

Brain Death and the Extent of Acceptance of Donating Organs for the Brain-dead in the Arab Gulf Countries

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Abstract

The research aimed to examine awareness of brain death definition, diagnosis criteria, and organ donation acceptance in citizens and residents of the Gulf countries. It explores acceptance levels, personal, and cultural differences affecting donation decisions. The study used the online questionnaire by applying it to the six Arab Gulf countries in addition to Iraq during 2024. A 1176 responses were obtained as a random sample of the study population, and after analyzing the data, the research reached several results, the most important is that: the willingness to donate organs for brain-dead individuals is directly proportional with a lack of understanding brain death concepts, medical protocols, legal implications, and religious perspectives. Additionally, there is a lack of coordination with the brain-dead individual's family regarding the donation process, decision-making, and who is responsible for that, and the fear that the donor's family will reject the idea. The research recommends spreading awareness about brain death, and organ donation benefits, the necessity of having a responsible person, a family member, during the period of brain death, who will be the link between the medical staff and the family of the deceased to organize and encourage the donation, and the necessity of adopting methodologies for decision-making and considering family mental health.

Keywords: Brain death, acceptance, donating organs, Arab Gulf countries, Cultural and societal factors

1. Introduction

The brain death is a most prominent developments in medical science and knowledge, which was destined to see the light, and about which a great controversy arose among the vast majority of doctors, Islamic Sharia jurists, jurists, and jurists. Where - that is, this debate - took place in the context of whether brain death is considered a real and certain death, and therefore the end of human life, or is it not so, and has not yet reached the point of absolute certainty that death occurs and the soul leaves the body?

The second half of the twentieth century witnessed an amazing development in medical sciences and many scientific achievements, such as artificial insemination and cloning, as well as the spread and expansion of human organ transplantation and transfer, the latter being considered one of the most important concerns.

Prominent topics because of their major role in saving patients whose lives are threatened. With certain death, it became possible to transfer organs or parts from one person to another, whether the first person was alive or dead.

Previously, determining the time of death did not raise any medical, religious or even legal issue. But with recent medical developments, a new concept of death has emerged based on the death of the brainstem without the need to wait for breathing and blood circulation to stop. This concept is supported by a large number of doctors, as brain death is considered a major source of extracting organs for transplantation and saving the lives of other patients. (Starr R, 2022)

This disagreement over the definition of brain death has led to different opinions regarding the legal consequences of death. Whoever believes that brain death is a legitimate and legal death applies the effects of legal death, such as annulment of marriage and distribution of inheritance to the person's heirs immediately after his brain death occurs, without the need to wait for breathing to stop. And blood circulation. While others who do not consider brain death a legal death consider brain death a stage of death, and it only entails legitimate and legal consequences related to the loss of capacity and the condition of patients facing the stage of death.

Therefore, it was necessary to address this context in the Arab Gulf countries, and follow up on any new problems, circumstances, and precise details. To clarify its ruling from a legitimate, legal, customs, and culture, perspective, and the extent of society's awareness of this in order to limit any disorder or deviation that could lead to prejudice to the prevailing values and morals in various societies, and the rules of interaction and limits of behavior known to humanity, many of which have reached the point of sanctity; Such as the sanctity of life, and the sanctity of violating physical integrity, As well as the extent of society's acceptance of organ donation according to the definition and awareness of brain death.

1.1. Research problem

The research problem is the extent of acceptance of brain-dead organ donation in the Arab Gulf countries, and the challenges of applying these standards in a consistent and effective manner. The research problem can also focus on challenges that may be complex and differ from one culture to another, such as the technical, legal, ethical and social challenges in this context, which It calls for research to understand different opinions and positions and to develop an ethical framework that can be agreed upon globally. The problem lies in the main question: What are the challenges facing accepting the donation of brain-dead organs in the Arab Gulf countries?

1.2. Research question

1. What is brain death and what are the criteria and conditions for its diagnosis?
2. What are the legal and ethical aspects of diagnosing brain death?

3. To what extent do people of the Gulf countries know about donating organs for brain-dead people in the Arab Gulf countries?
4. To what extent is donation of brain-dead organs accepted in the Arab Gulf countries? Are there differences between countries regarding approval to accept the donation of organs of a brain-dead person?
5. Do citizens of the Arab Gulf states adhere to personal or cultural beliefs regarding donating organs from brain-dead patients?

1.3. Research aims

1. Definition of brain death and criteria and conditions for diagnosis.
2. Comprehensive and ethical coverage of the diagnosis of death.
3. Explaining the extent of knowledge of citizens and residents of the Gulf countries about the issue of organ donation for people with simple death in the Arab Gulf countries.
4. A study of brain-dead organ donation acceptance in the Arab Gulf countries, and identifying the differences between the Gulf countries with regard to approval to accept brain-dead organ donation.
5. The revealed with personal or cultural beliefs regarding organ donation for the number of brain dead patients.

1.4. Research importance

The importance of the research lies in the sensitive humanitarian aspects related to patients' rights and the urgent need for organs to save their lives and improve their quality of life. It also highlights medical developments and modern technologies that help diagnose cases of brain death, and how they can be developed and employed more effectively in supporting organ donation. It also explores Researching the ethical and legal and culture aspects related to organ donation in the Gulf countries, and seeks to improve the personal orientations and regulations related to this aspect to facilitate and encourage the donation process, and its practical importance lies in increasing public awareness about the importance of organ donation and its benefits to society, and directing decision makers towards taking the right health policies to promote donation and increase the number of Donors, and in general, this research contributes to providing comprehensive and integrated solutions to enhance the organ donation process and thus save people's lives and improve their health.

2. Literature Review

The researcher reviewed the literature and mentioned some studies related to the subject of the study as followings:

1) **Jinan M. Aljaseem, et al. (2023), Awareness Level Regarding Brain Death and the Acceptance of Organ Donation in Eastern Province, Saudi Arabia,**

This study conducted in Saudi Arabia. The study reported a moderate level of awareness of light death, This study highlighted the level of cognitive awareness of basic death and acceptance of individual donation among residents of the Eastern Province of the Kingdom of Saudi Arabia, through the use of a questionnaire, The eye showed Saudi males and females over the age of eighteen, and the study concluded that the participants had a high level of awareness of death, Understanding death is essential to encourage donation of their organs, so people should make more effort to inform and educate the public about death and a large part of it is on organ donation.

2) **Suchita Kosare and Apeksha Gala, (2019) Brain Death and Organ Donation, Research.**

In this review, we attempt to delineate the criteria for brain death as well as the testing methodology. The challenges and the legal aspects related to organ donation have also been discussed, The study reported that, The number of organ transplantation has risen exponentially in the last few decades. The concept of brain death and the ability to harvest vital organs in a limited time have contributed to the recent success,

3) **Afaf Barahma. (2020) Organ donation after death from a jurisprudential perspective, and the extent of Saudi society's awareness of organ donation and of King Salman's efforts to donate organs**

This research dealt with the provisions of organ donation. In it, I reached some results, the most important of which are the following: Organ donation allows the donor to benefit from another of his organs during his life or after his death without compensation, and that the reward resulting from organ donation is because it brings benefit to the patient, and the reward of ongoing charity for the donor, and that the types of donation Three of them are transferring an organ from a person to himself, such as skin grafting, and this is permissible. The most important thing that the research recommended is urging members of society to donate organs after death, especially after it has been approved by jurisprudence academies, and educating members of society about the importance of organ donation, its reward, and the benefits sought from it.

4) D. W. McKeown¹, (2012) Management of the heart beating brain-dead organ donor.

This study found that there is great variation in the treatments and techniques used to achieve these goals. This is partly because optimal combinations of treatment goals, monitoring, and treatment techniques have not yet been fully defined. However, the key to future developments and research into component technologies is to ensure that currently recommended treatments are delivered consistently and to a high standard, and that there is increasing evidence that moderation of these pathophysiological changes through active management in intensive care preserves organ function and thus increases the number of Organs available for transplantation and their functional quality. An active donor management strategy requires a change in philosophy and treatment on the part of ICU clinicians and has significant resource implications if it is to be delivered reliably and safely.

5) Alaa Marouf Al-Taie. (2018) the role of altruistic values in university youth's attitudes towards organ donation after death, a field study on a sample of University of Sharjah students.

The study aims to understand young people's attitudes towards organ donation after death and the role of their values in shaping these attitudes in the Emirates. The study adopted several hypotheses, including rational choice theory and capital formation theory. The study focused on the concepts of altruistic values, organ donation, and youth attitudes. The study used a social survey method and research tools such as a scale and an interview guide, and collected data from 400 participants and 50 interviews. The study showed that people with high attitudes towards organ donation have high altruistic values, while those with low attitudes have low altruistic values. The study also showed that awareness of legality is a major obstacle to the idea of organ donation.

3. Theoretical framework

3.1 The concept of brain death

The developments in life, and what modern discoveries offer, increase day after day in all fields, and among the latest developments in the field of medicine is what relates to the conditions of patients who are placed under life support in intensive care units, without feeling or movement, after their brains die, and progress in methods such as Resuscitation and its modern devices separate the work of the brain from the work of the heart.

If the heart and lungs stop working due to brain death, the heart and lungs can be revived and restored to work. The cessation of the heart and the breath was the recognized sign of death, and

this was not the subject of research and discussion. Rather, it was something agreed upon among doctors, but with the medical progress in artificial resuscitation devices, and what scientific research revealed in terms of knowledge of the parts of the brain, determining the function of each part, the possibility of measuring its functions, and knowing its effect on the functions of the body's organs, all of this led to the emergence of a new definition of death. It is brain death, and this definition was not known until after the existence of artificial respirators, because brain death causes the cessation of all bodily functions, including breathing, heartbeat, and hormonal balance, (alqahtani, 2018) Given this extreme importance of this topic, scientific conferences were held for it, to study its legal ruling, which He still needs to increase research, focus on the descriptions that influence his ruling, and constantly follow up on the medical research and scientific studies that he finds in it, in order to reach knowledge of its rulings and controls, because what has been written about it is mostly because medical science, like all other modern sciences, is a renewable science that is rapidly advancing. Every day he discovers what was not known yesterday. (Al-Far, 2023)

3.1.1 Definition of brain death and criteria for its diagnosis

3.1.1.1 Definition of brain death

Brain death is the permanent disruption of all brain functions, including the brainstem. Accordingly, a decision was issued by a number of medical committees, and this definition has become accepted in medical circles, (David, 2023) Brain death is also defined as the patient falling into a permanent coma, while not responding to pain stimulation at all, even if it was strong and painful, and repeated, thus causing spontaneous breathing to permanently stop. This can be detected by disconnecting the respirator from the patient for ten minutes, (Kirschen, 2023) It is also defined as an inability to breathe, and the cessation of basic brainstem functions (2), and it is the absence of electrical waves emanating from the brain in the electroencephalogram. (Shemie, 2023), There are many causes of brain death, including stroke, subarachnoid hemorrhage, intracerebral hemorrhage, and cardiopulmonary arrest with appropriate resuscitation.

3.1.1.2 Criteria for diagnosing brain death

In 1968, new criteria for determining death began to appear, as a committee at Harvard Medical School issued a landmark report that proposed irreversible loss of brain function as an independent criterion for determining the occurrence of death. The report referred to the criteria adopted for diagnosing death on the basis of brain death, which are: (Spears, 2022), (OMELIANCHUK, 2021), (Truog, 2018)

The first condition includes the conditions that are set before it is performed, which is that the injured person must be in a deep coma from which he cannot be awakened, and also that the cause of the coma be known, such as severe brain damage due to a severe blow to the head, a large tumor inside the skull, or a loss of blood to the brain, or Head surgery, and this is confirmed by the necessary diagnostic means, by ruling out any case of the victim being in a coma under the influence of sedatives, narcotics, toxins, muscle relaxants, glandular disorders, or a drop in body temperature below 33 degrees Celsius, or it is not known. Its cause. In such cases, symptoms similar to brain death occur, but they are curable with appropriate treatment, and should not be confused with brain death. Finally, at least six hours have passed since the victim fainted.

The second condition, which is what lies after its procedure, its conditions are that the patient be in a deep coma with a lack of awareness and response to any stimulus, regardless of its level, and also the inability of the injured person to breathe normally while stopping the breathing pump for a specific period, and certainly the presence of clinical signs of cessation of brainstem functions. This includes the absence of the pupillary and corneal reflex, the cough reflex, vomiting, the pharyngeal reflex, etc. Finally, a complete cessation of brain functions must be ensured, a cessation that lasts for the period of observation, which is twelve hours from the diagnosis of deep coma, and the observation period is increased to twenty-four hours in children. From two months to one year, and for those less than two months, it is increased to seventy-two hours.

The third condition, which applies to the person who diagnoses it, this condition includes that the diagnosis be carried out by two doctors with experience in diagnosing cases of brain death, according to recognized medical standards. It is preferable to consult a third doctor who specializes in neurological diseases when needed, and that one of the two doctors is a specialist. In neurological diseases, brain and neurosurgery, or intensive care, the doctor must not be a member of the organ transplant team, or have a special interest in announcing the death of the injured person, such as if he is an heir or legatee.

3.1.2 Legal and ethical aspects of diagnosing brain death.

The final diagnosis of the fact of death is due to the social reality that includes medical, legal, religious and ethical aspects that vary from one country to another and are affected by local laws and cultural and religious values. Below are some legal and ethical considerations that must be taken:

Legal legislation: Legislation that defines the criteria for diagnosing brain death must be determined in each country. This includes regulations regarding the time between the two tests required to confirm brain death and the procedures that must be followed to correctly confirm brain death. (alqahtani, 2018)

Informed consent: Ethically, informed consent must be obtained from the person or his or her representative (such as a family member) for brain death testing and the decision to discontinue treatment if brain death is diagnosed. (Spears, 2022),

Fairness and equality: Ensuring that the diagnosis of brain death is made fairly and equally, without bias or discrimination based on gender, race, religion, etc. (Spears, 2022),

Preserving human dignity: The dignity and personal rights of the deceased must be respected after death, including full respect for the wishes of the deceased regarding his body and organs. (Suchita, 2019)

Compensation and legal liability: Legal problems and issues may sometimes arise regarding the diagnosis of brain death, especially in decisions related to donating organs of the deceased or related to stopping treatment. (McKeown, 2012)

Religious and cultural guidelines: The religious and cultural orientation of the brain-dead person and his or her family must be taken into account, as certain values and beliefs may influence brain death diagnosis and decision-making. (alqahtani, 2018)

3.2 The extent of acceptance of organ donation for the brain-dead in the Arab Gulf countries

In the Arab Gulf countries, the issue of brain death and organ donation after it is dealt with differently according to the laws and legislation of each country. Also, customs, traditions, and cultural and religious influences are a large part of this matter, as most Gulf countries go to encourage organ donation and develop and modernize transplant systems, While these efforts may face challenges such as laws and legislation related to organ donation, and cultural and religious factors that may affect the acceptance of such operations.

3.2.1 Cultural and religious factors that may influence acceptance of organ donation

There are many cultural influences and religious controls in the Arab Gulf countries, which are the basis for accepting or rejecting deceased organ donations. These influences may include the following:

1- Religion

Religious controls vary and their interpretation may vary from one person to another, and therefore this difference may affect their positions on the issue of organ donation after brain death, and since

the dominant religion in the Arab Gulf countries is Islam, there may certainly be disagreement in this regard as it conflicts with its controls. And its rulings or not, this is because these societies have cultural diversity and multiple intellectual levels.

2- Customs and traditions

Each country of the Arabian Gulf has different customs and traditions that are rooted in their society, which makes it difficult and affects the acceptance or rejection of donating organs of a brain-dead person, because it may conflict with their principles and traditions, some of which include considering the body of the deceased as sacred and absolutely rejecting any use of it, or even dissection of it. Or there is fear of society or relatives who may exert social pressure on the brain-dead person and his family.

3- Awareness and education

The level of awareness regarding donating organs for brain-dead people in the Gulf countries is considered a major reason for rejecting or accepting organ donation after brain death. This is due to the lack of education about the extent of the medical benefit, or the benefits from a humanitarian standpoint. Therefore, it is important to work on educational and awareness programs before Charitable and humanitarian organizations highlight the humanitarian and medical benefits when donating organs of a brain-dead person, by clarifying these benefits and clarifying the relevant religious laws and rulings, to relieve tension and fear, and eliminate false information.

4- Lack of confidence in the medical system

Confidence in the medical system, or lack thereof, plays an important role in rejecting or accepting the donation of organs for a brain-dead person. These fears include the belief that natural personnel are unable to remove these organs and transplant them reliably and safely. To try to gain this trust, it is necessary to ensure standards of quality, safety, and guarantee. This is done by providing equipment and trained medical teams specialized in this field, and we do not forget the role of transparency and integrity in this matter, by giving the necessary and accurate information to the families of the brain-dead person about the method of the operation and the measures that may guarantee the safety and success of the operation, or the potential risks.

3.2.2 The challenges that may face the issue of donating organs for the brain-dead person

There are many challenges and difficulties facing brain-dead organ donation in the Arab Gulf countries, which are as follows:

1- Laws and regulations: Legislation, laws and legal procedures are considered among the first challenges facing organ donation after brain death in the Arab Gulf countries. Each country has specific legislation and regulations related to organ donation, the most important of which is the prior consent of the deceased to do so, or precise consent from his family and their insight into this matter and its signature. Therefore, to ensure the protection of the rights of the donor or his family.

2- Religion and ethics: Religious and ethical concerns vary in the Arab Gulf countries, which face the rejection or non-acceptance of donating organs for the brain-dead person, which shows a clear difference in their opinions and beliefs, as some people may consider it to conflict with religion or their moral principles, which impose on them the sanctity of the body. This is considered a violation of bodily rights.

3- Organ transportation: This point constitutes a challenge due to the challenges of time and distance, which may interfere with delivering these organs safely and quickly, in the event that there is weakness in some Arab Gulf countries in the absence of infrastructure that supports this process, such as the lack of cars or Private planes equipped to transport organs safely.

4. Materials and Methods

4.1. Research methodology:

The basic method used in this research is the descriptive and analytical method, given that this approach provides the opportunity for the researcher to explore the studied phenomenon through the processes of describing and analyzing it and linking its dimensions and variables with other dimensions and variables that exist within the studied society, given that this approach is used in a manner Major in human studies in societies.

4.2. Research community and sample:

The population of this research was represented by all citizens and residents of the Gulf Cooperation Council countries and Iraq, whose ages range between 18 and 80 years. The research population is considered very large, and a random sample was selected to represent all segments of the study population. Thus, the sample of this research reached a value of (1174), which is considered an appropriate and sufficient percentage for the study according to the percentage chosen in the research population.

4.3. Study tool

The "online questionnaire" was used as a main and basic field tool in this research. This questionnaire contained four aspects of demographic data, including participants' gender, age, geographical region, and educational qualification, and Thirteen axes of inferential data analysis to study all relationships between the variables of the study, focusing on all conclusions that result from all participants' responses, The questionnaire was built based on the researcher's experience in the field of organ transplant and donation for more than 20 years, As he work as organ transplant coordinates, additional to that, Carrying out all administrative work as an administrative specialty in organ transplantation and organ donation in accordance with the official regulations and laws of the Saudi Center for Organ Transplantation as the reference center for the Arab Gulf countries. Participants were only allowed to proceed with the survey after they explicitly agreed to participate. Based on repeating the researcher's experience in applying the questionnaire's axes to the research community in the Kingdom of Saudi Arabia, obtaining similar results for the research community at the level of the Arab Gulf countries and over a varying period of time gives a positive indication of the validity of the results and conclusions.

4.4. Data collection and analysis methods used in this research

The data for this research was collected by distributing questionnaires to the survey participants in the study areas, and after they were all collected, the researcher worked on arranging and numbering these questionnaires, in addition to coding them and entering them into its statistical analysis program, which is the SPSS program, which is specialized in analyzing such data and classifying them. The answers to all of them, and after the researcher completed the process of filling out all the questionnaires suitable for analysis, amounting to (1176) questionnaires, the researcher carried out the appropriate analysis operations, using a number of appropriate techniques, and the most important of these statistical techniques that are valid and appropriate for this type of analysis are the following:

- 1 - Technique for extracting frequencies and percentages for the characteristics of the study sample and some other variables.
- 2 - The technique of collecting, integrating and examining the values of variables.

5. Results and Discussion:

5.1. Descriptive analysis of the characteristics of the research sample.

Analysis of the demographic characteristics of the questionnaire participants is represented by gender, age, geographical region, and educational qualification. The results are shown in Table 1.

Table 1: Distribution of selected sample according to demographic Characteristics (n=1176)

Age	Frequency	Percent
18-30	193	16.4%
31-40	297	25.2%
41-50	455	38.6%
51-60	172	14.6%
61-70	46	3.9%
Above 70	13	1.1%
Total	1176	99.80%
Gander	Frequency	Percent
Male	621	52.8%
Female	536	45.5%
Total	1157	98.37%
State of residence	Frequency	Percent
Saudi Arabia - Western Region	179	15.2%
Saudi Arabia - Eastern Province	101	8.5%
Saudi Arabia - Central Region	106	9%
Saudi Arabia - Northern Region	103	8.7%
Saudi Arabia - Southern Region	44	3.7%
United Arab Emirates	100	8.5%
Bahrain	106	9%
Qatar	107	9.09%
Oman	107	9.09%
Kuwait	105	8.9%
Iraq	103	8.7%
Total	1161	98.72%

Educational level	Frequency	Percent
Secondary	85	7.2%
Diploma	71	6%
University degree	535	45.4%
Postgraduate	285	24.2%
PHD degree	184	15.6%
Total	1160	98.6%

Source: This table was built based on the analysis of questionnaires taken from a sample

Based on the results of Table 1, Majority of participants age between 41-50 years old by (38.6%), This category represents the most aware and capable of making decisions, which gives strong and useful conclusions, Followed by the age category between 31-40 by (25.2%), There is a convergence between the sample responses in terms of gender, and the number of males was higher than that of females by (7.3%), There were 19 people who declined to respond to gender, which represents a percentage (1.6%).

As the table shows There is a higher response rate in the Western Region of the Kingdom of Saudi Arabia with a percentage of (15.2%) It is evident that the sample's acceptance of the response indicates high awareness about organ donation, while the rest of the regions came close to each other and this indicates similarity in culture and understanding of the subject of organ donation, while The southern region in the Kingdom of Saudi Arabia has the lowest percentage of representation (3.7%), and this imposes a lack of awareness of the issue of donation or abstention from participation due to the lack of knowledge of the citizens and residents of the southern region regarding the importance of organ donation, its conditions, and the concept of brain death. The response rates in the table give an impression of the extent of acceptance of the citizens of each region to participate in the study based on Understanding and cultural factors, 15 participants abstained from answering about determining the geographical area for housing, with a percentage of 1.1%, It is considered a small percentage and does not affect the answers.

Majority of participant's Educational level University degree by (45.4%), This category is considered the most aware, cultured, and most receptive and responsive to the issue of organ donation. This group also represents the most promising future in society and the most important factor for spreading the culture of organ donation.

Followed by the Postgraduate category with a percentage of (24.2%), which is considered a somewhat acceptable percentage. The Minority participant's is diploma came by percentage of (6%), and the Secondary by percentage of (7.2%) sample's response in this category indicates a lack of awareness about organ donation and its importance, and it requires spreading awareness and the culture of organ donation and the concept of brain death among secondary schools and vocational training centers.

5.2. Descriptive analysis of the sample's response to organ donation axes.

The questions of these axes were formulated to determine the extent of participants' awareness of brain death, which is a condition that occurs when the brain stops working permanently and its functions cannot be restored. Donating organs from the brain-dead person is a major charitable act that aims to utilize healthy, transplantable organs from the brain-dead person to help people who suffer from serious diseases and need organ transplants to survive.

Donating organs of a brain-dead person requires careful legal and medical procedures to ensure the safety and quality of the donated organs. Donating organs from a brain-dead person can contribute to saving the lives of many people and improving their quality of life. Through this great charitable work, individuals can make a valuable contribution to their community and help others have the opportunity to live and enjoy a healthy and happy life. More than 25 thousand people in the Kingdom of Saudi Arabia and the Gulf countries are waiting for their turn for organ transplant operations. Unfortunately, many may never receive the call that a suitable organ donor has been found and that a second chance at life has arrived. According to personal estimates, one or more patients die every month in the Kingdom of Saudi Arabia due to the lack of availability of organs such as the heart, lungs, liver, kidneys and pancreas. Through the participant's answers, we derive insights that help disseminate the concepts of organ donation, and help decision makers respond and support this valuable and ethical topic.

5.2.1. Personal beliefs about organ donation and participants' responses to the second axis of the questionnaire?

Through the participant's answers, we derive insights that help disseminate the concepts of organ donation, and help decision makers respond and support this valuable and ethical topic.

5.2.1.1. Are you an organ donor after death?

The participants' response was as shown in Figure (1)

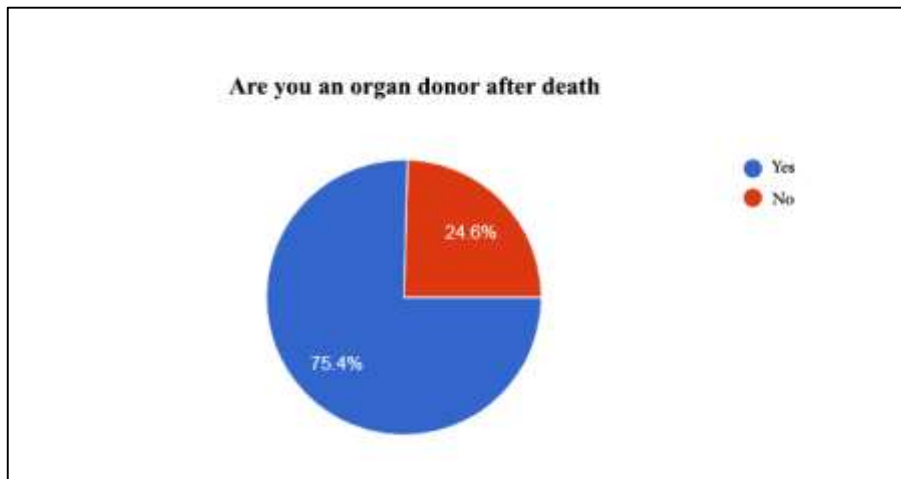


Figure (1) participants' response to the question: Are you an organ donor after death

The participants’ response to this question was Yes (886) (75.4%), No (289) (24.2%), We find that the acceptance or refusal of organ donation after death can be influenced by a multitude of factors, ranging from cultural beliefs and religious convictions to personal experiences and ethical considerations, And Many people may not fully understand the process of organ donation, including how it works, the criteria for eligibility, or the potential impact it can have on recipients’ lives, As well as the Trust in Healthcare System, The experiences of relatives of deceased organ donors and individuals who lived after receiving donated organs can be shared With society And on media, it may motivate others to accept the concept and principle of organ donation.

5.2.1.2. Let us say that you do not want to donate your organs after death, is this due?

In this question, three open options were presented to the participants, and Figure No. (2) show that:

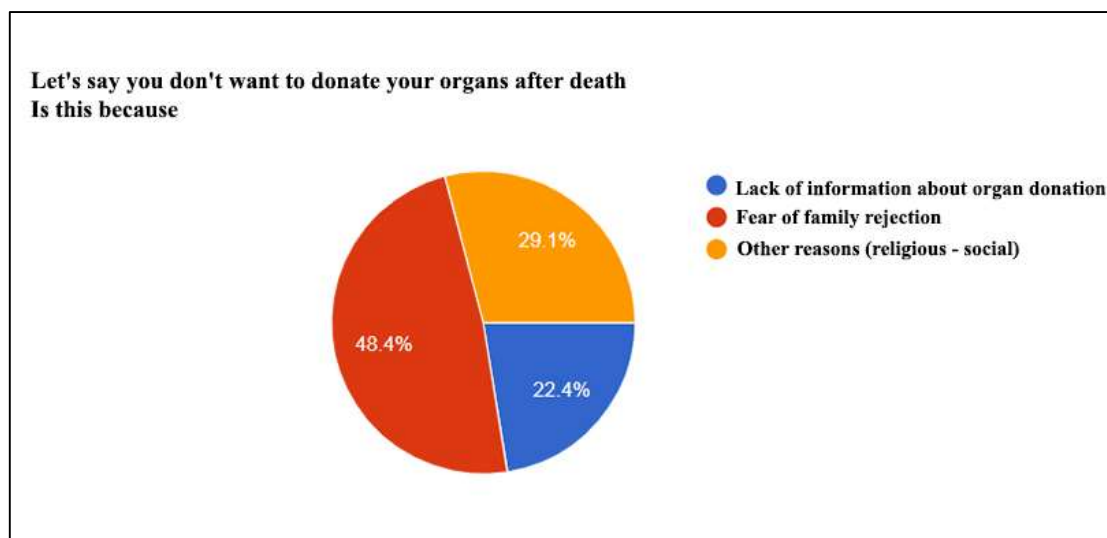


Figure (2) participants' response to the question: let’s say you don’t want to donate your organ after death is this because:-

From the participants' response, the percentage of lack of information you have about organ donation (22.4%), the fear of family rejection (48.4%), and other reasons (religious - social) were (29.1%), This can have multiple causes and varies from person to person, The reason behind some families' unwillingness to donate organs of a brain-dead person may be a result of their lack of awareness of the importance of donation, their fear of the surgical procedure, or the cultural or religious consequences they will face.

They may also have other personal reasons, such as not wanting to think about death or what happens after brain death, or their desire to preserve their body completely. In addition, there may be a fear that their family will determine their fate after brain death without their consent, so communicating with the family and discussing the options available to them may be the method used to ensure that their wishes are respected after death.

In the end, the reason depends on the individual's preferences and his personal, cultural and religious beliefs, which may affect his decision regarding donating his organs after cerebrovascular accident and when he is diagnosed with cerebral affliction.

5.2.1.3. From your point of view, do you believe that citizens of the Arab Gulf states adhere to personal or cultural beliefs regarding donating organs from brain-dead patients?

To answer this question, the participants' response was as follows, as shown in Figure No. (3):

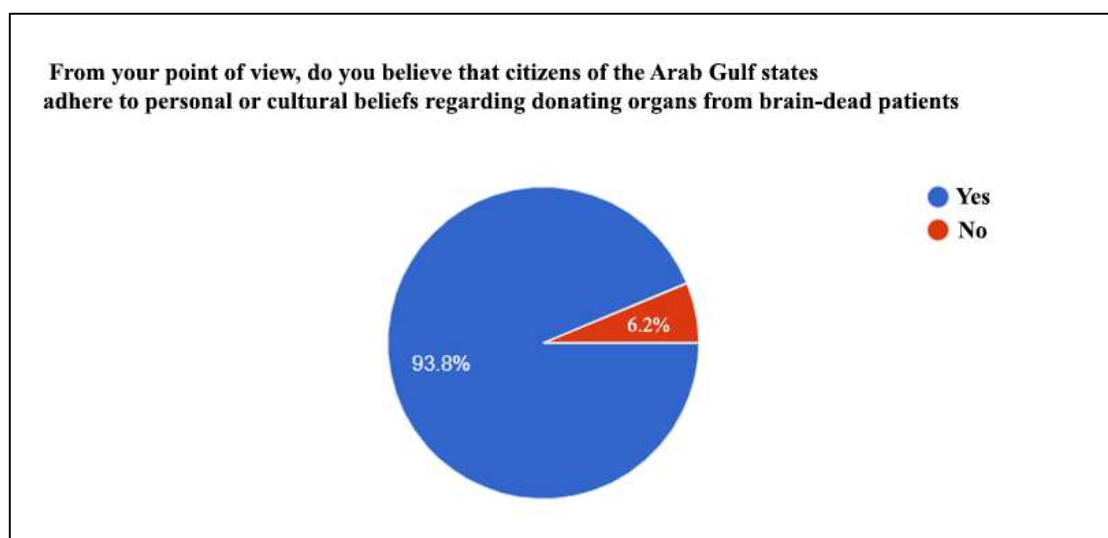


Figure (3) participants' point of view for believe that citizens of the Arab Gulf states adhere to personal or cultural beliefs regarding donating organs from brain-dead patients

From figure (3) Participants answered Yes by percentage of (93.8%) and No at a percentage of (6.2%), It is difficult to give a final answer to this question because it depends on several factors, including culture, education, religion, and personal orientations. However, there may be a diversity of opinions among citizens of the Arab Gulf countries regarding organ donation. Some people may support organ donation as an opportunity to save the lives of others, While others consider it to be a violation of cultural or religious practice. In the end, awareness of the importance of organ donation and education about this topic may contribute to changing viewpoints to increase the rate of organ donation from brain-available organs.

5.2.1.4. Do citizens of the Arab Gulf states accept the nature of brain death for any member of their family?

To answer this question, the participants' response was as follows, as shown in Figure No. (4):

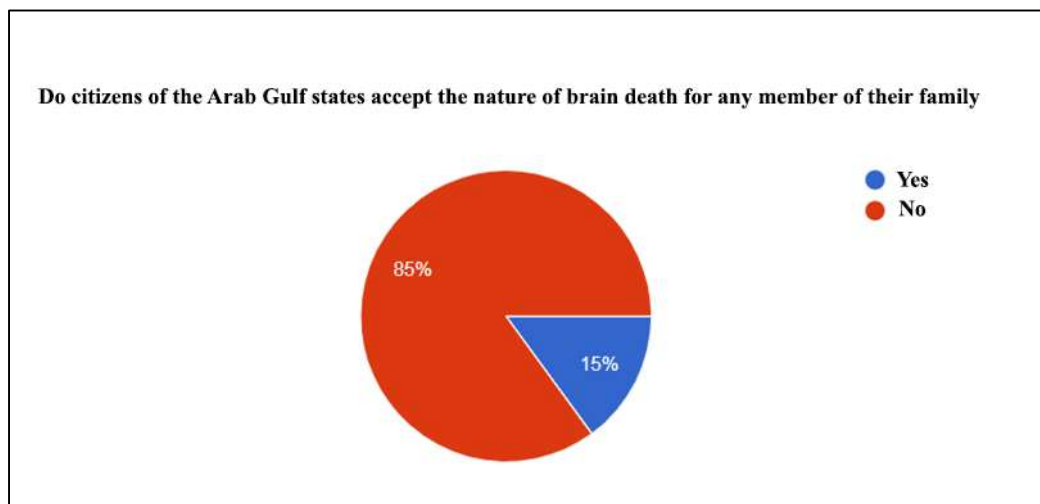


Figure (4) participants' answer to the question: Do citizens of the Arab Gulf states accept the nature of brain death for any member of their family

From figure (4) Participants answered Yes by percentage of (15%) and No at percentage of (85%), the Individuals in the Arab Gulf countries may differ regarding acceptance of the nature of brain death of a family member. Some individuals may accept this fact and understand it well as a result of increased awareness of the subject as well as progress in the field of medicine and science. However, others may deal with this idea with difficulty due to cultural factors. Or religious which may influence their views on brain death and its definition.

May most citizens of the Gulf countries do not accept brain death, as awareness and understanding regarding brain death can vary from one person to another, from one family to another, and from one country to another.

There may be multiple factors that affect individuals' acceptance of brain death, including culture, religion, and education, as well as Personal orientations, Some people may consider brain death to be part of the process of life and death, while others may feel difficult to accept it due to cultural or religious factors, fear of the unknown, or lack of confirmation of the diagnosis of brain death because the deceased is breathing on devices and they believe that he is still alive (He breathes due to assistive devices).

5.2.1.5. Do you think that citizens of the Arab Gulf countries are fully aware of the meaning of brain death?

To answer this question, the participants' response was as follows, as shown in Figure No. (5):

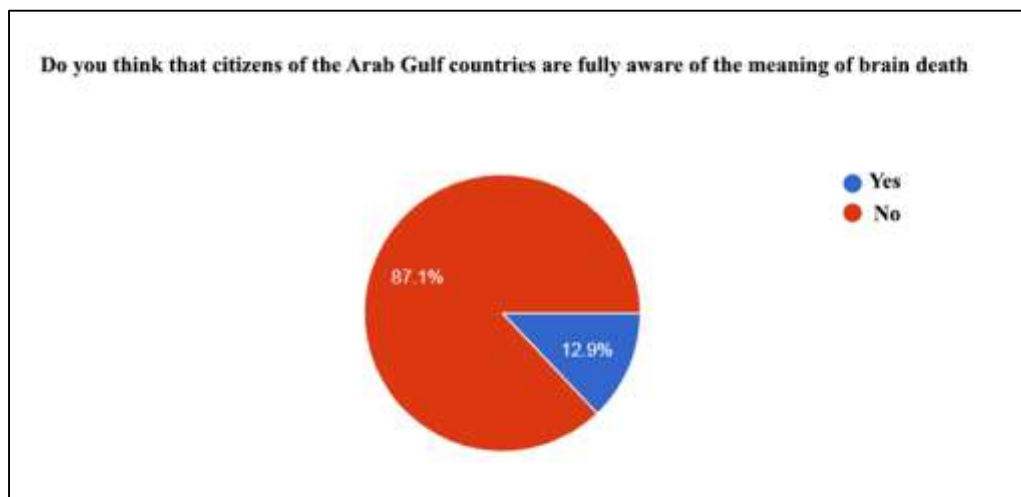


Figure (5) Participants' opinions about their thinks that citizens of the Arab Gulf countries are fully aware of the meaning of brain death

From figure (5) Participants answered Yes by percentage of (12.9%) and No at percentage of (87.1%), Awareness of the meaning of brain death may vary among individuals in the Arab Gulf countries. Some individuals may be fully aware of these concepts as a result of medical and media awareness, which increases their understanding of the processes of determining and confirming brain death according to the procedures followed, while others may be less familiar with these terms and concepts. This depends on factors such as education, culture, religious directives as well as personal orientations. If there is an interest in increasing awareness about this topic, awareness and continuous education can be provided to the Gulf community to enhance their understanding and medical concepts related to brain death. As well as from the results of the participants, the responsible authorities and media institutions need to spread awareness of the concept of brain death, the processes of diagnosing it, and the medical and legal concepts for this.

The low percentage of organ donations may be due to a lack of complete understanding of the basics and the complete mechanism in detail for brain death concept.

According to Laura A, et .al (2003) The families' understanding of brain death may be a factor that contributes to decisions regarding organ donation, the sample consisted of 403 families of organ donor–eligible patients who reported that someone at the hospital told them the patient was brain dead, Most families (96%) were told their family member was brain dead, but only 28.3% were able to provide a completely correct definition of brain death, the families informed the patient was brain dead were more likely to donate than those who did not consider the patient dead until mechanical support was turned off and the heart stopped.

5.2.1.6. Do you think that citizens of the Arab Gulf countries are fully aware of the conditions and standards that must be met to accept the donation organs from a brain-dead person?

To answer this question, the participants' response was as follows, as shown in Figure No. (6):

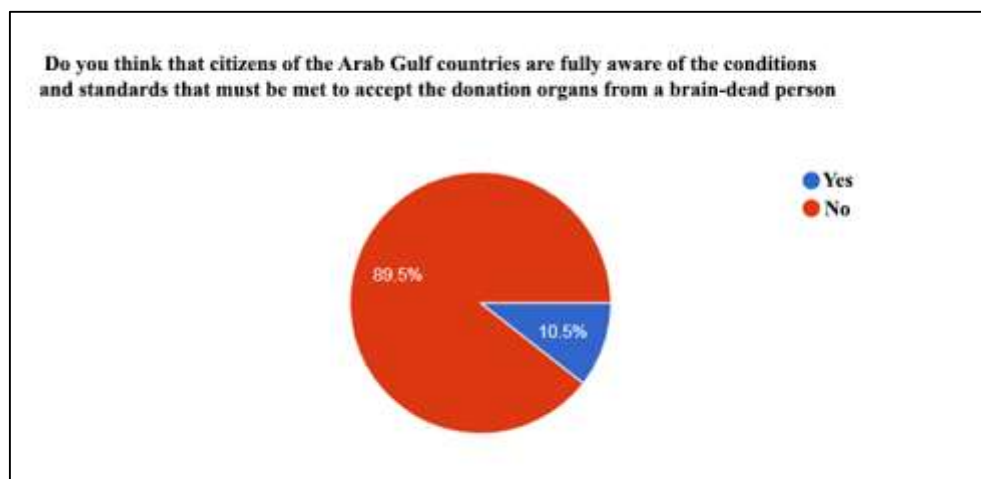


Figure (6) Participants' opinions about their thinks that citizens of the Arab Gulf countries are fully aware of the conditions and standards that must be met to accept the donation organs from a brain-dead person

From figure (6) Participants answered Yes by percentage of (10.5%) and No at percentage of (89.5%), The low level of awareness of the conditions and criteria that must be met to accept donation of organs from a brain-dead person may be due to a lack of awareness of the concept of brain death, the mechanism of donation, the procedures controlling that, the applicable laws and medical procedures associated with the donation process, as well as a lack of understanding of how to organize and carry out the donation process safely. Hence, it is necessary to raise awareness for all segments of society and organize awareness campaigns in cooperation with official bodies,

non-governmental organizations and health organizations, to spread awareness by following modern methods of infographics and short videos to address the principle of organ donation from a general perspective, raising awareness of the concept of brain death and the conditions for its diagnosis, and progressing to the benefits and value for patients waiting to donate. To have a new life for them, convey their experiences, and raise awareness about the conditions and criteria that must be met to accept organ donation.

However, this obstacle can be overcome through awareness and education about the concepts of brain death and its importance in providing an opportunity to save patients with organ failure and their families, as well as providing correct information and understanding the medical processes related to brain death and how to remove the organs of the brain-dead person. This may help in increasing awareness and acceptance among citizens in countries.

5.2.1.7. From your personal point of view, if there was a case of brain death of a patient in a Gulf family (God forbid), would his organs be approved for donation through An individual decision for the eldest family member, or a family decision.

The participants' responses were whether the decision to donate the organs of a brain-dead person was made through an individual decision of the eldest person in the family, or a family decision. The results were as shown in figure (7):

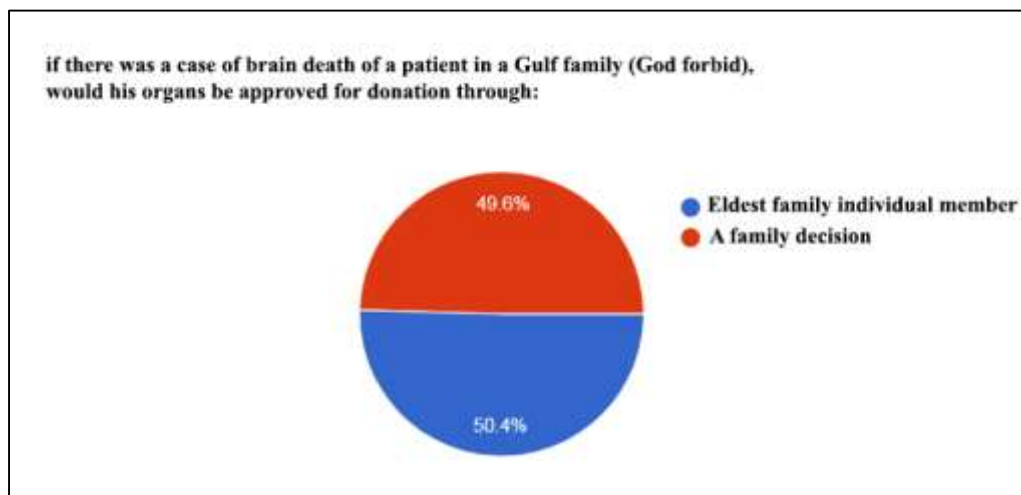


Figure (7) Participants' opinions about organs approval for donation through an individual decision for the eldest family member, or a family decision

Through the results shown in Figure (7), the participants showed that the decision to agree to donate the organs of a brain-dead person is made by the decision of the eldest person in the family by percentage of (50.4%),

And the participants who think that the decision to donate is made by the family decision by percentage of (49.6%), The decision to donate organs for a brain-dead person depends on many factors, including culture, religious, legal, and personal orientations in the Arab Gulf countries. There may be restrictions or special considerations related to donating organs from a brain-dead person, which must be taken into account because some families may agree to donate organs based on their values. The personality and its religious beliefs, while other families may reject this idea, the family must make the decision that is consistent with the values and principles regarding donating the organs of the brain-dead person in order to save a human soul in need.

Since the results of the responses are close, it is preferable to clarify the decision-making mechanism within the legal conditions and clarifications of the donation mechanism and not to leave the room open for decision-making based on the eldest member of the family, or a family decision, so that the door to disagreement is not opened in the future, and based on the consultation of legal experts. With the correct mechanism for making a donation decision, clarifying this within awareness campaigns, and obtaining informed legal consents from those concerned.

There are several decision-making models involving a complex interplay of medical, ethical, legal, and societal factors, Although some mechanisms depend on the legal and cultural context of each country or region, For example, individuals in Spain and Belgium use the Opt-out system as a decision-making mechanism, as individuals are presumed to consent to organ donation unless they explicitly opt out, and in the United States and many European countries the opt-in system requires individuals to explicitly consent to organ donation by registering as donors. other approach is shared decision-making, In this approach, the decision to donate organs is made collaboratively between healthcare providers, the potential donor's family. In generally suggested higher donation and transplantation rates in countries with an opt-out strategy (Adam et .al, 2019).

5.2.1.8. Do you think that regular medical procedures have been applied to confirm brain death in intensive care centers under the control and supervision of the concerned authorities?

The participants' answers were about the application of regular medical procedures to confirm brain death in intensive care centers under the control and supervision of the concerned authorities, as shown in Figure (8).

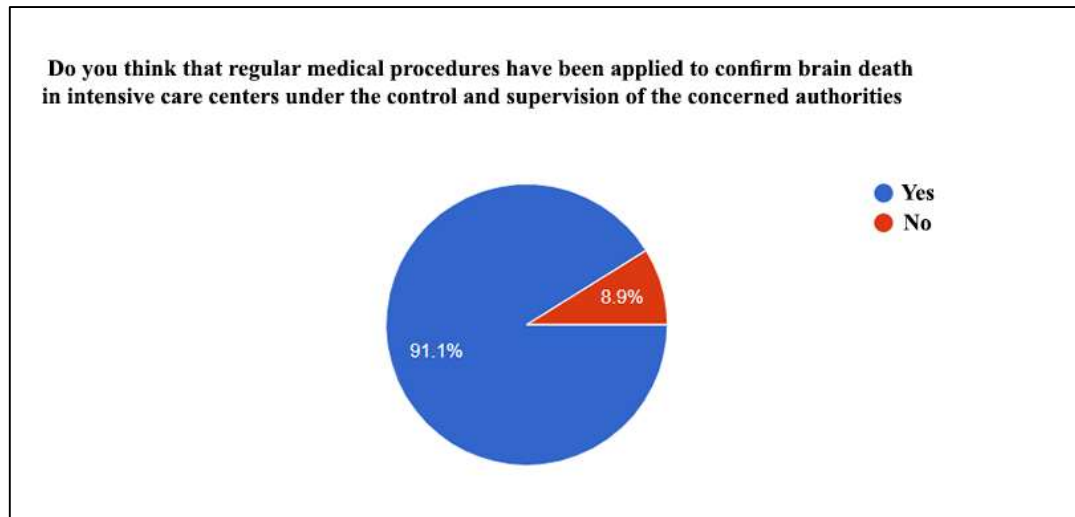


Figure (8) Participants' thinks about regular medical procedures applied to confirm brain death in intensive care centers under the control and supervision of the concerned authorities

From the results shown in Figure (8), the participants answered Yes (91.1%), and who answered No (8.9%), This shows participants' confidence in the health system and the center designated for donation, As it is rare for procedures to confirm brain death to take place without supervision and supervision by the competent authorities in intensive care centers, these procedures rely on precise and specific medical protocols and standards, which include various tests to evaluate brain functions and ensure that its activity has stopped permanently.

These procedures are performed by a specialized medical team that follows specific guidelines and protocols. This team includes intensive care doctors, neurologists, and doctors who specialize in evaluating brain functions. In addition, this procedure may require review and approval by special medical committees or bodies specialized in evaluating brain death cases. And ensure that the procedures are applied correctly in accordance with the standards and medical directions of the state.

5.2.1.9. Do you think that informing the family of the brain-dead person regarding the implementation of special procedures to ensure the health and safety of the donated organs has been done in accordance with the standards?

The participants' answers for this question shown in Figure (9).

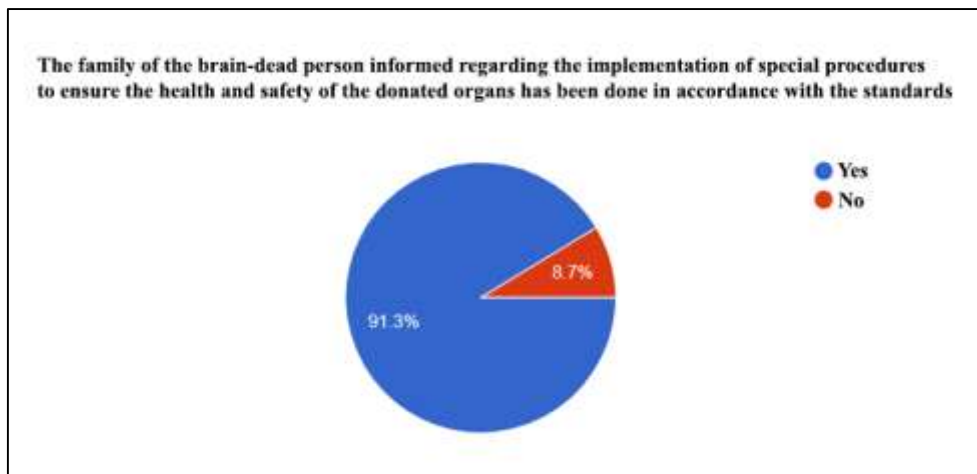


Figure (9) Participants' thinks about informing the family of the brain-dead person regarding the implementation of special procedures to ensure the health and safety of the donated organs has been done in accordance with the standards

From the results shown in Figure (9), the participants answered Yes (91.3%), and who answered No (8.7%), The results show that it is very important to inform the family of the brain-dead person correctly and accurately regarding the implementation of special procedures to ensure the validity and soundness of the diagnosis of brain death, and this information must be presented in a transparent and clear manner to the family, including an explanation of the procedures that were taken, the standards that were followed, and the results that were achieved. reached.

This effective and transparent communication with the family helps in calming feelings and providing emotional support to them in this difficult moment. It also enhances confidence in the medical work that is being carried out. In addition, it contributes to achieving transparency and credibility in the diagnostic process and ensures respect and wishes of the family who has a brain dead person in their desire to donate his organs. Or not, so providing correct and accurate information and emotional support to the family of the brain-dead person is an essential part of the beginning of effective communication in order to donate the brain-dead person's organs.

5.2.1.10. Is the idea of having a person responsible for the brain-dead person (a family member) important when applying regular medical procedures to confirm and announce brain death?

To obtain the participants' answer to this question, it appears in the results shown in Figure (10), as the answers to this question constitute a pivotal point for completing the donation process, and this is what helps decision makers focus on this concept.

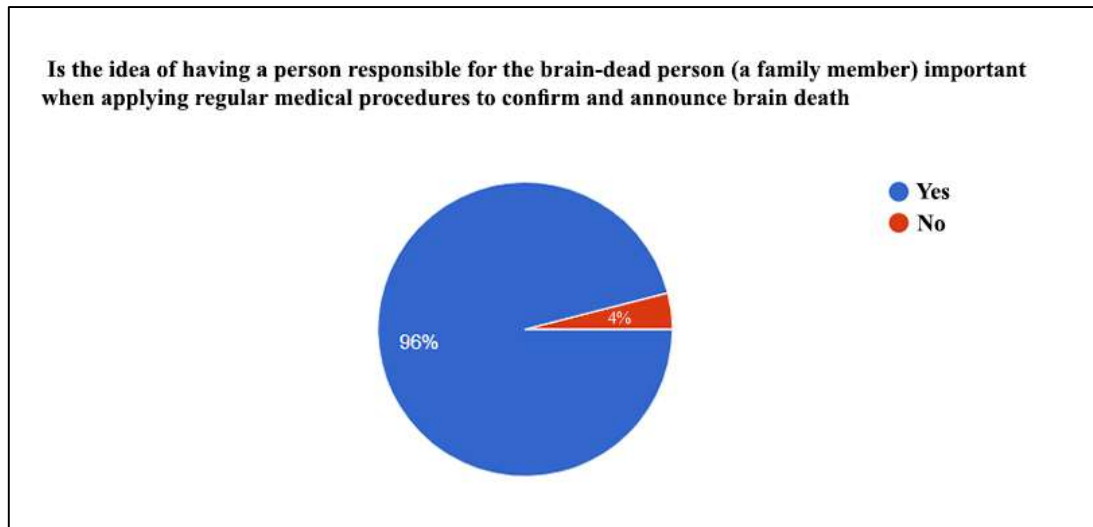


Figure (10) Participants' thinks about the idea that there is a person responsible for the brain-dead person (a family member) who is important during the application of regular medical procedures to confirm and announce brain death.

From the results shown in Figure (10), the participants answered Yes (96%), and who answered No (4%), this confirms that the presence of a person close to a brain-dead patient is important during the implementation of procedures to confirm brain death. It can be important for several reasons.

The close person can provide emotional support to the patient's family and family members. It also helps in understanding the procedures and providing important information to the medical team when they request any information regarding the deceased. Cerebrally.

This person can also help in helping the family of a brain-dead patient make difficult decisions about donating his organs.

According Tawil, et .al (2014) the family presence educational intervention during brain death evaluation improves understanding of brain death with no apparent adverse impact on psychological well-being. Family presence during brain death evaluation is feasible and safe, and it helps increase the donation rate.

5.2.1.11. Are the measures that represent the culture of dealing with the brain-dead in the Gulf countries today required in order to save the lives of other people?

The participants' answers for this question shown in Figure (11).

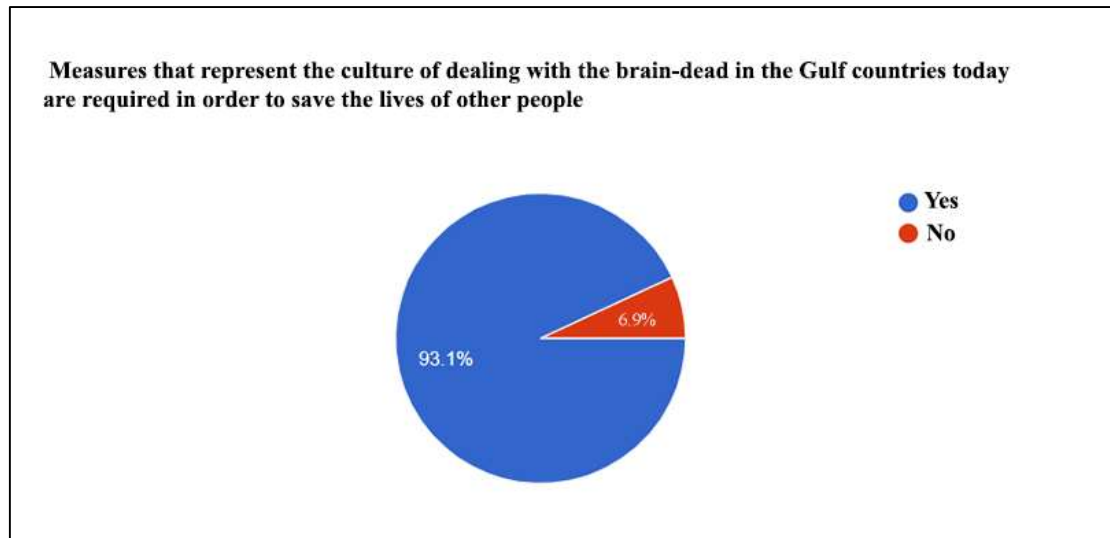


Figure (11) Participants' thinks about the Measures that represent the culture of dealing with the brain-dead in the Gulf countries today are required in order to save the lives of other people.

From the results shown in Figure (11), the participants answered Yes (93.1%), and who answered No (6.9%), The above results show that procedures that represent the culture of dealing with the brain-dead in the Gulf countries are important for saving the lives of other people by requesting organ donation for the brain-dead and that organ donation can be a source of hope and opportunities to save the lives of others who suffer from chronic diseases that require organ transplantation.

Individuals who are diagnosed with brain death can provide the opportunity for treatment for other patients, and this contributes to strengthening human values and community solidarity. Therefore, it is necessary to strengthen the culture of organ donation in the Gulf countries and provide support and awareness to the community to understand the importance of this step and contribute to saving the life of the Gulf citizen.

4.2.1.12. Because of the presence of multiple cultures among the countries of the Arabian Gulf, do you think that there is a difference and discrepancy between countries regarding approval to accept the donation of organs from the brain-dead person?

To find out whether the presence of multiple cultures among the countries of the Arabian Gulf leads to differences and discrepancies between countries in order to agree to accept the donation of organs for the brain-dead person. The results of this axis appear in Figure (12).

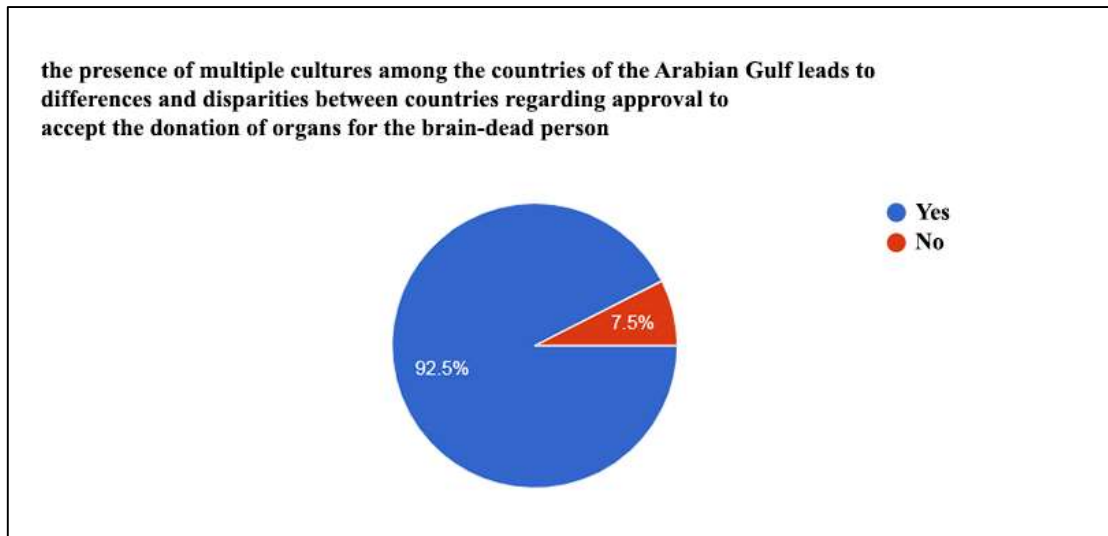


Figure (12) the presence of multiple cultures among the countries of the Arabian Gulf leads to differences and disparities between countries regarding approval to accept the donation of organs for the brain-dead person.

From the results shown in Figure (12), the participants answered Yes (92.5%), and who answered No (7.5%), Despite the similarity in religious factors between the countries of the Arabian Gulf, the results of this question showed a difference, as the higher percentage confirms the existence of a difference in multiculturalism with regard to consent to accept organ donation from the brain-dead person, and this may be due to fears of violating the donor’s rights or concerns about unethical donation operations in not agreeing to organ donation, and this may differ from one culture to another, or the difference in legal legislation regarding organ donation, and perhaps as a result of the weak level of awareness and education regarding the extent of societal acceptance Organ donation operations. There may be a lack of education about the medical and ethical benefits of organ donation for some.

5.2.1.13. What will you choose in your last answered?

The results of the last open question of the second section of the questionnaire showed the participants’ answers as shown in Table (2) As follows:

Table (2) participants’ last answered

The answer	percentage %
In the name of God, the Most Gracious, the Most Merciful (and whoever saves a life, it is as if he saved all of mankind) God Almighty has spoken the truth.	38.6%

I need more information to understand the meaning of brain death and organ donation	7.2%
Support the program for donating organs from brain dead people in the Arab Gulf countries because of its charity, and saving the human soul.	37.4%
I find that there would be great embarrassment if my family found out about my donation of my organs after death	4%
I now have a lot of information about brain death and organ donation, and I will educate my family about this	5.8%
There are some unclear matters regarding donating organs for brain-dead people from a religious and social perspective	7.1%
Total	100%

From the results Table (2) shows The higher percentage of participants' (38.6%) answers to accept the concept and idea of donating organs from a brain-dead person stems from a religious standpoint of contributing to the life of another person, Then Support the program for donating organs from brain dead people in the Arab Gulf countries because of its charity, and saving the human soul by percentage of (37.4%) This gives an impression of the participants' acceptance of the idea of donation after receiving comprehensive clarifications about the concept of brain death, its procedures, conditions, conditions, and mechanism.

Then it comes with a percentage (7.2%) I need more information to understand the meaning of brain death and organ donation, here, it is necessary to spread awareness to cover all religious, cultural, medical and societal aspects of the donation mechanism, its stages and steps.

Then it comes with a percentage (7.1%) There are some unclear matters regarding donating organs for brain-dead people from a religious and social perspective, It is considered a percentage that calls for awareness campaigns to include the presence of a religious guide or religious instructions for the donation process and Sharia and legal provisions.

And percentage of (5.8%) I now have a lot of information about brain death and organ donation, and I will educate my family about organ donation, this indicator gives an impression of participants' agreement with the concept of donating organs from brain-dead patients and taking action to spread awareness to their families.

This percentage constitutes complete conviction about the issue of organ donation, this gives importance to encouraging community contribution and the participation of individuals in spreading education and information about the concept of brain death and organ donation from brain-dead people, as the participation of individuals in awareness gives greater benefit than educational campaigns.

In last point comes I find that there would be great embarrassment if my family found out about my donation of my organs after death at a percentage of (4%), Individuals who are afraid of donating their organs after death can be encouraged through awareness and provision of counseling and support services to individuals who are considering organ donation. This can help them navigate their feelings and concerns, including those related to potential family reactions, and Encourage open family discussions using honest Live TV programs about organ donation within families, to remove fears and shyness about donating.

6. Summary of results

Based on the results of the cross-sectional study, we can summarize the results as follows:

- 1- Participants between the ages of 41-50 and 31-40 showed a high response to answering and participating in the study, and this gives an impression of the extent to which this age group accepts the topic of organ donation. Based on the useful age group, those who make the decision to donate are targeted with awareness and guidance.
- 2- The gender of the respondents to the study showed similarity in gender, and this gives an indication that it is possible for the donation to come from females, not just males.
- 3- Based on the State of residence, Saudi Arabia - Western Region received the highest response, and this indicates the existence of a culture around the topic of donation, while the rest of the regions and countries came close, except for the southern region, which calls for intensifying awareness and motivation operations in this geographical region and for the geographical regions to be targeted equal proportions.
- 4- The highest response rate to the study was from University degrees and postgraduate, and this gives an impression of the importance of this societal group and its contribution to awareness in universities, as the university stage is considered the basic stage for determining the orientation, beliefs, and culture of the individual, while Diploma and Secondary had the lowest response rate, which calls for spreading awareness in schools and vocational centers.

- 5- There was a response rate by percentage of (75.4%) in accepting organ donation after death; this gives the impression of society's acceptance of the idea of donation.
- 6- The family's rejection of the donation process is the highest reason for not donating after death from the participants' point of view, and this calls for solutions to encourage families to consider donating, then the lack of information about organ donation, then by religious and social factors.
- 7- A high percentage of participants showed personal or cultural beliefs regarding donating organs from brain-dead patients.
- 8- A high percentage of participants showed that citizens of the Arab Gulf states not accept the nature of brain death for any member of their family, this is due to multiple factors that affect individuals' acceptance of brain death, including culture, religion, and education.
- 9- It showed a percentage of (87.1%) citizens of the Arab Gulf countries are not fully aware of the meaning of brain death.
- 10- It showed a percentage of (89.5%) citizens of the Arab Gulf countries are not fully aware of the conditions and standards that must be met to accept the donation organs from a brain-dead person.
- 11- There is a similarity between the participants' answers about organs be approved for donation through an individual decision for the eldest family member, or a family decision.
- 12- A high percentage of participants showed their confidence in the health system and the application of regular medical procedures to confirm brain death in intensive care centers under the control and supervision of the concerned authorities, at a rate (91.1%).
- 13- A high percentage of participants showed that informing the family of the brain-dead person regarding the implementation of special procedures to ensure the health and safety of the donated organs must be done, at a rate (91.3%).
- 14- The presence of a person responsible for the brain-dead person (a family member) is very important when applying regular medical procedures to confirm and announce brain death, at a rate (96%).
- 15- There is a need to implement procedures to deal with the brain death concept and organs donations in the Arab Gulf countries in order to save the lives of others.
- 16- There is a difference and discrepancy between multiple cultures of Arabian Gulf countries regarding to approval to accept the donation of organs from the brain-dead person.

17- Most participants' responses showed moral and religious motives for donating in order to save other lives in accordance with religious teachings. Whoever saved one's life is like one who saved all people's lives.

18- Some participants' responses showed that there would be great embarrassment if my family found out about my donation of my organs after death.

19- Some participants in responses need guidance and teachings from a religious and societal perspective.

7. Conclusion

Brain death is a condition that occurs when the brain stops working permanently and its functions cannot be restored. Donating organs for the brain-dead person is considered a major charitable act that aims to exploit healthy, transplantable organs from the brain-dead person to help people who suffer from serious diseases and need organ transplantation to survive. Donating brain-dead organs requires careful legal and medical procedures to ensure the safety and quality of the donated organs. This process is organized through the Saudi Center for Organ Transplantation in the Kingdom of Saudi Arabia (as an accredited center and reference for the Arab Gulf countries) in order to coordinate the donation and organ transplantation process between donors and patients in need. Donating organs from a brain-dead person can contribute to saving the lives of many people and improving their quality of life. Through this great charitable work, individuals can make a valuable contribution to their community and help others have the opportunity to live and enjoy a healthy and happy life.

Through this study, it is clear that there is a lack of knowledge about brain death, as well as the initiative to donate, as well as the procedures for diagnosing brain death, the medical protocols followed for that, the legal controls, and the mechanism for dealing with the family of the brain-dead person to encourage their consent to donate. It is also due to cultural and social factors, such as the fear of rejection by the family and society. Weak religious and media awareness.

From a religious perspective, we find that the two councils: the Islamic Jurisprudence Council affiliated with the Muslim World League and the Islamic Jurisprudence Council emanating from the Organization of the Islamic Conference have agreed on the permissibility of removing life support from a brain-dead person after performing all medical procedures, after confirming that all his brain functions have been completely disrupted, and the consultant doctors have ruled that this is The failure is irreversible, although the heart and breathing still function automatically due to the installed devices.

8. Recommendations:

Based on the results obtained, the researcher presents several important recommendations to decision makers that enhance the development, organization and encouragement of organ donation. As follows:

- 1- Intensifying awareness and education campaigns targeting useful and effective age groups regarding the concept of brain death and organ donation for brain-dead individuals which can significantly support rapid awareness through Early Educating people from a young age, Educating the people to make informed decisions about their own organ donation preferences, and Covering all geographical areas so that the process is not focused on one geographical area and so that the culture of donation becomes a general culture among all members of society.
- 2- The necessity of Having a designated person responsible for the brain-dead patient, typically a family member, is crucial during medical procedures to confirm and declare brain death for several reasons: provide informed consent for the medical procedures required to confirm brain death, ensuring that the medical team can proceed with necessary tests and treatments, and provide emotional support not only to the patient but also to other family members involved when Dealing with a brain-dead loved one can be emotionally challenging and serving as a primary point of contact for the medical team, facilitating communication and ensuring that information regarding the patient's condition is relayed effectively to the family, and helping the facilitate these discussions and decisions, ensuring that the patient's wishes, if known, are respected, and help convey any cultural or religious preferences or concerns to the medical team.
- 3- It is necessary to informing the family of the brain-dead person about the implementation of special procedures to ensure the health and safety of donated organs is essential for ensuring transparency, obtaining informed consent, addressing concerns, and providing emotional support throughout the donation process.
- 4- Organizing the donation decision-making mechanism based on the globally followed donation decision-making approaches, and clarifying this within the legal controls and conditions.
- 5- Religious motivation and clarification of the religious conditions and controls and the legal ruling for donating organs of the brain-dead person, with the presence of mentors and religious figures for this.

- 6- Enacting a unified awareness and education system among the Arab Gulf countries that clarifies the medical mechanism for diagnosing and determining brain death, its conditions, and the protocols followed for that.
- 7- Strengthening community confidence in the health system and centers specialized in diagnosing brain death and donating brain-dead organs offers Increased Organ Donation Rates, and Improved Access to Care, and Enhanced Collaboration.
- 8- Publishing the experiences of a family who have agreed to donate organs from one of their members after brain death can play a significant role in promoting organ donation awareness, dispelling myths, inspiring others, fostering dialogue, providing support, and celebrating acts of generosity within the community.
- 9- Participation of civil society organizations, non-governmental organizations and health organizations according to a joint program to encourage donations and raise awareness about this, and engage the community in discussions about important healthcare issues
- 10- It is necessary to raise awareness of the general concept of brain death and everything related to it, before raising awareness of the mechanism of donation and the conditions for that, as a large percentage of participants showed that they did not know about brain death until they determined their inclination to donate.
- 11- Spreading awareness of the specialized and responsible centers authorized to diagnose brain death and organizing the donation mechanism, their locations and contact information.
- 12- Supporting meetings and television talk shows that bring together open discussions with the family members to encourage donation to eliminate the fear of the family among donors.
- 13- It is necessary to have social and psychological counselors to enhance the mental health of family members, take into account the mental health of family members of the brain-dead person, and motivate them to donate organs.
- 14- Awareness of the legal controls, conditions, and approvals necessary for the donation process.

19. Acknowledgement

This cross-sectional study did not include any experiments on humans or animals, and no personal information was collected about the participants, whether their opinions, after they were informed of the objectives of the study and agreed to participate.

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