STUDENTS' CORNER
SHORT REPORT

Comparison of medical and allied health students' attitudes on organ donation: Case study from a private university in Karachi — Short Report

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Abstract

Organ transplantation is often the only hope for patients with end-stage organ failure. Organ transplant surgeries are increasingly becoming available in Pakistan. From May-July 2017, using convenience sampling and statistical programme R 3.4.1, we assessed and compared the organ donation attitudes among medical and allied health undergraduate students of the Hamdard University in Karachi. Compared to non-medical students, medical students were more likely to be concerned that family members of brain-dead patients would be upset if approached for organ donation, and felt that appropriate time for bringing up organ donation would be after the declaration of brain death has taken place.

Medical students also considered prolonging life by using human organ transplants more appropriate, and considered organ donation desirable when a patient has been declared brain dead. As demand of human organs for transplantation far exceeds the supply, there is need to better understand the dynamics underpinning positive attitudes towards organ donation, and to improve educational activities by encouraging debate and acceptance of organ donation for saving lives.

Keywords: Organ donation, Attitude, Students.

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Introduction

Often the only recourse left to patients with end-stage organ failure is organ transplantation. However, there is a lopsided demand for and supply of organs for transplant in almost every country, including Pakistan; with demand far surpassing the supply of organs available for transplant.[1-3] Several institutes and specialized medical centers in Pakistan offer organ transplantation surgeries.[4,5] Attitudes of physicians and other healthcare professionals influence bereaved family members decision to donate organs of their deceased loved ones.[6-10] Healthcare professionals positive attitude towards organ donation results in higher proportion making such a request to bereaved families, with better consent rates.

Several studies have been done in Pakistan on knowledge and attitudes of patient's attendants,[11] medical and other students,[12,13] towards organ donation. However these studies inquired about organ donation under the broader rubric of bioethics and/or medical jurisprudence, knowledge about the term organ donation', willingness of participants towards organ donation, and to whom they would or would not donate their organs if a situation arose. None of these studies systematically tried to elicit and compare attitudes towards organ donation among medical and allied health undergraduate students.

The objectives of study were to assess the attitudes towards organ donation among medical students and to compare them with students of allied health disciplines of the Hamdard University in Karachi.

Methods and Results

From May to July 2017, a cross-sectional survey was conducted in the main campus of Hamdard University, situated in Karachi. Students from Medical, Dentistry, Pharmacy, and Eastern Medicine were included. Using an anonymous, self-administered, pretested questionnaire with close-ended attitude questions on organ donation; taken from a previously developed questionnaire.[14] The original questionnaire included questions on one's own experience with organ transplantation, as well as a question on expanding medical insurance to include organ-transplant surgery. These questions were excluded, as our inclusion criteria entailed respondents who had never donated organs, and the fact of relative lack of general medical insurance availability and use in Pakistan. All thirteen-attitude questions on organ donation were required to be answered on a four point Likert scale format ranging from 'strongly agree', 'agree', 'disagree' and 'strongly disagree'. Questions were also added regarding respondent's sex, and enrollment

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Table-1: Organ donation attitudes disaggregated by enrollment in medical and allied colleges of Hamdard University in Karachi.

Attitudes	MBBS (%) N = 150	BDS (%) N = 115	Other (%) N = 89
(1) If an approach is made to the family members of a brain-dead patient for organ donation, they will be upset.			
Strongly agree	34 (22.7)	22 (19.1)	23 (25.8)
Agree	89 (59.3)	64 (55.6)	33 (37.1)
Disagree	21 (14.0)	21 (18.3)	22 (24.7)
Strongly disagree	6 (4.0)	8 (7.0)	11 (12.4)
(2) My family would be upset if they were required to consent to my donating my organs after my brain death.			
Strongly agree	39 (26.0)	14 (12.2)	28 (31.5)
Agree	71 (47.4)	63 (54.8)	32 (35.9)
Disagree	35 (23.3)	27 (23.5)	22 (24.7)
Strongly disagree	5 (3.3)	11 (9.5)	7 (7.9)
(3) If I were asked for my family member's organ donation, I would be upset.			
Strongly agree	28 (18.7)	15 (13.0)	23 (25.8)
Agree	66 (44.0)	51 (44.4)	40 (44.9)
Disagree	46 (30.6)	40 (34.8)	24 (27.0)
Strongly disagree	10 (6.7)	9 (7.8)	2 (2.3)
(4) I would like to keep my body intact for life after death.			
Strongly agree	27 (18.0)	20 (17.4)	17 (19.1)
Agree	61 (40.7)	40 (34.8)	35 (39.3)
Disagree	47 (31.3)	43 (37.4)	24 (27.0)
Strongly disagree	15 (10.0)	12 (10.4)	13 (14.6)
(5) It is valuable to discuss organ donation with a dead patient's family members after the declaration of brain death.			
Strongly agree	29 (19.3)	17 (14.8)	20 (22.5)
Agree	81 (54.0)	51 (44.3)	33 (37.1)
Disagree	36 (24.0)	37 (32.2)	30 (33.7)
Strongly disagree	4 (2.7)	10 (8.7)	6 (6.7)
(6) If I donate my organs, some parts of me will still be alive.			
Strongly agree	20 (13.3)	17 (14.8)	17 (19.1)
Agree	85 (56.7)	53 (46.1)	36 (40.5)
Disagree	34 (22.7)	38 (33.0)	30 (33.7)
Strongly disagree	11 (7.3)	7 (6.1)	6 (6.7)
(7) As a general rule, prolonging life through the use of human organ transplants is appropriate.			
Strongly agree	34 (22.7)	20 (17.4)	17 (19.1)
Agree	88 (58.7)	56 (48.7)	49 (55.1)
Disagree	25 (16.6)	37 (32.2)	19 (21.3)
Strongly disagree	3 (2.0)	2 (1.7)	4 (4.5)
(8) Organ donation is desirable when a patient is declared brain dead.			
Strongly agree	16 (10.7)	14 (12.2)	17 (19.1)
Agree	90 (60.0)	52 (45.2)	37 (41.6)
Disagree	42 (28.0)	45 (39.1)	31 (34.8)
Strongly disagree	2 (1.3)	4 (3.5)	4 (4.5)
(9) I approve of organ donation from brain-dead patients.			
Strongly agree	17 (11.3)	14 (12.2)	15 (16.9)
Agree	94 (62.7)	52 (45.2)	34 (38.2)
Disagree	34 (22.7)	42 (36.5)	30 (33.7)
Strongly disagree	5 (3.3)	7 (6.1)	10 (11.2)
(10) In the event of my own death, my choice would be to donate my own organs.			
Strongly agree	24 (16.0)	20 (17.4)	15 (16.9)
Agree	68 (45.3)	45 (39.1)	40 (44.9)
Disagree	45 (30.0)	35 (30.4)	27 (30.3)
Strongly disagree	13 (8.7)	15 (13.1)	7 (7.9)
(11) If the members of a bereaved family would like to donate their loved one's organs, I would like to actively refer them to a transplant team.			
Strongly agree	26 (17.3)	23 (20.0)	19 (21.4)

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Agree	98 (65.4)	60 (52.2)	53 (59.6)
Disagree	21 (14.0)	25 (21.7)	14 (15.7)
Strongly disagree	5 (3.3)	7 (6.1)	3 (3.3)
(12) I would donate the organs of my family members if they were diagnosed as being brain dead.			
Strongly agree	9 (6.0)	5 (4.3)	1 (1.1)
Agree	56 (37.3)	44 (38.3)	25 (28.1)
Disagree	68 (45.4)	55 (47.8)	45 (50.6)
Strongly disagree	17 (11.3)	11 (9.6)	18 (20.2)
(13) If I donate my organs in the future, my soul would be comforted.			
Strongly agree	22 (14.7)	23 (20.0)	18 (20.2)
Agree	70 (46.7)	48 (41.7)	40 (45.0)
Disagree	47 (31.3)	29 (25.2)	23 (25.8)
Strongly disagree	11 (7.3)	15 (13.1)	8 (9.0)

Table-2: Statistical significance of the independent relationships between categorical variables of attitudes toward organ donation and enrollment status in terms of medical and non-medical, and for linear trend in the proportions, for degree of agreement with the attitude questions on organ donation and enrollment status.

Attitudes	p-value@	p-value@@
(1) If an approach is made to the family members of a brain-dead patient for organ donation, they will be upset.	0.008*	0.0345*
(2) My family would be upset if they were required to consent to my donating my organs after my brain death.	0.211	0.0589
(3) If I were asked for my family member's organ donation, I would be upset.	0.913	0.838
(4) I would like to keep my body intact for life after death.	0.480	0.546
(5) It is valuable to discuss organ donation with a dead patient's family members after the declaration of brain death.	0.006*	0.0192
(6) If I donate my organs, some parts of me will still be alive.	0.059	0.529
(7) As a general rule, prolonging life through the use of human organ transplants is appropriate.	0.012*	0.0273
(8) Organ donation is desirable when a patient is declared brain dead.	0.022*	0.199
(9) I approve of organ donation from brain-dead patients.	0.001*	0.017*
(10) In the event of my own death, my choice would be to donate my own organs.	0.634	0.71
(11) If the members of a bereaved family would like to donate their loved one's organs, I would like to actively refer them to a transplant team.	0.128	0.522
(12) I would donate the organs of my family members if they were diagnosed as being brain dead.	0.212	0.119
(13) If I donate my organs in the future, my soul would be comforted.	0.715	0.717

@ Comparison of medical versus dental and other students using combined answer categories of 'strongly agree' and 'agree' answers with 'disagree' and 'strongly disagree' answer categories, using Chi-Square test.

@@ Cochran-Armitage test (Chi Square Trend Test) for the proportions, for four levels of agreement with the attitude questions on organ donation and enrollment status.

* Statistically significant.

statuses were required to be answered as either 'medical', 'dental', and 'other'.

Four trained medical students approached Medical, Dental, Pharmacy, and Eastern Medicine colleges graduate students among the selected faculties of the university using convenience sampling technique, invited them to participate in the study. Students were approached on the campuses of the selected faculties, including classrooms, cafeterias, libraries, and other places of congregation. Prior to handing out study questionnaires, study objectives were explained, complete confidentiality was ensured, and verbal informed consent was obtained. Questionnaires were filled by students in the presence of interviewers, and were handed them back to them. On a four-point Likert scale, answer options ranged from 'Strongly agree', 'agree', 'disagree', and 'strongly disagree'. All questions required checking one pertinent box for each question, and on average, it took about 8 to 12 minutes for students to answer the study questionnaire. Sample size calculation was based on the fact that medical students were to be compared with non-medical students i.e. Dental, Pharmacy, and Eastern Medicine college students combined as the other group. While both affirmative answers to the organ donation attitude questions were to be combined i.e. 'strongly agree' and 'agree' responses combined, and compared with 'disagree' and 'strongly disagree' answer responses.

For comparing two proportions and using a 95% confidence level, 80% power, assuming proportions in medical and non-medical students i.e. Dental, Pharmacy, and Eastern Medicine college students to be 65% and 50%, respectively; a sample size of 167 in each group of graduate students was calculated. The proportion

assumptions in the two groups of students was based on a small-unpublished pilot study. Students on university premises were selected based on convenience and availability on the days of survey was conducted.

Data entry was double-key; descriptive and inferential analysis was conducted using the statistical analysis programme R version 3.4.1, by applying Pearson Chi-Square test to assess the independent relationships between categorical variables of attitudes toward organ donation and enrollment status in terms of medical and non-medical. Cochran-Armitage test for trend (Chi square trend) was used to determine if there was a linear trend in the proportions, for degree of agreement with the attitude questions on organ donation and enrollment status. Statistical significance was defined by two-sided p-value <0.05.

Cumulatively, 400 questionnaires were distributed in the Medical, Dental, Pharmacy, and Eastern Medicine colleges in Karachi, out of which 354 filled questionnaires were returned i.e. a response rate of 88.5%. There were 213 (60.2%) women and 141 (39.8%) men who participated from all colleges; with cumulatively, 150 (42.4%) medical students, 115 Dental students (32.5%), and 89 (25.1%) students from Pharmacy, and Eastern Medicine colleges.

Table-1 shows the proportions of organ donation attitudes disaggregated by enrollment in medical and allied colleges of Hamdard University in Karachi. While Table-2 shows results of the statistical significance of independent relationships between categorical variables of attitudes toward organ donation and enrollment status in terms of medical and non-medical, and for linear trend in the proportions, for degree of agreement with the attitude questions on organ donation and enrollment status.

The first eight questions pertained to attitudes on comfort level with being an organ donor, approaching bereaved families of a brain-dead patient for organ donation, and improving the quality of life. Compared to non-medical students, medical students were more likely to state that family members of brain-dead patient would be upset if approached for organ donation; felt it would be more valuable to discuss organ donation with dead patient's family members after the declaration of brain death; deemed prolonging life through use of human organ transplants appropriate; and considered organ donation desirable when a patient has been declared brain dead, in a statistically significant manner.

The next five questions pertained to attitudes and disposition towards being an organ donor. Compared to non-medical students, medical students were more likely to state that they approve of organ donation from brain-dead patients in a statistically significant manner. Differences between two student groups on all other attitudes inquired into were not found to be statistically significant.

All attitudes for which statistical significance of independent relationships between categorical variables of attitudes toward organ donation and student enrollment status in terms of medical and non-medical, were found to be significant; the linear trend in the proportions, for degree of agreement with the attitude questions on organ donation and student enrollment status was also found to be statistically significant. The only exception was attitude pertaining to desirability of organ donation when a patient is declared brain dead; the linear trend was not statistically significant.

Discussion

This is the first study in Pakistan that assessed the attitudes towards organ donation among medical students and compared them with students of allied health disciplines in a university in Pakistan.

The results reflect the fact that perhaps owing to more closer proximity with patient care compared to non-medical students; they were more likely to be concerned that family members of brain-dead patient would be upset if approached for organ donation; felt it would be more valuable to discuss organ donation with dead patient's family members after the declaration of brain death. Medical students also considered prolonging life by using human organ transplants appropriate, and considered organ donation desirable when a patient has been declared brain dead. Hence medical students in this study were understandably more sensitive towards approaching bereaved family members for organ donation from the deceased, and more inclined towards use of organ donation for healing patients with end-stage organ failure by organ transplantation. However, these positive attitudes towards organ donation were not universal. Thus underscoring the need for better understanding of organ donation attitude dynamics, including emphasis on better education.

The strengths of this study include use of standardized questionnaire, with thirteen questions gauging attitudes on one's comfort level with being an organ donor, approaching bereaved families of brain-dead patients for organ donation, and one's disposition towards being an organ donor; and comparison between medical and allied health undergraduate students. The major limitations are the fact that we could not meet the

required sample size of 167 for medical students, as we were able to get 150 instead of 167 i.e. 89.8% of the required sample size. Students were selected based on convenience, as opposed to using simple or stratified random sampling using enrollment lists. Finally, the study was limited to undergraduate students from only one university. As such, the results cannot be extrapolated to all medical and allied health undergraduate students in Karachi. However, it was not the objective either; we set out to conduct a case study from one private university only.

Future studies need to inquire about and disaggregate results, by year of enrollment of undergraduate students, and conducting similar cross-sectional studies using city-wide representative samples drawn from both public and private sector universities.

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