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## Effect of structured enlightenment program on knowledge and attitude regarding organ donation among college students

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### Cover Page Footnote

We acknowledge the guidance received from the faculty of the institution and Dr Noble Gracious S S, former head of Kerala Network of Organ Sharing

# Effect of structured enlightenment program on knowledge and attitude regarding organ donation among college students

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## Abstract

**Introduction:** According to the report of World Health Organization (WHO) on the state of international organ trade (2017), the donation rate in India is 0.5 per million populations, very low compared with other countries. There is a need for improving the knowledge and attitude of the community to attract more people towards organ donation. **Objectives:** The objectives were to evaluate the effect of structured enlightenment program on knowledge and attitude and to determine the correlation between them among college students. **Methods:** In phase I, a descriptive cross-sectional design and in Phase II a quasi-experimental one group pre-test post-test designs were used. In Phase I, 200 college students aged 18 to 20 years were selected using multistage sampling from two colleges. The tools used were socio-personal data sheet, knowledge questionnaire and an attitude scale. A structured enlightenment program regarding organ donation was provided for the college students who had low scores (n=148). The post-test was done on the 12th day. **Results:** The findings of the Phase I revealed that 23.5% had poor knowledge and 89% had more favourable attitude regarding organ donation. In phase II (n=148) the mean knowledge score of 14.11 in the pre-test increased to 21.43 in the post-test. This increase was statistically significant. The mean attitude score of 50.59 in the pre-test increased to 56.02 in the post-test, which was significant at .001 levels. There was no statistically significant correlation between knowledge and attitude regarding organ donation ( $r = +0.02$ ). **Conclusion:** The structured enlightenment program was effective in enhancing knowledge and creating favourable attitude regarding organ donation among college students.

**Key words:** Attitude, college students, organ donation enlightenment program, organ donation knowledge, organ donation

## Introduction

Organ and tissue transplantation have become literally a lifesaving hope for many people. According to a report of National Foundation for transplants (2016), one organ donor can save eight lives. The National Institute of Health (2016) reported that there are many diseases which can be cured only by means of transplantation like chronic kidney diseases, terminal lung disease, and heart failure. Edwin (2000) studied the attitudes of health

personnel towards organ donation and concluded that due to liver and heart failure, lots of deaths occurred in India. It is either difficult or impossible to conduct transplantation of unpaired organs like liver and heart from living persons; the only option is from cadaver donors.

There is a need of about two lakh kidneys and fifty thousand each hearts and livers for transplantation annually all over the world. The organ donation rate of India is poor compared to other countries of the world. In India the rate is 0.5 per million populations (WHO, 2017). It is estimated that two per million-donation rate, will take care of nearly all existing demands for organs in India.

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Legally organ donation is enacted by the Transplantation of Human Organs Act 1994 of the Government of India. The progress in medicine has made transplantation of vital human organs possible. Still lots of people in India succumb to diseases because there are no adequate donors. The general public in India are unaware about the great benefits of organ donation for the recipients and their families. Majority of the people needing transplantation are young. Hence, donating vital organs to such a person will prevent the whole family from being ruined. Some people have superstitious beliefs that they will be born deformed and disfigured in their next birth, if they are donating organs (Tong, Chapman, Wong, Josephson & Craig, 2016).

Certain socio-cultural beliefs and customs thwart the attempts to obtain cadaver organs for transplantation in Asian countries. There are more social issues than cultural issues associated with organ donation from a living related donor. There is lot of pressure from the family members and there are personal conflicts related to organ donation for both donor and recipient. The terror of death, violation of sanctity of deceased, apprehension about severing the body after death, desire to be buried whole, aversion to the idea of organs inside another person, wrong notion regarding brain death, and the opinion of donation being against religious conviction are some of the erroneous beliefs and dreads associated with organ donation (Woo, 1992).

A study conducted in China to reveal the progress regarding organ donation showed that during the previous six years the number of organ donors and organs transplanted was steadily increasing. Nearly 1 to 1.5 million people needs organ transplantation each year and it was found that only 10,000 people get it done successfully. There is serious deficiency of knowledge about organ donation among health care professionals too. The key hindrance to organ donation is lack of awareness and apprehension among people. This should be overcome by educating public, promoting medical awareness, advertising in media and providing opportunities for them to choose whether they like to donate their organs or not (Shah, 2015).

A survey conducted in Pakistan showed that 49.8% of respondents were ready to donate their organs. Among those participants, 62% recommended relatives as their most likely recipients (Saha, 2016). A cross-sectional descriptive study done among 359 pre-medical and

medical students in Egypt revealed that only 36% of the students had good knowledge about organ donation (Hamed, 2015).

The result of a cross-sectional study conducted in Central Saudi Arabia showed that one-third of students were aware regarding organ donation cards, but yet not signed them. The key cause for refusal of signing the card was their worry about side effects (51.8%). Nearly half of them think that there are misconceptions of the Islamic perspective associated with organ donation (Almohsen, 2016).

A cross-sectional study done in South India among undergraduate medical students revealed that 74% felt that there is need for organ donation to save life of others, but only 53% responded positively towards it (Sucharitha, 2013). In order to increase the frequency of organ donation, degree of awareness of community should be increased, negative attitude of society should be eradicated and obstacles against organ donation should be conquered (Saha, 2016).

The college students are considered as the representative population of today's youth who can create a difference in the society and hence they were selected for conducting the study. The objectives were to evaluate the effect of structured enlightenment program on knowledge and attitude regarding organ donation among college students and to determine their relationship.

The theoretical framework was based on Pender's Health promotion model (Pender, 2011). Perceived benefits of action include improved knowledge and achieving more favourable attitude regarding organ donation. The college students may express readiness to donate their organs.

## Material and methods

A quantitative research approach and a descriptive cross-sectional design were used in Phase I of the study. An experimental research approach with a quasi-experimental one group pre-test post-test design was used in the Phase II of the study. A multi-stage sampling technique was used to select two colleges-one professional and one non-professional - from Alappuzha district excluding all medical and paramedical colleges. The settings were Milad-E-Shereif Memorial College, Kayamkulam and College of Engineering and Management, Punnappra. A total of two hundred college students in the age group of 18-20 years, both

males and females, who knew English and Malayalam were included.

The sample size in Phase I was determined by using the formula  $4pq/d^2$  where  $p$  was 0.125, prevalence of poor knowledge regarding organ donation of a previous study (Ramandeep, 2016),  $q$  was 0.875 and  $d$  was 0.05. The sample size was computed as 175 and was rounded off to 200. In Phase II, the structured enlightenment program was provided for students who were not having good knowledge, lacking more favourable attitude or lacking both ( $n=148$ ).

The tools used for the study included socio-personal data sheet, knowledge questionnaire, and an attitude scale. The socio-personal data sheet consisted of 13 questions including age, gender, and status of organ pledging. There were 26 questions in the questionnaire to assess the knowledge regarding organ donation among college students. The questions were from the domains of general aspects, legal aspects, living organ donation, and deceased organ donation. Each correct response secured 1 mark. The knowledge levels were graded as good ( $>75\%$ ), average (50-75%), and poor ( $<50\%$ ). There were 13 statements including six positive and seven negative statements in the attitude scale to assess the attitude regarding organ donation among college students. The responses to the statements were on a five-point scale from strongly agree to strongly disagree. Levels of attitude were unfavourable ( $<50\%$ ), less favourable (50- 66.66%), favourable (66.67- 83.33%), and more favourable ( $>83.33\%$ ). The technique used for data collection was self-report. The reliability of the two tools was checked by test- retest method. The Karl Pearson's correlation coefficient was found to be .98 for the knowledge questionnaire and .97 for the attitude scale. Hence, the tools were found to be reliable.

The approval was obtained from the Scientific Review committee of the institution and the Institutional Ethics Committee of Government T D Medical College, Alappuzha. The study was approved by Kerala University of Health Sciences, Thrissur. The permissions were obtained from the Principals of the two colleges. Informed signed consent was obtained from each participant. The confidentiality of the data collected was assured. A pilot study was conducted to know the feasibility of the methodology, tools, and the intervention. Modifications were made in the grading of the levels of attitude after the pilot study.

After obtaining the ethical permissions and informed consent, 200 students meeting the inclusion criteria from the two colleges were included in the study. The socio-personal data sheet, the attitude scale, and the questionnaire were provided to them in their classrooms. The participants took about 30 minutes to complete the three tools. The students with low scores were identified and included in Phase II of the study. The structured enlightenment program regarding organ donation was conducted for them. Post-test was conducted on twelfth day. The analysis was done using SPSS version 23.

Structured enlightenment program was provided as a session of 45 minutes' duration imparted by lecture method in English language aided by power point slides in various domains of organ donation-general aspects of organ donation, legal aspects, living and deceased organ donation, myths and beliefs, and factors and motivators influencing organ donation. It was prepared with consultation by experts from MOHAN foundation, Kerala Network of Organ Sharing, Mrithasanjeevani, Non-Governmental Organizations and legal publications. An inspiring video on organ donation directed by A L Vijay of 2.5 minutes duration was included in the session after getting permission via email.

The socio-personal data, knowledge and attitude levels were analysed using frequencies and percentages. Mean and standard deviation of knowledge and attitude scores were computed. The effect of structured enlightenment program on knowledge and attitude was assessed by Paired  $t$  test. Karl Pearson's correlation coefficient was computed to determine the relationship between knowledge and attitude regarding organ donation.

## Results

Among college students 49% were aged 20 years and 68% of them were females. The study revealed that 55.5% of the college students received information regarding organ donation from the newspaper. In this study, 18.5% of college students had donated blood and only 16% had pledged their organs. The study revealed that 54.8% of them intended to pledge their organs and 77% had no intension to donate their organs when they were alive.

As seen in Figure 1 in the pre-test, 27% of college students ( $N=200$ ) had good knowledge and 23.5% had

poor knowledge regarding organ donation. The mean pre-test knowledge score (range 0-26) was found to be 15.95 with a standard deviation of 4.14.

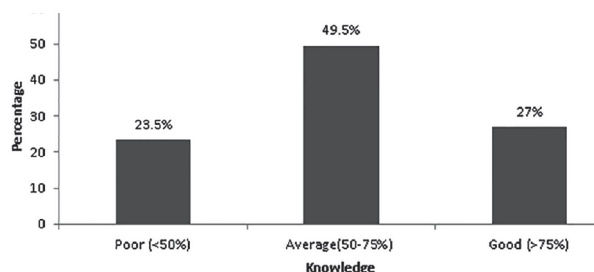


Figure 1: Percentage distribution of college students based on pre-test knowledge regarding organ donation

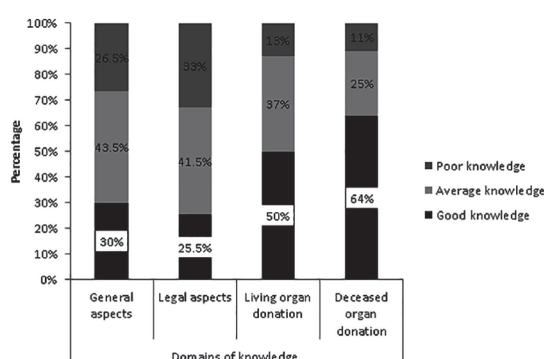


Figure 2: Percentage distribution of college students based on pre-test knowledge on various domains regarding organ donation

From Figure 2 it is clear that in the pre-test 64 % of college students had good knowledge regarding deceased organ donation whereas only 25.5% had good knowledge regarding legal aspects of organ donation.

Table 1:  
Frequency Distribution and Percentage of College Students Based on Pre-Test Attitude Regarding Organ Donation

N=200

Attitude	Frequency	Percentage
Favorable (66.6%-83.3%)	22	11
More favorable (>83.3%)	178	89

The Table 1 shows that in the pre-test none of the students had unfavourable or less favourable attitude.

Table 2:  
Frequency Distribution of College Students Based on Level of Knowledge and Attitude in the Pre-Test

N=200				
Attitude Knowledge	Favourable attitude		More favourable attitude	
	Frequency	Percentage	Frequency	Percentage
Poor knowledge	8	4	39	19.5
Average knowledge	12	6	87	43.5
Good knowledge	2	1	52	26

It is seen that 11% had favourable attitude while the remaining 89% had more favourable attitude. The mean pre-test attitude score (range 13- 65) was 52.16 with a standard deviation of 6.12.

Table 2 shows that in the pre-test only 26% of college students had both good knowledge and more favourable attitude. Remaining 74% (N=148) of college students were not having good knowledge or lacking more favourable attitude or lacking both and they were included in phase II of the study.

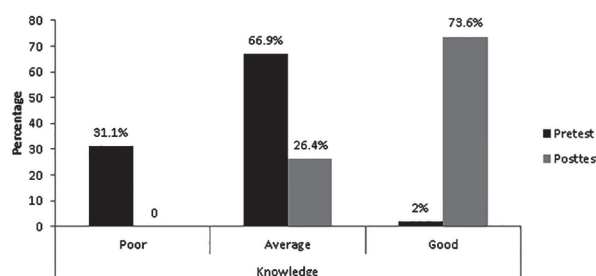


Figure 3: Percentage distribution of college students based on their pre-test and post-test knowledge regarding organ donation

Figure 3 depicts that in the pre-test only 2% of the college students had good knowledge whereas in the post-test 73.6% had good knowledge regarding organ donation.

Table 3:  
Mean, Standard Deviation And t Value Showing the Effect of Structured Enlightenment Program on Knowledge Scores Regarding Organ Donation Among College Students

N=148

Knowledge scores	Mean (Max=26)	SD	t
Pre-test	14.11	3.01	23.97***
Post-test	21.43	2.62	

\*\*\* Significant at .001 level

Table 3 highlights that the mean pre-test knowledge score of college students regarding organ donation was 14.11 (range 0-26) which was increased to 21.43 after the structured enlightenment program. The difference was found to be statistically significant at .001 levels.



Table 4:  
Mean, Standard Deviation and t Value Showing the Effect of Structured Enlightenment Program On Attitude Scores of College Students Regarding Organ Donation

N=148			
Attitude scores	Mean (Max= 65)	S.D	t
Pre-test	50.59	5.89	9.83***
Post-test	56.02	4.66	

\*\*\* Significant at .001 level

From the Table 4, it is clear that the mean attitude score regarding organ donation in the pre-test was 50.59 (range 13- 65) which was increased to 56.02 after structured enlightenment program and it was statistically significant at .001 level.

The study found that there was no statistically significant correlation ( $r=.02$ ) between knowledge and attitude regarding organ donation among college students.

### Discussion

In the present study, it was seen that 27% of college students had good knowledge regarding organ donation. The study findings were not consistent with a study conducted in Ahmedabad by Shah, Patel, Ramanuj and Solank (2015) among commerce college students. The study found that 87.5% of students had good knowledge regarding organ donation.

In the present study, it was found that most (89%) of the participants had a more favourable attitude and no one had unfavourable attitude regarding organ donation. In a study conducted by Shah, Patel, Ramanuj and Solank (2015) among commerce college students in Ahmedabad, 62.5% of students showed a favourable attitude towards organ donation and 37.5% reported negative attitude towards organ donation. Mikla (2016) had a contradictory finding that showed that more than 42% of the nursing students in Poland were not in favour of organ donation.

In this study, there was a significant increase in mean knowledge score of college students after the structured enlightenment program regarding organ donation. A study conducted in Tamil Nadu by Sugumar, Padhyegurjar and Padhyegurjar (2017) had a similar finding where there was a significant increase in knowledge after the educational intervention.

In the present study, 89% of the college students had more favourable attitude and none had unfavourable or less favourable attitude. Mary, Akhila, Chandni, Jijida and Joy (2017) conducted a study in Kerala among 50

professional and 50 non-professional students which showed that majority (72% of professionals and 68% of non-professionals) from both groups had positive attitude regarding organ donation.

In the present study, the structured enlightenment program was effective in improving attitude regarding organ donation among college students. Mean attitude score increased from 50.59 to 56.02 after the structured enlightenment program. The study findings were consistent with another study conducted in Punjab by Ramandeep and Nilvasana (2016). The study showed an increase in mean attitude score from 35.88 to 42.56 after the structured teaching program. The researchers concluded that the teaching program was effective in improving attitude of students.

The present study showed that there was no statistically significant correlation between knowledge and attitude regarding organ donation among college students. The findings of the study were not consistent with another study conducted by Chakradhar, Doshi and Kulkarni (2016) in Hyderabad which showed a statistically significant positive correlation between knowledge and attitude regarding organ donation.

### Conclusion

Based on the study findings, it was presumed that structured enlightenment program was effective in improving the knowledge and imbibing more favourable attitude on organ donation among college students. Nurses should take initiative in educating young adolescents about the importance of organ donation and make necessary arrangements for interested people to pledge their organs. Nurse educator should recommend for including organ donation in the nursing syllabus for educating undergraduate and postgraduate nurses, so that they can act as propagators of organ donation. It is recommended to conduct qualitative studies to explore the factors favouring organ donation among young adults. Descriptive studies can be conducted among students to assess the deterrents and motivators to donate organs. Studies can also be conducted to evaluate the actions and procedures carried out by various authorities regarding organ donation.

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