

Medical Student's Knowledge and Perspective Regarding Organ Donation In Punjab.

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ABSTRACT:

Objectives: This study aimed to evaluate the knowledge, attitudes, and practices of organ donation among undergraduate medical students and explore potential variations based on demographic characteristics.

Methodology: A Cross-Sectional Study was conducted from June to September 2023; participants were recruited from Punjab medical, dental, and paramedic colleges. Data was gathered using a structured questionnaire, which was pre-tested prior to the study. The online data collected was analyzed using SPSS version 28. Qualitative variables were reported in frequencies and percentages, and the Chi-square test assessed associations among study variables and sociodemographic traits.

Results: The study enrolled 152 students, predominantly from the MBBS program (80%). Inconsistencies were observed in knowledge, attitude, and practice domains. Approximately 55.6% of students were aware of organ donation, while only 45.5% exhibited a positive attitude, particularly in donating under exceptional circumstances. The group below 18 years demonstrated a high percentage (45.5%) of willingness to become organ donors. Notably, a significant portion of participants expressed comfort and positive feelings about posthumous organ donation.

Conclusion: The data revealed various perspectives and challenges associated with organ donation. Some participants mentioned issues like religious constraints, family opposition, and concerns about physical appearance or mortality. Moreover, a variety of "Other" barriers were identified, indicating a wide range of reservations. Nevertheless, the majority clearly grasped the selfless intent behind organ donation, with the main drive being to preserve and prolong human life. The results highlight the necessity for continuous efforts to enhance awareness, educate the public, and address reservations in order to encourage organ donation and ultimately save lives.

Keywords: Organ donor, Organ recipient, Undergraduate Medical Students. Item characteristic curve.

Introduction:

The organ donation process entails surgically removing an organ or tissue from an individual, known as the organ donor, and subsequently transplanting it into another person, referred to as the recipient¹. Over the past decade, there has been 200% increase in the global demand for organ transplants. Nevertheless, the availability of organ donors has remained relatively consistent, leading to a considerable gap between the number of organs donated and the individuals eagerly awaiting transplantation^{2,3}. In 2020, the United States exhibited the highest proportion of dead organ donors concerning the whole population, with a ratio of 38.0%⁴.

Pakistan is confronted with a deficiency in an adequate system plus an absence of desire among individuals to contribute, resulting in a growing need for organ donation⁵. In Pakistan, an estimated annual mortality rate of around 50,000 individuals has been attributed to organ failure. Pa-

kistan has a significant shortage of kidney and liver transplants, resulting in a yearly occurrence of renal failure affecting around 18,000 individuals, while liver failure claims the lives of almost 10,000 individuals³. The circumstances in Pakistan have resulted in the enactment of a legislative decree in 2007, which permits the use of deceased human bodies for organ transplantation^{6,7}. The primary objective of forming the Transplantation Society of Pakistan (TSP) was to facilitate the advancement of deceased organ donation via educational seminars and professional meetings^{8,9}. Nevertheless, despite the efforts mentioned earlier, it is worth noting that a mere 65.5% of the populace in Pakistan is equipped with the necessary understanding and awareness about the subject matter of organ transplantation¹⁰. This underscores the need to recognize and address obstacles to organ donation and formulate efficacious approaches to advocate for its adoption. There exists a tight relationship between blood donation and organ donation. According to the World Health Organization (WHO), a nation's blood supply is sufficient when 1% of its population donates blood. Nevertheless, based on estimations, the percentage of blood donors in Pakistan's population ranges from 0.46% to 0.78%¹¹. Insufficient and thorough data on this issue in Pakistan is evident since only one research study has been completed. This study examined the knowledge, attitudes, and practices surrounding organ donation among patients inside a tertiary care hospital in Karachi. The findings of this research indicate that a majority of the participants questioned, namely 59.9%, expressed a willingness to donate their organs.¹²

Considering the dearth of local literature on this topic, our study assesses medical students' knowledge, attitudes, and behaviors at RLKU Medical College in Pakistan. These students represent the potential donor population for the

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nation. Additionally, our research explores various factors that act as either motivators or deterrents for Pakistani youth when contemplating their willingness to participate in organ donation.

Methodology:

This cross-sectional study was conducted between June and September 2023, involving sample collection from various medical colleges covering different fields of study. Participants' ages were divided into three groups and further stratified by gender. A comprehensive approach was used to gather data from medical students across all academic years. Ethical approval was obtained from the Institutional Review Board (IRB) of RLKU Medical College, and informed written consent was obtained from each participant. The data collection involved using a structured questionnaire adapted from a previous study with similar methodologies. An online questionnaire was created on Google Forms to reduce data collection and entry errors. The questionnaire comprised of following sections:

- Socio-demographic Information
- Knowledge regarding organ Donation
- Attitude regarding organ Donation
- Practice (willingness and motivations) to become organ donors.

Research supervisor supervised the data collection process. The data was analyzed using SPSS version 25. For qualitative data (categorical), frequency and percentage

Table 1: Sociodemographic Characteristics

Question		Total	Female n (%)	Male n (%)	P Value n (%)
Profession of Study	MMBS	122 (80.26%)	82 (53.9%)	40 (26.3%)	0.648
	BDS	16 (10.52%)	10 (6.6%)	06 (3.9%)	
	DPT	06 (3.95)	04 (2.6%)	02 (1.3%)	
	BSN	08 (5.26%)	07 (4.6%)	01 (0.7%)	
Year of Study	1 st Year	81 (53.29%)	62 (40.8%)	19 (12.5%)	0.001
	2 nd Year	27 (17.76%)	22 (14.5%)	05 (3.3%)	
	3 rd Year	19 ((12.50%)	09 (5.9%)	10 (6.6%)	
	4 th Year	0 (0%)	0 (0%)	0 (0%)	
	5 th Year	25 (16.45%)	10 (6.6%)	15 (9.9%)	

were recorded. The Chi-Square test was used to compare outcomes between the groups of organ donation and perceived stress, with a significance level set at P<0.05. Stratification was performed for effect modifiers/confounders such as age, gender, and residency, and a post-

stratification Chi-Square test was conducted, maintaining the P value at P<0.05. Prior to the start of the study, informed written consent was obtained from all participants. Participation in the study was voluntary, and students had the option to withdraw at any time without providing a reason. The confidentiality of the participants was strictly upheld, and the study did not contain any identifiable information.

Results:

There were 152 participants, including undergraduate medical students. The majority of enrolled students were from MBBS (80%), followed by BDS (11%) students, 5% BSN students, and 4% DPT students. The majority of students represented 1st year MBBS (53%), as indicated in Table 1. Table 1 presents a cross-tabulation of survey results, showing that 53.9% of females choose to pursue this degree, while only 26.3% of males make the same choice. In contrast, the percentage of boys (6.6%) enrolled in the BDS (Bachelor of Dental Surgery) program is higher than that of girls (6.6%). In terms of the academic year of study, the data indicates a significant difference (P< 0.001) between male and female populations regarding organ donation.

Most participants were from the 1st year of study program (53.29%), with 77% female students, followed by 13% male students. Overall, there was a statistically significant difference (P<0.01) in study participants' sociodemographic characteristics, such as the profession of the study and years of the study.

Table 2: knowledge regarding organ donation.

As shown in Table 2, most females (76.8%) and males (32.8%) know that organs can be donated to save another person's life. However, there is a significant difference between the two groups, with females showing higher awareness. Among females, (40.1%) reported that they heard about organ donation through the media, and males are

(20.4%). Nevertheless, there is no significant association directly know that organs can be donated both during life and

Question	Responses n (%)	Female n (%)	Male n (%)	Pvalue
Are you aware that organs can be donated to save another person's life?	Yes No	103 (76.8%) 0 (0%)	48 (32.8%) 1 (2.0%)	0.146
How did you hear about organ donation?	Media Friends of friends Health care staff NGO or organ Donation program	61 (40.1%) 18 (11.8%) 19 (12.5%) 5 (3.3%)	31 (20.4%) 7 (4.6%) 9 (5.9%) 2 (1.3%)	0.953
Has anyone in your family or friend circle ever donated an organ?	yes No Don't know	22 (14.5%) 65 (42.8%) 16 (10.5%)	11(7.2%) 31 (20.4%) 7 (15.1)	0.974
Which of these statements best describes your views on organ donation? It doesn't matter if you would donate your own organs or not, we just want to know how you feel about organ donation.	I strongly support organ donation I support organ donation I neither support nor oppose I oppose organ donation I strongly oppose organ donation	26 (17.1%) 60 (39.5%) 17 (11.2%) 0 (0%) 0 (0%)	16 (10.5%) 27 (17.8%) 6 (3.9%) 0 (0%) 0 (0%)	0.572
When can your organs be donated	During life After death Both	06 (3.9%) 15 (9.9%) 82 (53.9%)	09 (5.9%) 15 (9.9%) 25 (16.4%)	0.001

by gender. Most respondents do not have family members or friends who have donated organs. There is no significant difference between the two groups. Regarding views on

after death, while more males believe it can only happen after death.

Table 3: Attitude regarding organ donation :

organ donation, there is no significant difference by gender. Most respondents expressed support or firm support for organ donation, with a few participants reporting neither supporting nor opposing it and a few opposing or strongly opposing organ donation. There is a significant difference in knowledge about when organs can be donated between females and males. A higher percentage of females cor-

Table 3 shows the data indicates a predominantly favorable disposition towards organ donation, as seen by a substantial proportion (30.9%) expressing their willingness to donate in specific scenarios. Nevertheless, it is worth noting that a significant proportion (18.4%) of individuals will contemplate the matter, demonstrating a certain degree of thoughtful deliberation. Regarding age limitations for organ donation, a notable proportion (27.6%) of individuals be-

Question	Responses	Total	Female	Male	P Value
Express your attitude toward the possibility of your organ being used for donation	I definitely want to Never considered Will think about it donate under special circumstances	25 (16.45%) 33 (21.71%) 41 (26.97%) 53 (34.87%)	16 (10.5%) 12 (7.9%) 28 (18.4%) 47 (30.9%)	09 (5.9%) 11 (7.2%) 13 (8.6%) 06 (4.0%) 10.5%)	0.253
what do you think is there any age limit to donate your organ?	Yes, definitely Yes, maybe No, I don't think so Don't know	60 (39.47%) 49 (32.24%) 30 (19.74%) 13 (8.55%)	42 (27.6%) 30 (19.7%) 22 (14.5%) 09 (5.9%)	18 (11.8%) 19 (12.5%) 08 (5.3%) 04 (2.6%)	0.674

How comfortable are you with the idea of donating your organs after death?	Very comfortable Quite comfortable Neither comfortable nor uncomfortable Quite uncomfortable Very uncomfortable Don't know	27 (17.76%) 37 (24.34%) 45 (29.61%) 18 (11.84%) 6 (3.95%) 19 (12.50%)	15 (9.9%) 29 (19.1%) 29 (19.1%) 13 (8.8%) 03 (2.0%) 14 (9.2%)	12 (7.9%) 08 (5.3%) 16 (10.5%) 05 (3.3%) 03 (2.0%) 05 (3.3%)	0.379
Which of the following best describes how you personally feel about organ donation?	I definitely want to donate all of my organs after death if possible I definitely want to donate some of my organs after death if possible I would consider donating all of my organs after death I would consider donating some of my organs after death I don't know if I want to donate my organs after death I definitely don't want to donate my organs after death	21 (13.82%) 19 (12.50%) 17 (11.18%) 32 (21.05%) 52 (34.21%) 11 (7.24%)	10 (6.6%) 14 (9.2%) 11 (7.2%) 23 (15.1%) 37 (24.3%) 8 (5.3%)	11 (7.2%) 05 (3.3%) 06 (3.9%) 09 (5.9%) 15 (9.9%) 03 (2.0%)	0.425
Have you ever talked with anyone about organ donation?	Yes No Never thought about this	53 (34.37%) 76 (50.00%) 23 (15.13%)	37 (24.3%) 49 (32.2%) 17 (11.2%)	16 (10.5%) 27 (17.8%) 06 (3.9%)	0.645
Which of the organ you have heard most about donation	Liver Kidney Cornea Others Don't know	24 (15.79%) 116 (76.32%) 04 (2.63%) 03 (1.97%) 05 (3.29%)	14 (9.2%) 84 (55.3%) 01 (0.7%) 01 (0.7%) 03 (2.0%)	10 (6.6%) 32 (21.1%) 03 (2.0%) 02 (1.3%) 02 (1.3%)	0.124
Q12: Would you be willing to donate if your family members or friend need an organ?	Yes, why not May be, not sure No, definitely not	73 (48.03%) 74 (48.68%) 05 (3.28%)	49 (32.2%) 51 (33.3%) 3 (2.0%)	24 (15.8%) 23 (15.1%) 02 (1.3%)	0.906
Do you feel that organs that are donated may be misused or abused?	Sometimes Never All the time Don't know	97 (63.82%) 16 (10.53%) 17 (11.18%) 22 (14.47%)	67 (44.1%) 09 (5.9%) 10 (6.6%) 17 (11.2%)	30 (19.7%) 07 (4.6%) 07 (4.6%) 05 (3.3%)	.461

lieve that age-based restrictions could exist. Furthermore, a percentage of 19.7% expresses uncertainty on this matter, indicating a degree of ambiguity within the public's perception. Regarding the level of comfort individuals have with posthumous organ donation, a significant proportion, including 19.1%, express a high level of comfort. At the same time, an equal percentage also indicates a considerable degree of comfort, thereby indicating a prevailing posi-

tive feeling. There is a relatively even distribution on individuals' sentiments on organ donation, wherein confident respondents are willing to contribute a portion or the entirety of their organs posthumously.

In contrast, others maintain uncertainty or reluctance towards embracing this concept. Significantly, a considerable proportion (32.2%) of individuals have engaged in conversations pertaining to organ donation, indicating a certain

degree of understanding and involvement with the subject matter. The research further reveals that a significant proportion (55.3%) of respondents had primarily been exposed to information regarding kidney donation, indicating

trust and providing educational initiatives on organ donation protocols.

Table 4: Participants' willingness and Motivations towards organ donation:

Table 4 displays data presenting a variety of obstacles and perspectives on organ donation. A notable portion of participants expressed concerns, with 10.5% citing religious restrictions, 7.9% facing family objections, 3.9% voicing worries about disfigurement, and 19.1% harboring anxieties about potential risks to their well-being. Additionally, a significant number of respondents (26.3%) highlighted "Other" barriers, indicating a wide array of reservations. On the

for more information on the topic. Most of these individuals preferred to receive information from medical professionals or healthcare staff (46.7%), while a smaller percentage mentioned relying on friends or family members (22.4%). As previously mentioned, the results underscore the importance of effectively addressing concerns, providing clear information, and enhancing public education efforts to encourage organ donation.

The data indicates differences in organ donation beliefs

Question	Response	Total	Female	Male	P Value
What are the barriers for you to donating your organs	Do you think it is religiously prohibited	37 (24.34%)	16 (10.5%)	11 (7.2%)	0.005
	Family objection	24 (15.79%)	12 (7.9%)	12 (7.9%)	
	Disfigurement of your body	13 (8.55%)	06 (3.9%)	07 (8.6%)	
	You fear the loss of your life	42 (27.63%)	29 (19.1%)	13 (8.6%)	
	Others	46 (30.26%)	40 (26.3%)	06 (3.9%)	
Why do you think organ donation is done?	To save someone's life	140 (92.11%)	97 (63.8%)	43 (28.3%)	0.194
	For empathy	07 (4.61%)	03 (2.0%)	04 (2.6%)	
	For Money	03 (1.97%)	01 (0.7%)	02 (1.3%)	
	Another reason	02 (1.32%)	02 (1.3%)	0 (0%)	
Do you think you need more knowledge about this topic?	<u>Yes</u>	103 (67.76%)	72 (47.4%)	31 (20.4%)	0.325
	No	14 (9.21%)	07 (4.6%)	07 (4.6%)	
	Maybe	35 (23.03%)	24 (15.8%)	11 (7.2%)	
If yes, then from which source would you prefer to get knowledge from	Doctor /health care staff	105 (69.08%)	71 (46.7%)	34 (22.4%)	0.509
	Friends/family	15 (9.87%)	09 (5.9%)	06 (3.9%)	
	Social media	28 (18.42%)	19 (12.5%)	09 (5.9%)	
	Newspaper	04 (2.63%)	04 (2.6%)	0 (0%)	
	SMS	0 (0%)	0 (0%)	0 (0%)	

other hand, a substantial level of awareness exists regarding the primary purpose of organ donation, with 63.8% recognizing it as a means to save and prolong human life. In contrast, 28.3% acknowledge its compassionate aspect—only a few (0.7%) view organ donation as driven by financial gain. Around 47.4% of participants expressed a desire a heightened emphasis on raising awareness about kidney donation compared to other organ types. In the context of donating to family or friends, a somewhat equal distribution exists between individuals who express willingness to contemplate such an act (33.3%) and those who remain undecided (33.3%). A notable proportion (44.1%) of participants hold the belief that given organs could be subject to misuse or abuse, hence underscoring the importance of fostering

and concerns among students in various years of study. First-year students show more concerns about religious restrictions, fear of losing life, and other factors. In comparison, fifth-year students appear to be more knowledgeable about both living and post-mortem organ donation options.

Discussion:

There was a total of 152 participants, including undergraduate medical students. The socio-demographic characteristics of this study, such as gender, profession of study, and year of study, reveal discernible patterns of significance. Most of the students were enrolled in the MBBS study program (80%), and 77% of the participants were females. The data showed a notable disparity between genders in the field of education, specifically in the pursuit of MMBS (Bachelor of Medicine, Bachelor of Surgery). Regarding the

academic year of study, the data reveals a statistically significant disparity ($P < 0.001$) between the male and female populations about organ donation. The predominance of female respondents (68%) is similar to the pattern observed in two studies, reflecting more females undertaking medical education than males in the subcontinent.¹³⁻¹⁴

We found variations in organ donation beliefs and concerns across different years of study. First-year students exhibit higher concerns about religious prohibitions, fear of the loss of life, and other reasons, while fifth-year students seem to have a greater awareness of both during-life and post-mortem organ donation options. This information could help tailor educational programs and interventions to address specific concerns and raise awareness about organ donation at different stages of medical education.¹⁵

Notably, very few perceived organ donations as being motivated by monetary gain. The data also reveals a substantial portion of participants who desired more knowledge on the subject, preferring to obtain information from healthcare professionals or trusted social circles. In light of these findings, it becomes evident that addressing concerns, providing clear communication, and enhancing public education efforts are crucial steps toward promoting and increasing organ donation rates^{9, 11}. This could save more lives and foster greater empathy within society. A comprehensive overview of the public's attitudes and perceptions toward organ donation. It indicates a generally favorable disposition towards organ donation, with a substantial portion of respondents willing to consider it, especially in specific scenarios. The data reflects a high level of comfort and positive feelings about posthumous organ donation among a significant portion of participants, further emphasizing the potential for organ donation awareness and promotion. However, the research also highlights areas of concern and uncertainty, notably the belief in potential age-based restrictions on organ donation and some level of ambiguity in the public's perception of this matter.¹⁶

Additionally, the data indicates that a sizable percentage of respondents had talked about organ donation, highlighting a continuous conversation and involvement with this important subject.¹⁷ The overwhelming majority of information about kidney donation points to the necessity for a more equitable strategy to raise public knowledge of different organ types and guarantee a comprehensive understanding of organ donation. According to the findings, a significant proportion of people think that organs could be misused or abused. This highlights the significance of establishing trust and implementing educational programs on organ donation procedures.¹⁸

Conclusion:

Our research reveals a wide range of challenges and perspectives related to organ donation. Some participants raised concerns, such as religious constraints, family opposition, and fears of disfigurement or loss of life. On the other hand, others mentioned various "Other" obstacles, indicating a diverse set of reservations. However, the majority of respondents recognized the altruistic nature of organ donation, with the main goal being to preserve and extend human life. This is supported by a significant number of participants acknowledging its compassionate aspect. In conclusion, the findings emphasize the ongoing necessity to increase awareness, educate the public, and address concerns in order to further promote organ donation and ultimately save lives.

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