



An educational interventional study on legal aspects of Transplantation of Human Organs and Tissues Act among medical & dental students in Visakhapatnam

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Abstract

Introduction: Organ transplantation saves so many lives in the world. Transplantation of Human Organs Act was enacted in 1994 with the objective of regulation of removal, storage and transplantation of human organs for therapeutic purposes and for the prevention of commercial dealings in human organs. Medical students and dental students as future doctors, have to take up the role of promoting organ donation.

Objectives

1. To assess knowledge and attitude towards organ donation among medical & dental students.
2. To evaluate impact of educational intervention on the legal aspects of Transplantation of Human Organs and Tissues Act among medical & dental students.

Materials & Methods: A health education interventional study done in GITAM Institute of Medical Sciences & Research and GITAM Dental College among first year medical students and first year dental students. A total of 212 students participated in the study, of which 126 were medical students and 86 were dental students during two months, December 2019–January 2020 study period. The data was collected after taking ethical clearance from Institutional Ethics Committee, GITAM Institute of Medical Sciences and Research and informed consent from students. A structured questionnaire was prepared and peer reviewed. Knowledge and attitude towards organ donation was assessed among the students. All the students were asked to take a pretest before the session

on the legal aspects of this act. This was followed by an educational intervention session, which was for 1 hour. Immediately after this session, posttest assessment was done. The difference between the two scores was analyzed statistically. Data was entered in MS excel sheet and analyzed by using SPSS software. 't' test was used to know the statistical significance between two mean scores. P value <0.05 is considered as statistically significant.

Results: Out of 212 students 151 (71.2%) were girls and 61(28.8%) were boys. 84.4% of total study participants were aware that there was Transplantation of human organs & Tissues act. Majority (66%) of the students opinioned that organ donation is mainly done to save some one's life. The pretest score of the total study participants was 6.89 ± 2.12 and the post test score was 11.85 ± 2.64 , so there was an improvement of the score. Most (72%) of the students opinioned that organ donation involves some risk. 43.9% of the students thought that infection was the most important risk involved in organ donation. Majority (73.6%) of the students had knowledge that only major organs such as eye, heart, liver and kidney can be donated.

Conclusion: The current knowledge and attitude on legal aspects of organ donation was less before an educational intervention session and the score was improved after the session and this difference between the pre & post test score was found to be statistically significant.

Keywords: Education, Human organs, Intervention, Medical students, Tissues, Transplantation.

Introduction

Organ transplantation saves so many lives in the world. Transplantation of Human Organs Act was enacted in 1994 with the objective of regulation of removal, storage and transplantation of human organs for therapeutic

purposes and for the prevention of commercial dealings in human organs. This Act was subsequently amended by Transplantation of Human Organs (Amendment) Act, 2011 and the title was revised as Transplantation of Human Organs and Tissues Act, 1994.^[1]

Organ donation is the removal of specific tissues of the human body from a person who has recently died, or from a living donor, for the purpose of transplanting or grafting them into other persons.^[2]

It can be related to a deceased donor or a living donor. Globally, the prevalence of knowledge on organ donation was found to range from 60% to 85%, on using different knowledge variables.^[3] Medical students and dental students as future doctors, have to take up the role of promoting organ donation. However, many lack relevant basic knowledge and are influenced by personal attitudes and biases which are held by the general public, which impinge on health care professionalism.^[4] Wig *et al.* stated, there is a need for educating people regarding organ donation about the number of donor organs and awareness of donation.^[5] The purpose of this study was to assess and educate medical and dental students on legal aspects of Transplantation of Human Organs and Tissues Act and also to evaluate the impact of this educational intervention.

Objectives

1. To assess knowledge and attitude towards organ donation among medical & dental students.
2. To evaluate impact of educational intervention on the legal aspects of Transplantation of Human Organs and Tissues Act among medical & dental students.

Material & Methods

Study Design: A health education interventional study.

Study setting: GITAM Institute of Medical Sciences & Research and GITAM Dental College.

Study Population: First year medical students and first year dental students.

Sample size: All the students who attended the educational intervention session and who have given the informed consent to participate in the study. A total of 212 students participated in the study, of which 126 were medical students and 86 were dental students.

Study period: Two months, December 2019–January 2020

Study tool: A pretest & post-test questionnaire including general information of the students, Audio - visual aids.

Method of data collection: The data was collected after taking ethical clearance from Institutional Ethics Committee, GITAM Institute of Medical Sciences and Research and informed consent from students. A structured questionnaire was prepared and peer reviewed. Knowledge and attitude towards organ donation was assessed among the students. All the students were asked to take a pretest before the session on the legal aspects of this act. This was followed by an educational intervention session, which was for 1 hour. Immediately after this session, posttest assessment was done. The difference between the two scores was analyzed statistically.

Ethical Clearance: After clearance from Institutional Ethical Committee, GITAM Institute of Medical Sciences and Research, study was commenced.

Data analysis: Data was entered in MS excel sheet and analyzed by using SPSS software. The qualitative data was represented as percentages/proportions and quantitative data was represented as means and standard deviation. 't' test was used to know the statistical significance between two mean scores. P value <0.05 is considered as statistically significant.

Results

A total of 212 students were included in the study. Out of 212 students 126 were medical students and 86 were dental students.

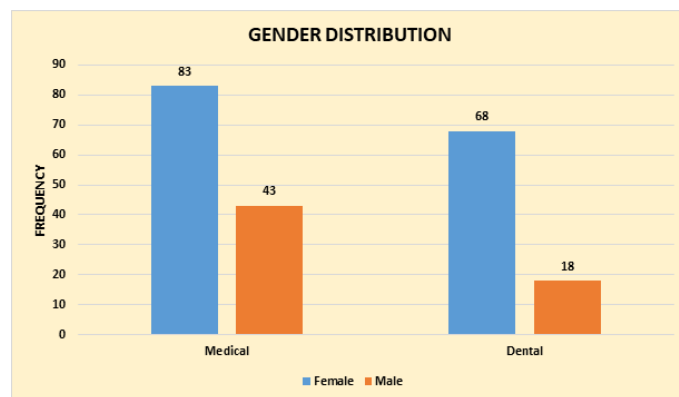


Figure 1: Gender distribution among study population

Out of 212 students 151 (71.2%) were girls and 61(28.8%) were boys. Out of 126 medical students 83 (65.87%) were girls and 43(34.13%) were boys. Among 86 dental students 68(79.06%) were girls and 18 (20.94%) were boys.

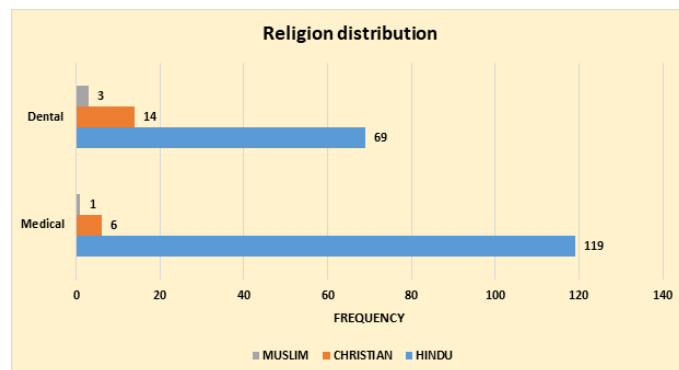


Figure 2: Distribution of study population based on religion

Majority 119 (94.4%) of the medical students were belonged to Hindu by religion followed by 6(4.76%) students were Christian and 1(0.79%) student was Muslim. Among dental students 69 (80.23%) were belong to Hindu by religion, 14 (16.27%) were Christians and 3 (3.48%) were Muslim.

Table1: Comparison of mean age

| Variable | Subcategory | Mean Age ± S.D |
|------------------------|-------------|----------------|
| Medical students | Male | 18.83±0.87 |
| | Female | 18.59±0.91 |
| Dental students | Male | 19.00±0.90 |
| | Female | 18.54±0.74 |
| Total study population | Male | 18.88±0.87 |
| | Female | 18.57±0.83 |

The mean age of the total study participants among male was 18.88±0.87 and among female was 18.57±0.83.

Table 2: Comparison of pre and posttest mean score among study population

| Category | Pretest score Mean±SD | Post test score Mean ± SD | T value | P value |
|------------------|-----------------------|---------------------------|---------|---------|
| Medical students | 6.26±1.82 | 11.16±2.92 | -17.23 | 0.001 |
| Dental students | 7.81±2.21 | 12.87±1.74 | -17.33 | 0.001 |
| Total | 6.89±2.12 | 11.85±2.64 | -24.1 | 0.001 |

The pretest score of the total study participants was 6.89±2.12 and the post test score was 11.85±2.64, so there was an improvement of the score. This difference between them was found to be statistically significant.

The results of pre and post test scores when analyzed separately for medical and dental students also found to be statistically significant.

Table 3: Percentage distribution of Knowledge towards organ donation

| Knowledge | | Dental | Medical | Total |
|--|---------------------------|-----------|------------|------------|
| Awareness of the act | Yes | 67(77.9%) | 112(88.9%) | 179(84.4%) |
| | No | 19(22.1%) | 14(11.1%) | 33(15.6%) |
| Awareness of Authorization committee & Appropriate authority | Yes | 55(64%) | 85(67.5%) | 140(66%) |
| | No | 31(36%) | 41(32.5%) | 72(34%) |
| Why do you think organ donation done? | To save some ones' life | 49(57%) | 91(72.2%) | 140(66%) |
| | Out of compassion | 0(0%) | 1(0.8%) | 1(0.5%) |
| | For money | 3(3.5%) | 4(3.2%) | 7(3.3%) |
| | Multiple | 34(39.5%) | 30(23.8%) | 64(30.2%) |
| Does organ donation involve any risk? | Yes | 57(67.1%) | 95(75.4%) | 152(72%) |
| | No | 28(32.9%) | 31(24.6%) | 59(28%) |
| Most important risk of organ donation? | Infection | 33(38.4%) | 60(47.6%) | 93(43.9%) |
| | Generalized weakness | 13(15.1%) | 17(13.5%) | 30(14.2%) |
| | Pain | 0(0%) | 2(1.6%) | 2(0.9%) |
| | Multiple | 40(46.5%) | 47(62.7%) | 87(41.81%) |
| Do you know the organs that can be donated? | All the organs | 4(4.7%) | 11(8.7%) | 15(7.1%) |
| | Major organs such as eye, | 63(73.3%) | 93(73.8%) | 156(73.6%) |

| | | | | |
|--|----------------------|-----------|-----------|-----------|
| | heart, liver, kidney | | | |
| | I am not sure | 13(15.1%) | 13(10.3%) | 26(12.3%) |
| | Multiple | 6(6.9%) | 9(7.2%) | 15(7%) |

From above table, 84.4% of total study participants were aware that there was Transplantation of human organs & Tissues act. 66% of students had knowledge regarding Awareness of Authorization committee & appropriate authority in the act. Majority (66%) of the students opinioned that organ donation is mainly done to save

some one's life. Most (72%) of the students opinioned that organ donation involves some risk. 43.9% of the students thought that infection was the most important risk involved in organ donation. Majority (73.6%) of the students had knowledge that only major organs such as eye, heart, liver and kidney can be donated.

Table 4: Percentage distribution of Attitude towards organ donation

| Attitude | | Dental | Medical | Total |
|---|--|-----------|-----------|------------|
| Attitude towards the possibility of your own organ being used for donation? | Never consider | 0(0%) | 12(9.5%) | 12(5.7%) |
| | Will think about it | 26(30.2%) | 46(36.5%) | 72(34%) |
| | Donate under special circumstances | 24(27.9%) | 29(23%) | 53(25%) |
| | Definitely want to | 34(39.5%) | 31(24.6%) | 65(30.7%) |
| | Multiple | 2(2.4%) | 8(6.4%) | 10(4.6%) |
| Danger that organ donated may be misused or abused? | Never | 8(9.3%) | 4(3.2%) | 12(5.7%) |
| | Sometimes | 30(34.9%) | 75(59.5%) | 105(49.5%) |
| | Often | 11(12.8%) | 15(11.9%) | 26(12.3%) |
| | Most of the time | 4(4.7%) | 12(9.5%) | 16(7.5%) |
| | All the time | 24(27.9%) | 2(1.6%) | 26(12.3%) |
| | Don't know | 2(2.3%) | 15(11.9%) | 17(8%) |
| | Multiple | 7(8.1%) | 3(2.4%) | 10(4.7%) |
| Whom would you like to donate your organs? | Family member | 11(12.8%) | 31(24.6%) | 42(19.8%) |
| | stranger | 0(0%) | 1(0.8%) | 1(0.5%) |
| | Can be anyone | 67(77.9%) | 84(66.7%) | 151(71.2%) |
| | Multiple | 8(9.3%) | 10(7.9%) | 18(8.5%) |
| Factors holding greatest importance near you while donating organ? | Relation to recipient | 5(5.8%) | 12(9.5%) | 17(8%) |
| | Age of recipient | 5(5.8%) | 2(1.6%) | 7(3.3%) |
| | Health status of recipient | 27(31.4%) | 33(26.2%) | 6(28.3%) |
| | Assurance of respectful treatment of the organ | 15(17.4%) | 37(29.4%) | 52(24.5%) |
| | None of the above | 8(9.3%) | 15(11.9%) | 23(10.8%) |
| | Multiple | 26(30.3%) | 27(21.4%) | 107(25.1%) |
| Do you agree to donate organ when you die? | Yes | 55(64%) | 72(57.1%) | 127(59.9%) |
| | No | 0(0%) | 4(3.2%) | 4(1.9%) |
| | I will think about it | 29(33.7%) | 47(37.3%) | 76(35.8%) |
| | Multiple | 2(2.3%) | 3(2.4%) | 5(2.3%) |

From the above table 30.7% of the students definitely want to donate their organs. 49.5% of the study participants thought that organs donated may be misused or abused. 71.2% of the students will donate organs to anyone. 28.3% of the students will donate organ based on health status of the recipient. 35.8% of the students will think about the donation of the organ after their death.

Discussion

The present study focused mainly on impact of educational intervention on Transplantation of Human Organs and Tissues Act among medical & dental students and also assessed knowledge and attitude towards organ donation. Among medical students majority (65.87%) were girls and remaining 34.13% were boys. Similar findings were observed in a study by Adithyan GS et al.,^[6] done in Kerala among medical students 56.7% were girls and 43.3% were boys. In the present study among dental students 79.06% were girls and 20.94% were boys. Similar findings were found in a study by K. Chakradhar et al.,^[7] done in Hyderabad among dental students who found that 79.9% were female and 20.2 % were male. It indicates that majority of the study population were female. Most of the medical students (94.4%) belonged to Hindu by religion. Similar findings were seen in a study done by Darlington D et al.,^[8] who found that 64.9% of the medical students were Hindu by religion. In the present study 80.23% of the dental students belonged to Hindu religion similar findings observed in a study done by Patthi B, et al.,^[9] in Uttar Pradesh who found that 89.9% of students were belong to Hindu by religion.

In this study 84.4% of total study participants knew that there was Transplantation of human organs & Tissues act. These findings were inconsistent with study done by Sam N et al.,^[10] in Karnataka who found that 56% of the

study participants were aware of the act. In the present study 59.9% of the stud participants were willing to donate their organs when they die. Higher percentage was found in a study done by Sam N et al.,^[10] in Karnataka who found that 56% of the study participants were willing to donate their organs.

In the present study there was statistically significant improvement of the score observed before and after the educational intervention session regarding Transplantation of Human Organs & Tissues act. These findings were consistent with study done by by Umesh Yama Appa Rama Durg et al.,^[4] in Karnataka.

Conclusion

The current knowledge and attitude on legal aspects of organ donation was less before an educational intervention session and the score was improved after the session and this difference between the pre & post test score was found to be statistically significant. The present study will form a platform for further research in this field and will be helpful in conducting furthermore health educational programs. It is necessary for every teacher to include concept of organ donation in his/her lecture, wherever it is needed. This study emphasizes the need of an intervention which incorporates knowledge, motivational messages, facts and figures, to bring necessary changes in the perceptions and intentions of the students regarding organ donation and legal aspects of Transplantation of Human Organs & Tissues act.

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