

Knowledge, Attitude and Perception Regarding Organ Donation: A Comparative Study among Medical and Non-Medical Students in Lahore

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ABSTRACT

Organ Donation is the process of surgically removing an organ or tissue from one person and placing it into another person. The engraftment of this tissue for the purpose of restoring the body function is called transplantation.

Objectives: The objectives of this study were: - 1) To assess and compare the knowledge, attitude and perception regarding organ donation among medical and non-medical students. 2) To assess their willingness to donate their own organs or those of a deceased relative in a setting without well-organized organ donation programs and education

Methodology: A cross sectional comparative study was conducted among medical and non-medical students of different institutes of Lahore, Pakistan. A questionnaire was used to collect data from 470 undergraduate medical and non-medical students. Among them 256 were of medical field and 214 students from non-medical group. Data was analyzed by using SPSS version 24.

Results The median score on knowledge, attitude, and perception among the medical students was 16 (14–17), 25 (23–28), and 41 (38–45), respectively, and among the nurses, the scores were 14 (12–16), 25 (22–27), and 39 (33–42), respectively. Almost half (46.9%) of the study participants knew the definition for brain death. Twenty-nine percent of the study participants knew about the existence of law toward organ donation; more than half of those participants (52.7%) mentioned few rules and regulation involved in the laws pertaining to organ donation. Knowledge and attitude of medical students were found to be better than non-medical students but still not up to mark.

Conclusion

Overall students are not well aware of brain death and existence of organ donation law. Most of the medical students are in favor of organ donation but doubts still exist among few of the participants which could be understood through further research in this field.

Keywords: Organ donation, Medical students, Knowledge, Perception.

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INTRODUCTION

Advancement in the science of organ transplantation had improved and saved many people suffering from end-stage organ failure as it is the standard treatment for some of the end-stage organ failure diseases. Solid organ transplant programs have been steadily growing but have still not kept pace with the global needs, with great differences among countries. Organ transplantations are valuable for a developed and mature healthcare system.[1] The first organ transplantation in the world was performed in 1954. Henceforth, the organ transplantation science grew from experimental state of practice to a standard state of practice for certain end-stage organ failure.[2]

Various studies conducted among the public to assess the awareness on organ donation. Therefore, this study was intended to assess the knowledge, attitude, and perception of organ donation among undergraduate medical and nursing students in the Lahore, Pakistan. This study will be useful to understand the level of knowledge, attitude, and perception toward organ donation in the Lahore Pakistan.

Organ Donation is the process of surgically removing an organ or tissue from one person and placing it into another person. The engraftment of this tissue for the purpose of restoring the body function is called transplantation. [1] Organs that can be donated and transplanted include kidney, liver, heart, pancreas, intestine, lungs, skin, bone

marrow and cornea etc. [2] Life can be prolonged by this procedure. The first transplantation was performed in 1954.

Worldwide, the major hurdle in transplantation seems to be its high demand with limited supply. To prolong life, organ donation and its transplantation remains last hope till date. Pakistan along with China, Japan, Pakistan had low knowledge and even lower practice with regards to organ donation.[3] Organ transplantation demand in Pakistan continues to exceed the limited supply. Kidney transplant is the most common organ transplantation carried out in Pakistan. While liver transplantation rate is quite low in Pakistan although 10,000 people die due to liver failure each year (SUIT). [4]

According to estimation, organ failure is a major cause of death in almost 50,000 people each year due to end stage organ failure. The end stage renal failure strokes out almost 18000 patients in a year. Among them, only 10% were able to get dialysis and only 4 to 5% were able to receive transplantation which made it a rate of 5 per million population.[5] The issue of organ donation has highly depended on medical, organizational, legal and social factors. It has been reported worldwide that knowledge, education and religion were found to be major players in people's attitude regarding organ donation.[6] In a recent study, conducted in Karachi on adults, it was found that level of knowledge and rate of practices based on people's religious beliefs that were affected by religious leaders in favor of organ donation.[7] A study reported that students trained in medical school showed high level of knowledge and answered the questions of patients regarding organ donation with more ease than those who did not get training.[8]

The objective of this study is to assess and compare the knowledge, attitude and perceptions regarding organ donation among medical and non-medical students. The rationale of this study is that although there are some centres that are especially established as organ transplant centres in our country but awareness related to the importance of organ donation is still below bar. Proper health education campaigns should be introduced to the

general population regarding this aspect. By sensitizing people especially our young population, their knowledge, attitude and perceptions regarding organ donation can be improved that can significantly affect health outcomes and remarkably reduce morbidity and mortality.

METHODOLOGY

Study Design; -

It was a cross-sectional descriptive study, conducted from Jan-June 2019.

Study Setting; -

This comparative study was conducted indifferent professional colleges of District Lahore; Pakistan. The study participants were undergraduate medical and non-medical students of different medical and non-medical institutes of Lahore.

Sampling Technique ; -

Non-random sampling (Conveniaient)

Sample Size ; -

Sample size was calculated by using epi-info for cross sectional studies and it was found to be 470 subjects. About 256 MBBS and 214 non-MBBS students filled out the questionnaire voluntarily. A questionnaire consisted of two sections, was used. Section A consists of information regarding variables like age, sex, program of study, religion and year of study etc. Section B contains questions to assess knowledge, attitude and perception of students. The research protocols were explained to every student. Informed verbal consent was obtained from each student. Confidentiality of subjects was also maintained.

Knowledge, attitude, and perception were assessed using 9, 6, and 12 questions, respectively. The questionnaire was filled by the students with an average time of 10 ± 5 min. A standard definition was used to evaluate the participants on brainstem dead.[8]

Prior permission was sought from the dean of the medical college and head of department of the non-medical colleges as well as students who participated in the study. Further, permission was sought from the professors of the respective seminars after which the data were collected from the students. The language of the questionnaire was

in English as all the students are familiar with the language, also the medium of education was English. The purpose and the usefulness of the study were explained to the students, following which the consent to participate was obtained from all participants. There was no attempt made to collect data from the students who were absent during the day of data collection as the sample number of participants had exceeded the calculated sample size.

STATISTICAL ANALYSIS

Only completed questionnaires were analyzed. Data entry was done in Microsoft Excel 2010, and then, data were exported to IBM Statistical Package of the Social Sciences version 19 (IBM, PASW Statistics), for management and analysis. The descriptive measurements were represented as proportions, percentages, and frequency distribution.

RESULTS

There was a total of 470 participants comprising 256 undergraduate medical students and 214 undergraduate non-medical students. There were higher proportion of female participants (59.7%, $n = 370$) compared to male participants (40.3%, $n = 250$). The mean age of the study participants was 19.8 ± 1.65 years.

The overall median score of knowledge, attitude, and perception among the undergraduate medical and nursing students was 15 (13–17), 25 (23–27),

and 40 (36–44), respectively. Toward attitude, both medical and nursing students had similar median scores of 25 (23–28) and 25 (22–27), respectively. Medical students showed higher median score for knowledge (16 [14–17]) and for perception (41 [38–45]) compared to the nursing students' median score for knowledge (14 [12–16]) and perception (39 [33–42]), respectively, which were statistically significant

Our study estimated that 29.4% of the study participants knew about the law for organ donation. More than half of those study participants (53.7%) mentioned a few laws regarding organ donation. The study participants were mostly aware on the donation of the kidney (92.3%), heart (87.4%), lungs (80.2%), eye (79.8%), liver (74.2%), and cornea (42.1%). Organs such as intestine, uterus, pancreas, head, bone marrow, spleen, limbs, and whole body were combined under the other category, which contributed around 19.9%.

Almost all 470 students from different professional colleges of Lahore were familiar with organ donation. Medical students were more up to date with this term as compared to non-medical students. Virtually, 452(96%) participants heard regarding organ donation and 18(4%) show ignorance about this term. Nearly all the students who know something about organ donation support it, as 441(94.1%) students were supporting the organ donation and 29(5.9%) were not considered it supportable.

Variables	Overall Median (IQR)	MBBS Median (IQR)	Non-medical Median (IQR)	p*
Religion opposes organ donation	3 (2-4)	4 (2-5)	3 (2-4)	<0.001
I support organ donation	5 (4-5)	5 (4-5)	5 (5-5)	<0.001
I would accept an organ transplant for myself, if my life was in danger	5 (4-5)	5 (4-5)	5 (4-5)	0.213
I am willing to donate my organs after my death	4 (4-5)	4 (4-5)	5 (4-5)	<0.001
I have been taught that organ donation is against my religion	4 (4-5)	5 (4-5)	4 (3-5)	<0.005
Organs can be bought and sold in the black market	5 (4-5)	5 (4-5)	5 (4-5)	0.674
Perception Questions				
I think organ donation is a safe and effective practice for donor and recipient	4 (3-4)	4 (3-4)	4 (3-4)	< 0.05

I trust that the hospital and doctors use donated organs as they are intended to be used	4 (3-4)	4 (3-4)	4 (3-4)	0.71
I think that doctors try hard to save my life no matter if I am a donor or not	4 (4-5)	4 (4-5)	4 (3-5)	<0.005
Organ donation is consistent with my values and belief	4 (4-5)	4 (4-5)	4 (3-5)	<0.001
It is important for a person to have all their parts of the body during burial	4 (3-5)	4 (3-5)	4 (2-5)	0.477
Regular funeral cannot be carried out for a deceased donor	4 (3-5)	4 (4-5)	4 (2-5)	<0.001
The recipient should pay some money to the donor family	4 (3-4)	4 (3-4)	3 (2-4)	<0.005
No extra bill should be paid by the donor family for retrieving the organ	4 (2-5)	4 (2-4)	4 (2-5)	0.535
Organ donation allows something positive to come out of a person's life	5 (4-5)	5 (4-5)	4 (4-5)	< 0.05
I believe that if I donate my organs in this life I will not have it in my next life	3 (1-5)	4 (2-5)	2 (1-4)	<0.001
It is important to discuss the willingness to donate organs with the family members	4 (4-5)	4 (4-5)	4 (4-5)	0.33

Out of 256 medical students, 182(70.9%) had a view that there is increased risk of opportunistic infections after organ transplantation while 74(29.1%) MBBS students didn't think, it is infectious. Evidently, 168(78.3%) non-MBBS students found organ transplantation risky and 46(21.7%) noticed it non-risky. It was observed that 228(89.1%) medical students were comfortable while talking about organ donation but 28(10.9%) of them were uncomfortable. Similarly, 154 students believed about disfiguring of body after donation of organ and 228(89.1%) were found it not a problem. Only 14(5.5%) and 24(10.9%) of medical and non-medical students have received the organ transplantation and family members of 88(34.5%) medical students and 50(28.3%) had experienced organ transplantation. 224(87.3%) medical students felt the organ donation righteous act and 32(12.7%) denied this

concept. Out of 214 non-medical students, 190 (89.1%) and 24(10.9%) voted the donation righteous and non-righteous act respectively. Regarding the query whether organ donation is a source of disturbance for the expired person or not, only 18(7.3%) and 42(19.6%) of medical and non-medical field respectively found it a source of disturbance for dead persons.

While answering about human dignity and human rights, but 214(83.6%) found organ donation not relatable with rights but 42(16.4%) of medical students declared it insulting. About 52 (23.9%) of non-medical students noted it humiliating. In order to estimate the ratio of organ donation, it was found that the family members of only 65(21.7%) of MBBS and non-MBBS students donated their organs.

Table 2: Attitude of Willingness of Organ Donation among Medical and Non-Medical Students

Variables	Medical students		Non-medical students	
	Yes%	No%	Yes%	No%
Agree to donate organs after death	72.7	27.3	73.9	26.1
Family agree with organ donation	61.8	38.2	56.5	43.5
Sale your organs	14.5	85.5	28.3	71.7

Willingness to donate organs after death was shown by 186 (72.7%) medical students and 158 (73.9%) non-medical students but all others didn't

agree for donation. In case of family members, 158 (61.8%) and 98(38.2%) of medical students show estimation for the willingness and unwillingness of

organ donation respectively. Non-medical students of about 120(56.5%) estimated for the willingness of organ donation of their family members. When asked about selling the organs, 38(14.5%) of 256

medical students and 60(28.3%) of non-medical students agreed to this concept but 218 (85.5%) medical and 156(71.7%) non-medical student found this idea absurd.

Table 3: Perceptions regarding Organ Donation among Medical and Non-Medical Students

Variables	Medical students		Non-medical students	
	Yes%	No%	Yes%	No%
Brain-dead patient's organs donation	63.6	36.4	56.5	43.5
Religion agree with organ donation	61.8	38.2	63.0	37.0
Live organ donation is better than the cadaveric donation	65.5	34.5	60.9	39.1

One sixty-two (63.6%) medical students selected dead-brain patient best donor and ninety-four (36.4%) MBBS students opted for living donor. Similarly, 24(56.5%) non-medical students regarded the dead brained patient's best option for donation purposes. When asked about religious concept about organ donation and transplantation, 158(61.8%) medical and 134(63%) non-medical students acknowledged the positive agreement while 98(38.2%) medical and 80(37%) non-medical students claimed that it is against the religious laws. One fifty-four (60%) medical and 126(58.7%) non-medical students thought that parents or guardians could make decision for the donation of mentally disabled patient transplantation and donation. Medical and non-medical students of about 168(65.5%) and 130(60.9%) respectively opted live organ donor best rather than cadaver organ donation while 88(34.5%) medical and 84(39.1) non-medical students found cadaver organ donation best.

DISCUSSION

The findings suggest that the students had higher knowledge and favorable attitude and perception toward organ donation. To the best of our knowledge, this is one of the few studies in Pakistan which assessed both the Majority of the participants in our study perceived that organ donation is safe and effective, with a median score of 4 (3–5) [Table 3] supported by

another study conducted among the nursing students;[9] whereas people-seeking healthcare from tertiary care centers in the southern part of Pakistan from another study perceived that health risk is associated with organ donation.[10] As our study was among the healthcare-oriented group, their negative perceptions were low, unlike the public.[11] This may suggest the myths and misconception that prevail in the society affecting their perception.[2]

Study participants perceived that doctors will strive hard to save the life of the patient in-spite of their decision toward organ donation, with a higher median score of 4 (3–4) [Table 3]; this was also supported by a similar study conducted among the nursing students.[10] This elicits the trust of healthcare ethics. Another study also supports our study that a higher proportion of study participants perceived that no extra bill should be paid by the donor family for retrieving the organs.[10] Although the perception is more positive among this study participants, this has proven to be different among the common public.[12]

Family members play a vital role in Pakistan toward any decision-making,[13] and hence, the donor is not the sole decision-making authority for the deceased organ donation; among the nursing participants in our study, 65.3% of them agreed that permission from the nearer family member is also very essential. Other similar studies have shown

that 60%–80% of the study participants agreed to the same.[14] Among the medical students in our study, 56.8% of them also agreed with the same, and this was also supported by another study conducted in the southern part of India.[15] This shows the attitude of the study participants on consent for organ donation from the family members and also the importance of gaining family's permission before retrieval.

The median score for the statement that religion opposes organ donation was 3 (2–4) in our study [Table 3]; similar studies also supported this result.[10,13] This could have been attributed due to the differences of opinion from various religious groups, which has been proved in other studies.[16] The median score for the statement on willingness to donate their organs was higher (4 [4–5]) in our study [Table 3] similar to study [17] however, further questions were not asked if they have signed an organ donor card which could have informed us about their practice.

An open-ended question to avoid the social desirability bias on the participants' knowledge on brain death through which the true information was gathered, high response rate, and relatively larger sample were the strengths of this study. Information on the number of study participants who have signed an organ donor card could have been explored to understand the gap between willingness and practice. Convenient sampling and a study site in a region where the literacy rate is higher and also in a region with good ODR make this study not to be generalized with the other population. Albeit its non-generalizability, this study gives an in-depth understanding on the knowledge, attitude, and practice of this particular population in this particular region.

Though, Pakistan is not so advance in organ donation and transplantation but it was confirmed by above data that medical students are more aware of it. Out of 470 students, 452 students had knowledge about organ donation and 18 had poor knowledge about it. One of the key issue regarding organ donation is religious confusion as 60% students had belief that our religion Islam support

the organ transplantation but other 40%are still confused about Islamic fatwaz and instructions regarding organ donation shown in table 1. This study can be guided by study of Al-Faqih who found and gathered the Islamic view point about the allowance of organ donation.[16]

Various factors such as willingness to donate organs, fear of disfiguring of body shape, disturbance of expired persons, comparison of dead and live patient's organ transplant and risk of infections after donation prove detailed study about knowledge, attitude and perception of organ donation.[17] Unfortunately, only 59.4% students and their families are willing to donate the organs and remaining 40.6% avoided it. It was clearly apparent from the past that people didn't show positive attitude for organ donation.[18]

In our country, organ transplantation is not very clean process which led to infections after donation so it's a common perception among people that if they donate their organ, they might die by serious infectious disease. Virtually, 74.3% students believed that risk of infection increased after donation owing to poor treatment. A survey about organ donation by live or dead-brained patients has also explored the confusion in the minds of students. Almost half students thought that dead brained patient's organ donation would be the best option rather than the live patient's organ donation. This is due to lack of awareness and lack of medical staff for transplantation in Pakistan [19]

It was wrong perception that body shape could not maintain after donating organs as nearly 30% students thought about disfiguring of body shape in this survey. Disfiguring could occur due to mineral lacking, blood deficiency or obesity but it was very less affected by donation of organs. This issue of poor organ donation and transplantation system in Pakistan is also privileged due to this concept that it is humiliating and against human rights and dignity. About 11-23% students had this belief, which proved barrier for organ donation.

Conclusion and Recommendations:

Students are not well aware of brain death and existence of organ donation law. Most of the

medical students are in favor of organ donation but doubts still exist among few of the participants which could be understood through further research in this field.

This survey could prove initiative for all medical and non-medical students facing issues regarding organ donation. This data is very essential to discuss among medical and non-medical students. All these lacking could be improved by starting campaigns and seminars in different institutes on annual basis. Media could play a very important role in this regard by advertising more about donation and transplantation.

LIMITATIONS: As the study was conducted among medical and non-medical students and almost all of them were Muslims so the results of this study cannot be generalized over all the religions.

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