

A study on knowledge, attitude and practices about organ donation among college students in Chennai, Tamil Nadu -2012

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ABSTRACT

Introduction: Assessment of knowledge, attitude and practices on organ donation is essential for better understanding of the community on different aspects of organ donation. It will further help us in improving health education initiatives thereby removing the hurdles behind organ donation.

Purpose: To assess the knowledge, attitude and practice about organ donation among college students in Chennai, Tamil Nadu and to study the association of sociodemographic factors with knowledge, attitude and practice of organ donation among college students in Chennai, Tamil Nadu.

Material and methods: A cross-sectional study was done among 440 students aged 18 years and above in Hindustan Arts & Science College, Chennai, Tamil Nadu. The students were

interviewed with a pretested questionnaire. The study was conducted between January 2012 to September 2012.

Results: Though all the participants were aware of the term organ donation, knowledge about different aspects was low. 86.1% were not aware of legislation. 75% of respondents were in favor of organ donation, but only about 2% were registered for organ donation.

Conclusion: This study implies the need for intensified and sustained education campaign to raise the knowledge on organ donation and its practice among students.

Key words: organ donation, awareness, legislation, knowledge

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INTRODUCTION

Worldwide, organ transplantation saves thousands of lives. The issue of organ donation is complex and multi-factorial, involving medical, legal, ethical, organizational, and social factors [1-4]. According to WHO; kidney transplants are carried out in 91 countries. Around 66,000 kidney donations, 21,000 liver donations and 6000 heart donations were transplanted globally in 2005 [5].

Organ shortages are a global problem, but Asia lags behind much of the rest of the world. Organ donation following brain stem death is infrequent in India. The current organ donation for cadaver in India is 0.08 per million while Spain tops the list with 35 per million [6]. There is a huge shortage of organs in India, and patients die while on the waiting list as they do not get an organ on time. Only 5% of all patients with end-stage kidney disease are successful in undergoing kidney transplantation [7]. The current demand in the country for kidney transplants is 150, 000; liver, 200,000 and heart, 150,000 [8].

Human organ donation was legalized in India since 1994 through 'The transplantation of Human Organs Act, 1994' [9]. Even after 18 years, the country passed the Transplantation of Human Organs Act 1994, only kidney donations by live donors are in vogue - cadaver donations have still not picked up. Certification and declaration of brain death have been made mandatory in transplant hospitals, and in non-transplant organ retrieval centers registered under the Human Organs Transplant Act, 1994. To further this, Tamil Nadu passed an order in 2008 making the certification mandatory [10].

Every year, close to six lakh people die due to organ failure. Conversely, with 70 per cent of India's 1.4 lakh accident victims diagnosed as brain dead annually, the country has 80,000 potential organ donors. Yet, organs from only about 120 are retrieved, making the percentage of cadaver donations a dismal 0.08 per million of the population, according to MOHAN Foundation. On the other hand, in most developed countries, the cadaveric conversion is approximately 25% to 30%. This results in 90% of all organs for transplants coming from brain-dead donors [11]. The greatest impediment to organ donation is the refusal of family consent [12]. Organ donation rates could be increased by enhancing the quality of hospital care and ensuring that the request for donation is handled in a way that meets the families' informational and emotional needs [13].

Lack of awareness along with myths and misconceptions add to the low percentage of organ donation. Although college students are accustomed to idea of donating blood, organ donation after death continues to be a problem [14]. To bridge this gap, the states of Tamil Nadu, Gujarat, Maharashtra

and Karnataka have started various awareness drives to promote cadaveric donation. As per current report, Tamil Nadu tops the list; it has done almost 1.3 per million donation rate in 2012 [15]. Trained staff with requisite systems in place produced significant organ donation rates [16]. High levels of success in increasing knowledge and subsequent rates of signing organ donor cards [17]. Horton and Horton's (1991) model of factors related to organ donation indicates that the strongest predictors of organ donation willingness are knowledge and attitudes, with personal values playing a much weaker role [18]. Knowledge, attitudes, and behaviors are essential factors in fostering an environment that positively influences organ donation rates [19-21].

The purpose of this study was to assess the knowledge, attitude and practice about organ donation among college students in Chennai, Tamil Nadu and to study the association of socio demographic factors with knowledge, attitude and practice of organ donation among college students in Chennai, Tamil Nadu.

MATERIALS AND METHODS

A cross-sectional study was done among 440 students aged 18 years and above in Hindustan Arts & Science College, Kelambakkam, Chennai, Tamil Nadu. A sample size of 385 was calculated assuming a prevalence of 50% for knowledge, attitudes and practices of organ donation, a 95% confidence interval and a sample error of 5%. This was adjusted for 15% non-response rate; bringing the total sample size to 440 [22]. Ethical committee permission was obtained. There were about 1500 students studying in Hindustan College of arts and science, Kelambakkam, Chennai. They were allotted numbers. Sample size of 440 was randomly selected using computer-generated random numbers. Participants were interviewed after getting oral consent. All the 440 students selected randomly gave their willingness to participate in this study. Respondents were interviewed by the authors with a semi-structured questionnaire adapted from 'KAP survey on organ donation among a selected adult population of Pakistan, *BMC Medical Ethics* 2009' and modified, pretested and standardized [22]. Data entry was made in excel software in codes and analysis was done by SPSS software. Descriptive statistical analysis, which included frequency, mean, standard deviation and percentages, was used to characterize the data. Association with the factors was tested for significance using chi-square test and $p < 0.05$ was considered statistically significant.

RESULTS

Among the participants of 440 in Hindustan arts and Science College, most of them were of the age between 18-19 years (55%) with mean of 19.57 and standard deviation of 1.42. The majority of the participants were male (71.8%) as shown in Table 1.

Table 1. Sociodemographic data of the participants.

Sociodemographic variables	N=440(%)
Age	
18-19	242(55%)
20-21	170(38.7%)
22-23	19(4.3%)
24-25	8(1.8%)
>25	1(0.2%)
Sex	
Male	316(71.8%)
Female	124(28.2%)
Religion	
Hindus	348(79.1%)
Christians	53(12.0%)
Muslims	36(8.2%)
Others	3(0.7%)
Education	
Arts	293(66.6%)
Science	147(33.4%)
Marital status	
Single	440(100%)

Knowledge on organ donation

Awareness about organ donation

All the participants heard of organ donation.

Source of information about organ donation

Fifty-three percent of the participants heard about organ donation from print and electronic media. 34.1% heard from health care worker and 13% knew from friends and colleague.

Meaning of organ donation

28.9% knew that organ donation is the removal of tissue and 11.8% said that it was transfer of cell/ova/fetus/sperms. 39.5% said it includes both removal of the tissues and transfer of cell/ova/fetus/sperm.

Knowledge and educational status

There was a significant association between education status- art and science students and knowledge on organ donation (Table 2).

Only 16.1% of the participants said that kidney, blood, heart, eyes, liver, lungs, skin and bone marrow can all be donated. Remaining 83.86% responded with more than one option as shown in Table 3.

Awareness about legislation

Most of the participants i.e., 86.1% didn't aware about the legislation regarding organ donation.

Table 2. Knowledge and educational status (N=440).

Variable	Arts (%)	Science (%)	Total	$\chi^2=66.5$ d.f.=1 P<0.001
Knew correct meaning of organ donation	48 (37.8%)	79 (62.2%)	127	
Did not know the meaning	245 (78.3%)	68 (21.7%)	313	
Total	293 (66.6%)	147 (33.4%)	440	

Table 3. Multiple options for organ to be donated (N=369).

Variables	Frequency (%)
Kidney	312(84.55%)
Blood	355(96.2%)
Heart	47(12.73%)
Eyes	348(94.3%)
Liver	4(1.08%)
Lungs	6(1.62%)

Only 13.9% knew that there was a law for organ donation.

Organ donation in relation to life and death- 36.36% said that organ donation done both during life and death. 42.95% said that it was during life alone, 15.45% said it was done only after death.

Consent for organ donation

43.63% respondents thought that the donor should be the one who can give consent for a living donation. 30.45% respondents thought that the family should give this consent while 25.9% opined that spouse should give this consent. For consent after death, 83% said that that the spouse and close relatives should give consent (Table 4).

Table 4. Giving consent for organ donation (N=440).

Variable		Frequency (%)
Consent for organ donation of a living person	Donor	192(43.63%)
	His family	134(30.45%)
	His spouse	114(25.9%)
Consent for organ donation after death	Spouse/close relatives	365(83.0%)
	Do not know	75(17.0%)

Attitude

The majority of them (43%) said they will think about donation their organs. 16.8% said they won't consider donation of their organ (Table 5).

Table 5. Attitudes towards your own organs being donated (N=440).

Variable	Frequency (%)
Will think about it	189(43.0%)
Would never consider	74(16.8%)
Only donate under special circumstances	87(19.8%)
Definitely want to donate irrespective of circumstances	55(12.5%)
My religion does not permit	35(8.0%)

Willingness for organ donation and gender

There was a significant association between gender and willingness for organ donation (Table 6).

Table 6. Willingness for organ donation and gender (N=440).

Variable	Male (%)	Female (%)	Total	$\chi^2 = 24.78$ d.f=1 P<0.001
Wont Donate	58(53.21%)	51(46.79%)	109	
Willing for donation	258(77.95%)	73(22.05%)	331	
Total	316(71.82%)	124(28.18%)	440	

Preference for donation

Of the 440 participants, 219(49.77%) said they will donate to any person. 12.72% said they will donate for their family members. The majority of the participants i.e., 43% want to donate for young persons. Religion is not the matter when considering organ donation for 94.54% of the participants (Table 7).

Seventy- five percent of the participants were in the favor of promoting organ donation in the future.

PRACTICE

Donated an organ

No participant donated an organ.

Organ donation registration

Only 2.04% of the respondents registered for organ donation.

Table 7. Preference for donation (N=440).

Variable	Frequency (%)	
Relation	Family members	56(12.72%)
	Stranger	21(4.77%)
	Friend	126(28.63%)
	Colleague	18(4.09%)
	Can be any one	219(49.77%)
Age factor	Young person (<30yrs)	189(43.0%)
	Middle aged (30-50yrs)	116(26.4%)
	Elderly person (>50yrs)	39(8.9%)
	Do not know	96(21.8%)
Religion	Belonging to same religion	18(4.09%)
	Religion does not matter	416(94.54%)
	Do not know	6(1.36%)

DISCUSSION

In this study, it was interesting to see that all the participants (100%) were aware about organ donation. This awareness was really amazing when compared to a study- Odusanya et al. [23] done in Lagos, Nigeria which reported that 60% respondents were aware of organ donation in general.

Of the 440 participants, only 127 i.e., 28.9% were aware about the meaning of organ donation. The majority (71.1%) of the participants did not know about the organ donation real meaning.

Source of information – 53% of the respondents heard about organ donation from print and electronic media. Only 34.1% heard from health care workers. A study done in California-Saub et al [24] revealed that speaking to a physician about organ donation positively influenced the likelihood to donate an organ. So, this aspect should be addressed.

94.3% of study population knew that eyes can be donated. Similar findings were reported by Wig et al. [25]. Only 16.1% knew that kidney, eyes, blood, liver, lung, heart and bone marrow all can be donated. This finding was slightly lower than the findings from Taimur Saleem et al [22].

Only 13.9% were aware of legislation regarding organ donation. This was contrary to the findings from Wig et al. [25] in Delhi where it was between 76-93% among school children, office goers and villagers. 36.36% of the participants

knew that organs can be donated both from living as well as from cadavers. This was slightly higher than the Taimur Saleem et al [22] in which it was 23%.

Regarding consent for organ donation of living persons, 43.63% respondents told that it was donor who has to take decision and 25.9% said that it was spouse and 30.45% said it was family members. This was contrary to Taimur Saleem et al [22] findings in which it was 76% respondents who told that it was donor to decide about donation. For donation after death, 83% of the people thought that family/spouse should have the right to make decision for organ donation and again it was contrary to Taimur Saleem et al [22] findings where it was 52.8% of the respondents told it was family or spouse.

75.3% of the study population said positive response for their own organ to be donated. This finding was more appreciable and it was much higher than the findings from a study done in China -Zhang et al [26] where 49.8% respondents indicated they would be willing to be living organ donors and Odusanya et al [23], where it was 30%. And lower than a study from Ohio et al [27], where over 96% of respondents expressed favorable attitudes toward donation. 49.77% opted to donate for any person irrespective of family, friend or stranger. 12.72% said they will donate for their family members and 28.63% for friends. El-Shoubaki H et al [28] from Qatar reported that the majority of subjects preferred donating organs to their close relatives and friends. Majority of the participants opted to donate for younger person i.e., 43% of this population. Religion was not the criteria for organ donation for 94.54% of the respondents.

Our study showed significant association between willingness to donate and gender. This was contradictory to findings from Mocan and Tekin [29] and Sheehy et al [30]. Females were more likely to be living donors than males.

Seventy- five percent of respondents were in favor of organ donation promotion in the future. This is lower when compared to data from a study done in Brazil. Coelho et al. [31] reported that 87% of respondents were in favor of organ donation.

And regarding practice of organ donation, no participants practiced solid organ donation. For organ donation registration, only 2.04% registered. This finding was similar to the findings from Bilgel et al. [32], Dardavessis et al [33], Bilgel et al [34], Bilgel et al [35], Donmez et al [36] and Ozdag [37]. However, this finding was very small when compared to 63% in Italy-Burra et al [38], 58.3% in Germany- Schaeffner et al. [39], and 43% in England- Cantwell et al. [40].

Thus, the study revealed that all the participants were aware of the term organ donation but the majority of them 86.1% were not aware of

legislation. Only 16% knew that different organs can also be donated. However, 75.3% were willing to donate. Unfortunately, this has not yet produced a high rate of signed organ donor cards only few i.e., 2.04% were registered for organ donation. Regarding practice, no one practiced organ donation.

CONCLUSIONS

This study found out that even though there was the willingness for organ donation among students only few were registered. In countries like India, there is a significant demand for organ donation in spite of availability of organs. The implications of this study are to emphasize the need to educate students about organ donation and registration for organ donation. This can be accomplished through the continuous mass media campaign in the form of short films, advertisement, celebrity endorsement, etc.; panel discussion utilizing experts in that field and inculcating in their curriculum regarding its importance.

Conflict of interests

The authors declare no conflict of interests.

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Authors' contributions

Design the work, statistical analysis and writing the paper done by Kalaivani Annadurai. Concept of the work, data collection and literature search done by Kumaresan. Technical advice and approval of final version done by Jegadeesh Ramasamy

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