

Knowledge and Attitudes of Medical Students about Organ Donation in Erbil City/Iraq

Authors: Ayman H. Muhammed¹, Ahmad A. Ghareeb¹, Taba A. Ismail¹, Shokhy D. Ramadhan¹,
Soma B. Mustafa¹, Nazho A. Muhammad Said¹, Samir M. Othman²

Corresponding author:

Samir M. Othman

Assist. Prof. of Community Medicine

College of Medicine

Hawler Medical University

Erbil_Iraq

E mail: Samir.othman.@med.hmu.edu.krd

Tel: +964 750 448 88 91

¹ Fourth year medical students, College of Medicine/HMU/Erbil/Iraq

² Assist. Prof. Community Medicine Department, College of Medicine/HMU/ Erbil/Iraq

Abstract:

Background and objectives:

Organ donation is one the major health related issues worldwide. During the past few decades, organ donation has been increasing globally as the modality of treatment for many end-stage organ diseases. The main aim of this study was to study the perception, awareness and beliefs about organ donation and to establishing a relationship between various socio-demographic data on awareness and perception of organ donation among Hawler Medical University students in Erbil.

Methods:

A cross-sectional descriptive study carried out from the period of September 22 to October 28 2016 at Hawler Medical University in Erbil city, involved a convenience sample of 391 medical students. Self-administered questionnaire and online questionnaire were used for data collection, which included socio-demographic characteristic of students, and other questions related to their awareness about organ donation. SPSS used for data entry and analysis.

Result:

This study showed that (45.8%) were males, and (54.2%) were females. Age of students ranged from 18 to 28 years with mean \pm S.D of 21.5 ± 1.9 years. The overall knowledge and attitude of students about organ donation was (91.3% and 65.5%), respectively. Significantly highest positive attitude (68.1%) among those had good knowledge, $P < 0.001$.

This study revealed that 52.7% of the students were ready to donate and after death donation was the most preferred choice among participants (51.5%). About 45% mentioned that organ donation was not safe for their health (45.0%), and (20.0%) fear from surgery as reason for not donate organ.

Conclusion:

Most medical students were aware about organ donation and had good knowledge and positive attitude about organ donation and most of them showed readiness to donate organ. These data might play a major role in educating, spreading awareness and motivating the public regarding organ donation.

Key words: Knowledge, attitude, organ donation, medical student, Erbil city

Introduction:

During the past few decades, organ donation (OD) has been increasing globally as the modality of treatment for many end-stage organ diseases; it's a unique social activity that affects the delivery of healthcare to patients. However, this strategy of treatment is concerned with many critical issues including, ethical, medico-legal and religious aspects.^{1,2} Through organ transplantation thousands of lives all over the world can be saved.³

Around the world, several organ donation policies have been developed in order to increase the donor population, for instance, opt-in and opt-out systems. Opt-in system states that people have to actively sign up an official registration paper to donate their organs after death⁴. Factors that might affect donor availability are including healthcare spending and public educational level and attitude.⁵

Although it's illegal to sell human organs and tissues in almost all the countries (as for instance, the US National Organ Transplantation act (public law 98 -507) those who violate this law will be subjected to fines and imprisonment). But, in spite of the presence of black markets for organs, there's an alarming phenomenon called "Organ or Transplant Tourism". Every year, thousands of people travel from Europe, Middle East, US to countries that are known to have high rates of poverty like India, China, Pakistan and Philippines searching for people who are willing to donate organs in an attempt to pay off debts; this denotes how financial status can directly affect the process.⁶

There is a significant relation between public attitude towards OD and availability of such organs.^{7,8} Thus the main concern of most transplant surgeons is to increase the donor pool and spread the willingness of donation among healthy individuals. Evaluation of public knowledge and attitude towards OD is of crucial importance to evaluate and develop educational programs to raise the public commitment to OD.^{9,10} Knowledge and attitude of health care providers towards OD plays a major role in promoting the concept among population.¹¹ Furthermore, it is of great importance to understand the impact of the educational process among other cultural factors on medical students' attitude towards OD.¹²

According to researchers' knowledge there is no published data about organ donation, so therefore the current study was carried out in order to assess knowledge and attitude of medical students toward organ donation and to investigate factors that might affect their attitude toward organ donation.

Methods:

A cross-sectional study was conducted among medical students of Hawler medical University in Erbil city, from periods between Sep.22 to Oct.28 2016.

Medical students from second year to final year of academic year 2016-2017 were included in the study. The sample size was determined by EPI INFO version 7, by using 95% C.I with expected frequency of 50% and population of 2174 students. The estimated sample size was 326; however, 391 students were participated in the study. Convenient sampling method was used to select students from colleges. A modified questionnaire from other previous studies^{3,13} was used for data collection. The questionnaire was in English language and included information about certain demographic characteristics of the participants (age, gender, religion, ect...), and questions related to organ donation.

Eight questions evaluated the knowledge of participants about organ donation; less than four question answered correctly was regarded as poor knowledge and more than four questions answered correctly regarded as good knowledge. The 12 items had evaluated students' attitude toward organ donation. Score from 0-5 regarded as negative attitude and scores ranged from 6-12 regarded as positive attitude about organ donation.

The process of data collection was carried by using two ways; printed paper distributed among participants of some colleges, and online questionnaire posted in official Facebook groups of others. The collection of information lasted for six days. Also, an official letter has been prepared from the dean of the college in order to facilitate the process.

A questionnaire was piloted on 15 students from college of medicine, in order to assess the content. The pilot study revealed that questions were clear and understandable and students had no difficulty in answering questions.

Aims of the study have been clearly explained for all participants. Informed consent was obtained from each participants; both verbal (for those answered on papers) and written (for the online questionnaire).

Statistical package of social science (SPSS version 18) was used for data entry and analysis. Descriptive statistics as a first approach was used to determine frequencies and percentages. In analytic statistics a chi-square association test was used for categorical variables. P value ≤ 0.05 regarded as statistically significant.

Results:

This study showed that out of 391 participants, 179 (45.8%) were males, and 212 (54.2%) were females. Age of students ranged from 18 to 28 years with mean \pm S.D of 21.5 ± 1.9 years. About 38% of participants were from College of Medicine, 23.8% from College of Dentistry, 19.4% from college of Pharmacy and 9.0%, 10.2% from college of nursing and college of science in respectively.

Among total 391 participants, vast majority 378 (96.7%) were heard about organ donation, among them the most common source of knowledge was internet & mass media (43.7%). The frequency of major sources is shown in Fig.1.

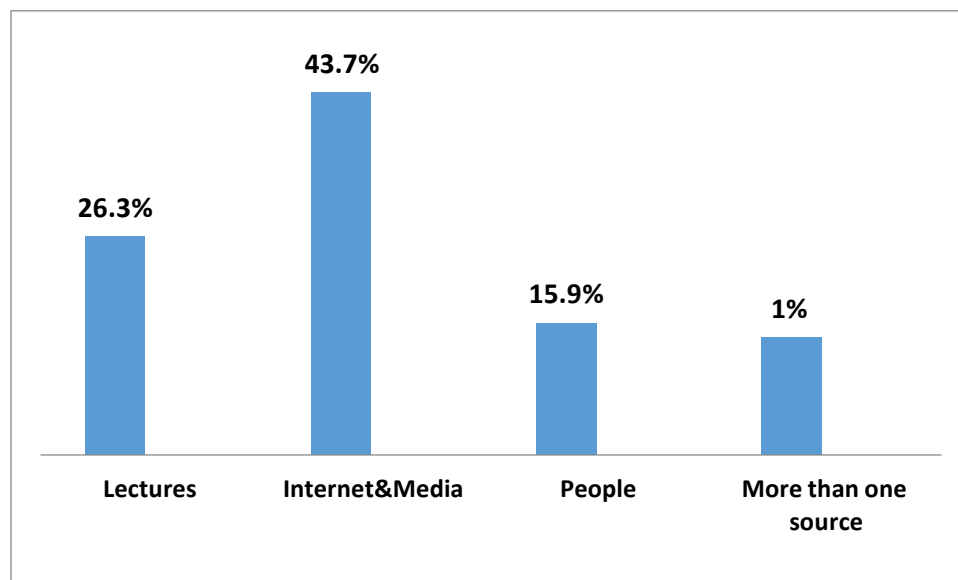


Fig. 1: Sources of knowledge about organ donation.

This study revealed that the overall knowledge score among the study sample was 91.3%; higher among females (93.9%) than males (88.3%), $p < 0.05$, and a statistically non significant association was found between gender and attitude toward organ donation, Table 1. The current study also revealed that there was a statistically significant association between good knowledge and positive attitudes towards organ donation, those had good knowledge had higher positive attitude score (68.1%), than those had who poor knowledge (38.2%), $P < 0.001$., Table 2.

Table 1: Association between knowledge, attitude about organ donation and gender.

Variable	Gender				Total		P value
	Male		Female		No.	%	
Knowledge	No.	(%)	No.	(%)	No.	%	
Good	158	(88.3)	199	(93.9)	357	(91.3)	0.05
Poor	21	(11.7)	13	(6.1)	34	(8.7)	
Attitude							
Positive	109	(60.9)	147	(69.3)	256	(65.5)	0.08
Negative	70	(39.1)	65	(30.7)	135	(34.5)	
Total	179	(100.0)	212	(100.0)	391	(100.0)	

Table 2: association between knowledge and attitude about organ donation

Knowledge score	Attitude score				Total		P value
	Negative		Positive		No.	%	
	attitude		attitude		No.	%	
Good Knowledge	114	(31.9)	243	(68.1)	357	(100.0)	<0.001
Poor Knowledge	21	(61.8)	13	(38.2)	34	(100.0)	
Total	135	(34.5)	256	(65.5)	391	(100.0)	

The current study revealed that 89% of students thought organ donation is beneficial/saves lives and 53% of them were ready to donate organ. However; most of them (63.1%) still had not informed their families about their willingness towards donation and 80.1% were willing to donate any organ “when possible”, and 19.9% were not ready to donate any organ (for instance, they might donate only one kidney, or a lobe of liver).

Regarding relation between readiness for organ donation with religion and colleges; this study showed a statistically non significant association, while a statistically significant association was found between gender and readiness for organ association, in which female students were more ready to donate organ than males (59.2% versus 40.8%), $p=0.036$, Table 3.

Table 3: Relation between gender, religion and colleges with readiness for organ donation.

variables	Readiness for donation				Total		P value
	Yes		No		No.	(%)	
Religion	No.	(%)	No.	(%)	No.	(%)	
Muslim	183	(52.4)	166	(47.6)	349	(100.0)	0.959**
Christian	18	(54.5)	15	(45.5)	33	(100.0)	
Others*	5	(55.6)	4	(44.4)	9	(100.0)	
Gender							
Male	84	(46.9)	95	53.1	179	(100.0)	0.036
Female	122	(57.5)	90	42.5	212	(100.0)	
College							
Medicine	69	(46.9)	78	(53.1)	147	(100.0)	0.289
Dentistry	53	(57.0)	40	(43.0)	93	(100.0)	
Pharmacy	46	(60.5)	30	(39.5)	76	(100.0)	
Health science	19	(54.3)	16	(45.7)	35	(100.0)	
Nursing	19	(47.5)	21	(52.5)	40	(100.0)	
Total	206	(52.7)	185	(47.3)	391	(100.0)	

*Others: Kakayi, Zardashti, & Agnostic.

** Fisher Exacts' test

Regarding the preferred time for donation, more than half of participants preferred donation after death, while 34% and 14.6% of them preferred donation at any time and during life in respectively. Among those who responded “Yes” for donation, 166 (80.6%), were ready to donate organ to a recipient of another religion. Regarding donating organ to families, relatives, friends and any one in need, this study showed that more than half (51.5%) of them would donate organ after death, 14.6% donate during life, and 34% donate at any time, P<0.001. Details illustrated in Table 4.

Table 4: Relation between time of organ donation, and the preferred recipient.

Preferred recipient	Time of donation						Total	P value
	During life		After death		At anytime			
	only	only	only	only	only	only		
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Family	20	(29.0)	17	(24.6)	32	(46.4)	69	(100.0)
Relatives	3	(25.0)	3	(25.0)	6	(50.0)	12	(100.0)
Friends	3	(21.4)	7	(50.0)	4	(28.6)	14	(100.0)
Anyone in need	4	(3.6)	79	(71.2)	28	(25.2)	111	(100.0)
Total	30	(14.6)	106	(51.5)	70	(34.0)	206	(100.0)

Regarding the most important factors encouraging donation among those who responded as donate organ; most of the (74.8%) agreed on humanity, while financial problems seemed to be the least important factor for donation only (5.8%), Details shown in Fig.2.

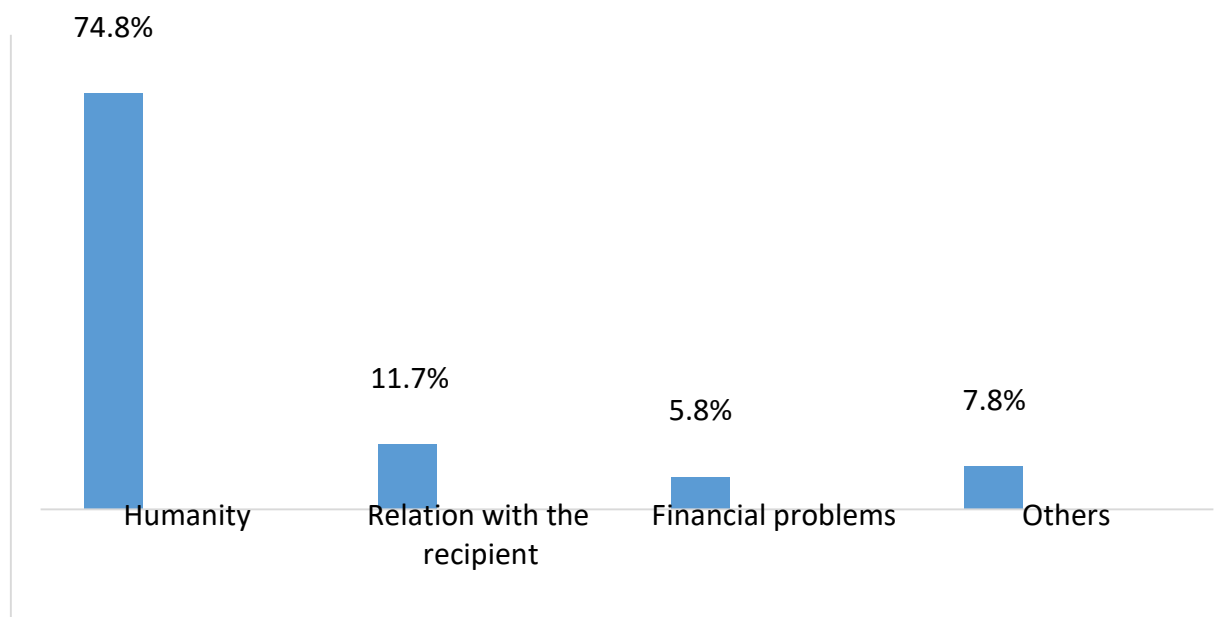


Fig.2: Percentage of responses about the most important factor for donation.

The most common reason behind donation refusal was the belief; that organ donation is not good for health (45%), followed by fear from surgery (20%). Only (5%) of the students refused due to the belief; that it's required to have an intact body after death (which is a religious belief), Fig.3.

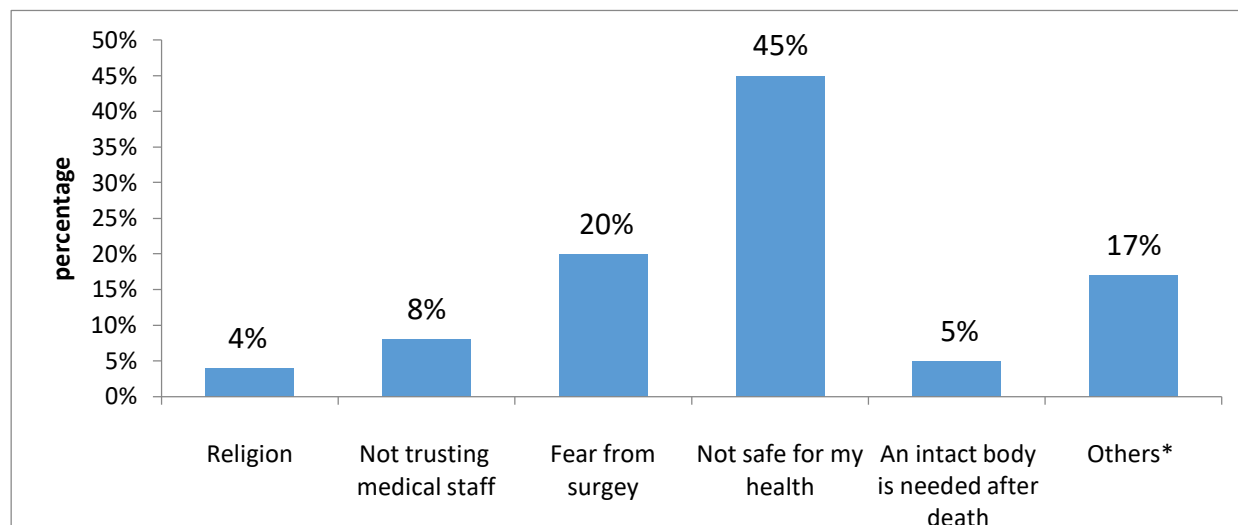


Fig.3: Frequency of the reasons behind refusing organ donation.

*Others: Not ethical, not having family consent.

Regarding the role of money, we asked whether financial support encourages donation or not.

About (85%) of participants responded as “Yes”, and (15%) of them replied as “No”.

Students were asked whether they register, if an official donation center is opened, or not. More than half of them (57%) responded that they need more time to think about it and (34%) of them absolutely agreed for registration, while (9%) of the refused registration at all.

Discussion:

Organ and tissue transplantation has become an integral part of health care in every day nation, it's a community service which saves lives, and it's one of the most effective lifesaving procedures.

The transplant technology and surgical methods continue to improve enhancing changes of survival and improved quality of life of recipients.

There is shortage of organ donor today all over the world. The success rate of donor program in any region is dependent – on the knowledge and attitude of the people residing in that region towards organ donation.³

Our study revealed that, majority of students (96.7%) had heard about organ donation. This might be due to more availability of information sources regarding organ donation for medical students in our region. Major source of information came out to be internet and media (about 43.7%), followed by lectures (26.3%). Similar to our result, a research done in Pakistan revealed that the major source of knowledge for Pakistani medical students about organ donation was television (46.5%). This finding might be due to electronic media can be used as an effective channel for further conducting health related messages to increase knowledge, especially for their easy accessibility.³

In this study the overall good knowledge about organ donation was present in vast majority (93.1%) of medical student which is higher in comparison to other countries: Pakistan (65%)^{14,15} and Nigeria (60%).¹⁶ Regarding attitudes of students towards organ donation the overall positive attitude was present in (65.5%). Nearly similar finding was reported in studies done in Germany (55-70%)¹⁷, Brazil (69%)¹⁸, Pakistan (62%)¹⁴, Turkey (59%)¹⁹, and China (50%)²⁰, while lower than that reported in Italy (91%)²¹.

This indicates a suitable situation to explore various factors contributing to the positive attitude and good knowledge among medical students. This finding is supported by a statistically significant association between good knowledge and positive attitudes which was found in our

result, Table 2. In the current study, we found that female students significantly were more ready to donate organs than males (57.5 versus 46.9%). This finding agreed with many reports which concluded that female gender was significantly associated with positive attitude towards OD.^{19,21} On the contrary, Boulware et al. reported that young males with higher education showed better attitude towards OD.²² and in other studies statistically significant association between knowledge and attitude towards OD and student gender.^{16,23}

In this study, the role of finance appeared to be strong, as 84.9% of the students agreed that providing fund will increase donor population. This finding is further supported by the result of another study done in Turkey, where 79.7% of students agreed on that issue.¹⁹

Although we expected that students of college of medicine will have more readiness to donate their organs due to several factors (including; studying anatomy lectures, being more familiar with surgery and surgeon's, etc....), but the study findings denoted that students of college of Pharmacy were more ready for donation. However, the result was statistically non-significant.

According to the results, in our study most important factor encouraging organ donation among HMU students was "Humanity", with a proportion of 74.8%. This finding is relevant with another study carried out in Hong Kong. This may explain that most of the donor participants took empathy into consideration.¹³

In this study, donation to family members is 46.4%, while in another study done in Pakistan it was 62% for family members. Fortunately, in our study, we found that donating to friends and anyone in need was (28.6% and 25.2%) respectively, since the major factor for encouraging donation in our study was humanity.³

Regarding the appropriate preferred time for donation, we found that more than half (51.5%) of the students (among those who said "Yes" for donation readiness) preferred donation after death, while only 14.6% were ready for alive donation. Another study in Turkey revealed that 37.1% of their participants agreed donation alive. So, it's clear that most people prefer after death donation as they might believe that during life, donation might be risky for the reasons mentioned previously.²⁴ About donating any organ, we found that 42.2% (of the 206 students who agreed on donation), would donate any organ. While in Nigeria, willingness for kidney donation is the commonest (52.1%). This might be related to kidney transplantations being more common and successful than some other forms of transplantation.²⁵

Limitations of the study: Convenient sample was used and the sample size was relatively small.

Another limitation was computation of a score for student knowledge and attitude based on the answers to a set of questions, but the nature of the questions provides this score a fairly feasible estimate in absence of standardized questionnaire to assess the knowledge and attitude of medical students towards organ donation.

Conclusion:

Most of medical students have good knowledge and positive attitudes toward organ donation. Most of them have willingness for donating their organs and females have more positive attitude toward donation than males. Financial status has a marked positive effect on student's attitude towards organ donation. The most common reason behind refusing the process was believe that organ donation is not good for health. Further studies need to be done among non-medical students to know their level of awareness about organ donation. An official center, for registration of organ donors, is needed to be present, and it should be accessible to everyone who wants donating.

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