Study on Knowledge, Attitude and Practice of Organ Donation Among Medical, Dental and Nursing Students in a Tertiary Health Care Setting of Chengalpet District, Tamilnadu, India

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ABSTRACT

Introduction: Organ transplantation is a boon for end-stage organ failure patients as it provides them with long-term survival and better quality of life. Despite this, in India, there is a shortage of organ donors which forms a hurdle in transplantation. One of the reasons may be the knowledge and attitude of health care professionals which are key elements in facilitating the cadaveric organ donation process.

Objectives: The present study was designed to assess and compare the knowledge and attitude regarding organ donation among medical, dental and nursing students.

Materials and Methods: It was a cross-sectional questionnaire-based study done between October 2019 and March 2020 among 420 undergraduate students of Tagore Medical, Dental and College of Nursing in the district of Chengalpet, Tamilnadu, India. The KAP questionnaire was developed regarding organ donation. The content validation was done and the reliability of the tool was checked by using Cronbach's Alpha test. This validated self-administered questionnaire was provided to the undergraduate medical, dental and nursing students.

Results: Out of 420 participants, 180 students were undergraduate medical students. The majority of the participants were in the age groups of 21 to 22 years (37.8%) and 17 to 18 years (10.6%). The study on the knowledge of the participants showed that the medical students have more adequate knowledge on organ donation. However, the attitude is concerned, more numbers of medical and dental students showed good attitude compared to nursing students. The overall results showed the students of final year and internship have adequate knowledge and a good attitude.

Conclusion: The present study which analysed the knowledge and attitude on organ donation among medical, dental and nursing students has been identified that there is a considerable difference in their knowledge and attitude on organ donation. This may be attributed to the differences in the details about organ donation in their curriculum.

Key Words: KAP study, Organ transplantation, Organ donation, Undergraduate students, Health care professionals, Blood donation

INTRODUCTION

Despite great advances in the field of organ transplantation worldwide, organ failure patients in India have not greatly benefited from it.¹ This is not because of the lack of well-equipped hospitals or doctors, but due to the shortage of organs and the lack of awareness.² It is unknown to many that organ donation is possible not only from living people but also from "brain dead" patients.³ The demand for organs is huge in India; 3000 kidney transplants are done annually, but the requirement is at least 100,000. At any given time, there

are over 275,000 patients annually who are diagnosed with end-stage kidney failure, with almost equal numbers having liver and heart failure.⁴

Organ transplantation is a boon for end-stage organ failure patients as it provides them with long-term survival and better quality of life. Despite this, in India there is a shortage of organ donors that is a hurdle in transplantation.⁵ One of the reasons may be the knowledge and attitude of health care professionals which are key elements in facilitating the cadaveric organ donation process.⁶ Further, lack of knowledge

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and failure to identify possible donors are key elements in shortage of transplant organs.⁷

It has been suggested that education programs for health care workers can solve this issue.⁸ It has been suggested that the undergraduate curriculum of medical, dental and nursing should have information about various aspects of organ donation.⁹ Thus, it is imperative to assess the knowledge, attitude and practice (KAP) of undergraduate students regarding organ donation and transplantation in the local population. Hence, the present study was designed to assess and compare the knowledge and attitude regarding organ donation among medical, dental and nursing students.

MATERIALS AND METHODS

It was a cross-sectional questionnaire-based study done between October 2019 and March 2020 among 420 undergraduate students of Tagore Medical, Dental and College of Nursing in the district of Chengalpeta, Tamilnadu, India. A total of 180 undergraduate medical students of 150 undergraduate dental students and 90 students of undergraduate nursing of various years of study participated in the study. A simple random method was used to select the samples. The students were randomly selected from each year of branch students. The participation was voluntary and details of the participants were kept anonymous. The study was approved by the Institutional Ethics Committee.

The KAP questionnaire was developed regarding organ donation. The content validation was done and the reliability of the tool was checked by using Cronbach's Alpha test. This validated self-administered questionnaire was provided to the undergraduate medical, dental and nursing students. It consisted of three sections from questions on demographics of study participants like age, gender, religion, type of family, residential area and year of study in the respective college and branch students. Section 'A' – Proforma to collect the demographic variables (Total 12 questions), Section 'B' – Structure questionnaire to assess the knowledge about organ donation (Total 25 Multiple choice questions- 3 distracters with one correct answer) and Section 'C' – Five-point Rating Scale to assess the attitude about organ donation (Total 10 questions in attitude scale) with positive attitude questions (Q 01 -08) and negative attitude question (Q 09- 10) regarding organ donation was applied.

The knowledge score was categorized into three: 1 to 8 score – Inadequate knowledge level/need to be improved. 9 to 16 score – Moderately adequate knowledge and 17 to 25 score – Adequate Knowledge. The attitude score was also categorized into three: 01 to 13 score – poor attitude, 14 to 26 – Moderate (Average) Attitude and 26 to 40 score – Good (Positive) Attitude.

The study was approved by the Institutional Ethics Committee (IEC) of Global health city, Chennai (Letter no.: HR/2016/MS/027). The informed consent was taken from all the participants before the data collection.

Statistical analyses were done by SPSS vs 20. The descriptive statistics were done for all data. The chi-square test was done to compare the levels of knowledge and attitude of students from a different branches of study

RESULTS

Out of 420 participants, 180 students were undergraduate medical students in that majority of the samples 68(37.8%) were in the 21 to 22 years of age group and 19 (10.6%) were in the 17 to 18 years of age group. Table 1 shows all the demographic data of the study participants. Among the 150 undergraduate dental students, the majority of the study participants 69 (46%) were in 19 to participants 46(51.1%) were in 19 to 20 years of age group and out of 90 nursing students 46 (51.1%) were in 19 to 20 years of age group.

The study population included 150 (83 %) females and 30 (16.7%) males in medical students. 111 (74%) females and 39(26%) were male among 150 dental students and 71 (78.9%) females and 19 (21.1%) were male students out of 90 nursing students. As far as religion is considered 180 medical students, 149 (82.8%) were Hindus and 20 (11.1%) were Christians. Among the 150 dental students, 125 (83%) belonged to the Hindu religion and out of 90 nursing students 73 (81.1%) belonged to the Hindu religion. Only a small percentage belongs to the Muslim religion. The majority of the study population i.e., 137 (76.1%) medical students, 109 (72.7%) dental students and 64 (71.1%) nursing students belonged to the nuclear family type.

The residential area of the study participants was analyzed and it was found that the majority of the medical and dental students belong to urban areas i.e., 124 (68.9%) and 86 (57.3%) respectively. However, nursing students mostly belonged to rural areas i.e., 44(48.9%). The majority of the study participants of medical and dental reported that their source of health information about organ donation is through health professionals i.e., medical 74 (41.1%) and nursing students 55 (61.1%) respectively. However, the majority of dental students i.e., 62 (41.3%) reported that through television they got their information about organs.

A comparison was done to find the registered blood donors among the various branch of study (Table 2). It was found that many of the participants have not registered as blood donors across various branches of the study ($P>0.05$).

Similarly, a comparison was made about the awareness of donor registry among participants (Table 2). It was found that medical students have more awareness (71.7%) than

dental and nursing students which is statistically significant ($P < 0.05$).

Awareness about donor cards among the different branches of the study was compared (Table 2) and was found that undergraduate medical students are more aware (55.1%) than dental (43.3%) and nursing students (23.3%) which are statistically significant ($P < 0.05$).

The study also included the question of willingness to donate blood among the participants (Table 2). All three branches differed in their willingness. The dental students (48.3%) expressed willingness to donate blood more than medical (48.3%) and nursing students (17.8%). Only a few nursing students expressed the willingness to donate blood ($P < 0.05$).

In the present study, the knowledge on organ donation was assessed. Table 3 shows the results of the comparison of knowledge among the different branches of study. The medical students predominantly showed adequate knowledge (32.2%) compared to dental (19.3%) and nursing students (28.9%) ($P < 0.05$).

Further on comparison of the attitude of organ donation (Table 4), the medical (85%) and dental students (84%) showed good attitude compared to nursing students (56.7%) which are statistically significant ($P < 0.05$).

A comparison of the knowledge among the participants of the different years of study among all the branches was done (Table 5) and it was interesting to find that the knowledge seems to increase with the year of study ($P < 0.05$) and adequate knowledge level is high during their internship (33%) and less during the first year of study (17.6%).

Similarly, in comparison with the year of study with the attitude (Table 6), it has been observed that the good attitude is seen high among the interns (91.2%) followed by other years of study ($P < 0.05$).

DISCUSSION

The KAP on organ donation is imperative among the health care students as they are going to be part of organ transplantation. Several patients in India lose their life because of the scarcity of organs. The health care workers should take adequate measures to make availability of organs for donation. Thus, the curriculum of health care professional students should be provided with adequate knowledge and attitude. In this context, we should perform KAP studies in different parts of India among various health care professional students. There are few KAP studies on organ donation among health professional studies but all those studies are done about anyone health profession like medical, dental or nursing. But in the present study, three branches of studies viz., medical, dental and nursing were taken to find their knowledge and attitude, which helps us to study the differ-

ences between them as their curriculum differs considerably. Also, certain demographic variables were analysed for their influence on the study participant's knowledge and attitude regarding organ donation.

In the view to find the students' interest in organ donation, the registered blood donors among them were analysed. It was found that only a few students were registered as blood donors. The present curriculum of health professionals does not encourage and educate the organ and blood donations.¹⁰

It is further interesting to find that the medical students have more awareness about donor registries compared to medical and nursing students. It was also observed the medical students were more aware of the donor card. It is attributed to the difference in their curriculum and the syllabi regarding organ transplantation.¹¹ Being the medical students, they have more information in their curriculum.

The study on the knowledge of the participants also showed that the medical students have more adequate knowledge of organ donation. The various studies throughout the world have proved the knowledge of the medical students on organ donation is adequate.^{12,13,14} However, the attitude is concerned, more numbers of medical and dental students showed good attitude compared to nursing students. Many studies regarding the attitude on organ donation showed that the attitude is good among medical and dental students and not adequate in nursing students.^{15,16,17}

The present study also had a hypothesis that the year of study may influence the knowledge and attitude of students. The overall results showed the students of final year and internship have adequate knowledge and a good attitude. This may be attributed to that the students of final year and internship have been exposed to all major subjects in their curriculum that would have helped to gain knowledge and attitude.^{18,19}

CONCLUSION

The present study which analysed the knowledge and attitude on organ donation among medical, dental and nursing students, has been identified that there is a considerable difference in their knowledge and attitude on organ donation. This may be attributed to the differences in the details about organ donation in their curriculum. Hence, adequate changes should be made in their curriculum to include medical and legal aspects of organ donations as the future health professionals can be nurtured on various aspects and procedures on organ donation.

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Authors' Contribution

M.R and P.A - Conceived and designed the analysis; Collected the data.

I.K – Data analysis and manuscript preparation.

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Table 1: Demographic details of the participants

Demographic variable	Medical (n=180)	Dental (n=150)	Nursing (n=90)
Age group in years			
17 to 18	19 (10.6%)	22 (14.7%)	43 (47.8%)
19 to 20	64 (35.6%)	69 (46%)	46 (51.1%)
21 to 22	68 (37.8%)	39 (26%)	1 (1.1%)
Above 22 years	29 (16.1%)	20 (13.3%)	0 (0%)
Gender			
Male	30 (16.7%)	39 (26%)	19 (21.1%)
Female	150 (83.3%)	111 (74%)	71 (78.9%)
Religion			
Hindu	149 (82.8%)	125 (83.3%)	73 (81.1%)
Christian	20 (11.1%)	18 (12%)	13 (14.4%)
Muslim	10 (5.6%)	7 (4.7%)	4 (4.4%)
Others	1 (0.6%)	0 (0%)	0 (0%)

Table 1: (Continued)

Demographic variable	Medical (n=180)	Dental (n=150)	Nursing (n=90)
Family type			
Nuclear family	137 (76.1%)	109 (72.7%)	64 (71.1%)
Joint family	38 (21.1%)	40 (26.7%)	26 (28.9%)
Others	5 (2.8%)	1 (0.7%)	0 (0%)
Type of residential area			
Urban	124 (68.9%)	86 (57.3%)	31 (34.4%)
Rural	21 (11.7%)	25 (16.7%)	44 (48.9%)
Semi-urban	20 (16.1%)	32 (21.3%)	13 (14.4%)
Semi-rural	6 (3.3%)	7 (4.7%)	2 (2.2%)
Source of information			
Television	55 (30.6%)	62 (41.3%)	17 (18.9%)
Radio	7 (3.9%)	3 (2%)	1 (1.1%)
Newspaper	17 (9.4%)	18 (12%)	6 (6.7%)
Health Professionals	74 (41.1%)	44 (29.3%)	55 (61.1%)
Family Members	11 (6.1%)	12 (8%)	5 (5.6%)
Friends	6 (3.3%)	7 (4.7%)	4 (4.4%)
Others	10 (5.6%)	4 (2.7%)	2 (2.2%)

Table 2: Participants response to various knowledge related aspects on blood donation

Branch of study	Yes	No	Total	P value
Medical	29 (16.1%)	151 (83.9%)	180 (100%)	0.355
Dental	19 (12.7%)	131 (87.3%)	150 (100%)	
Nursing	9 (10%)	81 (90%)	90 (100%)	
Medical	129 (71.7%)	51 (28.3%)	180 (100%)	0.001
Dental	69 (46%)	81 (54%)	150 (100%)	
Nursing	24 (26.7%)	66 (73.3%)	90 (100%)	
Medical	119 (55.1%)	61 (33.9%)	180 (100%)	0.001
Dental	65 (43.3%)	85 (56.7%)	150 (100%)	
Nursing	21 (23.3%)	69 (76.7%)	90 (100%)	
Medical	87 (48.3%)	93 (51.7%)	180 (100%)	0.001
Dental	80 (58.3%)	70 (46.7%)	150 (100%)	
Nursing	16 (17.8%)	74 (82.2%)	90 (100%)	

Table 3: Comparison of knowledge among the different branches of study (N = 420)

Branch of study	Knowledge needs to be improved	Moderate knowledge	Adequate knowledge	Total	P-value
Medical	8 (4.4%)	114 (63.3%)	58 (32.2%)	180 (100%)	0.002
Dental	3 (2%)	118 (78.7%)	29 (19.3%)	150 (100%)	
Nursing	9 (10%)	55 (61.1%)	26 (28.9%)	90 (100%)	

Table 4: Comparison of attitude among the different branches of study

Branch of study	Attitude		Total	P-value
	Moderate attitude	Good attitude		
Medical	27 (15%)	153 (85%)	180 (100%)	0.001
Dental	23 (15.3%)	127 (84%)	150 (100%)	
Nursing	39 (43.3%)	51 (56.7%)	90 (100%)	

Table 5: Comparison of knowledge among the participants of the different years of study

Year of study	Knowledge			Total	P-value
	Knowledge needs to be improved	Moderate knowledge	Adequate knowledge		
First year	10 (11%)	65 (71.4%)	16 (17.6%)	91 (100%)	0.041
Second year	2 (2.4%)	62 (73.8%)	20 (23.8%)	84 (100%)	
Third year	4 (4.3%)	60 (64.5%)	29 (31.2%)	93 (100%)	
Fourth year	2 (3.3%)	41 (67.2%)	18 (29.5%)	61 (100%)	
Intern	2 (2.2%)	59 (64.8%)	30 (33%)	91 (100%)	

Table 6: Comparison of attitude among the participants of the different years of study

Year of study	Attitude		Total	P-value
	Moderate attitude	Good attitude		
First year	30 (33%)	61 (67%)	91 (100%)	0.001
Second year	27 (32.1%)	57 (67.9%)	84 (100%)	
Third year	11 (11.8%)	82 (88.2%)	93 (100%)	
Fourth year	13 (21.3%)	48 (78.7%)	61 (100%)	
Intern	8 (8.8%)	83 (91.2%)	91 (100%)	