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Knowledge and Attitude Regarding Organ Donation in Undergraduate Medical Students of District Peshawar, Khyber-Pakhtunkhwa.

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ABSTRACT

Background: Organ transplant can serve as a lifesaving option for end-stage organ failure. Worldwide, with growing number of cases of organ failure, both the need & demand for the donation of organs has also increased.
Objectives: To assess the level of knowledge and explore attitude of undergraduate medical students of Peshawar towards organ donation.
Material and Methods: A cross-sectional study was carried out among 4th & 5th year students of a Public and Private Medical Colleges of Peshawar, KPK from January to April 2018. The 350 participants were approached through convenient sampling method. The data were collected through self-administered validated questionnaire. The data analysis was done for descriptive statistics on SPSS 21.
Results: Out of 350 participants, 324 (93%) students have filled out the questionnaire. Only 210 (64.8%) of the students had adequate cumulative awareness scores while 114 (35.2%) students had inadequate awareness scores regarding organ donation. Only 12% of the participants were motived positively for organ donation whereas 13% has refused for organ donation. The main reason for not promoting organ donation was found to be religious beliefs corresponding to 48.6%. Statistically significant correlation (P<0.001) was observed between religious beliefs and the attitude regarding organ donation promotion.
Conclusion: Though, medical students are found to have adequate knowledge but a gap is found between their knowledge and attitude towards phenomenon of organ donation. Effective actions are required to improve the awareness regarding organ donation in young doctors and medical students to translate their knowledge into definite actions. This requires modification in our educational system with the involvement of social media and religious scholars.
Keywords: Attitude, Knowledge, Medical students, Organ donation, Transplantation,

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INTRODUCTION

Organ transplant can serve as a lifesaving option for end-stage organ failure.[1-3] Worldwide, with growing number of cases of organ failure, increasing number of experts capable of performing organ transplant & relevant innovative technical advancement, both the need & demand for the donation of organs has also increased.[4,5] However, the need is largely unmet as there is a serious shortage of donated organs.[5-8] Many patients die waiting for an organ donor.[9] The current situation can be attributed to many factors including lack of awareness, hostile attitude, misconceptions, religious & cultural norms & legal barriers.[10] The situation is even worse in developing countries including Pakistan where organ transplant becomes a rare opportunity due to extreme shortage of donors and financial barriers. Organ donation does raise concern & its regulation calls for effective legislation. Realizing this, most of the countries do have laws to ensure ethical practices only however, an awareness of the relevant laws is equally important in order to avoid unethical or criminal practices.

The demand for organ donation in Pakistan is exceedingly high while there is very limited supply. It is estimated that the incidence of end-stage renal disease alone is 100/million population here. Further, only 10 percent out of those in need succeed in receiving dialysis and less than 5 percent have good fortune to receive renal transplantation.[11]

Healthcare professionals can play a vital role in promoting organ donation. Doctors are the primary first link between the patients waiting for an organ donation and the potential donors. Available research evidence that healthcare professionals specially doctors can play an instrumental role in improving the rate of organ donations in a community.[12-14] However, this needs awareness and a positive attitude towards organ donation practice among them first.

Undergraduate medical students are the future doctors and it is therefore important to assess their knowledge about organ donations. The medical students in their clinical years of undergraduate medical study are expected to have a satisfactory level of knowledge about organ donation. In addition it is also desirable that they would have

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developed a positive attitude towards organ donation by then because as future young doctors they need to encourage the much needed organ donation. In spite of its dire importance, few researches have explored this area. This study is therefore an attempt to assess knowledge of organ donation and also the attitude towards it among senior undergraduate medical students of Peshawar. It is also an effort to identify reasons to refuse donating organs, these could hint at potential barriers to promote organ donation. The study is expected to inform policy makers for promotion of organ donation & help devise specific, relevant & effective interventions involving the young doctors.

MATERIAL & METHODS

A cross sectional survey was conducted in the Khyber Medical College and Rehman medical college, Peshawar from January to April, 2018. The students of fourth year and final year MBBS were targeted as expected to have awareness on this subject than students of pre-clinical years. The sample size calculated as per WHO criteria was 350 by assuming 50% prevalence of awareness among students with 95% confidence interval and 5% error of margin. One hundred and seventy-five students from each public and a private sector medical college were selected through convenience sampling method. Data was collected using a validated structured,[11] self-administered questionnaire. The questionnaire comprised of three sections. First section was about Sociodemographic data, second part was meant to assess knowledge whereas third part assessed attitude of the study participants. The inclusion criteria was the students enrolled in 4th or final year MBBS whereas exclusion criteria was students who were not present and not willing to participate in the study. Ethical approval was taken from Institutional Review Board, (May10th 2023, RMI/RMI-REC/Article Approval/72). An informed verbal consent was taken from each participant and confidentiality was ensured. The study data was entered and analyzed for descriptive analysis in SPSS Version 21. The frequencies were estimated and 95% confidence interval was calculated.

RESULTS

A total of 350 medical student, only 324 (93%) students have filled out the questionnaire. 134 (41.5%) of them were males while 190 (58.5%) were females. The mean age of participants was 24 $\pm$ 2.05 years. Most of the participant (98.4 %) were Muslims.

Two hundred and ten Students (64.8%) in this survey achieved an adequate awareness score for Organ Donation while 114 (35.2%) had inadequate awareness scores as shown in Table 01. These cumulative awareness scores were based on a structured set of knowledge questions in a questionnaire. The students achieving more than 50% score were regarded as being adequately knowledgeable while those achieving less than 50% scores were regarded as being inadequately knowledgeable.[15]

Table 01. Cumulative Awareness Scores

Awareness Scores	Frequency	Percent
Inadequate knowledgeable	114	35.2
Adequate knowledge	210	64.8

As per individual questions responses from knowledge section, only 52.2% of the students in the study enrolled were aware about the term organ donation. Unfortunately, majority of the medical students were not aware of the national or international legislation on organ donation, Transplanting human tissue and organ Bill and organ trafficking. Similarly, 30.9% of students were aware of the all different organs of the body which can be donated. Knowledge regarding types of organs/ tissues was assessed based on whether the student know of all the different types of organs/ tissues that could be donated (kidneys, blood, heart, eye, liver, skin, bone marrow and lungs). Of all the students, 100(30.9%) selected all possible organs/ tissues that could be donated whereas knowledge about Kidney donation was highest 309(95.4%) followed by eye 277(85.5%). Knowledge regarding skin 153(47.2%) being an organ for donation was the lowest as shown in Fig. 01.

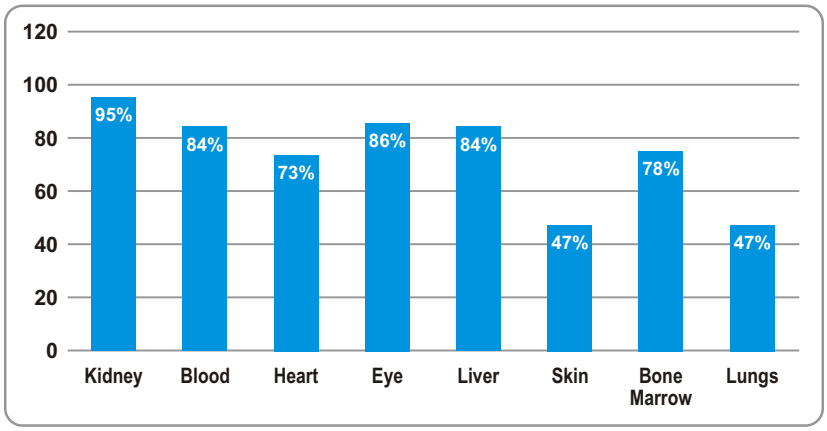


Fig 01. Organs which can be donated

According to the study participants when asked about the possibility of being an organ donor, most of the students stated that they would only like to donate in special circumstances however, about 13% students never considered donating an organ.

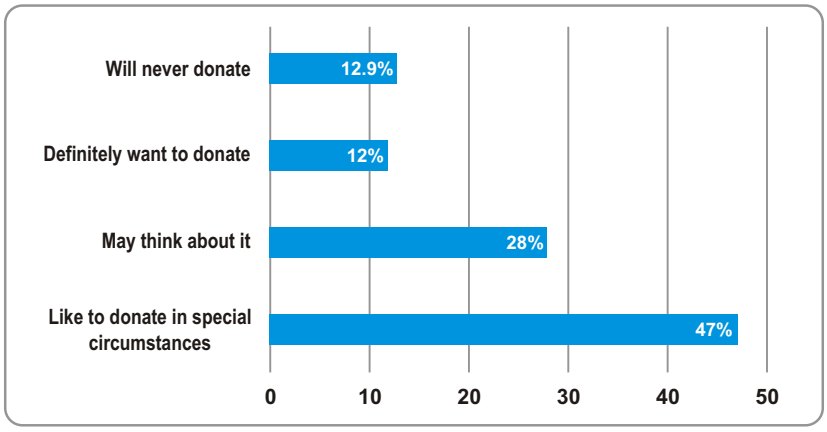


Fig 02. Attitude towards being an organ donor

63.9% of the study participants preferred to be recipient for organ donation to family members if ever needed. Similarly, 52.5% preferred to donate to young people. On response to the reasons of reluctance towards organ donations from study participants, following reasons were explored as shown in graph4.

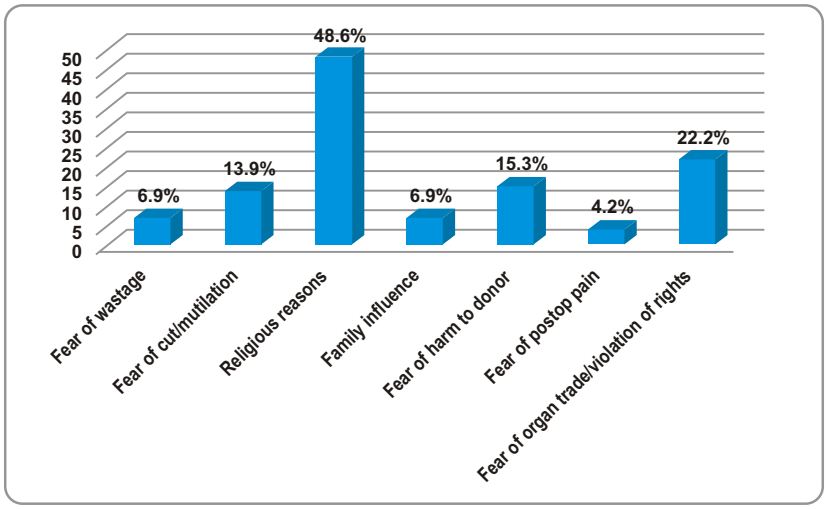


Fig 03. Reasons of reluctance to organ donation

155(44%) of the students were of the opinion that their religion allowed organ donation, the rest thought either opposite to this or did not know. As shown in table 02, a highly significant association was found between religious beliefs regarding organ donation and student's attitude towards promoting organ donation ($p<0.001$).

Table 02. Association between Religious beliefs and Attitude towards Organ Donation

Question		Does your Religion allow Organ Donation			Total	p value
	Responses	Yes	No	Don't know		
Should organ donation be promoted ?	Yes	101	33	31	165	p<0.001
	No	23	41	9	73	
	Don't know	20	30	36	86	
Total		144	104	76	324	

DISCUSSION

The demand for organ donation in Pakistan is exceedingly high while there is very limited supply. In order to improve the issues with supply of organ donation, it is imperative to identify the reasons so that we can work to promote organ donation phenomenon in our society with special emphasis on our young doctors.

As evident from our study that 210(64.8%) of the students had adequate cumulative knowledge and 114(35.2%) had inadequate cumulative knowledge regarding organ donation. A study done in Karachi, Pakistan on organ donation among general population in market places had similar results with a 60% adequate knowledge and 40% inadequate knowledge with similar knowledge assessment criteria.[15] In another study conducted on the patients visiting a private tertiary care hospital in Karachi, Pakistan, score of adequate knowledge on organ donation was 60%.[16] Knowledge among medical students was expected to be higher but these results show that the difference between medical student's knowledge regarding organ donation and the general populations is not very significant. This draws our attention that active interventions should be planned to increase awareness in young doctors and medical students.

In this study regarding attitude of medical students towards organ donation, only 12% of the participants were definitely motived for organ donation and another 12.9% refused for organ donation. Whereas 28% might think and 46% would consider organ donation in special circumstances only. A similar study reported about 45% of the medical students to demonstrate willingness to donate their organs.[17] These results were inconsistent with our results. Another survey found that 38% of individuals never wanted to donate any organ while 62.3% responded positively for organ donation.[15] This figure is surprisingly higher than our results. A study in Karachi, Pakistan has shown same preference regarding options to receive an organ, most of the study participant's preferred family member and young age group patients.[16] Another study done in Nigeria, health care professions and medical students also preferred family members as recipients for organ donation.[18]

In this study, religious beliefs regarding the allowance of organ donation was stated as the most common 35(48.6%) barrier to the promotion of organ donation. It was also found that there was a significant association ($p<0.001$) between religious belief about the allowance of organ donation and the attitude towards organ donation promotion. In a study done on the general population in Karachi, 45.4% of the population stated religious beliefs as their reason for refusal of organ donation.[15] These results are in accordance with our study. In another study done on the emergency department clinician's perception regarding organ donation and transplantation has also shown less positive attitude of Muslim clinicians as compared to Christians, Hindu and Buddhist clinicians.[19] A systemic review on barriers against organ donation also identified religious beliefs as an important barrier. It also reported Muslims to have

less favorable attitudes toward organ donation and transplantation as compared with individuals from other religions.[20]

The limitations of this study are that the study was conducted at one public and private sector medical college only and convenience sampling method was used. Hence the results cannot be generalized largely. This study provides a groundwork but further larger research is needed for generalizable evidence.

CONCLUSIONS

Though, medical students are found to have adequate knowledge but a gap is found between their knowledge and attitude towards phenomenon of organ donation. Effective actions are required to improve the awareness regarding organ donation in young doctors to translate their knowledge into definite actions. This requires modification in our educational system with the involvement of social media and religious scholars. These modifications can be made a part of undergraduate medical curriculum. Similarly, workshops, seminars and symposium can be arranged during pre-clinical and clinical years of medical education to create awareness among our young doctors.

Conflict of Interest

Authors declare no conflict of interest

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NIL

REFERENCES

1. Shi BY, Liu ZJ, Yu T. Development of the organ donation and transplantation system in China. Chin Med J (Engl). 2020 Apr 5;133(7):760-765. doi: 10.1097/CM9.0000000000000779. PMID: 32195670; PMCID: PMC7147652.
2. Moritsugu KP. The power of organ donation to save lives through transplantation. Public Health Rep. 2013 Jul;128(4):245-6. doi: 10.1177/003335491312800402. PMID: 23814318; PMCID: PMC3675206.
3. Axelrod DA, Schnitzler MA, Xiao H, Irish W, Tuttle-Newhall E, Chang SH, et al. An economic assessment of contemporary kidney transplant practice. Am J Transplant. 2018 May; 18(5):1168-1176. doi: 10.1111/ajt.14702. Epub 2018 Mar 31. PMID: 29451350.
4. Tamuli RP, Sarmah S, Saikia B. Organ donation - "attitude and awareness among undergraduates and postgraduates of North-East India". J Family Med Prim Care. 2019 Jan;8(1):130-136. doi: 10.4103/jfmpc.jfmpc_206_18. PMID: 30911493; PMCID: PMC6396593.
5. Council of Europe. More donors & transplantations to save lives. 202 [Online]. Available from http://www.coe.int/en/web/human-rights-channel;/organ-donation.
6. Sterri AB, Regmi S, Harris J. Ethical Solutions to the Problem of Organ Shortage. Camb Q Healthc Ethics. 2022 Jul; 31(3):297-309. doi: 10.1017/S0963180121000955. PMID: 35899548.
7. Wall SP, Plunkett C, Caplan A. A Potential Solution to the Shortage of Solid Organs for Transplantation. JAMA. 2015; 313(23):2321-2322. doi:10.1001/jama.2015.5328
8. Chan-On C, Sarwal MM. A ComprehensiveAnalysis of the Current Status and Unmet Needs in Kidney Transplantation in Southeast Asia. Front Med (Lausanne). 2017 Jun 23;4:84-9. doi: 10.3389/fmed.2017.00084. PMID:28691007; PMCID: PMC5481314.
9. Lee S, Yoo KD,An JN, Oh YK, Lim CS, Kim YS, et al. Factors affecting mortality during the waiting time for kidney transplantation: A nationwide population-based cohort study using the Korean Network for Organ Sharing (KONOS) database. PLoS One. 2019 Apr 12; 14(4):e0212748. doi: 10.1371/journal.pone.0212748. PMID:30978204; PMCID: PMC6461220.
10. Pourhosein E, Bagherpour F, Latifi M, Pourhosein M, Pourmand G, Namdari F et al, The influence of socioeconomic factors on deceased organ donation in Iran. Korean J Transplant. 2022 Mar 31;36(1):54-60. doi: 10.4285/kjt.21.0034. PMID: 35769431; PMCID: PMC9235528.
11. Rizvi SA, Naqvi SA, Zafar MN, Akhtar SF. A kidney transplantation model in a low-resource country: an experience from Pakistan. Kidney Int Suppl (2011). 2013 May;3(2):236-240. doi: 10.1038/kisup.2013.22. PMID: 25018989; PMCID: PMC4089647.
12. Ramadurg UY, Gupta A. Impact of an Educational Intervention on Increasing the Knowledge and Changing the Attitude and Beliefs towards Organ Donation among Medical Students. J Clin Diagn Res. 2014 May;8(5):JC05-7. doi: 10.7860/JCDR/2014/6594.4347. Epub 2014 May 15. PMID: 24995198; PMCID: PMC4080019.
13. Bharambe VK, Arole VU, Puranam V, Kulkarni PP, Kulkarni PB. Knowledge and attitude toward organ donation among people in Lanja: A rural town in India. Saudi J Kidney Dis Transpl. 2018 Jan-Feb;29(1):160-166. doi: 10.4103/1319-2442.225209. PMID: 29456223.
14. Chuang YM, Yeh SS, Tseng CF, Tseng CC. Soliciting organ donations by medical personnel and organ donation coordinators: A factor analysis. PLoS One. 2021 Apr 23; 16(4):e0250249. doi: 10.1371/journal.pone.0250249. PMID: 33891641; PMCID: PMC8064528.
15. Saleem T, Ishaque S, Habib N, Hussain SS, Jawed A, Khan AA, et al. Knowledge, attitudes and practices survey on organ donation among a selected adult population of Pakistan. BMC Med Ethics. 2009 Jun 17;10:5. doi: 10.1186/1472-6939-10-5. PMID: 19534793; PMCID: PMC2702378.
16. Ashraf O, Ali S, Li SA. Attitude toward organ donation: A survey in Pakistan. Artif Organs. 2005, 29:899-905. 10.1111/j.1525-1594.2005.00153.x

17. Ali NF, Qureshi A, Jilani BN. Knowledge and ethical perception regarding organ donation among medical students. BMC Med Ethics 14, 38 (2013). https://doi.org/10.1186/1472-6939-14-38
18. Pedro C Emem-Chioma, Hope I Bell-Gam. Organ Donation and Transplantation in Port Harcourt: Awareness, Knowledge and Willingness to Donate an Organ. American Journal of Clinical Medicine Research. 2020; 8(1):13-17. doi: 10.12691/ajcmr-8-1-3.
19. Mark C. Assessing barriers to the involvement of emergency departments to organ donation. Australia; 2015. p 197.
20. Al-Abdulghani A, Vincent BP, Randhawa G, Cook E, Fadhil R. Barriers and facilitators of deceased organ donation among Muslims living globally: protocol for an integrative systematic review using narrative synthesis. BMJ Open. 2023 Apr 3;13(4):e069312. doi: 10.1136/bmjopen-2022-069312. PMID: 3701 2022; PMCID: PMC10083782.

DATA SHARING STATEMENT: The data that support the findings of this study are available on request from the corresponding author. The data is not publicly available due to privacy or ethical restrictions.

AUTHOR'S CONTRIBUTION

The following authors full fill authorship criteria as per ICMJE guidelines;

Khan M, Aliya B:	Substantial contribution to conception and design, drafting the manuscript, final approval, agreed to be accountable for all the work.
Abdullah KN, Mustafa A:	Substantial contribution to conception and design, data acquisition, drafting the manuscript, final approval, agreed to be accountable for all the work.
Tariq B:	Analysis and interpretation of data, drafting the manuscript, final approval, agreed to be accountable for all the work.
Tahir S:	Analysis and interpretation of data, critical revision,final approval, agreed to be accountable for all the work.

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