

Assessing the Awareness of the Staff of a University of Medical Sciences about Organ Donation Following Brain Death

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Abstract

Background: Organ donation is fast becoming an important bioethical issue from a social perspective, because it is a humanitarian act with the goal of saving human lives and deliverance from suffering. Donation may be for research or, more often, healthy transplantable organs and tissues may be donated to be transplanted into another person. Organ donors are usually dead at the time of donation, though sometimes may be alive. The purpose of this study is to assess the awareness of the employees of a university of medical sciences, Tehran- Iran, about organ donation following brain death.

Methods: A questionnaire containing ten questions regarding participant's knowledge about "organ donation" was filled. To evaluate the reliability of the questionnaire Cronbach's alpha method test was used. SPSS software was used for statistical analysis of the data.

Findings: Out of 70 participants (those who answered the questionnaire), 61 were male (87.1%) and 9 were female (12.9%). Based on the education, most of the participants (36 people) were general practitioner with MBBS degree, masters and medical student (51.4%). Analyses of the collected data indicate that 60% of the 70 participants are "familiar" with organ donation ($P > 0.05$). 72.9% of the participants expressed interest in having more information about organ donation.

Conclusion: Motivating people to donate organ is a multi-approach task. It involves applying effective methods of teaching and learning, social network interventions and exposing educational content about organ donation for social media users.

Keywords: Organ donation, Brain death, Organ Transplantation, Organ Donor, Tissue and organ procurement, Cadaveric donation.

Introduction

Previously, death was defined as cessation of heart beat and breathing [1]. At present, death is considered as a state of non-functionality of the brain whilst other organs may remain functioning [2]. On this basis, a patient with brain dead is considered dead in spite of working heart and lungs [3]. At present, brain death is defined as unresponsiveness and lack of reactivity, absence of movement and breathing, absence of brain-stem reflexes and coma whose cause has been identified [4].

Based on the new definition of death, a brain-dead patient can donate organs [5]. Organ donation can be done either by legal consent or with the legal assent of the next of kin [6]. From the

biological as well as ethical point of view, organ donation is an important issue. Registering to be an organ donor depends greatly on the attitude of the individual; people with a positive outlook are blessed with a sense of altruism, so register for organ donation after brain death, while those with negative perspectives usually hesitate to donate organ [6]. Public views are crucial for the success of an opt-out or presumed consent donation system. Any change in health policy to the consent or some type of opt-in system from an opt-out system may help in increase of donors. Of course, this increase may be influenced by factors that have impact on donor increase such as religious beliefs. This study is carried out to survey the awareness of a university staff regarding organ donation following brain death. A ques-

tionnaire containing ten questions regarding participant's level of knowledge about organ donation, ways to get acquainted with it, attitudes of participants towards organ donation, reasons for their agreement or opposition, willing to transplant an organ or to be transplanted, if required, help needed to register for organ donation and the extent of the influence of various factors on their decision for organ donation, their views, age, gender, ethnicity, profession and so on was filled by the participants. Statistical Package for the social Sciences (SPSS) (International Business Machines (IBM), United States) Statistics version 19 package was used for analyzing the data. All the results were expressed as mean \pm standard deviations and $P < 0.05$ was taken to be significant.

Materials and Methods

A questionnaire containing questions regarding participant's level of knowledge about organ donation, ways to get acquainted with it, attitudes of participants towards organ donation, reasons for their agreement or opposition, willing to transplant an organ or to be transplanted, if required, help needed to register for organ donation and the extent of the influence of various factors on their decision for organ donation, their views, age, gender, ethnicity, profession and so on was filled by the participants. Statistical Package for the social Sciences (SPSS) (International Business Machines (IBM), United States) Statistics version 19 package was used for analyzing the data. All the results were expressed as mean \pm standard deviations and $P < 0.05$ was taken to be significant.

Results

In the present study 70 persons at different levels of education, profession and ethnicity participated in the study. Based on the job distribution of the participants, they were divided into 3 levels of faculty members $n=9$, 12.9%), staff ($n=29$, 41.4%), and medical students ($n=32$, 45.7%). Most of the participants are medical students and faculty members are the least in number (Fig.1). Regarding their education, participants were grouped as Bachelor or less ($n=25$, 35.7%), those with Master ($n=36$, 51.4%), MD and PhD ($n=9$, 12.9%) degrees (Fig.2). Based on the ethnicity, as is shown in Figure 3, participants were divided into 6 groups: Fars (51.4%), Turk (21.4%), Lor (18.6%), Kurd (2.9%), Balooch (2.9%) and others (2.9%). Majority of the participants were Fars followed by Turk and Lor (Fig-3). Regarding gender, both sexes participated in this study (Fig.4).

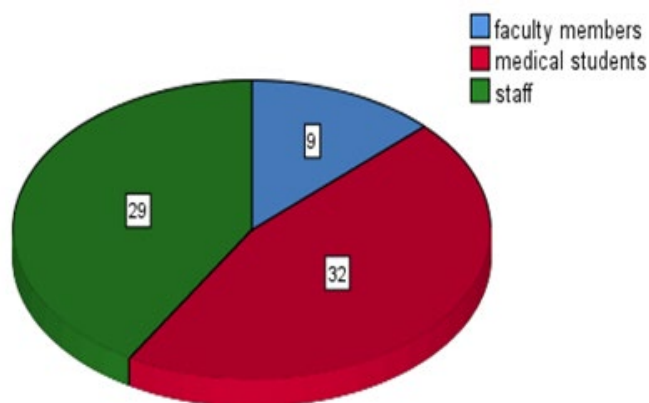


Figure 1: Job-wise distribution of the participants

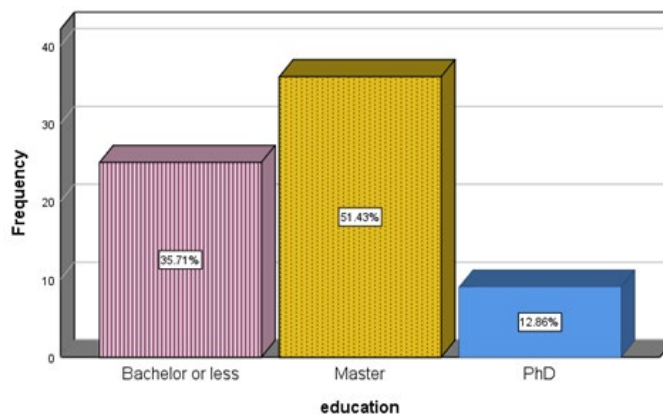


Figure 2: Education level of the participants

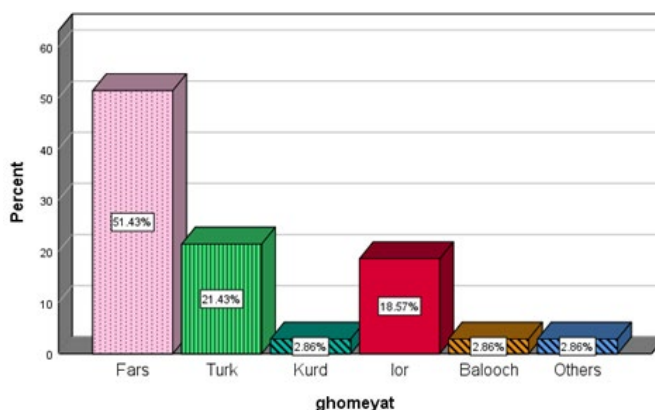


Figure 3: Ethnicity distribution of the participants

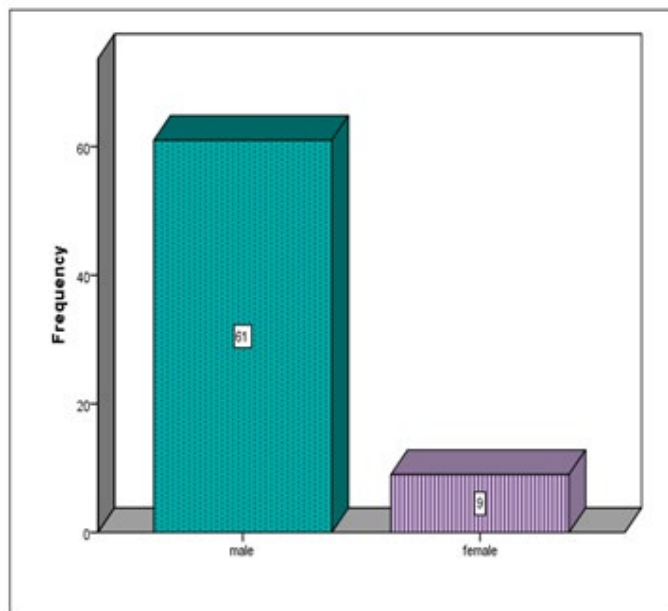


Figure 4: Gender-wise distribution of the participants

The first question of the questionnaire asked the participants the extent they were familiar with organ donation. Analysis of the collected data showed significant difference ($P < 0.05$) between the level of knowledge of two extremities i.e. 84% of the participants were familiar with organ donation, and 5.7% with limited knowledge but no one claimed "I have not heard at all".

Relationship between this question and gender of the participants shows that gender is significantly ($P < 0.05$) and directly related to the level of their familiarity with organ donation. Relationship of this question with 3 variables of education, ethnicity and profession based on the significance values ($P > 0.05$) reveal that this question is independent of these three variables.

Answering question 2 i.e. what are your ways of getting acquainted with organ donation, 52.9% of the participants considered mass media while 22 persons believed all items of informing people i.e. study, friends and participating in seminars and scientific gatherings, in addition to mass media, are the ways of increasing their knowledge about organ donation. Relationship between this question and gender ($P > 0.05$), education ($P > 0.05$) and ethnicity ($P > 0.05$) is not significant.

Relationship between this question and profession is significant ($P < 0.05$) indicating that the type of answer to this question is not independent of people's profession. The highest response was given by the faculty and staff (24.3%) who believed mass media i.e. radio and television were the main source of their information. 72.9% of participants were interested in having more information about organ donation while 2.8% of participants were not interested in having more information about organ donation.

Relationship between this question and gender ($P > 0.05$), education ($P > 0.05$) and ethnicity ($P > 0.05$) of the participants are independent of each other. On the other hand, relationship between this question and job using χ^2 test is significant ($P < 0.05$) indicating that profession of individuals (student-employee-faculty) are not independent of each other. Regarding question 3: What do you think about the practice of organ donation? Only for 1 person (1.4% cases) economic benefit was important while the highest response (58.6%) was related to men believing that they donate their organ after brain death as it is a "God-pleasing" act.

Relationship between this question and gender is significant ($P < 0.05$). Relationship between this question with education and ethnicity is not significant ($P > 0.05$) which shows response of people to this question has nothing to do with the level of education and their ethnicity. While, relationship between this question and profession is significant ($P < 0.05$). The highest response was related to students (30%) considering it as a "God-pleasing" act. To answer Question 4, where the reason for organ donation was asked, majority of the participants ($n=37, 52.9\%$) have pointed to "God willing", followed by $n=28, 40\%$ who considered it a humanitarian act to save the life of a human being and make his family happy. Relationship between this question and gender is significant ($P < 0.05$) and it depends on the gender of the participants. Relationship between this question and education ($P > 0.05$) and profession ($P > 0.05$) are independent of each other, meaning that organ donation has nothing to do with the level of education and profession of individuals. Only 11 people answered Question 5 which asked them to clarify the reason for opposing organ donation, 45.5% specified socio-cultural beliefs and religious beliefs (18.2%) as the main reasons for their opposition. Although some (27.3%) pointed to the fear of dissatisfaction of their lost one as the reason for their opposition.

The relationship between this question and education, job and ethnicity are not significant. More than 50% of the participants (51.5%) answering next question (Question 6) about their decision in case they or their loved ones need a transplant were determined that they procure an organ though 18 people (25.7%) stated that they decide at the same time, and 16 people (22.9%) were satisfied with the divine destiny.

The difference between the options of this question is not statistically significant ($P > 0.05$) and relationship between this question and education ($P > 0.05$), ethnicity ($P > 0.05$) are not significant and are independent of each other. Similar results were obtained from Question 7, asking them if they agree with organ donation in case of brain death. In this case also, 75.8% people agreed to donate organ or to be donated only to the needed relatives and only 2 people (2.9%) have strictly opposed organ donation. The statistical value of this test is 91.94 with 3 degrees of freedom. The level of significance is less than 0.05 ($P < 0.05$) and the difference between the options of this question is statistically significant. Relationship between this question and education ($P > 0.05$), ethnicity ($P > 0.05$) are not significant and are independent of each other while relationship between this question and profession is significant ($P < 0.05$) meaning that it depends on the profession of the people. For those willing to donate organ following brain death, the next question (Question 8) asked was the way they express their will to donate organ. 52.9% had done nothing for this purpose. 15.7% selected the easiest way that was telling orally to their family. 11.4% had registered on the site and 8.6% of the participants were trying to get an organ donation card. The level of the difference between the options of this question is statistically significant.

Relationship between this question and education ($P > 0.05$) is not significant while regarding the ethnicity the test is significant ($P < 0.05$). In Question 9, participants were asked if they need help to declare their readiness to donate organ, out of 29 people (41.5%) needed help, out of which 9 people (12.9%) stated they get help from trusted sources only and 19 people (27.1%) rejected the help. The level of significance is less than 0.05 ($P < 0.05$). It shows that the difference between the options of this question is statistically significant. Relationship between this question and education ($P > 0.05$) and ethnicity ($P > 0.05$) is not significant which indicates that this question has nothing to do with education and ethnicity. More so, these parameters are independent of each other. On the other hand, relationship between this question and profession is significant ($P < 0.05$). The level of significance is $P < 0.05$, showing that difference between the options of this question is statistically significant. Relationship between this question and education ($P > 0.05$), profession ($P > 0.05$) and ethnicity ($P > 0.05$) is not significant; indicating that this question has nothing to do with the level of education, profession and ethnicity of individuals and these parameters are independent of each other.

The scatter plot matrix (Fig.5) helps to visualize bivariate relationships between combinations of four demographic variables: gender, education, ethnicity and job, as relationship between a pair of variables, allows many relationships to be explored. To find out the strongest relationship, all plots can be scanned and related variables could be determined.

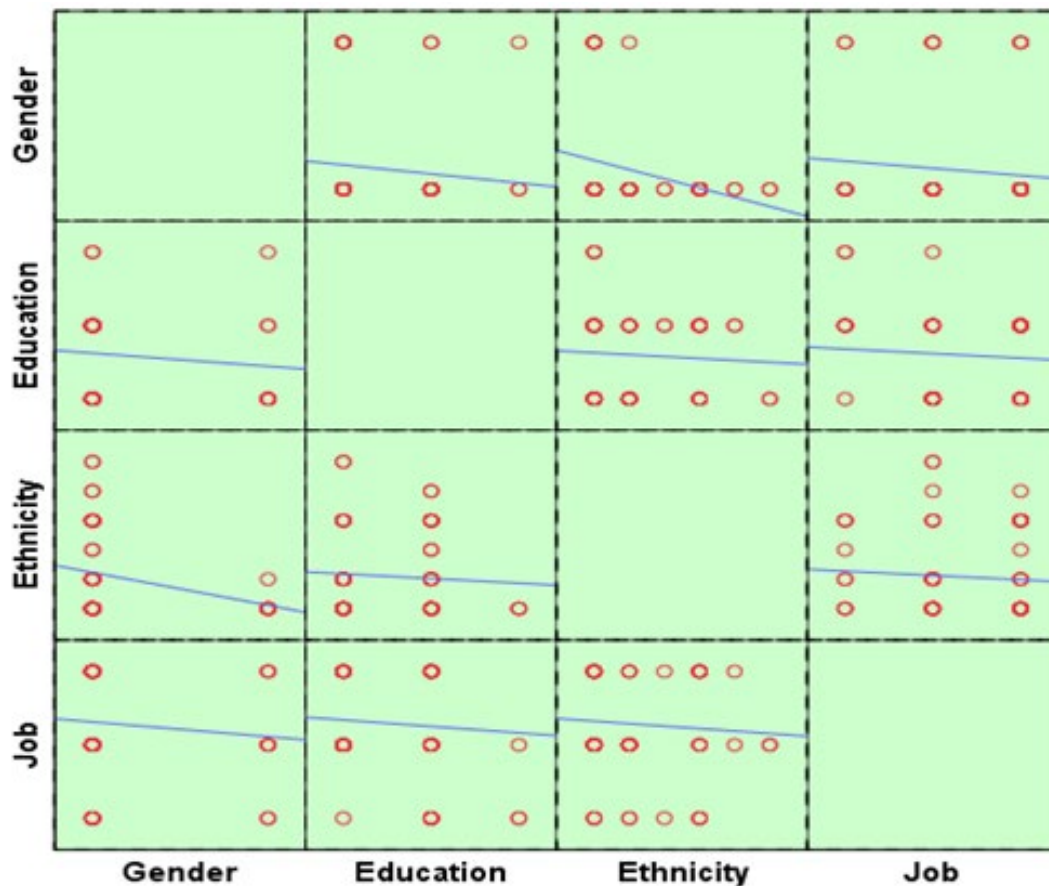


Figure 5: Scatter plot matrix of 4 studied demographic variables

Discussions

Some organs and tissues like kidney, parts of the liver, pancreas, lungs and intestines can be donated by living donors [7] while most donations are done by deceased donors.[6] Some organs and tissues like kidney, parts of the liver, pancreas, lungs and intestines can be donated by living donors [7] while most donations are done by deceased donors. [6] Increasing the number of organ donations, certain approaches must be employed like optimizing social networks, providing specific knowledge about organ donations to target social media users. [8] It is well known that demand for transplanting viable organs significantly surpasses the number of donors in major parts of the world [6,9].

It is well known that demand for transplanting viable organs significantly surpasses the number of donors in major parts of the world [6,9].

In countries with opting in system, everyone is considered an organ donor after brain death. But, there are countries that allow opting out of the system. In some other countries, family member's consent or next-of-kin is required for donating an organ [6]. In Iran, health policy system is a presumed consent or opt-out system though organ trade is legal in Iran. In other words, Iran is the only country that within 11 years since 1988, eliminated the shortage of transplant organs by legal payment system for donated organ and has become the only country in the world to clear its waiting list for transplants, in spite of the fact that organ selling is legally banned in Asia [6,10]. Moral, cultural and religious factors prevailing among the participants of this

study enforces them towards organ donation which is considered by majority of them as a "God pleasing" and "humanitarian" act [11]. In the present study, participants were keen to have more knowledge about organ donation and the ways to donate organs.

In this study, similar to Bartira de A R, et al.'s study [11], majority of the participants were men (87.1% men vs.12.9% women).

Public views are crucial to the success of opt-out or presumed consent donation systems [6]. Spreading the good news of treatment following organ transplantation is, per se, one of the effective ways of stimulating people to donate organs. As a result of spreading such good news, preliminary figures of donation and transplantation in Iran shows an increase in registration and transplantation [12]. No doubt, scarcity of general information is due to the lack of enough public notification in places where organ donation is based on consent donation systems. As social media networks are at present available throughout the world, it is easy to increase the number of organ donors, by exposing educational content about organ donation to social media users. As is clear from the findings of the present study, increase in transplantation rate is influenced by the awareness offered through social media. In addition to social media, community-based interventions are other ways of public awareness and to stimulate people of a community to register for organ donation. Murphy et al (2020) in their publication proposed a framework for a large-scale community-based intervention using social media. According to them, each 10 additional organ-related tweets are associated with a 3.20% increase in the number of donor reg-

istrations. They concluded that their framework provides a real-time characterization of organ donation awareness that delivers tailored interventions and can complement past approaches to create large-scale, sustainable interventions that raises awareness about organ donation [8].

Alessandro et al (2012) also in a study related to Health Resources and Services Administration conducted to familiarize and expecting college students, in particular those in student organizations, to be the social media catalyst for informing others about the need of organ donation and to become organ donors. According to them, college students have less knowledge about the organ donation and transplantation process. This lack of knowledge is a barrier to motivate this population to register as organ donors and become organ donor advocates. They emphasized that by interventions like using social media and personalized messages, knowledge of the College students about organ donation will be increased and college students themselves can be motivated to register as organ donors [13].

In the present era, technology and especially internet along with social media have a significant influence on increasing population's knowledge including students' information searches and communications. The Internet provides information and many students find information about organ donation online. Social media are extremely popular with this target and is an effective tool to communicate with students about organ donation and registration. Social networking sites can provide links to information, stories about organ donation, and how to register [13].

Another study performed earlier supports the idea that social media may lead to 40% increase in donor registration [14]. Definitely, teaching staff of education centers, especially at university level, directly or through social media may lead to promoting public awareness as may be concluded from the present study.

Conclusion

Launching a new culture in a society requires having sufficient information about the subject and enacting laws to support and sustain it in society, especially if the new culture is related to human health. Although organ donation is not a new culture, every country's legislature must legislate to keep that culture alive in the society. In addition to donor-recipient familiarity, the creation of a database of member donors, the implementation of a centralized institution for financial support of donors should be determined by policy makers. Applying effective and active methods to inform people about its importance in saving human lives requires more serious efforts.

In order to develop a proper strategy for dealing with the cur-

rent program, it is necessary to revise the program regularly to remove annoying rules and unwanted delays, if necessary, in order to better judge practical moral acceptance, which has a more precise meaning in the sociocultural context. Despite the annual increase in the number of brain deaths in some areas, the percentage of organ donation in the community should increase by promoting culture and providing accurate and promising information. Providing sufficient continuity through mass media is an effective way to speed up the process of organ donation.

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