

Fostering cognizance of organ donation: An education-based approach

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ABSTRACT

Introduction: The knowledge of health professionals and trainees is of great importance as they could be very effective sources of motivation for the general population toward organ donation. So, a study was planned to improve the perceptions of students and faculty about organ donation. **Materials and Method:** A program-based educational intervention was implemented in a dental institute by a medical professional. It was attended by 168 participants, including interns, postgraduate students, and faculty members. A self-administered questionnaire consisting of 27 questions about knowledge, attitude, and practice (KAP) of organ donation was used. Statistical analysis was done using the Statistical Package for the Social Sciences (SPSS) software Version 23, IBM. The difference in knowledge and attitude according to various demographic factors was determined by applying independent *t*-test and analysis of variance (ANOVA) test. A Chi-square test was used to assess the association between demographic variables and willingness to sign organ donor card. $P < 0.05$ was considered statistically significant. **Result:** The mean knowledge score of the study participants was 9.6 and the mean attitude score was 3.4 at the end of educational program. When association between willingness to sign organ card was assessed with age and gender, it was found that no such association existed. Statistically significant difference was found among males and females when compared for knowledge ($P = 0.006$) scores and among education group when compared for attitude ($P = 0.0238$). **Conclusion:** The present educational intervention for improving the perceptions of students and faculty about organ donation was successful as the study population was able to achieve sound knowledge and good attitude level.

Keywords: Education, intervention, organ donation, perception, willingness

Introduction

Shortage of organs has been recognized as an important contributor to fatalities among patients waiting for organs in hospitals. This occurs because of a huge gap between organ supply and demand that needs to be filled to improve outcomes among these patients.^[1] Till now, various efforts have been made by both governmental and nongovernment organizations (NGOs) to

increase organ donation in India.^[2,3] However, we are still trailing behind the developed countries in organ donation.^[2]

Illegal trade of organs, lack of community education, advertisement, and absence of a role model are also important contributing factors contributing to low organ donation. These issues have to be addressed seriously to promote organ donation in India.^[3,4]

India with a 1.2 billion population is much behind in organ donation with a national deceased donation rate of <1 per million population (pmp). Amid this backdrop, the Tamil Nadu state in India has shown commendable performance in organ donation

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with 1.3 donor pmp.^[5] As per an educational program initiated by an organ procurement organization, a multipronged strategy is required for improvement in organ donation. An essential requirement for this strategy is the need to educate the medical fraternity and seek their cooperation in promoting organ donation. Such a program also requires trained counselors to be able to work in intensive care units (ICUs).^[6]

The thoughts, awareness, and knowledge of health professionals and trainees are of great importance as they could be a very effective source of motivation for the general population toward organ donation.^[3,7,8] The lack of participation among medical professionals may be attributed to a tight schedule that causes them to view organ donation as a low priority area; lack of adequate information about transplantation procedures, their complications; and a lack of an extensive education program. Also, it has been seen that community education related to organ donation is very difficult, as donating an organ is a matter of serious concern. This is because it involves legal, medical, social, cultural, as well as organizational issues.^[9-11]

Of all these issues, the main causative factors responsible for the shortage of available organs are insufficient knowledge and failure to identify possible donors.^[12] Further, it has been proved in some studies that knowledge regarding organ donation can contribute in shaping positive attitudes toward being an organ donor and education on organ donation can double the number of carriers of an organ donor card among students.^[13,14] So, to increase the rate of organ donation, we should start the promotion of organ donation at the grass-root level through educational approach.

Educational programs have been suggested as a useful approach to solving the organ donation shortage.^[15-18] Therefore, a program-based educational intervention was implemented in an institute for the dental faculty and students to foster cognizance for organ donation.

Material and Methods

While conducting our previous study, it was observed by the authors that the majority of the dental faculty had inadequate knowledge about organ donation.^[19] So, a program was conducted at an institute of dental studies in the National Capital Region of India (NCR) to promote organ donation among faculty members and students of the institute. The program was conducted on July 15th 2018 in the institute's auditorium. Ethical clearance to conduct the program was taken from the institutional authorities. The program was attended by 168 dental intern students, postgraduates (PGs), and faculty members. Participation was voluntary. As we could not predict the rate of participation, a descriptive methodology was adopted. No power calculation was done to sort an imperative sample size.

Program development

The professionals from the medical field and a presenter from the foundation were requested to prepare the program content

freely through an electronic presentation. After all these preparations, the presenter and the authors held a meeting and made the suggested changes in the presentation. Finally, all the authors assessed the program content for its completeness and relevance. The finalized program was administered by a medical professional with experience in working with a local organ procurement organization.

The program involved a 60 min presentation, which included factual information about the need for organ and tissue transplantation, organ donation and allocation process, and its role in fulfilling this critical social need and discussed various misconceptions regarding organ donation. The program was conducted at the end of a working day so that the clinical schedule, as well as the patient work, are unaffected.

Assessment tool

A self-administered questionnaire was prepared in English by the authors with the help of an expert presenter. The questionnaire comprised of 27 questions about organ donation. Out of these, 12 questions measured the participants' knowledge and 5 measured their attitude concerning organ donation. Other questions measured the demographic details, source of information of organ donation, the practice of organ donation and magnitude of the problem, any organ donor or recipient they know, and whether they have done any organ donation or they want to sign an organ donor card. Face validity of the questionnaire was determined by administering it to five experts from the field of medicine and public health.

Program evaluation

Invites were sent to 200 individuals to participate in the program. Of these, 168 individuals that included interns, PG students, and faculty of a dental institution attended the program, and the response rate of the program was 84%. As 20 participants did not fill the form completely, only 148 forms were evaluated for assessing the effect of the educational program on the participants. For knowledge scores, each "Yes" response was given a score of 1 and "No" as well as "Don't know" were given a score of 0. The knowledge score for each individual was calculated by adding the knowledge score of each question and it ranged from 0-12. Similarly, as decided by the questionnaire development group, the responses with positive attitude were given a score of 1 and negative attitude were given score of 0. The attitude score for each individual was calculated by adding knowledge score of each question, and it ranged from 0-5. The mean knowledge and attitude scores of the study participants were calculated and compared among various demographic variables.

Statistical analysis

Data were analyzed through IBM Statistical Package for the Social Sciences (SPSS) Statistics software for Windows, version 20.0 (IBM Inc., Armonk, NY, USA). A significant difference in knowledge, according to various demographic

factors, was determined by applying independent *t*-test and analysis of variance (ANOVA) test. A Chi-square test was used to assess the association between demographic variables and the willingness to sign organ donor card. *P* < 0.05 was considered statistically significant for all analysis.

Result

A total of 148 participants were included in the program, and out of these, 77% (*n* = 114) were females; 28.4% were faculty; 52.7% were interns; and 18.9% were PG students. The study comprised of 64.9% of participants belonging to 25–30 years age group. The knowledge and attitude scores attained after the program were appreciable, as the mean knowledge score of the study participants was 9.6 and the mean attitude score was 3.4 at the end of the program.

It was found after assessing the questionnaires that 29.7% individuals said they knew an organ recipient, 16.2% said that they knew someone waiting for organ donation, and 98.6% had heard about the term “organ donation” before the present study program. Only 1.35% (*n* = 2) of the participants had signed an organ donation card and 18.9% (*n* = 28) participants showed their willingness to sign an organ donor card.

The knowledge and attitude scores were compared among different variables like gender, education, and age. It was found after the educational program that males and females had a statistically significant difference when compared for knowledge scores [Table 1]. There was no significant difference among other variables when compared for knowledge scores [Table 1]. Also, it was seen that significant difference was found only among different age group of the study participants and no statistical difference was found among all other variables when compared for attitude scores [Table 2].

When feedback was taken from the participants regarding the present educational program, then 25.6% (*n* = 38) of the participants were of the view that it was effective, 64.7% (*n* = 96) felt it was partially effective, and only 9.4% (*n* = 14) of the participants felt it was ineffective. Further, when the association between willingness to sign organ card was assessed with age and gender, it was found that no such association existed [Table 3].

Discussion

The United Nations (UN) recommends participatory dialogue as a strategy to improve the attitude of population regarding health care.^[20] The present program utilized participatory dialogue methodology for promoting understanding and transforming attitudes for organ donation among students and faculty. As the need for organs is increasing day by day, there is a requirement of such participatory educational programs to promote the supply of organs. The present program busted myths associated with organ donation and also created interest in donating organs among participants. Similar findings were reported in various studies.^[21–24]

Table 1: Comparison of mean knowledge scores among different demographic variables

		Mean score	t-test	F ratio (ANOVA)	Significance (P)
Gender	Male	8.69	2.529		0.014*
	Female	9.642			
Education	Faculty	9.809		0.808	0.450
	PGs	9.428			
	Intern	9.307			
Age group	20-25	9.666		0.131	0.970
	25-30	9.361			
	30-35	9.428			
	35-40	9.600			
	>40	9.636			

**P*>0.05=Significant. ANOVA=Analysis of variance

Table 2: Comparison of mean attitude scores among different demographic variables

		Mean score	t-test	F ratio (ANOVA)	Significance (P)
Gender	Male	3.705	0.839		0.404
	Female	3.491			
Education	Faculty	4.000		3.976	0.0238*
	PGs	3.428			
	Intern	3.333			
Age group	20-25	3.333		1.441	0.230
	25-30	3.395			
	30-35	3.571			
	35-40	3.800			
	>40	4.090			

**P*>0.05=Significant. ANOVA=Analysis of variance, PGs=Postgraduates

Radünz *et al.* interviewed volunteers among the staff of a university hospital in Essen, Germany on the attitude toward organ donation. The results of this study clearly showed that a high level of awareness in a hospital increases the willingness of employees to hold organ donor cards.^[25] So, the present study was done with the same motive of increasing awareness and, hence, the willingness to donate organs.

It has been noticed in the present study that most (*n* = 114, 77%) of the study participants were females. Similar findings were seen in another Indian study, which was conducted among students of a dental institute, where 79.9% of study subjects were females.^[12] This may be because there has been an increase in the number of women taking up dentistry.^[26]

In the present study, demographic variables like gender, education, and age group were compared with responses related to organ donation. When knowledge scores were compared among genders, a higher mean score was observed among females (9.6) as compared to males (8.6). These findings are in contrast with the results reported by Marques, *et al.* on medical students attending the University of Puerto Rico School of Medicine, where almost half (49.6%) of the male participants had adequate knowledge (>50%) compared to females (41.9%).^[27]

Table 3: Willingness to donate an organ in association with age and gender

Willingness to sign organ donor card	Gender ^a		Total	Age ^b					
	Male	Female		20-25	25-30	30-35	35-40	>40	Total
Yes	8 (12.2%)	58 (87.8%)	66 (44.5%)	4 (6.06)	4 (6.06)	6 (9.09%)	10 (15.1%)	42 (63.6%)	66 (44.5%)
No	24 (29.2%)	56 (68.2%)	82 (55.4%)	4 (4.8%)	10 (12.19%)	4 (4.8%)	12 (14.6%)	42 (63.4%)	82 (55.4%)

Chi-square test=^a (2.4294), ^b (1.2584). P-value=^a (0.11908), ^b (0.8683)

It was observed in the present study that males had higher mean attitude score (3.7) as compared with females (3.4). Whereas other studies done by Burra, *et al.* in European medical students contrast the findings from present study.^[15] However, the difference found among genders in the present study was insignificant.

According to the study done by Afshar *et al.*, it was found that age had a positive correlation with the willingness to donate an organ.^[28] However, in the study by Heuer *et al.*, the factors of age and gender did not have a critical influence on the decision for or against organ donation.^[29] Similarly in the study done by Panwar *et al.*,^[30] Sanavi *et al.*,^[31] Cardenas *et al.*,^[32] and in the present study, it was seen that gender and age were unassociated with the willingness to sign an organ donor card. This may be because the level of information is a factor which influences the willingness to donate organ.^[29,30]

Salim *et al.* conducted a study in four Catholic churches, where an educational program to increase the awareness regarding organ donation was evaluated.^[33] Similarly, an educational program regarding organ donation was implemented among high school students in a study done by Wig *et al.* and among dental students and faculties of a dental institute in the present study.^[34] All these studies showed that such a type of educational program, involving participatory dialogues, improve knowledge, perceptions, and beliefs regarding organ donation.

The overall attitude score of all the participants was found to be positive in the present study. Another study conducted in Iran showed a highly positive attitude toward organ donation among participants.^[28] The reason for this could be the nonexposure of population of the present study to any such information previously. In comparison to this, the population in the study by Afshar *et al.* in Iran was already exposed to widespread educational programs presented through the mass media within Iran.^[28]

Further, in the present study, 18.9% of the population agreed to sign the organ donation card while in the study done by Afshar *et al.*, only 10% of the subjects agreed to it.^[28] This difference may be because of the reason that living donor transplantation has been more customary among Iranian populations or probably because of religious and cultural beliefs concerning the integrity of body and soul. In contrast to this, in the study done by Zhang *et al.*,^[35] willingness to donate organs was found among 85% of the participants, whereas, in the present study, it was found among 44.5% of the participants. The reason for

this could be because of heightened awareness among medical science students about the fields of medicine and transplantation surgery.

Feedback for the present program from the participants showed that 25.6% of the participants found it effective while 64.8% felt that it was partially effective. However, in the study done by Gracia *et al.*, the majority of the participants rated the educational program as excellent, and their attitude toward organ donation and transplantation was found to be strongly positive.^[36] The reason for this could be that a more extensive program (25 h) was conducted in the study done by Gracia *et al.* The limitation of the present study was that it was conducted in an institution with limited number of participants. Therefore, the results of the study may not be generalizable.

Unfortunately, in spite of the serious role played by the general population's perceptions of organ donation toward improving the supply of organs, very little has been published about people's attitudes toward organ donation. We recommend further widespread educational and motivational programs regarding deceased organ donation in other educational institution as the positive attitude of faculty is important for students as they spend maximum time in schools and colleges.^[37] Further studies should be conducted to evaluate the effectiveness of this type of an educational program on other larger population. According to Thomson JD, *et al.* majority of the physicians at primary care clinics agree that they should provide information related to organ donation to their patients. But, as they are not practicing it so these programs should be conducted at national level also.^[38,39]

Conclusion

The present educational intervention for improving the perceptions of students and faculty members about organ donation was successful as the study population was able to achieve sound knowledge and good attitude level. Educational interventions that include the exchange of knowledge through a mix of lectures and participatory dialogue have proven to be effective in improving organ donation rate. Such interventions may help in reducing the long waiting list and save many lives.

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Conflicts of interest

There are no conflicts of interest.

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