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 details in the 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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ISSN: 2231-2196 (Print)    ISSN: 0975-5241 (Online)

Received: 08.01.2021    Revised: 03.03.2021    Accepted: 06.07.2021    Published: 13.12.2021
It has been suggested that education programs for health care workers can solve this issue. It has been suggested that the undergraduate curriculum of medical, dental and nursing should have information about various aspects of organ donation. 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 Chengalpet, 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.09 to 16 score – Moderately adequate knowledge and 17 to 25 score – Adequate Knowledge. The attitude score was also categorized into three: 01 to13 score – poor attitude, 14 to 26 - Moderate (Average) Attitude and 26 to40 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 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 done about the awareness of donor registry among participants (Table 2). It was found that medical students have more awareness (71.7%) than
However, the attitude is being the medical students, they should be provided with adequate knowledge and attitude which helps us to study the differences between them as their curriculum differs considerably. Also, certain demographic variables were analysed for their influence on the study participants’ 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. 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. 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. 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.

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.

**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 differences between them as their curriculum differs considerably.

**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.

**ACKNOWLEDGEMENTS**

This study was done as a part of Ph.D. thesis of Dr. MGR Medical University, Chennai, India.
by Manimuthu Reena and authors are thankful to the university for the same. The authors are also grateful to authors/editors/publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

Conflict of interest: None

Source of Funding: Nil

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                        |                |                |                |         |
| Registered blood donor         | 29 (16.1%)     | 151 (83.9%)    | 180 (100%)     |         |
| Dental                         |                |                |                |         |
| Aware of donor registry        | 19 (12.7%)     | 131 (87.3%)    | 150 (100%)     | 0.355   |
| Nursing                        | 9 (10%)        | 81 (90%)       | 90 (100%)      |         |
| Medical                        |                |                |                |         |
| Aware of donor card            | 129 (71.7%)    | 51 (28.3%)     | 180 (100%)     |         |
| Dental                         |                |                |                |         |
| Willing to donate blood        | 65 (43.3%)     | 85 (56.7%)     | 150 (100%)     | 0.001   |
| Nursing                        | 24 (26.7%)     | 66 (73.3%)     | 90 (100%)      |         |
| Medical                        |                |                |                |         |
| Willing to donate blood        | 11 (5.1%)      | 209 (94.9%)    | 220 (100%)     |         |
| Dental                         |                |                |                |         |
| Knowledge needs to be improved| 8 (4.4%)       | 114 (63.3%)    | 122 (67.8%)    |         |
| Knowledge                      |                |                |                |         |
| Moderate knowledge             | 114 (63.3%)    | 58 (32.2%)     | 172 (95.1%)    |         |
| Adequate knowledge             | 58 (32.2%)     | 58 (32.2%)     | 116 (64.2%)    |         |
| Total                          |                |                |                |         |
| Nursing                        |                |                |                |         |
| Knowledge needs to be improved| 9 (10%)        | 55 (61.1%)     | 64 (38.9%)     |         |
| Knowledge                      |                |                |                |         |
| Moderate knowledge             | 55 (61.1%)     | 26 (28.9%)     | 81 (49.4%)     |         |
| Adequate knowledge             | 26 (28.9%)     | 26 (28.9%)     | 52 (31.6%)     |         |
### Table 4: Comparison of attitude among the different branches of study

| Branch of study | Moderate attitude | Good attitude | Total | P-value |
|-----------------|------------------|---------------|-------|---------|
| 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 needs to be improved | Knowledge | Adequate knowledge | Total | P-value |
|---------------|--------------------------------|-----------|--------------------|-------|---------|
| 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%) | 0.041   |
| 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 |
|---------------|----------|-------|---------|
| First year    | 30 (33%) | 91 (100%) | 0.001   |
| Second year   | 27 (32.1%) | 84 (100%) |         |
| Third year    | 11 (11.8%) | 93 (100%) |         |
| Fourth year   | 13 (21.3%) | 61 (100%) |         |
| Intern        | 8 (8.8%) | 91 (100%) |         |