

Saudi Nursing and Medical Student's Knowledge and Attitude toward Organ Donation- A Comparative Cross-Sectional study

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Abstract

Objectives: Proper awareness among health professionals about organ donation is important for increasing organ procurement. Personal commitment and attitude of nurses are imperative as they have key role in identifying potential donors. The aim of this study was to compare prevailing knowledge and attitude of undergraduate female Saudi nursing and medical students' toward organ donation.

Methodology: A cross sectional questionnaire using 29 item were filled by nursing (n=46) and medical (n=63) students' at University of Dammam (KSA) during academic year 2014-15, to check and compare their knowledge and attitude about organ donation. The data were analyzed by descriptive statistics; chi square test and bivariate analysis to find out correlation.

Results: Level of knowledge of nursing group were significantly lower ($p=0.000$) than medical group while no significant difference in attitude score ($p=0.591$) between the two groups were found. Major source of knowledge for nursing was media (65.2%) and college/university for medical (50.8%) group. Both groups chose "anyone in need" as preferred recipients' upon donation (nursing 60.3% and medical 52.2%) and opted "anyone" as donor in case of recipient (nursing 52.2% and medical 49.2%). The results indicate positive correlation between level of knowledge and attitude toward organ donation.

Conclusions: Nursing students have low knowledge toward organ donation as compared to medical students although they shows positive attitude toward this issue. This study ascertains the need of an effective educational program for nursing students of Saudi Arabia to improve their knowledge regarding organ donation and to raise organ procurement.

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Introduction

Despite of great advances in the field of medicine, organ transplantation still considered extensively as an only life-saving treatment for patients suffering from end-stage organ failure. However the unavailability of adequate donor for organs transplantation has resulted in major organ shortage crisis, Kingdom of Saudi Arabia (KSA) is not an exception. ⁽¹⁾ Organ transplantation is permissible in every region of almost all the religions of the world. ^(2, 3) The issue of organ transplant has been a matter of great debate and dispute among the great contemporary Muslim scholars from around the world. ^(4, 5) For majority of them the transplantation and donation of human-organs would be permissible subject to conditions that it would not harm life of donor. ⁽⁶⁾ This ruling based on Quranic Aya "*Whosoever saves the life of one person it would be as if he saved the life of all mankind.*" ⁽⁷⁾ One of the fundamental purposes of this Islamic law is the preservation of life of others.

Organ transplantation started in KSA with the board of senior scholars' approval in 1981, after two years, center to coordinate organ donation (SCOT) was established. ⁽⁸⁾ This organization is responsible for the national coordination of donation and transplantation activities, setting up of protocols, guidelines, managing waiting list and follow up registries. According to 2014 annual report of SCOT, of the 570 possible deceased cases in the year 2014, 110 of them gave consent for organ donation, i.e. averages of 19 pmp for possible donors were reported in 2014 and 21 pmp (mean donors) in the last 5 years. ⁽⁹⁾

Health professionals are usually the first individuals in contact with possible donor families, particularly in local communities. Although the request for donation may be a collective responsibility of the physician, nurse, and other health professionals, the nursing professional serves a fundamental link in the process. ⁽¹⁰⁾ In England the organ donation process is supervised primarily by nurses and recognition of potential donors is considered primarily a nursing duty. ⁽¹¹⁾ Nurses should consider organ procurement to be part of their professional liability. As they provide nursing care to trauma victims and are in a position to recognize patients who may meet the brain death criteria and thus become possible organ donors. ⁽¹²⁾ It was observed by many

researches that for swift organ and tissue procurement process, personal commitment and religious and relevant knowledge about organ donation were most significant aspect. ^(11,13,14) Accordingly the vital role that nurses have to play in the system of organ donation like to approach to potential donors, explaining the process and getting consent, nurses must receive sufficient training and education to understand the process in order to participate in and to satisfy the donors and their families. ⁽⁵⁾

Despite the importance of the issue, few studies have assessed the knowledge, and attitudes of health care professionals and almost none for nurses regarding organ donation in KSA. This information may be useful in the development of educational programs designed to prepare nurses for their role in making required requests regarding organ procurement. These measures not only improve their own knowledge but also save life of many in need.

Material and methods:

The Major objective of the current study was to evaluate the level of knowledge and attitude of undergraduate female health professionals particularly among nursing and medical groups. Permission and ethical approval to conduct the study was granted by University Deanship of Scientific Research. Participants were drawn by convenience sampling from all the female students enrolled in Nursing and medical course (n=150) during the academic year 2014-15 in University of Dammam. Participants were clustered into Nursing and Medical groups (n= 46 and 63 respectively). Overall, a 73% (n=109) response rate was achieved. Forty six nursing (92 %) and sixty three medical students (63 %) completed questionnaire.

This comparative cross-sectional study used a structured questionnaire developed by the author based on information in the available national and international literature. ^(16, 17)

The questionnaire was pilot tested on a sample of 10 students for clarity of questions and the time taken to respond. After suitable modifications questionnaire had a total of 29 items, of which 15 items assess the general knowledge and Saudi perspectives of organ donation, 10 items for attitude and 4 items

regarding source of knowledge and beliefs about organ donation were included. The participants had to indicate either dichotomous response (yes/no) or to choose from the given options. For each correct reply a score of 1 was awarded and 0 to negative or blank reply. Participation was voluntary and participants were assured about confidentiality and ethical principles.

To check the internal consistency of knowledge and attitude scales through dichotomous responses, **Kuder and Richardson Formula 20** were employed, for knowledge items it was 0.700 and for attitude 0.731. Data was statistically analyzed using SPSS vs. 22. Frequencies were generated for correct and incorrect answers for all items by using descriptive statistics. The comparison between the groups was calculated by Chi-square test with a significant level set at $p < 0.05$. To find out correlation between level of knowledge and attitude toward organ donation of participants, Spearman's rho correlation test was used.

Results

Mean age of participants were 19.57 ± 0.658 . Table-1 shows frequencies of correct response and comparison of knowledge and attitude of organ donation between nursing and medical groups. In knowledge based questions, there is significant better knowledge of medical group in items "dead person ruined by organ transplant" ($p = 0.006$), "information regarding national registration program for organ donation" ($p = 0.000$), "families have legal right to overruled decision of organ donation" ($p = 0.025$) "list of organs transplant in KSA" ($p = 0.005$) and "minimum age to register as organ donor" ($p = 0.011$) as compared to nursing group. Significantly positive attitude of medical group found in "Organ donation insults human dignity" ($p = 0.006$), "Organ donation disturbs the peace of a dead person" ($p = 0.000$), "If we decide to donate organs, it is like we are ready to die" ($p = 0.001$) and by nursing group in item " Do you think the sale of human organs should be legalized" ($p = 0.000$).

Table 1. Comparison of Knowledge and attitude score about organ donation between nursing and medical students.

Items	% of correct response		
	Nurse (n=46)	Medical (n=63)	P value
Dead person ruined by organ transplant	12.0	87.0	0.006*
It's not part of my religion to donate organ	84.8	90.5	0.365
Ideal donor is person died of head injury	45.7	52.4	0.488
Not important for person to buried with all his organs	58.7	66.7	0.394
It is possible to cure illness with organ donation	84.8	92.1	0.230
Donated organ can transmit disease	71.4	76.1	0.587
It is possible to transplant Uterus, spinal cord and intestine	23.8	17.4	0.417
Information about National registration program for organ donation	65.2	96.8	0.000*
Minimum age to register as organ donor	45.7	69.8	0.011*

Need to ask for parent/guardian permission for organ donation	22.2	23.9	0.836
Families have legal right to overruled decision of organ donation	43.5	65.1	0.025*
Kidney and some part of liver can be given as live donor	82.6	69.8	0.127
Did religious fatwa allow organ donation	93.5	87.3	0.290
Knowledge about organ donation organization in Kingdom of Saudi Arabia	82.6	93.7	0.069
Organ can be transplanted in Kingdom of Saudi Arabia	50.0	76.2	0.005*
Donating organ to another person after death is humane	91.3	93.7	0.643
Organ donation insults human dignity	65.2	87.3	0.006*
Organ transplantation saves life	95.7	98.4	0.384
If we donate organ after death, it will prolong life of another person	97.8	100	0.240
Organ donation disturb peace of dead person	60.9	92.1	0.000*
If we decide to donate organs, it is like we are ready to die	71.7	95.2	0.001*
Are you registered or plan to register as organ donor	28.3	17.5	0.179
Do you agree with the idea that everyone should be automatically included on the organ donor register with the ability to opt out as they wish.	39.1	28.6	0.247
How likely are you to donate an organ while you are living	82.6	68.3	0.090
Donating organ to another person after death is humane	91.3	93.7	0.643

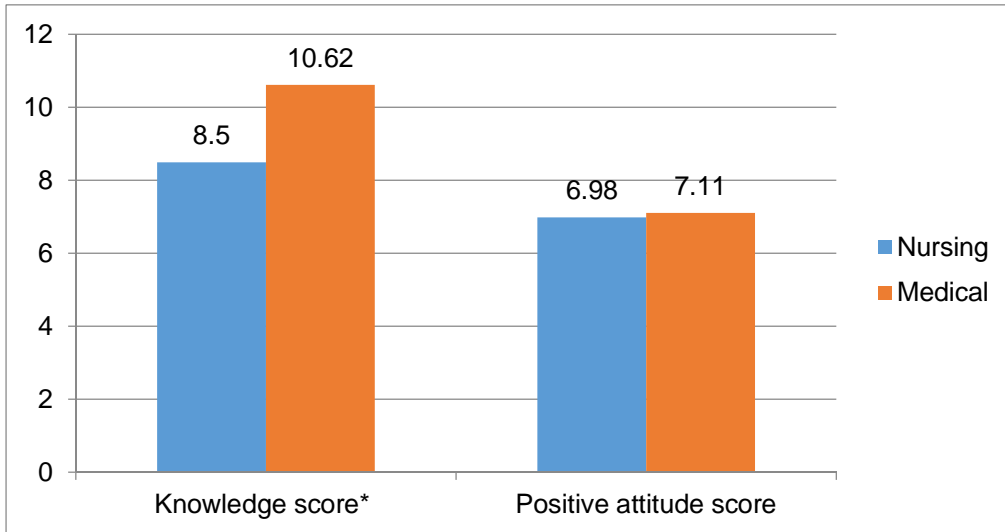
* $p < 0.05$

Figure 1 is the illustration of mean correct response of knowledge score (out of 15) and Positive attitude score (out of 10) of nursing and medical group, that revealed statistically significant better score of knowledge by medical group ($p=0.000$) while no significant difference in attitude score between the two groups ($p= 0.591$).

Possible source of knowledge was depicted in figure 2. Major source of knowledge was media (65.2%) for Nursing group and college/university (50.8%) for medical group.

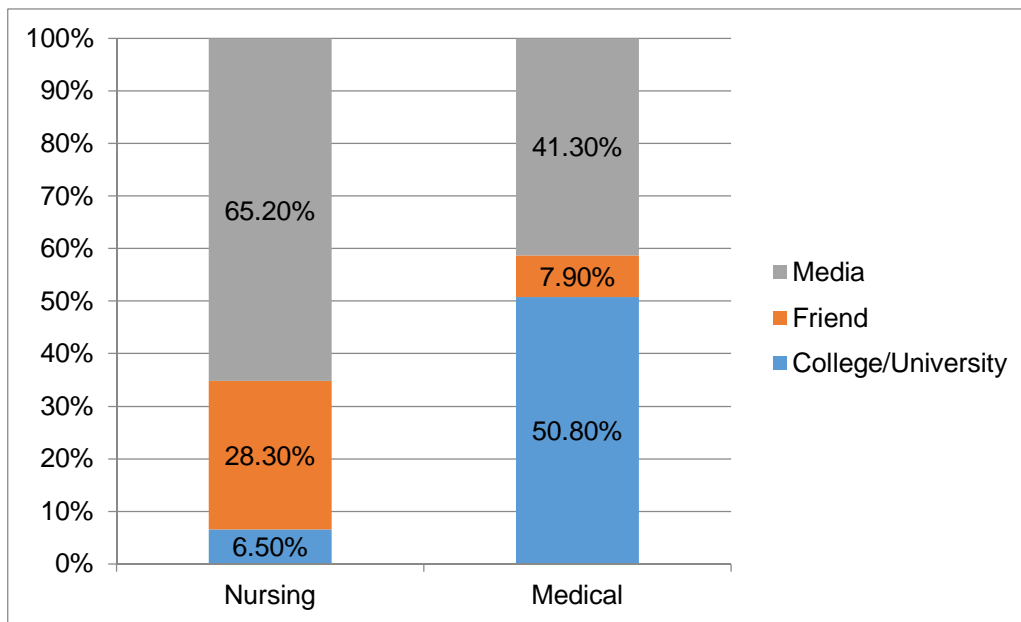
Figure 3 represent preference of recipients upon donating organ by study participants, revealed both medical (60.3%) and nursing (52.2%) groups chose "Anyone in need" as preferable recipient upon donating organs. Figure 4 is participant response of preference of donor as recipient, revealed their donor could be "Anyone" (medical 49.2% and Nursing 52.2%).

Figure 1. Mean correct response of knowledge score (out of 15) and Positive attitude score (out of 10) of nursing and medical group.



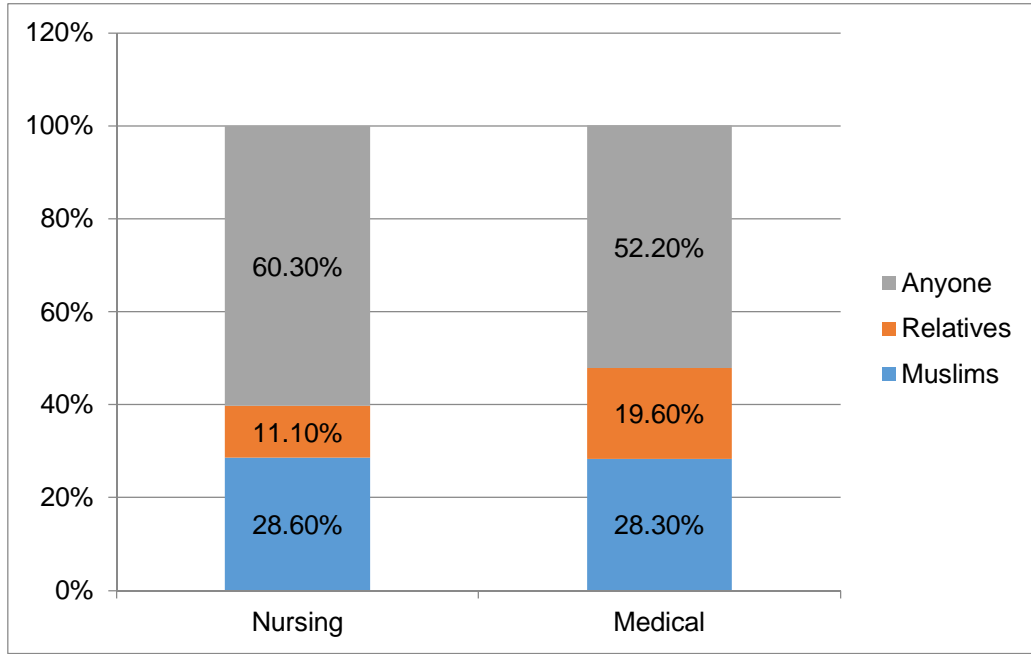
* p= 0.000, Nursing (n=46), Medical (n=63)

Figure 2. Source of knowledge regarding organ donation of study participants (n=109)



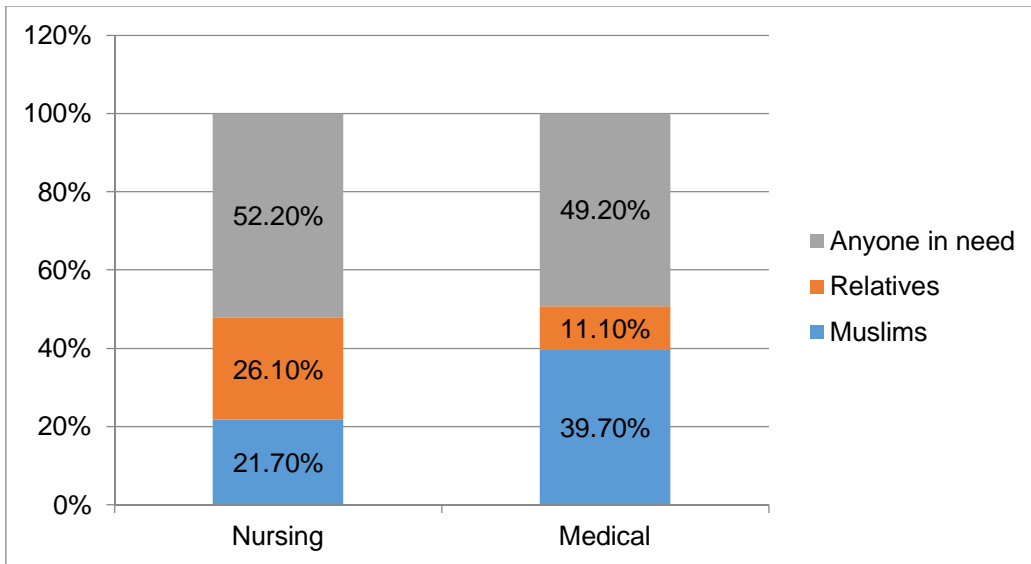
Nursing (n=46), Medical (n=63)

Figure 3. Preference of recipients upon donation organ by study participants.



Nursing (n=46), Medical (n=63)

Figure 4. Preference of donor as recipient by study participants.



Nursing (n=46), Medical (n=63)

Table 2. Bivariate analysis showing correlation of level of Knowledge with positive attitude toward organ donation by study participants (n=109)

Items	Spearman's rho correlation	P value
Donating organ to another person after death is humane	0.118	0.220
Organ donation insults human dignity	0.512	0.000*
Organ transplantation saves life	0.075	0.440
If we donate organ after death, it will prolong life of another person		
Organ donation disturb peace of dead person	0.439	0.000*
If we decide to donate organs, it is like we are ready to die	0.210	0.029*
Are you registered or plan to register as organ donor	0.094	0.332
Do you agree with the idea that everyone should be automatically included on the organ donor register with the ability to opt out as they wish.	0.75	0.436
How likely are you to donate an organ while you are living	0.192	0.046*
Do you think that sale of human organ should be legalized	-0.312	0.001*

* p<0.05

Bivariate analysis of factor finding correlation between level of knowledge and attitude using "spearman rho correlation" reflects items "Organ donation insults human dignity" (p=0.000), "Organ donation disturb peace of dead person" (p=0.000), "If we decide to donate organs, it is like we are ready to die" (p=0.029), " How likely are you to donate an organ while you are living" (p=0.046) have positive correlation with knowledge. Item " Do you think that sale of human organ should be legalized" (p=0.01) have negative correlation with knowledge as mention in table-2.

Discussion:

Present study is design to check and compare knowledge and attitude of Saudi nursing and medical students toward organ donation. Among all health care professionals nurses have maximum exposure and encounter with patients, from their admission till discharge yet at follow up. Their personal knowledge and attitudes can play imperative part in potential patient/attainders' decisions toward organ donation. Present study shows that mean knowledge score of nursing group is significantly lower than medical group although variation in mean positive attitude score was insignificant between the groups.

The source of knowledge is very important for decision making as knowledge coming from reliable source create much positive influence on once choice. ⁽¹¹⁾ In our study, major source of knowledge for medical group was college/ university, while nursing group got their major source of knowledge from media. Over 85% of study participants in Tam WWS et al study make different media as their major source of knowledge and same observation was seen in other studies. ^(18, 19, 20) These results are

comparable with our study. Since last three decades, SCOT uses all sources of mass media to communicate their message to public and professionals which seems quite effective reflected by our participants' attitude.

In the present study, questions related to knowledge of organ donation, medical group show significantly better mean score, while nursing students shows positive attitude toward organ donation comparable to medical group. Similar results reflecting low level of knowledge and high score of attitude were present by other researcher from around the globe. ^(18, 21, 22) Although result of present study is in agreement with other researchers, an early education curriculum on the topic may improve the level of knowledge of nursing students as well. Among attitude related items, nursing group has significant affirmative response toward "legalization of organ sale". As this is a debatable issue now a days, some researcher believed that legalization will abate illegal organ procurement and increase inflow of live donor that saves life of many on waiting list. ^(23, 24)

Results of present study point out toward a very important issue that despite of more than 70% of our study participants' showed positive attitude toward organ donation only 28.3 % of nursing and 17.5% from medical groups were either hold a donor card or planning to have one in future. This contribution by our study participants quite lower than other Asian studies like Korean, Chinese and Japanese, and other American and European studies. ^(14,25,26,27,28) Decision of donation significantly depends on cultural surroundings. ⁽¹¹⁾ Despite of hefty efforts by SCOT for more than three decades, taboo of circumvent organ donation is still present in Saudi society as demonstrated by the result of the present study that need to be addressed to compensate organ shortage in Saudi Arabia.

"Preference for recipients upon donating organ" chosen by both groups was "anyone in need". This shows their optimistic attitude toward other human being as they chose this option over "Muslims" or their "Relatives". Similar response was observed in reply of "preference of donor as recipient" as they are open to receive organ from anyone.

Our study results also revealed positive correlation between knowledge score and attitude of study participants in almost half of the attitude related items while negative correlation found in single item. This is in accordance to previous studies conducted all over the world. ^(12, 22, 29, 30) However unlike these studies; we adapted different methodological approach and recruited only first year university students spanning a narrow spectrum of age and educational status.

Limitation of the study includes the fact that the sample was collected from only one higher education institution and therefore cannot necessarily be extrapolated to other healthcare students and that students self-reported their practices, beliefs and compliance levels.

The questionnaire developed by the author was the only instrument employed for recruitment of study participants. While, this may limit comparability of our results with that of other researchers, it is notable that some degree of validity was guaranteed by pre-testing the questionnaire on a convenient sample before start of the study.

Conclusion

The results of this study suggest that our nursing students have mild to moderate knowledge of organ donation but their knowledge is lower than medical students. Although positive attitude toward organ donation uttered by both groups, revealed their concern and optimistic approach toward this emerging issue. Hence, there is a need to enhance knowledge particularly of nursing students regarding issues related to organ donation. This knowledge will be more effective when supported by government organizations and educational institutes.

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