

Knowledge, attitude and practices of medical undergraduates of Rawalpindi Medical University regarding potential organ donation

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Abstract

Objectives: To determine the knowledge, attitude and practices of medical undergraduates regarding potential organ donation.

Methods: The descriptive cross-sectional study was conducted from April to July 2017 at Rawalpindi Medical University, Rawalpindi, Pakistan and comprised medical students of either gender selected from each of the five academic years. Data was collected using a structured questionnaire on knowledge, attitude and practices. Data was analysed using SPSS 22.

Results: Of the 400 subjects, there were 40(10%) male and 40(10%) female students from each of the five academic years. The mean age of the sample was 20.98+/-1.63 years (range: 18-27 years). Overall, 363(90.8%) students had knowledge of organ donation and 96(24%) knew about potential organ donation. Of the 184(46%) subjects willing for live donation, 86(46.7%) were males and 98(53.2%) were females. Of the 245(61.5%) subjects willing for potential organ donation, 62(77.5%) were from the 5th year and 30(37.5%) were from the 1st year.

Conclusions: Medical students were found to have good knowledge regarding live organ donation, but they had very little information about potential organ donation.

Keywords: Potential organ donation, Organ transplant, Knowledge, Attitude, Practices, Medical students, KAP study, Transplant. (JPMA 70: 1784; 2020) DOI: <http://doi.org/10.5455/JPMA.301449>

Introduction

Potential organ donor is a person, whose cells, tissues and organs can be recovered after the declaration of brain death if the organs are viable and there is no absolute medical contraindication. The consent for donation is either given by the donor themselves or by family after their death. On the basis of death declaration criteria, these donors can be divided into Deceased Heart Beating Donor (donor after brain death) and Deceased Non-Heart Beating Donor (donor after cardiac death). The former can be kept alive by cardiopulmonary resuscitation (CPR) till the viable organ is recovered.¹

According to a rough estimate, around 50,000 people in Pakistan die each year from end-stage organ failure. According to the Sindh Institute of Urology and Transplant (SIUT)², these constitute around 15,000 from kidney failure, 10,000 from liver failure and 6,500 from heart failure. Most of these lives can be saved if there are organs available for transplantation. Live donation can be done for very limited range of organs, i.e. kidney, portion of the liver, lobe of a lung, part of pancreas, or intestine.

However, in deceased donation, a single donor can donate up to 17 organs, including kidneys, liver, lungs, heart, pancreas, intestine, corneas, bone, bone marrow and skin and can save the lives of at least 8 patients on an average.^{2,3}

Pakistan at present has a growing programme of live organ donations and transplantations with several transplant institutes throughout the country. According to a 2007 survey, only 400 live kidney transplant procedures were conducted, which is not enough to reduce mortality associated with end-stage renal disease (ESRD).⁴ There is only one specialised facility for liver transplantation in Pakistan and very limited number of surgeons are specialised in the field.⁵ In the case of deceased organ transplantation, only 7 had been carried out in Pakistan till 2005.⁶ Out of these, 6 organs were imported from international donors.⁶ No further countrywide surveys were carried out. In Pakistan, another major problem regarding organ donation is organ export or commercial sale of organs to foreign recipients. This practice was prevalent to a much greater extent before the formulation of a law against it in 2010.⁷

According to the World Health Organisation (WHO), Global Activity in Organ Transplantation estimates that total 119,873 solid organs were transplanted globally in

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2014, which included 79,948 kidneys, 26,151 livers and 6,542 hearts.⁸ In the United States, 30,849 kidney transplants were conducted, out of which 67% were from deceased donors, while only 25.3% deceased donors contributed in the total of 5,290 transplants conducted in South Asia. These statistics depict a huge role of potential donation in developed countries.⁹

Medical students who have to witness life-and-death situations are expected to have a better idea of the gravity of the situation and therefore, to have better knowledge regarding the importance of donated organs. The current study was planned to find out the knowledge, attitudes and practices of medical undergraduates regarding potential organ donation and to find changing trends, if any, in terms of academic year and gender.

Subjects and Methods

The descriptive cross-sectional study was conducted from April to July 2017 at the Rawalpindi Medical University, Rawalpindi, Pakistan, at its two campuses. Campus-I has students of the first two academic years, while Campus-II has students of the remaining three years. After obtaining approval from the ethics committee of the Rawalian Student Research Society (RSRS), the sample size was calculated using the WHO calculator in line with literature⁴ at confidence level of 5% and absolute precision of 0.05. WHO sample size calculator was used to calculate the minimally required sample size.¹⁰ Owing to potential non-response, the sample size was inflated by 10%. The sample was raised using stratified random sampling, with equal number of male and female students who were randomly selected from each of the five academic years of the undergraduate medical programme.

After taking informed consent from the participants, data was collected using a pre-tested questionnaire which had multiple choice questions (MCQs) and a few open-ended questions. It had three sections. The first section consisted of five questions to assess knowledge about live and potential donation, side effects of organ donation, laws about organ donation and transplantable organs. The second section inquired

about any history of organ donation as a way of assessing practices and, if donated, which organ it was and what was the reason behind the donation. The third section assessed attitude of participants by inquiring whether they will willingly donate their organs during life or after death along with the reason for their answer and which organs they will willingly or never donate. Also, the questionnaire had three questions related to gender, age and the academic year of each subject. The questionnaire was administered among the students and collected the next day. Data was analysed using SPSS 22.

Results

Of the 400 subjects, there were 40(10%) male and 40(10%) female students from each of the five academic years; a total of 200(50%) males and as many females. The mean age of the sample was 20.98 ± 1.63 years (range: 18-27 years). Overall, 363(90.8%) students had knowledge of organ donation while 96(24%) students knew about the basic concept of potential organ donation and the

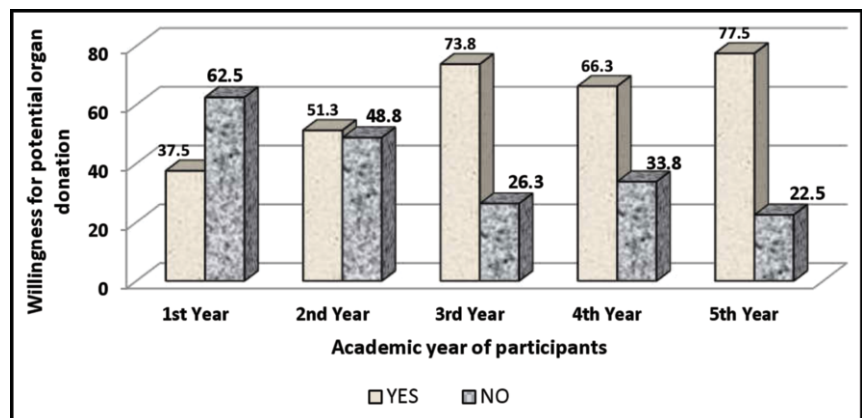


Figure-1: Relation between willingness of donation with academic year of participants.

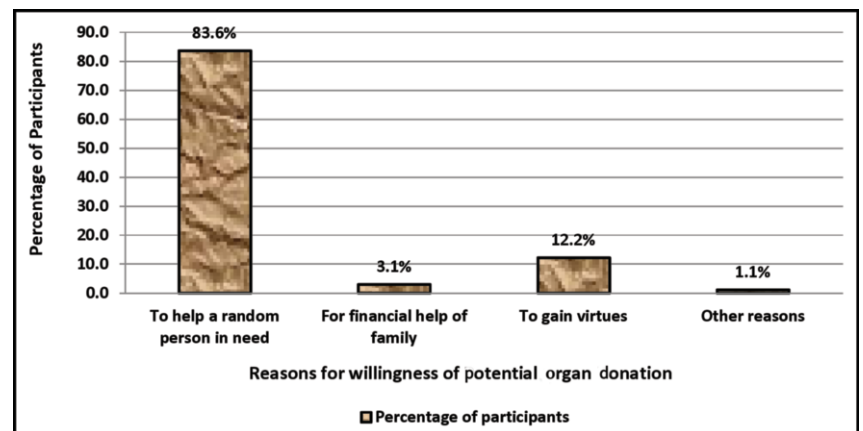


Figure-2: Reasons for willingness of participants for potential organ donation.

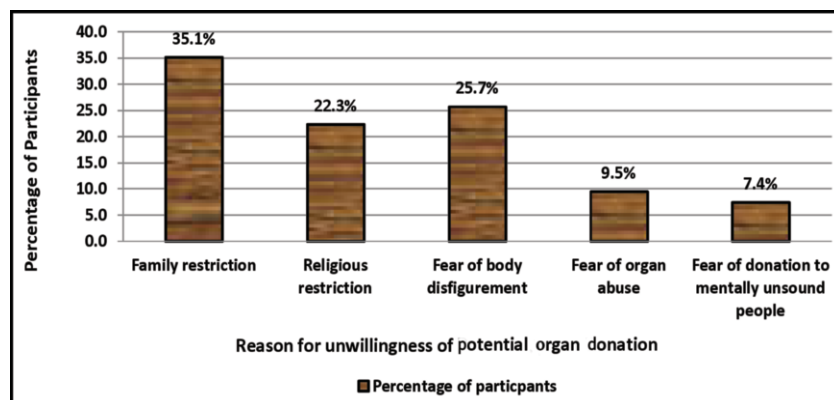


Figure-3: Reasons for unwillingness of participants for potential organ donation.

systematic programme required for its practical implementation. Also, 269(67%) knew about the adverse effects on the health status of donor after live solid organ donation; 298(74.7%) had a rough idea regarding one or more basic laws of deceased organ donation and of these 298 subjects, 62(21%) knew that deceased donation without consent is illegal; 44(15%) knew that 18 is the lower age limit for donation; 69(23.3%) knew that organ trafficking is illegal; 18(6%) knew that donation without human leukocyte antigen (HLA) matching is illegal; 25(8.5%) knew that there is high penalty for illegal action; and 256(86%) knew that only heart, liver and kidney can be transplanted.

In terms of attitude, 184(46%) subjects were willing to donate an organ during life; 86(46.7%) males and 98(53.2%) females. A total of 245(61.5%) students were willing to donate their organs after their death. Among those who were willing, 62(77.5%) were from the final year and 30(37.5%) from the 1st year ($p=0.000$). Similar trend for live donation was noted when going from first to final year (Figure-1). There was no significant correlation between gender and willingness of donation ($p>0.05$). Kidney 90(22.5%) and liver 31(7.8%) were the top choices for donation.

The most dominant reason for willingness was to help a random person in need, 204(83.6%) (Figure-2). The most dominant reason for unwillingness was family restrictions 54(35%) (Figure-3). In terms of practice, 1(0.25%) student had donated a kidney to a relative; a male student of 4th year. Relation with gender was not statistically significant ($p=0.082$).

Discussion

The findings showed that 363 (90.8%) of students had knowledge of organ donation, but surprisingly only 96 (24%) students had knowledge about potential organ

donation. This shows that potential organ donation is quite an unfamiliar concept in our setup. A study conducted among general population at Aga Khan University (AKU) reported that 60% people had basic knowledge about organ donation.⁴ Another study conducted in Egypt showed that only 36% medical students had good knowledge about organ donation.¹⁰ To our knowledge, no study has yet been conducted for potential organ donation.

The current study found that 299 (74.7%) participants had idea about the laws concerning deceased organ donation while the study in Egypt showed that 77.7% participants had not heard or read about any laws regulating organ donation.¹⁰

A relatively low percentage of students were willing to donate their organs in their lifetime (46%) compared to those willing to donate after death (61%). However, other studies have reported up to 62% participants willing to donate organs.^{4,10,11} The higher level of willingness for potential or cadaver donation in our study is justifiable as there is no morbidity associated with it while live organ donation is associated with considerable morbidity and risks for the donor and in addition, the cost of the procedures and post-operative care is unaffordable for a big majority. Yet again, no such study has been carried out for potential organ donation before in Pakistan. Our results also showed that a slightly greater number of females were willing for donation compared to males but the difference was not statistically significant.

Medical students in Pakistan are given mostly theoretical knowledge in their first two years, having near to none clinical exposure. Over the next three years, they are taught in an environment of increasing clinical exposure with each academic year. Our results showed that our medical students had increasing willingness to donate their organs during life as well as after death when moving from the first to the final year. Another important analysis was that there was a sudden increase in willingness noted in the first clinical year or the 3rd academic year, while there was a uniformly increasing trend in the rest of the academic years. This shows that exposure to clinical practice and facing life and death situations imparts a greater respect towards life and suffering of patients in the minds of students.

When asked for the reasons for which they wanted to

donate their organs after their death, the most prominent reason was to help a random person in need (83.6%), while the second prominent reason was to gain virtues (12.2%). These results contrast with the results of an earlier study⁴ which showed 51% participants willing to donate their organs only to family members. In a study in China 62.4% participants were willing to donate only to the relatives.¹¹ However, when asked the reasons for unwillingness from the students not willing to donate, the most prominent reason was that their family will not allow their bodies to be taken apart for donation (35.1%). The second common reason was fear of body disfigurement (25.7%). There were also a fair number of students about 9.5%, who opted for the fear of improper handling of their organs and some cited religious concerns. In China¹¹ a study showed value of life, relationship between body integrity and conventional culture to be important factors regarding decision-making in this regard.

From these results, one can infer that there is a general misconception among the students that their bodies will not be handled in a respectable way if they allow their organs to be taken. As for the religious aspect, there has been a lot of debate regarding religion and organ donation. The Al-Azhar University of Egypt has declared both potential and live organ donation as allowed and appreciated in Islam.¹² In fact, apart from Jehovah's witnesses from one of the Christian dominations¹³ and some orthodox Jews, no religion formally disputes blood or organ transplantation.^{14,15}

Most willingly potentially-donated organs in the current study were kidneys, liver, heart and lungs. However, a significant number of students (44%) were willing to donate all their organs after their death.

In our study, only one student had donated a kidney to a family member (0.25%). A survey published in Pakistan in 2009 showed that 3.5% people had donated organs in their lives and 35.3% of people expressed a high motivation for organ donation. However, no survey has ever been conducted in Pakistan regarding potential organ donation, but according to a report,⁶ 7 deceased donor transplants were carried out at the SIUT, Karachi, in 2005 and 6 of them were from international donors.

In Pakistan, there have been successful kidney and liver transplants, but apart from that no other transplant has yet been done.³ Even though Pakistan has high endemicity of hepatitis B and C¹⁶ and the gold standard and cost-effective treatment modality for chronic liver diseases is liver transplant, only one such facility is fully

operational.⁵

In the light of findings, it is recommended that more transplant units in government and private sectors should be set up, healthcare to guarantee successful transplantation should be improved and a system for registering potential organ donors and carrying out transplantation, similar to foreign programmes, must be developed. Besides, awareness should be raised through seminars etc. to educate the general public and remove misconceptions regarding live and potential organ donation. Steps should also be taken to ensure organ safety and proper handling of bodies after death.

Conclusion

Knowledge regarding potential organ donation was less than that of live donation, but, once educated about potential organ donation, there was more willingness for it. There was a fear of adverse effects and increased morbidity associated with live donations, while the main concern for potential organ donation was the reluctance of family members and the fear of body disfigurement. The practice of live organ donation was minimal while that of potential organ donation was essentially absent.

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