



Validity and Reliability of the Persian Version of the Organ Donation Attitude Survey in the Iranian Community

Hamid Sharif Nia and Noushin Mousazadeh*

Department of Nursing, Mazandaran University of Medical Science, Sari, Iran

*Corresponding author: Mousazadeh N, PhD, Assistant professor, Department of Nursing, Amol Faculty of Nursing and Midwifery, Mazandaran University of Medical Science, Sari, Iran, E-mail: Somaye87@gmail.com

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Abstract

Background: In the world, more than 10% of transplant waiting list patients die each year due to a shortage of donated organs. And the shortage of organs for donation has become a global phenomenon, which is getting worse by the day. Also, the current supply of transplant members is much less than they need. This growing gap between the number of organ donors and recipients is a serious challenge for governments. Therefore, the present study was conducted to evaluate the validity and reliability of the Persian version of the Organ Donation Attitude Survey (ODAS) in Iranian community.

Materials and Methods: Participants in this study were 328 Iranian community people, who were selected by convenience sampling method, and completed the organ donation attitude survey, then the factor structure of the questionnaire and its reliability were examined.

Results: The results of exploratory factor analysis supported the validity of questionnaire constructs and showed two factors. The factor load values of the items ranged from 0.591 to 0.857. The reliability of the instrument by internal consistency method (Cronbach's alpha) for the whole instrument was equal to 0.82.

Conclusion: The results showed that the organ donation attitude survey has good validity and reliability in the Iranian community and this questionnaire will be a suitable tool for measuring the attitude to organ donate of Iranian. And given the important role of individual beliefs and the role of the family in the donation process, governments must make effort in order to prepare a suitable context in order to promote the tendency of people to donate organs.

Keywords: Organ donation attitude; Validity; Reliability

Introduction

Organ transplantation is an effective treatment strategy to preserve life and improve the quality of life in patients in end-stage organ failure and has a significant role in saving treatment costs [1,2]. According to research, the demand for organ transplants has increased by 70% compared to the past due to the speed of medical and technological advances [3]. Patients with brain death constitute one of

the main sources of organ supply in the world [4]. About 15% to 67% of patients with brain death are suitable organ donors [5]. The health care system therefore seeks to encourage people to donate organs in the case of brain death [6].

Over 10%-25% of patients on organ transplant waiting lists worldwide die every year due to shortage of donated organs [7], and this shortage has turned into a global phenomenon [8]. A relative decline in organ donation has been observed nationwide since 2007 and the lack of organ donation is turning into a public health crisis that is worsening every day [9], and there have been 120,963 patients in need of donated organs in the US since April 2016 [10].

In Iran, there are about 13,000 patients on organ transplant waiting lists, and seven to ten of them die each day without having received an organ [11] as organ donation rates in Iran are not favorable [12]. According to a 2015 report from the International Registry in organ donation and transplantation, the overall rate of organ donation in Iran was 8.4 per million, and despite the efforts made, the donation rate only reached 10.9 per million in 2017, ranking the country 26th in the world; meanwhile in Spain, this rate was 35.9. According to reports from Iranian association of organ donation, one person is added to the organ transplant waiting list every ten minutes, and one patient needing an organ dies every two hours. At the same time, one person dies of brain death every 70 minutes [13], and these patients can supply about 30% of the organs needed for transplantation.

The body of people with brain death constitutes the most important source of organ transplant, but there is no unanimous opinion on this subject. Ethical schools and religions value the human body after death differently in different societies, and some of these views are based on the society's beliefs and values. Attitudes around this subject differ depending on the culture, religion and beliefs of the people and may be expressed by different terms, such as blasphemy, manipulating God's creation, sinful act, and confusing the survivors [14]. Iran is an Islamic country, and according to the Islamic view, removal of an organ from a person's body by dissection is blasphemous, and there are Islamic narratives about the value and importance of respect for the high position of faithful Muslims and the protection of their life, and these narratives state that respecting the faithful Muslim supersedes respect for the house of god (Kaaba) and insulting and humiliating him is forbidden and is viewed as a war against God and an example of idolatry and polytheism, and this respect is obligatory at the time of death and afterwards too [15].

Moreover, various other factors are involved in organ transplantation, and the main reason for the still limited rate of organ donation seems to be the lack of consent by the families [16], as it is very difficult for the family to consent to their deceased patient's organ donation early on, being under so much pressure and having difficulty making such decisions. One of the factors that affect families' attitude toward this subject is knowing about the deceased person's wishes and desires during life, since this knowledge makes it easier for them to accept the organ donation, and not only does it no longer make them concerned and scared, but it also gives them a peace of mind [17]. People's beliefs, values and attitudes about organ donation is another influential factor in this respect. The results of a study conducted in South Korea showed that people's beliefs, attitudes, and behaviors in relation to organ donation are associated with their social, cultural and religious background. The results of qualitative studies show that the factors affecting organ donation

include people's awareness, attitude, and beliefs [18], the awareness and attitude of family members toward organ donation [19], cultural and legal issues [20], and socio-economic matters [21]. In contrast, issues related to one's religious views and considerations such as unwillingness to dismember the body, families' disagreement, and despair caused by friends and family are the main reasons for people's refusal to register as organ donors [22]. The results of a study by Damar et al. showed that nurses working in ICUs in teaching hospitals have a negative attitude toward organ donation, although these negative attitudes abated with aging [23]. The results of a study conducted in Spain also suggested that some variables affect people's tendency to donate organs, including gender, discussions about organ donation among family and friends, having a good family who consents to the subject, having information about organ donation, being a blood donor, and accepting an imperfect body [24]. The phenomenon of organ donation is directly dependent on people's humane perspective on this matter. This phenomenon has been less addressed in Iran as a psychological phenomenon with a holistic view. Previous studies in the country have all been quantitative and have used tools that were not even psychometrically assessed in some instances [25,26]. Given the importance of organ donation, there is a need for tool to accurately examine this subject. There are various tools in the world that deal with people's attitudes about organ donation [27]. One of the most important and reliable of these tools is the Organ Donation Attitude Survey (ODAS), which was first developed by Rumsey et al. This tool has twenty items and three factors [28].

Since people's attitudes toward organ donation can be influenced by the beliefs and cultural attributes of the individual and the society, the results of studies in a particular society and culture cannot be easily generalized to other cultures. Meanwhile, specific studies are needed to produce more reliable results on the psychometric properties of the ODAS. This survey has not yet been translated into Farsi or validated to suit Iran's sociocultural context. The present study was thus conducted to assess the psychometric properties of the farsi version of ODAS.

Methods

Study design and participants

The present study is a methodological research conducted in 2020-21. Although sample size adequacy is considered an important issue in methodological studies, there is no consensus on what constitutes an adequate sample size.

Nonetheless, reliable literature usually considers the adequacy of sample size in factor analysis and multivariate statistical studies based on a rule of thumb, namely the ratio of the number of variables, items or participants [29]. The samples in this study therefore consisted of 328 people from the Iranian community who were selected by convenience sampling. The inclusion criteria were: Age over 18 years, reading and writing literacy, and access to social networks and ability to use them.

Measures

Data were collected using a demographic details form inquiring about age, gender, education, marital status and occupation, and also

the Organ Donation Attitude Survey (ODAS). ODAS was first designed and psychometrically assessed by Rumsey et al. This survey contains three factors and 20 items. The factors include Opposing Organ (items 2, 4, 5, 11, 13, 14, 19, and 20), Accepting Organ (items 15, 17, 18, 19, and 29) and finally, Potential Donor (items 6, 7, and 12). Each item is given a score based on a four-point Likert scale from totally disagree: 1 to totally agree: 4. The sum of the scores of the items shows people's attitude toward organ donation.

Construct validity evaluation

The construct validity of ODAS was evaluated through factor analysis. Exploratory factor analysis was conducted using the maximum-likelihood method and with Promax rotation. Sample adequacy was tested through the Kaiser-Meyer-Olkin (KMO) and the Bartlett's tests.

KMO values of 0.7–0.8 and 0.8–0.9 were interpreted as good and excellent, respectively.

The presence of an item in a factor was determined based on a factor loading of almost 0.3. The number of latent factors was estimated using Kaiser's criterion. Items with communalities less than 0.2 were excluded from exploratory factor analysis [30].

Reliability evaluation

The reliability of ODAS was assessed using Cronbach's alpha coefficient [31].

Statistical analysis

The SPSS software (v. 26.0) was used to manage and describe the data and perform exploratory factor analysis.

Results

The participant's mean age was 35.40 (SD=10.9) years. A total of 194 (59.2%) were female and 134 (40.9%) were male. The majority (58.9%) were married, and 66.2% had academic education. Most subjects were employed (46.2%) and worked as medical staff.

The results of construct validity evaluation

Construct validity was assessed using exploratory factor analysis with maximum likelihood. The results showed that participants' attitude to organ donation had two factors, called 'beliefs and moral values', with an Eigen value of 3.683 and extracted percentage of 30.7%, and 'discussed with family', with an Eigen value of 2.007 and extracted percentage of 16.8%. According to the results, this questionnaire can explain 47.5% of the concept of attitude to organ donation in the Iranian community.

The results indicated that the item "In general, I think that organ donation is a good thing", with a factor loading of 0.875, was an important factor in people's attitude to organ donation in the Iranian community, while "I would agree to an organ transplant if my life were in danger without one", with a factor loading of 0.591, was the least effective factor identified. Table 1 presents the results of the construct validity evaluation.

Factor	Qn. Item	Factor loading	h2	λ	Variance %
Beliefs and moral values	Q19: In general, I think that organ donation is a good thing	0.857	0.65	3.683	30.70%
	Q20: Organ donation is consistent with my moral values and beliefs	0.798	0.563	30.70%	
	Q12: I would be willing to donate my organs to a person of a different race than myself	0.741	0.52		
	Q6: I am willing to have organs donated after my death	0.721	0.596		
	Q4: I support organ donation	0.675	0.593		
	Q15: I think that organ donation is a safe, effective practice	0.659	0.418		
	Q5: I would agree to an organ transplant, if my life were in danger without one	0.591	0.527		
Discussed with family	Q10: I have discussed my wishes for after my death with my family	0.826	0.576	2.007	16.80%
	Q9: It is important to discuss my wishes for after my death with my family	0.739	0.513		
	Q7: Have signed an organ donor card or the back of my driver's license	0.594	0.401		
	Q8: I know someone who has signed an organ donor card or the back of his/her driver's license	0.49	0.276		

Table 1: The ODAS Items and their loadings for each factor (N=328).

The results of reliability evaluation

The internal consistency of the items was assessed using Cronbach's alpha coefficient, which was found to be 0.88 and 0.77 for each factor of the questionnaire.

Discussion

The present study was conducted to assess the validity and reliability of the Farsi version of ODAS in the Iranian community. The exploratory factor analysis confirmed the adequacy of the sample size for construct validity, and based on the Pro max rotation, the items were divided into two factors. The reliability evaluation by internal consistency showed the favorable reliability of the questionnaire.

According to the results, the concept of organ donation has two subscales. The first subscale is the person's beliefs. Personal beliefs are an important part of people's characteristics that affect their attitude

toward life and are responsible for the formation of feelings and contribute to many behaviors and decisions, especially in relation to organ donation [32-34]. In addition to religious beliefs, culture and social norms also have an important role in the formation of attitudes, especially toward organ donation.

Attitude to organ donation varies in different countries and regions due to the diverse traditions, beliefs, and other personal attributes. The results indicate that people are generally highly willing to donate organs, but in practice, this rate is lower. In other words, people who think about donating organs differ from those who actually donate organs in terms of their beliefs and attitudes. Although people have a positive attitude to organ donation, they cannot transfer this attitude to the corresponding behavior, which is of course a global problem.

In Iran, people are largely affected by the western culture and try to assimilate their lives to western standards. Therefore, their attitude to organ donation is negative and they consider this act unacceptable and taboo out of fear of organ selling, insulting behavior toward the corpse

and dismembering the body. In many societies, religiosity is regarded as a major barrier to organ donation. Concerns about damage to the integrity of the body are also an important deterrent, as some believe that receiving an organ donation card would equal their body not being treated ethically later in life. The most popular belief underlying the refusal to donate an organ is that organ donation changes the integrity of the body [35]. The suffering of the soul after donation is also a negative personal belief about organ donation. The belief that the donor's sins are transferred to the recipient, or that some people's life is not worth saving, and that our destiny is pre-determined, and also the reluctance to mix two bodies together are other barriers to organ donation willingness, which are rooted in the person's own beliefs. Also, regarding the value attributed to humans in Islamic narrations, it has been stated that, for the faithful dead, God has rightly forbidden all things which have been forbidden during their life. Accordingly, some studies have shown that Muslims are less inclined to donate their body organs than Hindus. Moreover, the desire to donate an organ is greater among Christian Arabs living in the US than Muslim Arabs, since christianity approves of organ transplantation and considers it a sign of self-sacrifice [36].

The phenomenon of organ donation is currently commonplace in many countries, but the shortage of transplant organs, especially in Asian countries like Iran, is due to certain cultural beliefs and views about death. It is therefore necessary for Asian countries including Iran to facilitate organ donation by identifying its contributing factors [37].

'Discussed with family' was the second subscale of the Persian ODAS in the present study. The factors related to consent for organ donation include pre-existing variables such as the patient's personal attributes as well as his family's perspective. From the perspective of families, issues such as the need to be informed of their loved ones' wishes, gaining peace of mind from the act of donation, and feeling that the deceased does not need his body are positive influential factors, while the lack of information about the deceased's wishes and delays in burial are barriers to consent for donation. Families reported that being aware of the wishes of their loved ones when they were alive through previous conversations makes the decision to donate easier for them, and in these instances, donating induces a sense of fulfilling their loved one's wishes, and knowing what he wants through previous conversations makes us try to put his decision into practice and that it is not our wish and it is the wish of our loved one, and it is what he accepts and thus accept to donate. In such instances, the family of the deceased continues their effort due to being aware of the deceased person's wishes even if a problem emerges in the donation process, and in cases where the family does not personally support the cause of donation, knowing of the deceased person's wishes leads to a desire for its realization. Discussing the matter of donation with one's family before death makes the family members learn about each other's wishes and desires. Therefore, the family's awareness about the person's wishes in advance has an important role in their acceptance or non-acceptance of organ donation.

As stated above, due to their beliefs, which are rooted in religion, the family has a very important role in the Iranian individual's decision, especially about organ donation [38]. The family's refusal is the biggest barrier to organ donation after brain death, and 41% of the times, the relatives of the organ donor have not consented to donating their patient's organs. In a study conducted by Aghaei in Iran, relatives' discontent was one of the most important reasons for the lack of consent for organ donation. In Iran, people have limited

knowledge about organ donation and are reluctant to get an organ donation card during their life, and their families are also not very eager about this issue, which is due to the generally unfavorable attitude toward this subject [39].

The importance of family in Islam means that the family's decision is important for accepting or rejecting a request for organ donation. According to Article 10 of the Constitution of the Islamic Republic of Iran, family is the foundation of the Islamic society and is the first institution formed by humans that has an important and special role in all societies, including Iran. Family has a particularly special place in Islam and can thus have an important role in the individual's decision-making [40]. The family's role is undeniable in brain-dead patients, since they have to be prepared for the organ donation suggestion while they are in a difficult situation, and the request for organ donation causes them further anxiety and stress [41]. Since the family is under a lot of physical and mental pressure during such times, it is difficult for them to decide about organ donation, and this is especially true for Asian families, for whom family has a special place [42]. The results of a study conducted by Beigzadeh in Iran showed that family is one of the most important factors affecting a person's decision to donate his organs. In general, a large proportion of people do not have a clear understanding of brain death, and half of them consider brain death to be reversible [43].

Knowing of the patient's wishes and prior discussions of the subject with them constitute one of the main reasons for which families consent to donating their deceased patient's organs [44,45]. From the family's viewpoint, stating one's view before death makes the decision to donate organs easier and gives a strong motivation; in such instances where the subject is already discussed before death, respecting the wishes of a deceased loved one gives the family a sense of purpose and peace [46], as if something good is coming out of something bad.

One of the reasons for which families reject the request for transplant is their lack of knowledge about the person's wishes about donation [47]. Therefore, talking about this subject when the person is alive can be an important and influential factor. Meanwhile, in some countries, despite the family's knowledge of the person's wishes, they are still allowed to make decisions. In a study in China, 69.9% of the participants stated that the family's consent to organ donation is an important matter, and 71.1% believed that the family's view of their decision to donate has a significant and even decisive role [48,49].

One of the main focuses of the present study was the psychometric assessment of a tool that is not only suitable for assessing organ donation, but is also psychometrically valid. The results showed that ODAS is a valid and reliable tool that can be used to assess how people perceive organ donation. The researchers hope that these findings can help take a positive step to improve people's attitudes toward organ donation.

Conclusion

The good psychometric properties and reliability and validity as well as brief design and ease of implementation ODAS facilitate its extensive use by researchers. Since this tool has an appropriate validity and reliability in the Iranian community, it can be utilized to assess and improve people's attitude to organ donation. It is recommended that while emphasizing the importance of training about organ donation, the content of educational programs and strategies also receive particular attention.

Limitations

In this study, the Farsi version of ODAS was psychometrically assessed in an Iranian population. Since ethical concepts are mostly focused on personal, mental and internal criteria, they can affect people's answers to questions. In the present study, data were collected using a questionnaire, and limitations associated with a self-reporting questionnaire thus seemed inevitable. In addition, only people capable of using social media were included in the study for the psychometric assessment of the questionnaire, and those who did not have access to these networks were not able to take part; therefore, to improve the validity and reliability of the tool, future studies are recommended to use paper-based questionnaires.

Implications for Practice

Policy-makers can use the results of this study in making decisions about the design of community education programs. Given the important role of family members in the consent or non-consent to organ donation, governments' main message regarding the promotion of organ donation should encourage people to talk about the act of donation among their family rather than merely asking people to sign a donation card. The reason is that even if only one family member disagrees with donation, the act of donation is refused, and without the family's consent, even a signed donation card does not guarantee the fulfillment of donation. The most important factors affecting organ donation were the person's beliefs and his family's consent. Therefore, paying attention to these two concepts in nursing practice can provide accurate indicators of care, and interventions and results thus have a better chance of reaching the target and proving effective.

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Conflict Interests

No declare

Ethical Considerations

This study was approved by the ethics committee of Mazandaran university of medical science (code: IR.MAZUMS.REC.1399.8852). All authors contributed to data collection. The aim of the study was explained to all participants, they were ensured of the confidentiality of their data and the voluntariness of participation in the study, and their written informed consent was secured. Permission to use the instrument and perform its psychometric evaluation was obtained from Professor Huford, one of the instrument designers, *via* email.

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