

Organ Donation in Iraq: Public Perception and Social Influences

Samir Muter,^{1,*} Firas Al-Tekreeti,¹ Ekhlal Khalid Hameed,² Laith Thamer Al-Ameri,³ Ahmed Abed Marzook,⁴ and Noorulhuda Mukhlif Al-Ani⁵

¹Department of Surgery/Urology, College of Medicine, University of Baghdad, Baghdad, Iraq.

²Department of Biochemistry, Al-Kindy College of Medicine, University of Baghdad, Baghdad, Iraq.

³Department of Human Anatomy, Al-Kindy College of Medicine, University of Baghdad, Baghdad, Iraq.

⁴Department of Community Medicine and Public Health, Dijlah University College, Baghdad, Iraq.

⁵Tasmania Health Department, North-west Regional Hospital, Tasmania, Australia.

(Received : 31 January 2025; Accepted : 7 May 2025; First published online: 1 July 2025)

ABSTRACT

Background: Iraq was one of the first countries to establish kidney transplantation services in the Arab world, in 1973. This long history has affected people's attitudes towards organ donation; however, Iraqis, like all Middle Eastern people, are heavily influenced by religious, cultural, and tribal norms and traditions.

Objectives: To explore the current view of Iraqis towards organ donation, their possible explanation, and ways of raising people's awareness towards organ donation.

Materials and methods: This cross-sectional study targeted adult Arabic-speaking Iraqis. Between December 2021 and June 2022, a self-administered questionnaire was distributed through the Facebook platform. The questionnaire comprised 10 specific questions covering important aspects of organ donation ethics and knowledge. The collected data were analysed using descriptive and inferential statistics.

Results: We collected a total of 2411 responses. Females predominated, making up around three-quarters (72.8%). The mean age was 25.6 years, and around half were university students (48.5%). The limited organ donation practice has been attributed to the lack of health awareness in the general population by 56.5% of the responders. Studied Iraqis hold adequate knowledge about organ donation in terms of time, age, donatable organs, and possible recipients. Only 24.4% of the responders reported some conflict between their religious beliefs and organ donation. Interestingly, sex and education level affected only answers related to the time of donation and the willingness to donate organs after death (P-values were 0.023 for the association between time of donation and education level and 0.001 for the other three associations).

Conclusion: This study would provide a deep understanding of the Iraqi attitude toward organ donation and help plan future regulations and practices of this vital aspect of health care.

Keywords: Organ donation; Iraq; Attitude; Perception; Renal transplantation.

DOI: 10.33091/amj.2025.156947.2099

© 2025, Al-Anbar Medical Journal



INTRODUCTION

Kidney transplantation is an integral component of the current standard of care for patients with end-stage renal disease (ESRD) in Iraq and worldwide [1]. It is currently the only widely practiced organ donation/transplantation in the country, and

it has been performed in specialized centers in both public and private healthcare facilities for more than 50 years [2].

History-wise, the first renal transplantation in the Middle East took place in Iran in 1967, while the first in the Arab world was in Jordan in 1972 at King Hussein Medical Center. In Iraq, the inaugural renal transplantation occurred in June 1973 at Al-Rasheed Military Hospital, conducted by Dr. Walid Al-Khayal [2].

Although organ donation is an essential component of current medical practices, providing hope and opportunity for patients suffering from organ failure or life-threatening condi-

* Corresponding author: E-mail: samir.a@comed.uobaghdad.edu.iq
This is an open-access article under the CC BY 4.0 license

tions, people's attitude to and understanding of this critical subject greatly influence the patterns and spectrum of this highly specialized form of healthcare [3]. People's attitudes toward organ donation vary greatly across regions and cultures, often influenced by religious beliefs, cultural norms, and societal perceptions. This might be even more complex and multifaceted in the Middle East because of the wide variations of local traditions, faith, and familial ties [4].

With its diverse tapestry of cultures, religions, and social structures, the Middle East presents a unique landscape for understanding people's views on organ donation. While some countries in the region have made notable advances in promoting organ donation through awareness campaigns and legislative measures, others continue to struggle with deep-seated cultural reservations and religious interpretations regarding the sanctity of the body and the afterlife [5–7].

Exploring people's attitudes towards organ donation requires an examination of factors like religious teachings, societal perceptions, legal frameworks, and healthcare infrastructure [8].

In this study, we aimed to explore Iraqis' attitudes toward organ donation and transplantation, which might help direct future educational campaigns and organ donation-related legislation.

MATERIALS AND METHODS

This cross-sectional study has been approved by the medical research ethics committee at Al-Kindy College of Medicine, University of Baghdad (Reference number 521, dated the 17th of August 2021).

Questions were made by the research group after examining similar literature [4–7] and with the help of Arabic language professionals to put the precise Arabic terms when translating the questions. Before distribution, a group of 32 students and 21 staff members from Al-Kindy Medical College of Medicine tested the questions. However, we did not conduct any official validity testing.

Data was collected through a Google form application on the web via a specifically designed self-administered questionnaire that has been distributed by sponsored advertising to 15 Iraqi governorates. The other three governorates were excluded because of the language barriers, as they are dominated by Kurdish people who might find difficulties in understanding the formal Arabic language. Data collection continued in the period between the 1st of December 2021 and the 30th of May 2022.

The questionnaire form started with a description of the study and its purpose and acknowledged that by continuing to answer the questions, the participant is giving consent and only people aged 18 years or older are allowed to continue the study.

The questionnaire comprised 10 specific questions in addition to the participant's demographic data. All questions were submitted in an easily understandable Arabic language, and sometimes, more than one word is used to describe the same term, to cover all possible local dialects. The questions were as follows:

Participants' demographic data: Age, sex, highest education obtained, and whether they are currently engaged in a study.

What prevents the spread of the practice of organ donation after death in Iraq? When can we donate organs? Is it possible to donate organs during life, after death, or both?

To whom can we donate organs when we are alive? Related patients, unrelated patients, or both?

How important is it for the patient to be a close relative to be donated an organ?

What would be a suitable age of the donor?

In your opinion, which organ is needed most for donation? Does your religion conflict with organ donation? How comfortable are you with the idea of donating your organs before or after death?

Which of the following best describes how you feel about organ donation after death?

Do you agree that organ donation is a gift of life and that we continue life through others' bodies through organ donation?

For each question (except the first), participants were given several options. When applicable, they were asked to choose a maximum of two responses. Form submission was not possible until all questions had been answered.

The questionnaire form distribution was planned to continue for 6 months through social media (Facebook) sponsored advertising. The reason behind choosing Facebook is that it is the most commonly accessed social media platform in the country [9]. We aimed at a minimal sample size of 400 according to the finite population correction of Cochran's formula [10]:

$$n = \frac{NZ^2p(1-p)}{d^2(N-1) + Z^2p(1-p)}$$

Where n = sample size, N = Total Arabic speaking adults in 15 governorates, Z = Standard normal deviate = 1.96 with a confidence level of 95%, d = Permissible error on each side of 5% and P of 5% maximum variability. The total adult population of the 15 targeted governorates is estimated to be around 18 million according to 2019 official numbers [11]. The final formula result was 348, and that was rounded to 400 to cover for possible incorrectly answered forms.

The data were analyzed using the Statistical Package for Social Science (SPSS) version 27 software (SPSS Inc., Chicago, United States). Frequencies and percentages were used to describe the data. A Chi-square test was performed to measure the association between demographic data and knowledge and attitude about organ donation. The P -value of less than 0.05 was considered significant.

RESULTS

A total of 2411 people participated in the survey. Females made 72.8% (1755). The mean age of respondents was 25.6 ± 5.87 , with most of both males and females lying in the 20–29-year age group. Education-wise, 1125 (42.4%) were university students (Table 1).

Regarding the participants' responses to the specific organ donation-related questions, (56.5%) believed that (the lack of health awareness among the general population) is the main cause behind the limited organ donation practice in Iraq, in addition (40.9%) have considered (the lack of proper health authorities/facilities) as the cause. In contrast, 28.9% attribute the situation to tribal norms (Figure 1).

Subgroup analysis according to the education level showed no significant difference between respondents who hold a university degree and those who do not [$n = 1291$, 53.55% vs. ($n = 1120$, 46.45%), P -value = 0.13].

Concerning the time of organ donation, 1760 (73%) think that they can donate organs both before and after death. Sex and educational level significantly affected the responses (Table 2).

Table 1. The age and education level distribution regarding the sex of 2411 participants.

Variable	Female n (%)	Male n (%)	Total n (%)
Age groups (years)			
< 20	634 (36.1)	68 (10.3)	702 (29.1)
20–29	986 (56.2)	392 (59.8)	1378 (57.1)
30–39	88 (5.0)	115 (17.5)	203 (8.4)
40–49	22 (1.25)	46 (7.0)	68 (2.8)
50–59	19 (1.0)	22 (3.4)	41 (1.7)
60–69	3 (0.17)	11 (1.7)	14 (0.6)
> 70	3 (0.17)	2 (0.3)	5 (0.2)
Education level			
Primary school	49 (2.85)	35 (5.3)	84 (3.5)
High school	472 (26.8)	66 (10)	538 (22.3)
University student	853 (48.5)	272 (41.4)	1125 (42.4)
University degree	308 (17.6)	194 (29.6)	502 (20.8)
Postgraduate degree	73 (4.2)	89 (13.6)	162 (6.8)
Total	1755 (72.8)	656 (27.2)	2411 (100)

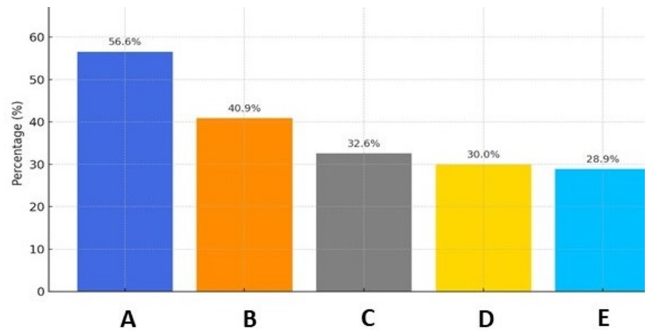


Figure 1. Causes of limited organ donation practice in Iraq. A = Lack of contemporary legislation, B = No specialized health authorities. C = Against religious instructions, D = No legal legislation, E = Against tribal norms.

For the person for whom we can donate an organ, the vast majority of respondents (n= 1932, 80.1%) see that we can donate an organ to both related and unrelated patients. On the other hand, when asked how important the patient is as a close person willing to donate an organ, 50% stated that “it is important”, while only 24.5% considered this “not important” and the rest answered as “don’t know” Subgroup analysis for age, sex, and educational level didn’t significantly affect both questions (P-value > 0.05).

When asked about the suitable age for organ donation, 1563 (64.8%) considered 18 years and older suitable. Again, there was no significant difference among the groups according to gender and educational level (P-value > 0.05). Regarding the question about the most needed organs for donation, 2100 (87%) of participants selected the kidney as the most important organ for donation, while the heart and the liver were selected by almost the same number of participants (n= 1036, 42.9%) and (n = 1034, 42.9%), respectively.

The responders were also asked about the organs we can donate during life, and their responses are summarized in Table 3.

Trying to explore the influence of religion on organ do-

Table 2. Responses to the question on possible time of organ donation, before or after death or both. We used the Chi-square for statistical analysis.

	When can we donate organs?			P-value
	Only after death N/%	Only during life N/%	During life and after death N/%	
Sex				
Male	117(17.8%)	98(14.9%)	441(67.2%)	0.001
Female	339(19.3%)	97(5.5%)	1319(75.2%)	
Education level				
Primary/Secondary	156(25.4%)	60(9.4%)	406(65.2%)	0.023
University student / graduate	273(15.2%)	162(9.1%)	1354(75.6%)	

Table 3. Donatable organs during life.

Organ/tissue	Percent of responders who think the organ/tissue is donatable during life
Kidney	48%
Bone marrow	30%
Liver	28%
Skin	6%
Lung	3%
Intestine	3%
Hear/Heart valve	1%

nation, we have asked the participants a direct question of whether their religious beliefs conflict with organ donation. More than half of the participants (n = 1210, 50.1%) responded with “may be” More than three-quarters of those who opted to give a clearer answer see that their religious beliefs do not conflict with organ donation (n = 912, 75.6%). Surprisingly, this was not affected either by sex or by educational level (P-value = 0.127 and P-value = 0.062, respectively).

When asked how comfortable they are with the idea of donating their organs before or after death and given the option to donate some, all, or none of their body organs after death, around half of the participants felt comfortable donating organ(s) after death (n = 1175, 48.7%), with females

Table 4. Differences among mean age according to personal feeling about organ donation*.

Answer	Number	Mean age (years)	Standard Deviation
Donate all my organs after death	829	22.76	6.64
Donate some of my organs after death	529	24.80	9.79
Don’t know	788	22.92	7.09
Don’t want to donate	265	25.71	8.68

* P-value = 0.001.

Table 5. Personal feeling about donating organs after death according to sex and educational level.

Variable	Personal feelings about the donation of organs after death				P-value
	Donate all my organs	Donate some of my organs	Don't know	Don't want to donate	
Sex					
Male	168 (25.6%)	158 (24.1%)	192 (29.3%)	138 (21.0%)	0.001
Female	661 (37.7%)	371 (21.1%)	596 (34%)	127 (7.2%)	
Education level					
Primary /secondary school	266 (42.9%)	178 (28.6%)	126 (20.2%)	52 (8.3%)	0.001
University student/graduate	559 (31.1%)	412 (23.1%)	534 (29.8%)	284 (15.9%)	

significantly (P -value = 0.001) more willing to donate (51.2% vs. 42.1%). Approximately one-third ($n = 829$, 34.4%) chose to donate all of their body organs, if possible, while only 265 (11%) chose not to donate any of their organs. This was also significantly (P -value < 0.05) affected by age, sex, and educational level (Tables 4 and 5).

The last question was whether the participant considers organ donation a gift of life and agrees that we continue life through others' bodies through organ donation. 1693 (70.2%) considered organ donation a gift, while 1434 (59.5%) agreed that we continue life through someone else's body through organ donation. There was no significant (P -value > 0.05) effect of age, sex, or educational level on both values.

DISCUSSION

Organ transplantation is considered the last hope for thousands of patients with end-stage organ failure in Iraq. Like elsewhere in the world, we have a big gap between the number of donors and patients on the waiting list for organ transplantation [6]. To make circumstances even more difficult, the country lacks the essential legislation and facilities for cadaveric organ donation and depends solely on live donors. People's attitude and knowledge affect their willingness to donate their organs. It is always difficult to convince a healthy individual to pause their normal life, even for a short time, and enter the hospital to be treated as a patient and to be subjected to surgery with all the potential risks and complications, with the only aim of helping others. A good understanding of the people's attitudes and understanding of organ donation will help shape future educational campaigns, especially in communities with deep faith and tight religious bonds.

In this study, we tried to explore how Iraqis view the concept of organ donation, their opinions about potential hindering factors, and possible ways to encourage organ donation practice. We targeted a considerable number of Iraqis with different educational backgrounds and a wide range of ages.

We recruited 2411 participants between 18 and 68 years of age. However, the majority were in the 20–29-year age group, with a mean of 25.6 years. Females predominated and made up around three-quarters of respondents (72.8%). Education-wise, 69% were either university students or graduates. All the above data can be explained by the method of data collection, which was the sponsored distribution of a Google form through the Facebook platform, the most widely used social media platform at the time of data collection.

This study showed that around one-half of the participants agreed to donate at least one organ during life or after death, with females being significantly more accepting of the idea

of organ donation (51.2%). These figures are in the middle between what is reported in Syria (62%) [12] and in Saudi Arabia (30.1%) [13]. This finding is explainable as Iraqis lie between the more closed society of Saudi Arabia and the more open society of Syria in terms of religious bonds and tribal norms. A recent study conducted by Al-Abbasi and Al-Jasim in 2020 reported an acceptance rate of 84.2% among Iraqis. However, they limited their study to younger people under 30 years old. This might explain the exceptionally higher rates [14].

More than half of the participants agreed that the lack of health awareness and knowledge among the population is the main reason behind the shortage of organ donors and the limited organ donation practice in the country. This coordinates well with similar studies by Abbasi et al. [15] and Sayedalamini et al. [16] that were conducted on university students in Iran and Saudi Arabia, and with Alam et al. [17] and Shahbazian et al. [18] were conducted on the general population of Iran and Saudi Arabia as well. These results over-emphasize the vital role of the governmental and legislative authorities in issuing contemporary laws and regulations that control the practice of organ donation and fight organ trafficking by involving all social activities and doctors involved in this life-saving practice. At the same time, big educational campaigns should be launched with the support of judicial and religious community leaders, who should advise people on the importance of organ donation and the different moral aspects of living deceased donors. Health authorities, on the other hand, must establish facilities and regulations to help start the first steps of deceased organ donation.

Less than one-third (32.6%) of the participants believed that organ donation is against religious instructions and Fatwa; this is significantly lower than what is reported by Agrawal et al. (44.8%) [13] and Al Habeeb et al. (49.8%) [19]. The lower percentage might be explained by the fact that our study recruited more educated people and the Iraqi community's less conservative and more open nature compared to the Saudi community. However, when asked a direct question of whether their religious beliefs conflict with organ donation, more than half of the participants were uncertain. However, of the half that answered, more than three-quarters (75.6%) stated that their beliefs do not conflict with organ donation. This answer was not related to sex or educational level. Al-wahaibi and colleagues stated that 50.96% of Omani students believed religion and Islamic Fatwa allow organ donation and do not conflict with it [20].

The answers to many questions revealed clearly that Iraqis' knowledge about many aspects related to organ donation is remarkable. The majority of responders (80.1%) know that

organ donation can be to both related and unrelated recipients, and organs can be donated during life and after death, with around half of them (48.7%) feeling happy to donate an organ. They generally agreed that 18 years or more is the suitable age to donate an organ (64.8%). The vast majority of Iraqis (87%) selected the kidney as the most needed organ for donation. This is not unexpected if we know that Iraq was the first country in the area to start a regular kidney transplantation program in the public and private health services, this was as early as 1973. In all the major state hospitals in the country, a kidney transplantation service can be found; even though most of these units do not perform kidney transplantation surgery, they provide care and supply the required drugs, especially the immunosuppressants, at subsidized prices affordable to low-income patients. The heart and the liver came second and were equally selected as organs of donation/transplantation (42.9%). The liver was also expected, as there are a few liver-transplantation centers in the major cities in Iraq. The heart, however, was surprising, as no single heart transplantation has been performed in the country, and the explanation for this might come from the people's exposure to media with the well-known focus on heart transplantation surgeries when performed around the world, for what they represent of advanced medicine. Half of the responders considered it important for the recipient to be a close person so that they could donate. This might have two explanations. First, they might look from the angle of the organ being donated is precious and precious things should be given to precious people, but on the other hand, they might have simply shown their knowledge about compatibility and its effect on organ transplantation outcomes and believed that close individuals would show a higher degree of compatibility compared to non-related donor and recipient. This response was not affected significantly by the age, sex, and educational level of the responders.

The last two questions were more philosophical and tried to explore people's deep understanding of organ donation. The majority agreed to consider organ donation a gift of life through which we continue living within others' bodies. Again, this conclusion was not significantly affected by age, sex, or educational level.

Despite the good number of participants and questions, this study has several limitations. Firstly, it targeted a certain group of people who used the Facebook platform and were interested in enrolling and answering the questions. Secondly, the formal Arabic language used when formatting the questions might be difficult to comprehend for some people with low education levels, despite the use of some local dialects to explain the more formal words. Moreover, not everyone is familiar with Google Forms and can open it to respond to the questions provided. Finally, this method of data collection misses the illiterate people who might be able to browse through the social media platforms using images and icons

but cannot read or write.

CONCLUSION

The attitude of the studied Iraqis towards organ donation is generally positive. They realize the importance of organ donation in saving people's lives and improving their quality of life. Their knowledge about organ donation is good, with most of them recognizing the types, timing, and donatable organs well. However, the absence of contemporary legislation regulating organ donation is the most significant obstacle to effective and organized organ transplantation practices. Initiation of public education campaigns and the possible addition of organ donation ethics to university curricula represent ways to level up the community's understanding of this vital practice.

ETHICAL DECLARATIONS

Acknowledgments

We acknowledge the students and staff of Al-Kindy College of Medicine, Baghdad, Iraq, for their valuable assistance and support in the questionnaire testing and validation process.

Ethics Approval and Consent to Participate

The study proposal was approved by the Medical Research Ethics Committee at Al-Kindy College of Medicine, University of Baghdad (Reference number: 521, dated 17/08/2021), in accordance with the Declaration of Helsinki. Informed consent was obtained from all participants.

Consent for Publication

Not applicable. This manuscript does not contain any person's data in any form (including individual details, images, or videos).

Availability of Data and Material

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Competing Interests

The authors declare that there is no conflict of interest.

Funding

No external funding was received for this study.

Authors' Contributions

All listed authors made significant, direct, and intellectual contributions to the work. They have read and approved the final version of the manuscript.

REFERENCES

- [1] M. Suthanthiran and T. B. Strom. Renal transplantation. *New England Journal of Medicine*, 331(6):365–376, 1994.
- [2] A. S. Ali, S. Al-Mallah, and A. Al-Saedi. Renal transplantation in Iraq: history, current status, and future perspectives. *development*, 2(3), 2016.
- [3] A. E. Ahmed *et al.* Knowledge, attitudes, and practices regarding organ donation among students of jazan university: A cross-sectional study. *Saudi Journal of Kidney Diseases and Transplantation*, 34(Suppl 1):S5–S13, 2023.

- [4] M. Y. Alessa, M. S. Albedaiwi, A. M. Al Mousa, G. M. Alhassan, and B. T. Alnefaie. Knowledge and attitude of organ donation in the eastern region of saudi arabia and the influence of social media campaigns: a cross-sectional study. *Annals of Medicine and Surgery*, 85(3):403–410, 2023.
- [5] A. Mekkodathil, A. El-Menyar, B. Sathian, R. Singh, and H. Al-Thani. Knowledge and willingness for organ donation in the middle eastern region: A meta-analysis. *Journal of religion and health*, 59:1810–1823, 2020.
- [6] S. Akbulut, K. Demyati, M. Tamer, S. Unsal, S. Beyoglu, and H. Saritas. Knowledge levels, attitudes, and awareness of nurses toward organ donation. *Northern Clinics of Istanbul*, 9(4):367, 2022.
- [7] W. Aissi *et al.* Knowledge and attitudes toward organ donation among tunisian adults: results of a national survey. *Exp Clin Transplant*, 22(Suppl 1):224–228, 2024.
- [8] E. F. Ehtuish and A. Baker. Understanding the hesitancy: A study on reluctance towards organ donation. *Arab Board Medical Journal*, 25(2):53–61, 2024.
- [9] A. A. Okab. Social network sites' effects on nursing students' physical and psychological health behaviors. *Al-Anbar Medical Journal*, 19(1):48–53, 2023.
- [10] W. G. Cochran. Sampling techniques. *Johan Wiley & Sons Inc*, 1977.
- [11] Central Statistical Organization (CSO). Population estimates for iraq 2015–2030. 2025. [Online](#).
- [12] M. Tarzi *et al.* Attitudes towards organ donation in syria: a cross-sectional study. *BMC Medical Ethics*, 21:1–10, 2020.
- [13] S. Agrawal, S. Binsaleem, M. Al-Homrani, A. Al-Juhayim, and A. Al-Harbi. Knowledge and attitude towards organ donation among adult population in al-kharj, saudi arabia. *Saudi Journal of Kidney Diseases and Transplantation*, 28(1):81–89, 2017.
- [14] G. Al-Abbasi and A. Al-Jasim. Attitudes and perceptions among iraqi young adults towards organs donation and transplantation: A call for action. *Journal of Public Health Research*, 9(4):1857, 2020.
- [15] M. Abbasi, M. Kiani, M. Ahmadi, and B. Salehi. Organ transplantation and donation from the point of view of medical students in iran: Ethical aspects and knowledge. *Cellular and Molecular Biology*, 64(1):91–96, 2018.
- [16] Z. Sayedalamin, M. Imran, O. Almutairi, M. Lamfon, M. Alnawwar, and M. Baig. Awareness and attitudes towards organ donation among medical students at king abdulaziz university, jeddah, saudi arabia. *J Pak Med Assoc*, 67:1–64, 2017.
- [17] A. A. Alam. Public opinion on organ donation in saudi arabia. *Saudi Journal of Kidney Diseases and Transplantation*, 18(1):54–59, 2007.
- [18] H. Shahbazian, A. Dibaei, and M. Barfi. Public attitudes toward cadaveric organ donation a survey in ahwaz. *Urology journal*, 3(4):234–239, 2006.
- [19] W. AlHabeeb, F. AlAyoubi, A. Tash, L. AlAhmari, and K. F. AlHabib. Attitude of the saudi community towards heart donation, transplantation, and artificial hearts. *Saudi medical journal*, 38(7):742, 2017.
- [20] N. Alwahaibi, A. Al Wahaibi, and M. Al Abri. Knowledge and attitude about organ donation and transplantation among omani university students. *Frontiers in public health*, 11:1115531, 2023.