

Knowledge and Attitude of Nurses in Organ Donation and the Influence of Interventions- A Systematic Review

MANIMUTHU REENA¹, POTHIPILLAI ARUMUGAM², SONY PAUL³, IYANAR KANNAN⁴



ABSTRACT

Introduction: Nurses are important paramedical staff taking care of potential organ donors, poor knowledge and attitude of nurses towards organ donation may worsen the non availability of organ for transplantation. Hence, in such scenario the nurses should be given interventions in the form of workshops, audio-visual presentations and certificate courses to develop their knowledge and attitude in organ donation.

Aim: In the present systematic review, an attempt was made to find the current scenario of knowledge and attitude of nurses and the effectiveness of the programmes conducted to foster them.

Materials and Methods: The MEDLINE database was used to retrieve the articles. The Medical Subject Heading (MeSH) term used was "Knowledge, Attitude and Practice (KAP) study, organ donation, nurses, organ transplantation, workshop, education

programme, intervention". The PubMed advanced search was used. Boolean operator 'AND' was used in between the MeSH terms in the advanced search. A descriptive analysis was done on the data available in the articles.

Results: From the literature it was evident that in most of the circumstances the knowledge and attitude regarding organ donation among nurses is not satisfactory. However, few studies state that nurses do possess adequate knowledge regarding organ donation and are influenced by many factors like age, experience and the unit in which they work. The studies concluded that the knowledge of nurses has improved after the intervention programmes.

Conclusion: From this systematic review it was found that the knowledge and attitude of nurses towards organ donation is not to the expected level and the interventions like workshop and peer education do improve their knowledge to considerable level.

Keywords: Brain death, Interventions, Intensive care units

INTRODUCTION

Organ transplantation plays an important role in saving the life of many end stage organ failure patients. The need of organ transplantation is increasing day-by-day and many patients are waiting for organ donors throughout the world [1]. Nurses are important paramedical staff taking care of potential organ donors and organ transplant recipients. They play a key role in the identifying the potential organ donors [2]. Further they interact with the families of such potential organ donors and make arrangements of getting consents for the same [3]. Such nurses should have a strong attitude and high level of knowledge towards organ donation.

There are many influencing factors that influence the knowledge and attitude of nurses like accurate diagnosis of brain death, dealing with the rules and regulations existing in their particular country, organ maintenance and dealing effectively with the organ donors and their family [4-7]. A poor knowledge and attitude of nurses towards organ donation may worsen the non availability of organ for transplantation [8]. It is imperative that the nurses especially in Intensive Care Units (ICU), emergency units should be fostered and trained to improve their knowledge and attitude towards organ donation and transplantation [9]. In many countries, there is no content regarding the organ donation in their curriculum [10]. Hence, in such scenario the nurses should be given interventions in the form of workshops, audio-visual presentations and certificate courses to develop their knowledge and attitude in organ donation.

Throughout the world few cross-sectional and qualitative studies were conducted to find the effectiveness of such programmes in developing the knowledge and attitude of nurses. In the present systematic review, an attempt was made to find the current scenario of knowledge and attitude of nurses and the effectiveness of the programmes conducted to foster them.

MATERIALS AND METHODS

A systematic review was conducted to determine the level of knowledge and attitude of nurses towards organ donation and transplantation and to assess the intervention programmes towards improving the knowledge and attitude of nurses towards the organ donation. The study was conducted based on Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines for systematic reviews [11].

Inclusion criteria:

1. Those studies including nursing population.
2. Study conducted between January 1990 to October 2020.
3. Study conducted to assess knowledge and attitude of nurses towards organ donation and transplantation.
4. Study conducted on various interventions that influence the knowledge and attitude of nurses.
5. All cross-sectional and qualitative studies.
6. Study involving nurses working in all the units of the hospital.
7. Full length published articles in English.

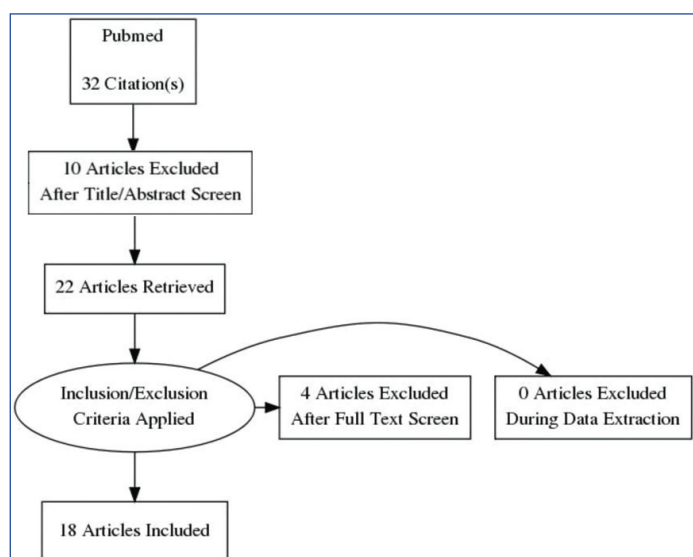
Exclusion criteria: In general, those articles not matching the inclusion criteria were excluded from the study. Review articles, case reports and letters to editor were excluded from the study.

Search Methods

The MEDLINE database was used to retrieve the articles. The MeSH term used was "KAP study, organ donation, nurses, organ transplantation and intervention". The PubMed advanced search was used. Boolean operator 'AND' was used in between the MeSH terms in the advanced search.

Selection of Articles

Authors in collaboration analysed the articles and selected those articles used in the study based on the inclusion and exclusion criteria. Those articles in which the data were inadequately presented were excluded [Table/Fig-1].



[Table/Fig-1]: PRISMA chart showing the article selection process.

Synthesis of Results

A descriptive analysis was done on the data available in the articles. All the data were entered in the form of table and were narrated in descriptive manner. As the data were highly heterogenous, meta-analysis was not conducted.

RESULTS

A total of 32 articles were retrieved from the database out of which 18 articles were chosen based on the inclusion and exclusion criteria. Out of 18 articles, only four articles were related to the influence of intervention in knowledge and attitude of nurses toward organ donation and transplantation.

From the literature it was evident that in most of the circumstances the knowledge and attitude regarding organ donation among nurses is not satisfactory. However, few studies state that nurses do possess adequate knowledge regarding organ donation and are influenced by many factors like age, experience and the unit in which they work [Table/Fig-2] [12-25].

Overall, many studies emphasize that, lack of knowledge and attitude is primarily because of the lack of information about the organ donation in their curriculum of study. Further, the studies emphasize that the nurses are in need of interventions like workshop, training programmes to improve their knowledge and attitude towards organ donation.

Author (s)	Year	Country	Study tool	Sample size	Results
Matten MR et al., [12]	1991	USA	Questionnaire based study	1683 nurses	243 respondents reported having requested organ donations. Respondents were knowledgeable about organ and tissue donation with mean score of 7.5 on a 0 to 10. Knowledge scale factors like nurses' knowledge, attitudes and beliefs about donation; being a supervisor; and working in an Emergency Department significantly correlated with consents for organ donation.
Kiberd MC and Kiberd BA [13]	1992	Canada	Questionnaire based study	1023 nurses	62% of nurses have already signed an organ donor card or driver's license. Across the nursing units surveyed, both perceived transplant success and support for procurement correlated with the percent of nurses who have already signed organ donor cards/license ($r=0.94$, $p\text{-value}=0.02$)
Molzahn AE [14]	1997	Canada	Questionnaire based study	4900 nurses	92% supported organ donation. 71.2% of the nurses responded correctly to questions testing knowledge. Attitudes regarding organ donation tended to be positive. A 85% of nurses indicated reluctance to approach potential organ donors. Critical care nurses had higher level of knowledge, attitude, and professional involvement in organ donation.
Chan YM et al., [15]	1997	Hong Kong	Questionnaire based study	60 nurses	84.6% of the nurses supported the concept of cadaveric donation but only 23.5% had signed the donor card. Nurse's attitudes and behaviour towards cadaveric organ donation were positively correlated to their knowledge and experience of caring for organ donors and recipients.
Ozdag N [16]	2001	Turkey	Questionnaire based study	956 nurses	87.7% were willing for organ donation. 34.4% showed willingness to talk to families and ask for donations. Adequate knowledge and level of education were the factors affecting acceptance and willingness to be involved in organ harvesting efforts and statistically significant ($p<0.001$ and $p<0.05$).
Boey KW [17]	2002	Hong Kong	Questionnaire based study	314 nurses	Younger and unmarried nurses were more likely to commit to posthumous organ donation. 55% of the nurses had no idea about organ donation. Fears of bodily mutilation were most significantly related to unwillingness to commit to organ donation.
Kim JR et al., [18]	2006	Korea	Questionnaire based study	520 nurses	Most of the participants had a sound knowledge of diagnostic testing for brain death, but demonstrated a lack of knowledge regarding co-morbid factors of brain-dead patients.
Flodén A et al., [19]	2011	Sweden	Questionnaire based study	1013 nurses	A total of 39% had experienced occasions when the question about organ donation was never raised with the relatives. Four factors were verified: Personal attitudes to organ donation, organisational attitudes environmental resources; and personal wish to donate accounted for 70% of variance.
Stadlbauer V et al., [20]	2013	Austria	Questionnaire based study	8415 nurses	84% of participants knew the Austrian organ donation legislation; the percentage varied significantly ($p<0.05$) within the target groups. 74% think that the law is good.
Vijayalakshmi P et al., [21]	2015	India	Questionnaire based study	184 nurses	Although 81% of the respondents were 'willing to sign the card' for organ donation; only 3.8% ($n=7$) of them actually 'signed the organ donation card'. Significant associations were found between intentions to sign the organ donation card and gender ($p<0.054$), religion ($p<0.000$), and experience caring for brain-dead patients ($p<0.001$).
Masoumian Hoseini ST, et al., [22]	2015	Iran	Questionnaire based study	90 nurses	70% of the research subjects had discussed with their own families about organ donation; 20% had organ donation cards. The mean±SD score of nurses' knowledge was 49.13 ± 9.6 , attitude 21.49 ± 14.32 , and practice was 3.66 ± 6.04 .
Lomero MDM et al., [23]	2017	Spain	Questionnaire based study	453 nurses	98.6% of those respondents stated that they were in favour of organ donation. The bivariate analysis revealed a significant association between a positive attitude toward donation.

Xie JF et al., [24]	2017	China	Questionnaire based study	536 nurses	The effective rate was 89.33%, 33.4% nurses agreed to donate their organs after death; whereas 39.9% were uncertain. Only 38.2% were willing to register in the national organ donation system.
Janatolmakan M et al., [25]	2020	Iran	Questionnaire based study	185 nurses	The mean knowledge of nurses was 8.9±.4 out of 10. There was a significant relationship between knowledge of nurses regarding donation and religion and having organ donation card (p<0.001). The mean attitude of nurses was 7.8±2.2 out of 8. Knowledge was the strongest predictor of nurses' performance (p<0.01).

[Table/Fig-2]: Analysis of knowledge and attitude studies [12-25].

As this systematic review is focused on the influence of the such interventions towards the knowledge and attitude of nurses on organ donation, an attempt was done to study the same. Only four articles were retrieved which indicates not much attempt has been made to find the effect of various programmes that can enhance the skill of the nurses. All the studies concluded that the knowledge of nurses has improved after the intervention programmes [Table/Fig-3] [26-29]. However, one study had concluded the attitude towards the organ donation has not improved. More such studies should be done to find the effectiveness of the interventions in knowledge and attitude of nurses on organ donation.

Author(s)	Year	Country	Study tool	Sample size	Results
Aghayan HR et al., [26]	2009	Iran	Questionnaire based study	66 nurses	The mean score for knowledge was 16.89 (SD=3.33) before and 23.76 (SD=1.66) after the workshop (p<0.001). The mean attitudes score was 4.76 (SD=1.71) before and 5.08 (SD=1.34) after the workshop (p=0.235). Although 63.63% claimed they were willing to have a donation card only 15.15% actually carried one.
Smudla A et al., [27]	2012	Hungary	Questionnaire based study	Intensive care specialists (n=179) Nurses (n=103)	Age or type of staff (physician or nurse) didn't influence organ donation. Staff who attended training programmes had high willingness to donate organs (p<0.01). A 66% of intensive care professionals supported the practice of requesting the consent of family for organ retrieval.
Lin LM et al., [28]	2014	Taiwan	Questionnaire based study	Experimental group (n=61) Control group (n=62)	No difference in attitude and behaviour intentions between the control and experimental groups prior to education was noticed. TPB training caused significant changes in the attitudes and behaviour intentions on organ advocating of nurses, both immediately (p<0.01) and 2 months after the education program (p<0.01). Multivariate analysis indicated that TPB training is significantly associated with the change of attitude (p<0.01) and behaviour intention (p<0.05) of organ donation advocacy.
Ordin YS and Söylemez BA [29]	2018	Turkey	Questionnaire based study	242 nursing students	There was no statistically significant difference in students' attitudes toward organ donation after peer education (p>0.05). The difference in the number of students having a donor card after peer education was highly significant (p<0.05).

[Table/Fig-3]: Studies based on interventions used to improve the knowledge and attitude [26-29].

DISCUSSION

Organ donation and transplantation had saved lives of millions of people who otherwise would have died because of end stage organ failure [30]. Despite several advancements in organ transplantation and possibility of saving the life of end-stage organ failure patient becomes difficult because of organ shortage. It has been estimated that the overall global prevalence of knowledge of organ donation is about 70% to 85% [31].

Since the "Transplantation of Human Organs Act" was passed in 1994 in India, many studies have been conducted on various sections of people about the knowledge and awareness of organ donation and organ transplantation [32]. However, the KAP on organ donation among nurses is least done. Further, a systematic review of this literature is not available to find out the global scenario. The organ donation is a complex issue as it is influenced by many factors like legal, medical and social depending on a particular geographical area. The attitude on organ donation depends on people's knowledge and education and to some extent on religion [33].

In the commitment, towards bringing down the organ shortage, a proper attitude of healthcare workers especially nurses towards organ donation forms a first step. Role of nurses in organ donation and transplantation could not be overlooked [34]. Especially the nurses in ICU should have good knowledge and attitude on organ donation. Thus, several studies are being conducted in different parts of the country to find the knowledge and attitude of nurses towards organ donation and transplantation.

In the present study, an attempt has been done to perform a systematic review of literature regarding the knowledge and attitude of organ donation and transplantation among nurses and the

impact of interventions in that. Several studies were conducted among nursing students about the knowledge and attitude and it was found that the majority of the students do not have idea about organ donation process [35-37]. Even though knowledge on organ donation is important for nursing profession the curriculum do not have much scope to learn about the various aspects on organ donation [38]. The organ donation involves lot of medical and legal issues, thus warrants many chapters about them in their curriculum. The present review has revealed that nursing curriculum does not have detailed content about organ donation process [39]. It is imperative to include organ donation atleast as elective subject in

nursing curriculum so that any nursing student aspiring to be nurse in casualty and ICUs can opt the subject to gain knowledge on organ donation.

The present systematic review also analysed the various factors that can improve the knowledge of nurses on organ donation. In a study they have identified that those nurses who hold organ donation card have good knowledge and attitude on organ donation [13]. Most of the studies reveal that the ICU nurses have more knowledge than the nurses in other units and this may be due to their experience in handling the organ donors [12,14]. Further, it has been also found that the experience of the nurses does have role in the knowledge and attitude towards organ donation [12].

Further, this systematic review has brought out lack of educational programs on organ donation and transplantation among nurses and contributes to the poor knowledge and attitude on the same. The studies which have conducted to find the influence of interventions show that there is an improvement in the knowledge regarding the organ donation among nurses [26-29]. Some studies have shown that the nurses who use the media like television, internet and newspaper have reasonable knowledge on organ donation. Thus, well-directed programmes on organ donation and transplantation for nurses can improve the knowledge and attitude of nurses; thereby shorten gap of demand and supply of organs for transplantation. It has been proved in many studies that the knowledge and awareness of the organ donation and transplantation has been improved considerably various educational programmes [40,41]. Thus, imparting the information on organ donation and transplantation through media and workshops will definitely have an influence on knowledge and attitude of nurses towards organ donation among nurses. However, many such studies should be conducted for nurses to prove this statement.

CONCLUSION(S)

From this systematic review it is found that the knowledge and attitude of nurses towards organ donation is not to the expected level. However, it has been identified that certain factors like experience, media and organ donation card have an influence in their knowledge and attitude. Further, it has been identified that the interventions like workshop and peer education do improve their knowledge to considerable level.

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PARTICULARS OF CONTRIBUTORS:

1. Vice Principal and Head, Department of Medical Surgical Nursing, Tagore College of Nursing, Chennai, Tamil Nadu, India.
2. Professor and Head, Department of Transfusion Medicine, Tamil Nadu Dr. MGR Medical University, Chennai, Tamil Nadu, India.
3. Associate Professor, Department of Microbiology, Tagore Medical College, Chennai, Tamil Nadu, India.
4. Associate Professor, Department of Microbiology, Tagore Medical College, Chennai, Tamil Nadu, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Sony Paul,
Tagore Medical College, Chennai, Tamil Nadu, India.
E-mail: sonymarypaul@tagoremch.com

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