df=5) were significantly associated at 5% level

($p < 0.05$). The other demographic variables were not significantly associated ($p > 0.05$). The table 4.1 presents results of association between knowledge on organ donation among Indian students with their selected demographic variables. The Chi-square test was carried out and it was found to be significant at $p < 0.05$ level. It provides the evidence that the knowledge regarding organ donation among Indian students was significantly associated with their demographic variables on organ donation.

DISCUSSION

The study was designed to assess and compare the Indian and Foreign students' knowledge on basic information in a selected degree college, Bengaluru. The present study revealed out that out of 120 respondents, majority 37 had inadequate knowledge, 19 of them had moderate knowledge and 4 of them had adequate knowledge among Indian students. But among Foreign students 29 of them had inadequate knowledge, 15 had moderate knowledge and 1 of them had adequate knowledge. Majority of 71.7% (43) of Indian and 75.0% (45) of Foreign respondents were had previous knowledge regarding organ donation whereas 39.5% (17) of Indian and 48.9% (22) of Foreign respondents had received information on organ donation from the academic background rather than through Net surfing, electronic media, family members/relatives, friends/neighbors, health personnel.

In testing the stated hypothesis " H_2 - There will be significant association between knowledge scores on Organ donation among Indian students and Foreign with their selected demographic variables was accepted based on gender, degree studying and source of information. Hence It provided the evidence that the knowledge regarding organ donation among Indian and Foreign students was significantly associated with demographic variables. The mean, SD and mean score percent of knowledge regarding organ donation among Indian and Foreign students. The Indian

students were within the range of 9-32 with mean 17.03 and SD of 5.74. The mean score percent was 47.3%. But the Foreign students were within the range of 2-30 with mean 14.93 and SD 5.19. The mean score percent was 41.5%. The mean and mean score percent of knowledge among Indian students was more than foreign students. Hence it provided the evidence that there were significantly difference in knowledge on organ donation. The study concluded that knowledge of Indian students was more than the Foreign students and the stated hypothesis " H_1 - There will be significant difference in knowledge scores on Organ donation among Indian and Foreign students was accepted based on statistical analysis

CONCLUSION

The present research study concluded that Indian students are having more knowledge than foreign students and several implications can be drawn from the study. Similar studies can be introduced among the other healthcare workers to spread greater awareness on organ donation. Awareness programmes can be conducted by the nursing personnel in improving knowledge related to Organ donation to the general public. Nursing administrator and Nursing in education needs to be recognized and to enable nursing personnel, patients, nursing staffs, to provide supportive educational services on organ donation for all medical, nursing and allied health staff that come into contact with the donation process. Comparative studies can also be done between different areas, group of people with different organizations.

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