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The Effectiveness of Structured Teaching Program on Knowledge and Attitude Regarding Organ and Tissue Donation among College Students in Selected Colleges, Rajasthan

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Abstract

Introduction: Organ donation is the process of giving an organ or a piece of an organ for transplantation into another person. As a result of the imbalance, there is a substantial disparity between organ supply and demand, resulting in excessively long transplant wait times and an increasing number of deaths while waiting. Brain death is the irrevocable and permanent loss of all brain functions. Although vital bodily functions cannot be maintained after brain death, they can be maintained in a 'intensive care unit' for a limited time period. 'Until their organs are transplanted, these folks are kept on artificial support to keep them oxygenated and healthy.

Methodology: The experimental approach was thought to be the best way to examine college students' knowledge and attitudes about organ and tissue donation. A "pre-test, post-test control group design" was chosen as the study's research design. The research was carried out in 2018-2019 among students enrolled in Rajasthan's m.sc final year colleges. In this investigation, 100 subjects were randomly assigned to the experimental and control groups using simple random sampling.

Results: The experimental group's mean pre-test and post-test knowledge scores were 12.62 and 27.64, respectively. As a result, the "z" value obtained (26.81) shows the efficacy of a systematic education programme. The experimental group's mean post-test attitude scores (86.14) are greater than the pre-test attitude scores of the experimental group (52.76). The calculated "z" value was 21.22, showing that a structured instruction programme was effective because pre-test and post-test attitude scores were significantly different. According to the results, there was no link between college students in the experimental group's post-test

knowledge and post-test attitude scores and the selected variables.

Conclusion: College students' knowledge and attitudes towards organ and tissue donation improved as a result of the health education programme. To learn more about organ and tissue donation and create awareness of India's severe organ and tissue scarcity, there is a need for sound orientation and education programmes for college students, friends, families, and others.

Keywords: Knowledge, Attitude, Organ and tissue donation, College students.

Introduction

Organ donation is the process of giving an organ or a part of an organ for the purpose of transplantation to another person. Organs and tissues are removed and put into another person's body. Replacing the organ may be the only treatment of choice for the patient who is chronically ill such as ESRD, tumors of the heart, lung, and liver, etc. Live donor transplants are a viable alternative for patients in need of new organs who however depend entirely on the generosity of donors and their families who are willing to make their life-saving gift to the recipient who is usually between 18-60 years. Organ transplantation helps patients lead an active and normal life. [(1)] In 1994, the government of India passed the transplantation of Human organs Act legalized the concept of brain death and for the first time facilitated organ procurement from heart beating, brain-dead donors. Thousands of lives are lost in India annually from the heart and liver failure since transplantation of unpaired organs like the 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. [(2)]

Though the advances in medical science have made transplantation of vital human organs possible, millions of people in India lose their lives because the donors are not available in adequate numbers. More than 150,000 people are diagnosed with end-stage kidney disease every year in India. However, not more than a few thousand transplants are performed every year and the patients are forced to survive on dialysis. [(3)]

The number of people needing a transplant continues to rise faster than the number of donors. About 3,700 transplant candidates are added to the national waiting list each month. Each day, about 77 people receive organ transplants. However, 18 people die each day waiting for transplants that can't take place because of the shortage of donated organs. There are now more than 92,000 people on the waiting list. [(4)] According to WHO, kidney transplants are carried out in 91 countries. It was estimated that organ trafficking accounts for 5-10% of kidney transplants performed annually throughout the world in March 2007. In the United States in 2008, a total of 6,229 patients died because of the shortage of organ donors. Of these, 4,217 were awaiting kidneys; 1,447 needed livers; 54 pancreases; 368 hearts; 227 lungs, and 25 were waiting for intestines. Of these, 612 deaths were in New York State. [(5,6,7)]

As the survey was done in 2010, Around 10 lakh Indians suffer from corneal blindness and are awaiting corneal transplantation. "Against the requirement of 1 lakh corneas, only 38,000 eyes are collected annually. About 1.5 lakh Indians suffer from kidney failure every year, and their survival largely depends on kidney transplants. "However, only 5,000 undergo a transplant due to lack of available organs. [(8)]

Methodology

The experimental approach was thought to be the best way to examine college students' knowledge and attitudes about organ and tissue donation. The study's research design was decided to be a "pre-test, post-test control group design." In this study, demographic variables included age, gender, mother's education, father's work, and monthly family income. A organised teaching programme on organ and tissue donation was the independent variable. College students' knowledge and attitudes were the dependent variables. The research was carried out in 2018-2019 among students in their final year of master's degree studies at Prince and Shekhawati College in Sikar, Rajasthan. In this investigation, 100 subjects were randomly assigned to the experimental and control groups using simple random sampling. The necessary ethical clearance was received from the appropriate authority. The participants in the study were assured that the information gathered would be used specifically for research purposes.

Results

Table 1: Description of Sample Characteristics By Using Frequency & Percentage Distribution N=100

Sn.	Sample characteristics	Experimental group (n=50)		Control group(n=50)		Total	
		No. of sample(f)	Percentage %	No. of sample(f)	Percentage %	No. of sample(f)	%
1.	Age in year						
	20-23	8	16%	3	6%	11	11%
	23-26	28	56%	26	52%	54	54%
	26-29	9	18%	13	26%	22	22%
	29-32	5	10%	8	16%	13	13%
2.	Sex						
	Male	38	76%	31	62%	69	69%
	Female	12	24%	19	38%	31	31%
3.	Religion						
	Hindu	33	66%	36	72%	69	69%
	Muslim	13	26%	12	24%	25	25%
	Christian	4	8%	2	4%	6	6%
	Others	0	0%	0	0%	0	0%
4.	Area of residence						
	Urban	33	66%	38	76%	71	71%
	Rural	17	34%	12	24%	29	29%
5.	Monthly income of the family (in Rupees)						
	< 10,000	5	10%	10	20%	15	15%
	10,001-15,000	26	52%	20	40%	46	46%
	15,001-20,000	10	20%	13	26%	23	23%
	>20,000	9	18%	7	14%	16	16%

6.	Do you have any information/knowledge regarding organ and tissue donation?						
	Yes	13	26%	10	20%	23	23%
	No	37	74%	40	80%	77	77%
7.	If yes, what is the source of information regarding organ and tissue donation?						
	Neighbour, family member	2	15%	1	10%	3	13%
	Multimedia (Radio, television, newspaper)	9	70%	5	50%	14	61%
	Health organization	2	15%	2	20%	4	17%
	Internet	0	0%	2	20%	2	9%
8.	Have you registered for organ donation?						
	Yes	2	4%	4	8%	6	6%
	No	48	96%	46	92%	94	94%

Table 2: Mean, median, and standard deviation of pre-test and post-test knowledge scores on organ and tissue donation in the experimental and control group N=100

Group	Knowledge Score	Maximum Possible Score	Range of Scores	Mean	Median	Standard Deviation
Experimental Group (n=50)	Pre-test	35	6-19	12.62	12.5	3.36
	Post-test	35	21-32	27.64	28	2.57
Control group (n=50)	Pre-test	35	6-20	12.28	13	3.49
	Post-test	35	8-22	13.52	13	2.89

Table 3: Mean, mean difference (MD), standard error of mean difference (SEMD) & 'z' value of the pre-test knowledge scores of college students of experimental & control group N=50

Group	Knowledge scores	Mean	Mean difference	SE_{MD}	''Z'' value
Experimental Group (n=50)	Pre-test	12.62	0.34	0.68	0.51*
Control group (n=50)	Pre-test	12.28			

* z critical value level=1.96, P<0.05= significant at 0.05 level

Table 4: Mean, mean difference (MD), standard error of mean difference (SEMD) & 'z' value of the pre-test & post-test knowledge score of college students on organ and tissue donation in the experimental group. N=50

Group	Knowledge score	Mean	Mean difference (MD)	SE_{MD}	"z'' value
Experimental Group	Pre-test	12.62	15.02	0.56	25.38*
	Post-test	27.64			

* z critical value =1.96, P<0.05= significant at 0.05 level

Table 5: Mean, mean difference (MD), standard error of mean difference (SEMD) & 'z' value of the post-test knowledge scores of college students between experimental & control groups. N=50

Group	Knowledge scores	Mean	Mean difference	SE_{MD}	"z'' value
Experimental group (n=50)	Post-test	27.64	14.12	0.55	26.09*
Control group (n=50)	Post-test	13.52			

* z critical value =1.96, P<0.05= significant at 0.05 level

Table 6: Mean, median, and standard deviation of pre-test & post-test attitude scores on organ & tissue donation in experimental & control group N=100

Group	Attitude Score	Mean	Median	Standard Deviation
Experimental group (n=50)	Pre-test	52.76	50	10.45
	Post-test	86.14	87	4.99
Control group (n=50)	Pre-test	52.94	53	10.66
	Post-test	55.06	55	9.49

Table: 7 Mean, mean difference (MD), standard error of mean difference (SE_{MD}) & 'z' value of the pre-test attitude scores of college students of experimental & control groups. N=100

Group	Attitude scores	Mean	Mean difference	SE_{MD}	''Z'' value
Experimental Group (n=50)	Pre-test	52.76	0.18	2.11	0.08*
Control group (n=50)	Pre-test	52.94			

* z critical value level=1.96, P<0.05= significant at 0.05 level

Table 8: Mean, mean difference (MD), standard error of mean difference (SE_{MD}) & 'z' value of the pre-test & post-test attitude score of college students of the experimental group N=50

Group	Attitude score	Mean	Mean difference	SE_{MD}	''Z'' value
Experimental Group	Pre-test	52.76	33.38	1.57	20.59*
	Post-test	86.14			

* z critical value =1.96, P<0.05= significant at 0.05 level

Table 9: Mean, mean difference (MD), standard error of mean difference (SE_{MD}) & 'z' value of the post-test attitude scores of college students of experimental & control group N=100

Group	Attitude scores	Mean	Mean difference	SE_{MD}	''Z'' value
Experimental group	Post-test	86.14	31.08	1.52	20.69*
Control group	Post-test	55.06			

* z critical value level=1.96, P<0.05= significant at 0.05 level

Table 10: Karl Pearson Coefficient of correlation between post-test knowledge scores & post-test attitude scores of college students of the experimental group N=50

Group	Variables scores	Mean	SD	''r'' value
Experimental group	Knowledge scores	27.64	2.57	0.67*
	Attitude scores	86.14	4.99	

* r value for df (48) 'r'=0.27, significant at 0.05 level

Table 11: Chi-square value showing an association between post-test knowledge scores with selected factors of college students of the experimental group N=50

Sn.	Selected variables	Below Median	Above Median	Df	Obtained Chi-Square value (X^2)	Table value of Chi-square
1.	Age (in Years)			3	0.37**	7.82
	20-23	4	4			
	23-26	13	15			
	26-29	4	5			
	29-32	3	2			
2.	Sex			1	2.21**	3.84
	Male	16	22			
	Female	8	4			
3.	Religion			2	1.65**	5.99
	Hindu	16	17			
	Muslim	5	8			
	Christian	3	1			
	Others	0	0			
4.	Area of residence			1	0.25**	3.84
	Urban	15	18			
	Rural	9	8			
5.	Monthly income of the family (in Rupees)			3	2.45**	7.82
	<10000	4	1			
	10001 – 15000	11	15			
	15001-20000	5	5			
	>20000	4	5			

Chi-square at 0.05 level of significance. **Non-significant, * significant.

Table 12: Chi-square value showing the association between post-test attitude scores with selected factors of college students of the experimental group N=50

Sn.	Selected variables	Below-median	Above Median	Df	Obtained Chi-Square value (X^2)	Table value of Chi-square
1.	Age (in Years)			3	2.19**	7.82
	20-23	2	6			
	23-26	12	16			
	26-29	5	4			
	29-32	3	2			
2.	SEX			1	3.29**	3.84
	Male	14	24			
	Female	8	4			
3.	Religion:			3	0.49**	7.82
	Hindu	14	19			
	Muslim	6	7			
	Christian	2	2			
	Others	0	0			
4.	Area of residence			1	0.83**	3.84
	Urban	15	18			
	Rural	7	10			
5.	Monthly income of the family (in Rs.)			3	1.39**	7.82
	<10000	2	3			
	10001 – 15000	10	16			
	15001-20000	6	4			
	> 20000	4	5			

Chi-square at 0.05 level of significance. **Non-significant, * significant.

Discussion

The knowledge and attitude of college students toward organ and tissue donation were found to be low in the current study when measured during the pre-test, indicating that the college students lacked adequate and correct information as well as negative attitudes toward organ and tissue donation, which were improved in the post-test after the administration of the intervention, namely the structured teaching programme. In this section, the main findings of the current study were compared to a result obtained by another researcher.

Findings of the present study indicated that there is a deficit in knowledge & attitude of the college students on organ and tissue donation. These findings are consistent with the earlier study findings [9] which

revealed that the college students have inadequate knowledge & attitude toward organ and tissue donation. The findings of the study conform with the study[10], which revealed that the most critical information source of the participants was determined as television/radio, followed by newspaper/journal, environment, friends, books, and the internet. The result of our research is in parallel with the information in the literature. In both domestic and foreign studies, the most important information sources about organ transplantation were determined as television/radio, newspapers, and journals.

In the present study the findings related to the effectiveness of structured teaching programs on organ and tissue donation in improving the knowledge & attitude of the college students. The findings of the study are consistent with the findings of the earlier study [11,12]which revealed that the structured teaching program on organ and tissue donation was effective in improving the knowledge & attitude of the college students.

The findings in the present study are also consistent with other studies [13,14], Which state that there is no association between knowledge and attitude with selected factors but if knowledge increases the attitude changes positively. Thus the nurses can play a significant role in educating the college students regarding organ and tissue donation to enhance their knowledge and favorable attitude.

In a study by Prince Alex et al regarding the knowledge and changing attitude and beliefs towards organ donation, it was found that the media, i.e. newspapers (52%) was the most common source of information,[68] Similarly, in our study, the print form of media (61%) was the most common source of information.

In a study conducted by Srinivas Rao Ganta et al on the Knowledge and attitude regarding organ donation and transplantation among undergraduate medical students, it was found that the Majority of the students i.e. 104 (76.4%) were ready to donate their organs,[15] A similar finding was seen in our study with the students i.e. 100 (94%) were ready to donate their organs.

In a study conducted by J Devi et al. findings of the study had revealed that the pre-test means knowledge score was 22.82±6.33 for the experimental group and 21.7±6.46 for the control group whereas the post-test mean knowledge score was 33.74±3.84 for the experimental group and 22.52±6.36 of the control group. The pre-test means attitude score was 63.20±5.88 in the experimental group and 67.76±7.84 in the control group whereas the post-test mean attitude score was 81.80±5.90 for the experimental group and 69.52±7.37 for the control group. A positive correlation existed between the post-test knowledge and attitude (r=0.35, p>0.05) in the experimental group. The study found that there was no significant association between knowledge and attitudes with selected variables. [16] A similar finding was seen in our study with the pre-test mean knowledge score was 12.62±3.36 for the experimental group and 12.28±3..49 for the control group whereas the post-test mean knowledge score was 27.64±2.57 for the experimental group and 13.52±2.89 of the control group. The pre-test means attitude score was 52.76±10.45 in the experimental group and 52.94±10.66 in the control group whereas the post-test mean attitude score was 86.14 for the experimental group and 55.06 for the control group. A positive correlation existed between the post-test knowledge and attitude (r=0.65, p>0.05) in the experimental group. Therefore it was

proved that the higher the level of knowledge higher the attitude.

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