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Effect of Blended Education on Nursing Students' Awareness and Attitude Towards Organ Donation: A Solomon Four-Group Study

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Abstract

Background: Organ donation requires management to promote awareness and create the proper culture in all societies. Awareness and attitude of students and nursing staff can affect the process of donating organs.
Objectives: The aim of this study was to determine the effect of blended education on the awareness and attitude of nursing students towards organ donation.
Methods: In this clinical trial study, which used a Solomon four-group design, 94 undergraduate nursing students from Azad University of Sanandaj in 2016 were selected by the census method and randomly assigned to four groups. The data collection tool included demographic data and the Organ Donation Awareness and Attitude Questionnaire blended education was provided to students through a one-day interactive workshop and social networks for 2 weeks. Before and after the intervention, students' awareness and attitude were evaluated. The collected data were analyzed by SPSS 16 using Fisher, Wilcoxon, Mann-Whitney, and Kruskal-Wallis tests.
Results: The comparison of the awareness level after the intervention in the four groups showed statistically significant differences (P = 0.0001). Moreover, there was a significant difference in the attitude level after the intervention between the four groups (P = 0.02).
Conclusions: Blended education increases the awareness and attitude of nursing students. Thus, trainers and educators are suggested using blended education to train students regarding donation. Moreover, it is recommended to include the topic of donation in the nurse's curriculum.

Keywords: Organ Donation, Nurse, Student, Education

1. Background

One of the most complex issues with which human beings have encountered in history is the issue of death, which may seem different from the medical point of view rather the common people's perspectives (1). Brain death generally occurs after damage to the central nervous system due to brain trauma or brain stroke (2). Brain death patients are one of the primary candidates for organ donation (3). According to scientific definitions, if the brain of the person loses the ability to continue its functions, it is considered a dead body. In this situation, if other organs are healthy, they will continue their physiological functions in the body for limited periods (4).

There are approximately 15000 brain deaths per year, indicating high brain death rates in Iran (5). About 50% of cerebral deaths occur in the intensive care units, which needs management to turn them into opportunity (6). The rate of donation in European countries is 20 per million; for Spain, it is reported as 35 per million. The rate in Iran is two per million, which shows Iran still has the potential to improve (7). On the other hand, the deficiency of organs for donation has become a problem today, and the availability of organs is largely influenced by the number of tissue donations (8). In Iran, the proportion of collecting organs for donation is not as satisfactory as in other developing countries (9).

Studies have shown that people's attitude, eagerness, and consciousness have a direct relationship with the issue of donation (10-12). Increasing donation rates in the world, as well as in Iran, have increased the role of nurses in this area (11, 12). Nursing students are not excluded from this rule. The importance of the issue of organ donation is so much that today, a part of specialized nursing care focuses on nursing care in organ donation processes (13). In

the study of Coyle the families of brain death patients described the nursing group as the main care team for receiving emotional care (14). According to Kim et al. nurses play an important role in the identification of organ donors and even post-donation follow-ups (15). The result of a study by Collins shows that there is a direct relationship between the attitude of nurses in the intensive care unit and the increased consent for donating an organ (16). In addition, there is a direct relationship between the attitude of people and taking the organ donation card in nurses in the emergency department and intensive care units (17).

Considering the role of nurses and the effect of their awareness of donation, studies have shown that intensive care unit's staffs, including nurses, are not very prepared for the successful management of donating patients in these centers (18, 19). The study of Manzari et al. in Iran showed that there is not enough awareness and attitude regarding the role of nurses in the process of organ donation (20). Therefore, the issue of organ transplantation and its awareness is a global emergency that needs management to raise awareness and increase the willingness of individuals to donate organs (21). This lack of awareness and lack of up-to-date information, on the one hand, and the extent of nursing staff's enthusiasm as one of the most effective factors involved in promoting this issue, on the other hand, can have a direct negative effect on the number of donated organs (22). Considering the fact that nursing students will be the members of the health care system in the future, raising their awareness can play an important role in creating proper culture (2).

Different interventions have been done to increase the awareness and attitude in the field of donation. Mahdiyoun et al. reported the impact of interactive and non-interactive E-Learning methods on increasing nurses' awareness of the brain death process and organ donation (23). In the study of Azmandian et al. the effect of training by the seminar method on the awareness and attitudes toward donation after brain death was emphasized (24).

Blended education is a goal-oriented convergence between face-to-face education and distance learning, which has been developed by technology and communication (25). Nowadays, blended education as a new method with the goal of using an appropriate combination for each learning problem emphasizes the diverse and widespread use of learning methods, including face-to-face learning, group E-Learning, and individual learning (26).

The key to blended education is the correct combination of materials, methods, and educational strategies that have the greatest impact with minimal cost. It improves the efficiency and effectiveness, decreases costs, and reduces the attendance time in traditional classes. (27, 28). Considering the problems in the field of organ donation, despite the fact that various studies in this area have been conducted in different regions, studies on students are scarce, and there is not adequate information regarding the awareness and attitudes of nursing students as an effective factor in creating proper culture of donating organs in the community. Furthermore, the necessary educations with appropriate methods for the undergraduate nursing students have not been taken into account.

Considering the fact that the waiting list for organ donation in the world is relatively long, many of these patients die prior to the transplantation because of the lack of donated organs and tissues or suffer from low quality of life due to severe and impressive disabilities. Therefore, to improve the status of organ donation in the world and in developing countries such as Iran, it is necessary to identify the factors affecting the number of organ donations and improve the conditions so that the background is prepared for this issue. One of the most influential factors in this regard is the level of awareness and attitude of the community towards the donation and transplantation of organs and tissues (29).

2. Objectives

The aim of this study was to investigate the effect of blended education on the awareness and attitude of nursing students of Sanandaj Azad University towards organ donation in 2016.

3. Methods

3.1. Design

This study is a educational trial with Solomon four-group design that was conducted in 2016 in the Faculty of Nursing and Midwifery of Islamic Azad University, Sanandaj Branch, Iran. This research was registered in the Iranian clinical trial registry (www.irct.ir) with the code IRCT2016091029780N1.

In the Solomon four-group design, the after-only and the before-after designs are combined into one design. The rationale for this combination is that subjects are known to do better on a measurement at the second time they are tested no matter what happened between testing periods. Some learning occurs simply as a result of familiarity with the measuring tool used in pretest or the experience itself. For this reason, this design compares the scores of groups who have not had a pretest (after-only) with the scores of the two groups who have been pretested. Accordingly, in this design, the two experimental groups are contrasted and the two control groups are contrasted to verify the difference in the posttest as a result of the pretest. Then, the after-only groups are contrasted and the before and after groups are contrasted on the dependent variable. Finally, the two experimental groups together are contrasted with the two control groups (30, 31).

3.2. Participants

Using the census method, first and second-semester undergraduate nursing students of Sanandaj Azad University in the academic year of 2016/2017 were included in the study and they were randomly allocated to four groups. The entrance criteria for the study included being Iranian, Muslim, having no history of organ donation or transplantation in family and friends, no employment of the parent or the spouse of the participant under study in the health care system, no participation in the similar research, and lack of clinical experience or employment in health care units. The exclusion criteria included a reluctance to continue the research and not attending all educational sessions or periodic examinations. The number of registered students was 100, two of whom did not participate in the pretest and four did not complete the whole steps of blended education; so, these six subjects were excluded.

3.3. Randomization

The list of all the first and second-semester undergraduate nursing students was provided by the education center and they were coded. Then, all the codes were embedded in a pot. Each time, a code was randomly emptied out of the dish and was written in a group A or B. Then, the code was returned to the dish and then the next choice was made. After dividing all subjects into two groups, the same procedure was repeated for each of the groups to divide each group into two other groups (C, D). This procedure eventually led to the formation of four groups A, B, C, and D. In the beginning, the number of subjects in each group was 25. After the exclusion of six subjects, the numbers of subjects remaining in each group were A = 25, B = 22, C = 23, and D = 24.

3.4. Data Collection

In group A (the first intervention group), a pretest and a posttest (after 2 weeks) were taken. In group B (the first control group), a pretest was performed and posttest was taken after 2 weeks without any intervention. In group C (the second intervention group), without a pretest, similar to the intervention group A, a posttest was taken after 2 weeks of intervention. In group D (the second control group), without a pretest and intervention, a posttest was performed simultaneously with other groups.

3.5. Tool

The data collection tools included demographic data (6 items) and the Organ Donation Awareness and Attitude Questionnaire (29 items). The questionnaire consisted of two sections. The awareness section contained 11 right/wrong questions. Each right answer gave a score of 2 and each wrong answer a score of 0. Therefore, the maximum and minimum scores were 22 and 0, respectively. Three questions had reverse scoring. The second section concerned attitude and included 18 questions scored on a 5-point Likert scale from completely agree (4 scores) to completely disagree (0 scores). Therefore, the maximum score of 72 and a minimum score of 0 were attainable. Four questions had reverse scoring.

3.6. Reliability and Validity

The Organ Donation Awareness and Attitude Questionnaire consisted of 35 questions designed by Haji-Ghaderi and Ghajjhi (32). Upon obtaining permission for using the questionnaire, content and face validity and test-retest reliability were used to determine the validity and reliability of the questionnaire. The instrument was reviewed and corrected by 10 faculty members of the Faculty of Nursing and Midwifery of Kurdistan University of Medical Sciences and Islamic Azad University, Sanandaj. The demographic questionnaire initially included 9 questions, which were changed to 6 questions. Seven questions related to organ donation were changed to 2 questions, and questions related to awareness were changed from 10 questions to 11 questions. For the reliability of the questionnaire, it was completed twice by 30 three-semester undergraduate nursing students and the reliability was approved by using a test-retest method with the intraclass correlation coefficients r = 0.7 for awareness and r = 0.73 for attitude.

3.7. Intervention

First, the research team designed the content of blended education and it was reviewed and modified by 10 faculty members. The educational content in the blended education method was presented via a workshop and virtual education. The lecture method, scenario-based interactive education (by dividing students into 5 groups to discuss 5 scenarios), scenarios, and movies were presented in two parts of a workshop in the morning and afternoon. It should be noted that the virtual content (5 videos, 1 text, and 7 short messages related to organ donation) was sent to the student groups A and C via the Telegram social network within 2 weeks (Table 1 and Box 1). The workshop held by the thesis adviser who was an assistant professor in nursing education and the main researcher who was a student of master of sciences. The virtual education was held by the main researcher.

3.8. Ethical Considerations

This study was supported by a research fund from Kurdistan University of Medical Sciences. The protocol of the research project was approved by the Ethics Committee of School of Nursing and Midwifery of Kurdistan University of Medical Sciences No. IR.MUK.REC.1395.200. Ethical considerations in the research included getting permission from the subjects, explaining the objectives and nature of the research, obtaining written consent, persuading the subjects to participate in the research, and assuring

Table 1. Blended Education Plan

Plan	Duration
Workshop	
Clarifying the importance of organ donation and its history	30 min
Review of a short story about organ donation	30 min
Playing a video regarding brain death, the difference between brain death and coma, discussions by the students	30 min
Presenting educational material regarding organ donation (in a lecture format):	1 h
Materials regarding brain death and coma, organ donation card, the effective and determining factors for the waiting time for organ donation, the underlying illnesses that prevent an organ donation, the age of the donors, the appearance of the deceased after the donation of the organ, the opinion of various religions in relation to the organ donation, the costs related to transplantation and removing of organ for donation, tissues which can be donated, materials related to transplant rejection and so on.	
Discussing available scenarios regarding organ donation by the students (in an interactive way)	2 h
Playing a video clip regarding organ donation (to affect the attitude of the students)	30 min
Virtual education	
Virtual education via telegram social network (including sending five videos, one text, and seven texts)	2 weeks

Box 1. A Sample of Scenarios and Messages Sent in the Social Network

Samples
Scenario
A 35-year-old man falls from the third floor and he is admitted to the ICU. After the assessment, the brain death is diagnosed with him. His family after knowing is very agitated and worries about doing organ donation without their permission. What explanation should you give them?
Messages
1. All celeries accepted permission for the organ donation.
2. The heaven reward is an important motive for organ donation.
3. Transplantation of the organs is possible between different sexes and races.

them that obtained information would remain confidential; moreover, it was explained that they could leave the study whenever they wanted to.

3.9. Setting

This study was performed on nursing students of Sanandaj Islamic Azad University. The reason for choosing nursing students is the importance of their future role in the family guidance process for organ donation. In this setting, undergraduate nursing students are educated by providing general and specialized courses for nursing care for children, adults, and elderly during four years. Nursing students start clinical training from the second semester and have to pass the clinical courses simultaneously with theoretical subjects until the sixth semester. The seventh and eighth semester is totally allocated to clinical training. Nursing students take the theoretical subjects, training, and internship courses in various sections of teaching hospitals affiliated to universities. Students, during the years of study, have the opportunity to create a relationship with patients in the various sections, especially intensive care units to achieve experiences. Students' progress in clinical environments is from simple issues toward harder issues.

3.10. Statistics

The collected data were analyzed by SPSS software (version 16) using Fisher, Wilcoxon, Mann-Whitney, and Kruskal-Wallis tests. To compare the variables of gender, religion, ethnicity, marital status, and academic semester between the groups, the Fisher's exact test was used and to compare the age between the groups, the Kruskal-Wallis statistical test was used. The Wilcoxon test was used to compare the awareness and attitude scores before and after the intervention in each group. The Mann-Whitney test was used to compare the awareness and attitude scores between the two groups. The Kruskal-Wallis statistical test was used to compare the awareness and attitude scores between the four groups.

4. Results

The majority of the participants were single (n = 87, 92.55%), Sunni (n = 65, 69%), and Kurdish (n = 87, 92.55%) with an average age of 21.4 $\pm$ 2.04 years. Of them, 58.51% were male and 41.49% were female; 49% of them were in the first semester and 51% were in the second semester. The comparison of demographic characteristics between the

four groups showed that the groups were homogeneous in terms of gender (P = 0.59), religion (P = 0.61), ethnicity (P = 0.11), marital status (P = 0.49), academic semester (P = 0.99), and age (P = 1) (Table 2).

The results showed that the awareness score in group A was 14.62 ± 2.73 before the intervention and 17.33 ± 2.85 after the intervention, which had statistically significant increase (P = 0.004). The awareness score in group B was 14.47 ± 2.29 before the intervention and 15.78 ± 3.27 after the intervention, which increased significantly (P = 0.046). The pre-intervention awareness was not significantly different between the two groups (P = 0.98), indicating that groups A and B were homogeneous before the intervention. The comparison of awareness level in the posttest did not show a statistically significant difference between the two groups A and B (P = 0.06).

The awareness score after the intervention was 18.09 ± 2.24 in group C and 14.8 ± 2.84 in group D, the difference was statistically significant (P = 0.00001) (Table 3). The comparison of awareness after the intervention between group A (17.33 ± 2.85) and group C (18.09 ± 2.24) showed no significant difference (P = 0.52).

The results showed that the attitude score in group A was 42.08 ± 7.27 before the intervention and 47.75 ± 7.73 after the intervention, which increased significantly (P = 0.001). The attitude score in group B was 44.91 ± 7.98 before the intervention and 47.04 ± 9.83 after the intervention, the difference was not statistically significant (P = 0.24). There was no statistically significant difference in terms of attitude before the intervention between the two groups A and B (P = 0.133), indicating that groups A and B were homogeneous. After the intervention, although there was no statistically significant difference (P = 0.898), the mean score of attitude increased. The attitude score after the intervention was 49 ± 4.99 in group C and 43.16 ± 6.20 in group D, the difference was statistically significant (P = 0.0025) (Table 4). The comparison of attitude in the posttest between group A (47.75 ± 7.73) and group C (49 ± 4.99) showed no significant difference (P = 0.72).

The comparison of awareness in the post-test between the four groups showed a statistically significant difference (P = 0.0001). In addition, there was a significant difference in terms of attitudes in the posttest between the four groups (P = 0.0253) (Table 5).

5. Discussion

The findings of this study showed that the level of awareness among nursing students in group A was significantly different before and after the intervention. This also applies to group B. However, the level of awareness before the intervention in groups A and B did not differ with each other statistically. In other words, students' awareness of organ donation was homogeneous in the pretest. Finally, it was found that the level of awareness in the posttest was not significantly different between the two groups A and B, but the score of awareness increased more in group A than in group B. Similarly, the level of awareness among nursing students in group C and group D in the posttest without any intervention was significantly different. The comparison of awareness in the posttest between group A and group C showed no significant difference. The comparison of awareness in the posttest showed a significant difference between the four groups.

The significant difference in the level of awareness before and after the intervention in group A, which received the intervention, indicates the effect of blended education in this study. Moreover, the significant difference of the level of awareness before and after the intervention in group B, which received no intervention, indicates the effect of pretest on awareness. Since there was a possibility that pretest could affect the level of awareness, it was not performed for groups C and D. Thus, the statistically significant difference in the level of awareness after the intervention between the two groups (group C received intervention and group D did not) indicates the effect of the intervention without the impact of the pretest. The insignificant difference between groups A and C in the posttest shows that the pretest had not any effect on the post-test awareness. It means that with the elimination of the pretest effect, the intervention was effective. Overall, the comparison of posttest awareness between the four groups, which showed a statistically significant difference, indicates the effect of the intervention with the elimination of the effect of the pretest. The significant difference between the four groups in the posttest shows the effect of the independent variable (blended education) on dependent variables (awareness and attitude) without the effect of the pretest. This is because the two experimental groups are contrasted and the two control groups are contrasted to verify the difference in the posttest as a result of the pretest. In addition, the after-only groups are contrasted and the before and after groups are contrasted on the dependent variable.

Mahdiyoun et al. by studying the effect of interactive and non-interactive e-learning methods on the awareness of brain death process, organ donation, and satisfaction with education among nurses of the intensive care unit reported that interactive E-Learning could increase the awareness level of nurses of the intensive care unit regarding brain death and organ donation (23). Tikey-Ne et al. also found that blended education could have an impact on the outcomes of students studying public health. Blended education is a goal-oriented convergence between face-to-face education and distance learning, which is purposefully developed by technology and telecommunications. The educational environment requires blended education due to the need for greater flexibility. Many studies

Table 2. Demographic Characteristics of the Groups[a]

Groups	A	B	C	D	P Value
Gender					0.59
Male	16 (66.67)	12 (52.17)	11 (50)	16 (64)	
Female	8 (33.33)	11 (47.83)	11 (50)	9 (36)	
Religion					0.61
Shia	8 (33.33)	6 (26.09)	9 (40.91)	6 (24)	
Sunni	16 (66.67)	17 (73.91)	13 (59.09)	19 (76)	
Ethnicity					0.11
Fars	0	1 (4.35)	0	1 (4)	
Kurd	23 (95.83)	22 (95.65)	21 (95.45)	21 (84)	
Turk	1 (4.17)	0	1 (4.55)	0	
Lurs	0	0	0	3 (12)	
Marital status					0.49
Married	1 (4.17)	1 (4.35)	1 (4.55)	4 (16)	
Single	23 (95.83)	22 (95.65)	21 (95.45)	21 (84)	
Semester					0.99
1st semester	11 (45.83)	11 (47.83)	11 (50)	13 (52)	
2nd semester	13 (54.17)	12 (52.17)	11 (50)	12 (48)	
Age, mean ± SD	20.70 ± 2.52	21.13 ± 1.45	21.27 ± 2.35	22.44 ± 1.29	1

[a] Values are expressed as No. (%) unless otherwise indicated.

Table 3. Comparison of Pretest and Posttest Awareness Within and Between the Groups

Awareness	Pretest	Posttest	P Value[a]
A	14.62 ± 2.73	17.33 ± 2.85	0.004
B	14.47 ± 2.29	15.78 ± 3.27	0.046
P value[b]	0.98	0.06	-
C	-	18.09 ± 2.24	-
D	-	14.08 ± 2.84	-
P value[b]	-	0.00001	-

[a] Within group.
[b] Between groups.

Table 4. Comparison of Pretest and Posttest Attitude Within and Between Groups

Attitude	Pretest	Posttest	P Value[a]
A	42.08 ± 7.27	47.75 ± 7.73	0.001
B	44.91 ± 7.98	47.04 ± 9.83	0.247
P value[b]	0.133	0.898	-
C	-	49 ± 4.99	-
D	-	43.16 ± 6.20	-
P value[b]	-	0.0025	-

[a] Within group.
[b] Between groups.

have shown that blended education has been the most effective educational model and the most popular form of instruction among students (33). Furthermore, in a study by Masoumian Hoseini et al. entitled "the study of the awareness, attitude, and practice of nurses of intensive care units about their role in the donation after brain death, and the factors affecting it", it was found that nursing education could increase their awareness, attitude, and practice re-

Table 5. Comparison of Awareness and Attitude Between the Four Groups in the Posttest

	A	B	C	D	P Value
Awareness	17.33 ± 2.85	15.78 ± 3.27	18.09 ± 2.24	14.08 ± 2.84	0.0001
Attitude	47.75 ± 7.73	47.04 ± 9.83	49 ± 4.99	43.16 ± 6.20	0.0253

garding their role in organ donation (34). The findings of the studies mentioned above are in line with the findings of this study. This consistency in the findings of various studies indicates the importance of awareness in the donation of the organ so that it can be said that as the level of awareness of people improves, the problem of the shortage of donated organs would be solved better and easier. Of course, awareness and information about the issue of organ donation are also very wide. Therefore, the most effective and most important ones that can play a role in increasing the organ donation should be considered. In this regard, brain death should be explicitly explained in order to be understood by the people (35).

One of the findings in this study was that the attitude of nursing students in group A before and after the intervention was significantly different. This does not apply to group B because there was no significant difference. Moreover, it was found that there was no significant difference in attitude before the intervention in both groups A and B. In other words, the nursing students' attitude of organ donation before the intervention was homogeneous. Finally, it was found that the level of awareness after the intervention was not significantly different between the two groups A and B. Last but not the least, the posttest attitude among nursing students in group C and group D without any intervention was significantly different. Moreover, the comparison of the posttest attitude level showed significant differences between the four groups.

The significant difference in the attitude level before and after the intervention in group A, in which the intervention was performed, could indicate the effect of blended education in the present study. In addition, the lack of a significant difference in attitude level before and after the intervention in group B, which received no intervention, could indicate that the pretest had no effect on attitude. Considering the fact that pretest could affect the attitude level, no pretest was done in groups C and D. However, the significant difference in the post-intervention attitude level between both groups (group C received intervention and group D received no intervention) could indicate the effect of the intervention without the impact of the pretest. The insignificant difference between group A and group C in the posttest shows that the pretest had no effect on posttest attitude. It means that with the elimination of the pretest effect, the intervention was effective. Overall, the comparison of post-intervention attitude between the four groups, which showed statistically significant differences, indicated the effect of the intervention with the elimination of the effect of the pretest.

Abbasi et al. in a study on the effect of education regarding brain death and organ donation on the attitude and awareness among nursing students reported that education related to brain death increased the attitude and awareness of organ donation. Accordingly, attitude should be emphasized because part of the nursing students' attitude toward organ donation is explained by increasing their attitude (28). In another study, carried out by Azmandian et al. in 2013 on 120 nurses of the intensive care unit and emergency department of Kerman hospitals who participated in a brain death seminar, it was found that nurses' attitude increased after the seminar (24). The findings of these studies are in agreement with the findings of this study. One of the possible reasons for the consistency of the results can be the importance of the attitude towards organ donation, which is the most important and effective factor for the explanation of this issue. This is because the attitude toward organ donation includes a set of beliefs of the personality system toward the subject and this attitude is prior to the act of donation. Thus, the type of attitude (positive or negative) can be a determinant of the quality and quantity of the mentioned reaction (35).

5.1. Limitations and Suggestions

Awareness, attitude, and willingness to donate are parts of the concept that may be affected by many factors and this study attempted to investigate them. However, there may be factors beyond the discretion of the researcher. Considering the effect of pretest and familiarity of the subjects with the questions on the posttest results, a four-group Solomon design was used to resolve the pretest effect. In addition, we asked the students of the intervention groups not to share the information they earned in the workshop and virtual education with the students of the control groups. However, it was beyond the control of the researcher at intervals of the intervention. In this study, the awareness and attitude of nursing students were investigated. Due to the short duration of the study, their practice, i.e. trying to have a donation card or being willing to receive the card, was not investigated. Therefore, it is suggested that the effect of interventions on students' practice regarding organ donation is investigated. This study was conducted on nursing students. Therefore, it is suggested carrying out some other studies on students of other fields. In addition, blended education

can be compared with other educational methods regarding organ donation. The implementation of community education programs for all people in the community is recommended to strengthen the awareness and attitude towards organ donation and to create proper culture. It is also suggested that organ transplantation and organ donation are placed among the priorities of the relevant authorities, including the Ministry of Health, the Medical Board, the Forensic Medicine Organization, and the broadcasting organizations.

5.2. Conclusions

The results of this study showed that blended education could increase the awareness and attitude of nursing students toward organ donation. Therefore, this method can be used in nursing education and nursing curriculums.

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Footnotes

Authors' Contribution: Shoaib Dehghani: Participated in research design, participated in the writing of the paper, participated in the performance of the research, contributed new reagents or analytic tools, participated in data analysis and participate in article writing. Kaveh Bahmanpour: Participated in research design, participated in the writing of the paper, contributed new reagents or analytic tools, participated in data analysis and participate in article writing. Bijan Nouri: Participated in data analysis. Sina Valiee: Participated in research design, participated in the writing of the paper, contributed new reagents or analytic tools, participated in data analysis and participate in article writing.

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