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# Nurses' perspectives of families 'needs of the maternal critically ill cases in woman health hospital: an educational program

Howieda Fouly[1]*, Jennifer Debeer[2], and Manal Mohamed Abd ElNaeem[3]

[1] Faculty of Nursing, King Saud bin Abdulaziz University of Health Science, Jeddah, Saudi Arabia

[2] King Faisal Specialist Hospital and Research Centre, Jeddah, Saudi Arabia

[3] Faculty of Nursing, Assiut University, Assiut, Egypt

*Correspondence: Howieda Fouly. Address: Faculty of Nursing, Assiut University, Assiut, Egypt. Email: hoida_elfouly@yahoo.com

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## ABSTRACT

**Introduction:** Meeting the family needs of patients in intensive care units is challenging for healthcare providers. The critical illness of one family member affects the wellbeing of other family members, causing changes in the life of the whole family. This study aimed to assess nurses' perspectives of the family needs of the critically ill maternal patient and to provide an educational program to nurses about these family needs.

**Methods:** A pre post-test design was used. The study was conducted in the obstetric intensive care unit at Women's Health Hospital at Assiut University Hospital, Egypt. A convenient sample of 28 was recruited from the total 35 female nurses of the Women's Health Hospital's ICU.

**Results:** There was a significant relationship between the sociodemographic items and family needs at p=0.00. There was also a statistically significant relationship between support needs, working hours, and years of experience at p=0.03 and p=0.01, respectively. There was a significant difference in the pre-post application of an educational program in all family needs items (p=0.00).

**Conclusions:** The educational program improved nurses' perspectives and awareness toward family needs. A regular educational program should be conducted in all intensive care units to improve the understanding and management of patients' needs, especially in an African context.

**Keywords:** family; educational program; perspectives; maternal critically ill patient

## Introduction

The family is one of the basic units of society and has a significant influence on its members. The critical illness of one family member affects the wellbeing of other family members, causing changes in the life of the whole family. The critical illness usually occurs suddenly, and the patient's family members do not have enough time to comprehend and deal with this situation. Consequently, the family members will experience many needs regarding the patient's condition, and, to meet family member's needs, critical care unit nurses must be able to identify their needs accurately (Ghabeesh et al., 2014; Iranmanesh et al., 2014). Therefore, the patient's family needs in ICUs are challenging roles for healthcare providers, particularly nurses, as families of critical patients depend on the healthcare providers to obtain data about their family member's disorders and status of the disease progress (Hashim and Hussin, 2012).

Many critically ill patients are incapable of communicating with healthcare providers regarding ICU care procedures due to the severity of their disease or condition (Mitchell et al., 2009). Accordingly, healthcare providers are increasingly seeking for family members to communicate with them and clarifying the care and support provided to the patient from their family (Al-

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Mutair et al., 2013). It is essential to involve the patient's family in the ICU stage of care to empower the health with complete person-centered care (Paul and Finney, 2015). However, some studies have reflected the importance of meeting the family needs to avoid the negative effect on family satisfaction due to insistent unmet family needs (Khalaila, 2013). Therefore, the quality of ICU care should involve the families' needs perspective regarding their patient care process outcome and evaluation of this care to improve their psychological health and safety (Flaatten, 2012).

Obringer, Hilgenberg, and Booker (2012) confirmed that the least important needs of family members were those related to the aspect of support. The core responsibilities of nurses in the ICUs are to meet patients and their family members' needs. These priority needs of family members of ICU patients differ according to sociocultural contexts (Bandari et al., 2015). In Saudi Arabia, Alsharari (2019) displayed that the family members of patients admitted to ICU have higher levels of needs toward the assurance, proximity, and information aspects (Alsharari, 2019). Furthermore, the family members had the lowest level of needs in the comfort and support aspects. However, other needs varied according to the sociodemographic characteristics of the participants. Therefore, recognizing the aspects of the family members' different needs is essential for the progress of effective communication and good collaboration toward the best care and support to ICU patients and their families. In Egypt, the intensive care unit is a highly stressful environment for patients' families due to the high critical and sophisticated care. Nursing care is mostly directed to critically ill patients' management without significant attention to their families. Due to the shortage of nurses, they lack information and training on how to meet this issue. On the other hand, meeting the patient's family needs is one of the holistic healthcare components among critically ill patients (Abdel-Aziz, Ahmed and Younis, 2017). Critical care nurses are in the first line to provide the family members with their needs to accommodate stressful situations. Therefore, the accurate assessment and reacting to critically ill obstetric patients' family needs is noteworthy in decreasing the negative impact of that stress, increasing family awareness about the care, and promoting trust. Consequently, inadequate attention to family needs can result in inappropriate care, family hostility, and the development of confrontational relationships between family members and care providers (Buckley and Andrews, 2011). In Egypt, the ICUs policies do not have specific regulations or rules regarding critically ill patients' families in care. Therefore, the critical care nurses do not have a clear rule about the best practices of family engagement in their critically ill patients. Thus, ICU nurses' perception toward family engagement in patients' care is critical (Abd El Wareth and Elcokany, 2019).

Although the Women's Health Hospital is the first hospital in Upper Egypt to include a maternal ICU, the families of critical maternal cases have limited contact with their patients, and they are always seeking to meet their needs. So, the nurses need to recognize how this part is essential for both nursing care and family needs satisfaction. Hence, all previous studies done in Egypt focused on ICUs patients but not specifically toward critically ill maternity-related patients (Abdel-Aziz, Ahmed and Younis, 2017; Abd El Wareth and Elcokany, 2019). Our study aimed to assess the nurses' perspectives toward family needs of the maternal critically ill cases and to provide an educational program about family needs of maternal ICU cases at the Women's Health Hospital.

## Materials and Methods

### Study Design

A pre-posttest design was used to determine nurses' perspectives on the needs of family members of critically ill maternal patients before and after an educational program. The study was conducted in the intensive care unit at the Women's Health Hospital at Assiut University Hospital. It is the largest teaching hospital in Upper Egypt and a tertiary referral center with all maternity services inclusive of a 12-bed obstetric ICU for cases of severe condition related to pregnancy, delivery, and postpartum conditions such as severe postpartum hemorrhage, severe preeclampsia, eclampsia, sepsis and ruptured uterus, or any system failure depending on certain clinical criteria and laboratory markers.

### Respondent

The population included all obstetric critical care nurses at the hospital. The inclusion criteria included obstetric critical care nurses who worked in the current ICU for at least six months and who nursed critically ill maternal patients. In addition, nurses who withdrew from the study whilst it was ongoing were excluded, as well as nurses with less than six months of experience and did not work with critically ill maternal patients. There was a total of 35 obstetric critical care nurses employed at the hospital during the time of the study. The total number of nurses in the ICU was 35. The study

conveniently recruited 28 nurses. Five nurses were included in the pilot study and excluded from the final data collection. Two nurses did not participate due to maternity leave and sick leave due to the Coronavirus pandemic.

### Instrument

The tool used was The Critical Care Family Needs Inventory (CCFNI) which includes two parts: The first part was the sociodemographic data of participants and the second consisted of the items of the CCNI (Molter & JS, 1995). There were forty-five (45) items related to family needs arranged in categories, namely support (items 1 to 14), proximity (items 15 to 23), proximity or closeness (items 24 to 32), assurance (items 33 to 39), and comfort (items 40 to 45). The responses are noted on a 4-point Likert scale, and the scoring is coded as not important (1), slightly important (2), necessary (3), and very important (4). The original English version was translated into Arabic by a qualified English to Arabic translator.

Table 1 Sociodemographic relationship to nurses' perspectives of family needs

| | **Support needs Mean (SD)** | **F** | **p-value** |
|---|---|---|---|
| Education | | | |
| Bachelor | 2.42(0.50) | | |
| High Diploma | 2.80(0.70) | 0.96 | 0.39 |
| Secondary Diploma | 2.52(0.70) | | |
| Working hours | 2.64(0.65) | 2.78 | 0.03* |
| Years working in ICU | 2.64(0.65) | 3.25 | 0.01* |
| | Information needs Mean (SD) | | |
| Education | 2.68 (0.31) | | |
| | 2.93 (0.44) | 0.89 | 0.42 |
| | 2.80 (0.53) | | |
| Years of working | 2.83(0.42) | 0.59 | 0.82 |
| Years of working in ICU | 2.83(0.42) | 1.00 | 0.48 |
| Education | Proximity Mean (SD) | | |
| Bachelor | 2.42(0.64) | | |
| High Diploma | 2.82(0.42) | 1.325 | 0.284 |
| Secondary Diploma | 2.74(0.79) | | |
| Years of working | 2.69(057) | 1.123 | 0.214 |
| Years of working in ICU | 2.69(057) | 1.536 | 0.420 |
| Education | Assurance Mean (SD) | | |
| Bachelor | | | |
| High Diploma | 2.51(0.45) | 0.919 | 0.412 |
| Secondary Diploma | 2.76(0.40) | | |
| | 2.67(0.45) | | |
| Years of working | 2.67(0.42) | 0.565 | 0.849 |
| Years of working in ICU | 2.67(0.42) | 0.928 | 0.545 |
| Education | Comfort Mean (SD) | | |
| Bachelor | 2.56(0.90) | | |
| High Diploma | 3.16(0.67) | 2.085 | 0.145 |
| Secondary Diploma | 2.50(1.06) | | |
| Years of working | 2.87(0.84) | 0.80 | 0.653 |
| Years of working in ICU | 2.87(0.84) | 0.84 | 0.61 |

*p<0.05

### Data Collection

The investigator applied the education program based on the pre-test of the nurses' perspectives toward the family needs from May 1st to July 28th, 2020. After explaining the study aim, the investigator submitted the questionnaire to all available maternal critical care nurses in all shifts under high control of infection during COVID-19. Instead of regular face-to-face interviews, the investigator interviewed by cellphone and collected their answers regarding the family needs (support, information, proximity or closeness, assurance, and comfort items). This process continued for four weeks and each week the researcher interviewed approximately seven nurses in their free hours, not during work hours. Once the investigator got the confirmation from the head of nurses, all ICU nurses were accepted other than those on maternity and sick leave. In the fifth week, the investigator held four online sessions according to nurses' availability to attend these sessions to give them an instructional lecture presentation to clarify how are the family needs very important for triangle care, "the patient, family, and the nurses," to improve the nursing care and patient outcomes. Through the presentation, the investigator discussed the concept of the family needs and the history of this concept and the evidence of research regarding this issue. Also, all items were explained to verify the importance of these concepts in a low-middle income country. After each session, the investigator submitted the online post-test questionnaire to check how the nurses perceived family needs after the lecture. The answers were submitted promptly online through the investigator's email.

### Data Analysis and Ethical Consideration

SPSS 0.20 version (IBM Corporation Armonk, NY, and the USA) was used to analyze the data in the form of descriptive statistics (frequency and percentage, mean, and standard deviation) and analytical statistics (independent t-Test) were used to analyze the data between nurses' perspectives before and after the application educational program instructions regarding family needs. The study obtained the approval of the ethics committee of Women Health Hospital's ICU authorities, and the nursing ethical committee and research committee (No. 017 dated April 28th, 2020). The researcher also obtained informed consent from every obstetric critical care nurse after explaining the

Table 2 Comparison of the Total mean of family needs items before and after applying for the educational program

| | t-test | Mean (SD) | P value |
|---|---|---|---|
| Support needs (Before) | 21.31 | 2.64(0.65) | 0.00 |
| Support needs (After) | 40.86 | 3.10(0.40) | |
| Information needs (Before) | 35.37 | 2.83(0.42) | 0.00* |
| Information needs (After) | 40.61 | 3.29 (0.42) | |
| Proximity needs (Before) | 24.97 | 2.69(0.57) | 0.00* |
| Proximity needs (After) | 33.17 | 3.02(0.48) | |
| Assurance needs (Before) | 33.21 | 2.67(0.42) | 0.00* |
| Assurance needs (After) | 38.24 | 3.03(0.41) | |
| Comfort needs (Before) | 26.46 | 3.09(0.87) | 0.00* |
| Comfort needs (After) | 28.22 | 3.37(0.63) | |

* p-value = 0 significant

study's aim the privacy and confidentiality of responses considered during data collection. Finally, the participants had the right to withdraw from the study at any time without a negative impact on them.

## Results

The distribution of sociodemographic characteristics of the 28 critical care nurses reflects their ages range 22 to 42 years old, 50% of the respondents aged 22 to 26 years old, 32.1% aged 27 to 31 years old, while 17.7% were aged from 32to 42 years old. Those who graduated from a high nursing diploma accounted for 53/5%, while bachelor was 28.6%, and 17.9% from secondary diploma. The work experience reflects that two-thirds have up to five years' experience, 17.8% up to 10 years, and 17.9% up to 19 years. However, 75%, 10.7%, and 14.3% have up to six, 12, and 19-years' experience in the critical care nursing field, respectively. The relationship between the sociodemographic items and family needs revealed a statically significant relationship between support needs and working hours and, years of ICU experiences (P<0.03 and P<0.01), respectively. However, the other items of family needs did not show any significant relationship (Table 1).

Appendix 1 shows the nurses' perspectives toward family support needs. It reflects a significant difference before and after receiving the educational program (P=0.00). There is dramatic improvement in the support items before and after application of the educational program. The improvements occurring in very important items from the nurses' perspectives are to know the expected outcomes (32.1% to 67.9%); to have explanations of the environment (10.7% to 67.9%); to talk to the doctor every day (25.0% to 50.0%); to have visiting hours changed for special conditions (14.3% to 60.7%); to have directions as to what to do at bedside (25.0% to 64.3%); and to visit at any time (7.1% to 53.6%). However, there are three items (5, 7, 11) which showed significance (P=0.000) in the opposite direction in which the correct answers decreased instead of increased.

The nurses' perspectives toward family information needs (Appendix 2) reflect a significant difference (P=0.00). It showed great improvement in the information items to be very important in the following: To know about the types of staff members taking care of the patient, to know how the patient is being treated medically, to have a place to be alone while in the hospital, and to have someone to help with financial problems. Before the educational program, the score was 17.9%, 21.4% and 21.4%, and after receiving of the educational program the posttest the score was 57.1%, 60.7%, and 53.6%, respectively.

The proximity/closeness needs of the family needs include nine items, as shown in Appendix 3. The item considered important is "To have another person with you when visiting the critical care unit," and very important items are "To be assured it is all right to leave the hospital for a while," "To talk to the same nurse every day," and "To be told about other people that could help with problems." The pretest scores were 32.1%, 10.7%, 3.6%, and 28.6% and after posttest the scores were 46.4%, 39.3%, 25.0%, and 39.3%, respectively. There was a statistically significant difference (P=0.000) except in four items (1, 3, 6, 9), but the before training test was better than after. Family assurance needs include seven items and showed improvement after applying for the program regarding important and very important. The pretest score for the items "To be told about transfer plans while they are being made," "To be told about someone to help with family problems," "To have explanations given that are understandable," "To have visiting hours start on time," "To be told about chaplain services," "To help with patient's physical care," and "To be called at home about changes in the patient's condition" were 35.7%, 14.3%, 35.7%, 3.6%, 14.3%, 3.6% and 3.6%, respectively, while the posttest scores were 46.4%, 42.9%, 50.0%, 53.6%, 35.7%, 35.7% and 39.3%. It showed a statistically significant difference (P=0).

The family comfort needs include seven items and showed improvement after applying the educational program. In these items perceived as important and very important were: "To receive information about the patient at least once a day," "To feel that the hospital personnel care about the patient," "To know specific facts concerning the patient's progress," "To see the patient frequently," "To have comfortable furniture in

the waiting room," and "To have a waiting room near the patients." The scores before intervention were 35.7%, 32.1%, 32.1%, 28.6%, and 25.0%, and after intervention were 60.8%, 75.0%, 75.0%, 67.9%, and 50.0%, respectively. There was a statistically significant difference (P=0). The family needs items' total means include support, information, proximity, assurance, and comfort. All items showed a statistically significant difference after the application of the educational program (Table 2).

## Discussions

Half of the nurses who participated in this study were aged 22-26 years old. Similarly, the Egyptian study by Abdel-Aziz, Ahmed and Younis (2017) showed most nurses aged 20-30 (Abdel-Aziz, Ahmed and Younis, 2017). However, the education level and experience of work were more than our participants. The difference may be related to the variety of participant ICUs as the authors collected the sample from neurological and anesthesia and medical ICUs. Our participants were younger due to the innovation establishment of the women's health ICU. Moreover, in the same age category, most nurses were aged up to 30 years, bachelor's degree, and years of experience up to five years (Abd El-Aziz Basal, 2017).

There was a dramatic improvement in the nurses' perception of family support needs after applying the educational program. The most significant statements perceived by the nurses were: "To know the expected outcomes," which changed after the training program from one-third to two-thirds; "To have explanations of the environment before going into critical care unit for first time" which changed from only 10% to more than two-thirds; "To have directions as to what to do at bedside" from one-fourth to more than two-thirds; and "To talk to the doctor every day" from one-fourth to half.

Correspondingly, Abdel-Aziz, Ahmed and Younis (2017) reported the important perceived support needs were "to know how the patient was being treated" and "to talk to the doctor every day." Moreover, Shorofi et al. (2016) confirmed the important statement was "to have directions regarding what to do at the bedside." The mentioned studies reported the perceived needs based on a survey that reflected nurses' primary perceived needs while our study improved the perceived needs based on the educational program (Shorofi et al., 2016).

Regarding the family information needs, our study revealed that the nurses' perspectives showed a remarkable improvement toward family information needs with a statistically significant difference after receiving of the educational program. However, before the training program, one-fifth of nurses perceived that the statement "to know how the patient is being treated medically" is very important, while, after training, the perception changed to two-thirds of nurses acknowledged this statement as very important. The perceived information after training matches previous studies by Naderi et al. (2013) and Abdel-Aziz, Ahmed and Younis (2017), which reported that getting information about a patient's state is one of the very important family's needs (Naderi et al., 2013; Abdel-Aziz, Ahmed and Younis, 2017). In the same line, Gundo et al. (2014) and Gaeeni et al. (2015) reported that most nurses perceived the need for "knowledge about the patients' treatment" as the utmost important needs of family members (Gundo et al., 2014; Gaeeni et al., 2015). In the same line, Scott, Thomson, and Shepherd (2019) confirmed regarding the importance toward ICU patients' family needs, especially the need for more information and reassurance (Scott, Thomson and Shepherd, 2019). However, the healthcare providers' perceived needs almost did not meet and, consequently, will negatively affect those families. Whereas there is some evidence that procedures established on the providing of proper information in ICU could effectively reduce worry and increase satisfaction. Therefore, our study assessed the nurses' perspectives toward the family needs of the maternal critically ill cases and provided an educational program, as well as the family needs of maternal ICU cases.

The findings of the current study regarding the proximity (closeness) and assurance needs of the family showed a statistically significant difference, reflecting an improvement of the nurses' perspectives after receiving the educational program. The important statements were: "To have another person with you when visiting the critical care unit" which changed from almost one-third to almost 50%; "To be assured it is all right to leave the hospital for a while" changed from two-fifths to half; and "To talk to the same nurse every day" changed from one-fifth to one-third. However, the very important statement was "To be told about other people that could help with problems," which changed from more than one-fourth to almost two-fifth. On the other hand, two statements stayed in the same perception level as very important and important without any change, "To have a bathroom near the waiting area" and "To be alone at any time," respectively. However, according to nurses' perspectives, the assurance needs revealed a statistically significant difference after applying the

educational program (P=0.000). These items were: “To be told about transfer plans while they are being made;” “To be told about someone to help with family problems;” “To have explanations given that are understandable;” “To have visiting hours start on time;” “To be told about chaplain services;” “To help with patient's physical care;” and “To be called at home about changes in the patient's condition,” which reflected that our study objectives achieved through the dramatic change of nurses' perspective to be more favorable toward family needs. Compared to similar studies reported by Gaeeni et al. (2015) and Abdel-Aziz, Ahmed and Younis (2017), it reflected similar findings of nurses’ perspectives that the important family proximity and assurance needs were focused on changes in the patient's condition, visiting hours and honest answers to questions, the transfer plans, and called at home regarding patient's condition. This similarity interpreted that the family members need to be updated regarding their patient’s conditions.

The findings of comfort needs showed a statistically significant difference in all comfort items about “receiving information about the patient daily, feeling that the hospital cares about the patient, facts concerning the patient's progress, frequently seeing the patient, availability of comfortable furniture in the waiting room, and to have a waiting room near the patient”, which reflected a dramatic change after the application of the educational program. Contradictory, the findings of previous studies by Shorofi et al. (2016) and Abdel-Aziz et al. (2017) reported that the minority of nurses confirmed that “to feel accepted by the hospital staff” and “to have visiting hours changed for specific conditions” were important needs. This minor percentage was interpreted by the author by inadequate preparation or education and nurses' experience to manage the family needs in emergencies, which supports our study's objectives that the nurses need an educational program to increase their awareness regarding family needs. However, conclusively the family needs of support, information, proximity, assurance, and comfort showed a statistically significance difference after applying the educational program. Correspondingly, the other literature scope studies highlighted that the highest everyday important family needs were information and assurance, followed by proximity, comfort, and support, respectively (Al-Mutair et al., 2013; Scott, Thomson and Shepherd, 2019). In the end, the findings of the current study presented all the items of the family needs from nurses’ perspectives that family members need reliable and accurate information and availability of proximity regarding the ICUs' patient. Also, the needs of support, assurance, and comfort from the health care providers, especially nurses, which were supported by a previous study conducted by (Davidson, 2009). Limitations of the research regarding the research design did not involve a control group so that the change in nurses' perspectives and awareness toward family needs was solely based on the educational program being held through the study.

The COVID-19 crisis appeared during the data collection and affected the number of participants from nurses and increased obstacles to collect data from other ICUs occupied by patients with Coronavirus.

## Conclusions

The study concludes that the educational program achieved the objective of dramatically improving nurses' perspectives toward family needs. On the other side, the educational program increased nurses' awareness regarding that issue, which was not one of our objectives. The nurse’s awareness was confirmed orally when they acknowledged that our program was useful for them. In addition, the educational background and work experiences in ICUs were positive factors to improve nurses' perspectives within a short time.

The regular educational program application in all ICU types will enhance nurses' ability to understand the family needs and consider these needs to facilitate the relationship between healthcare providers and family members. Also, it will help to enhance the services introduced in the ICUs. However, this study was done in a female ICU, so the concern of family needs focused on one side. Therefore, the study needs to expand to include the other nurses' perspectives who care for male patients and their family members, most of the time by males.

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Appendix I. Family support needs from nurses' perspectives before and after receiving the training program

| **Family needs items** (Items 1 to 14) Support needs | **not important n (%)** | **slightly important n (%)** | **important n (%)** | **very important n (%)** |
|---|---|---|---|---|
| To know the expected outcomes | | | | |
| Before | 2 (7.1) | 5 (17.9) | 12 (42.9) | 9 (32.1) |
| After | 0 (0) | 0 (0) | 9 (32.1) | 19 (67.9) |
| P value | | 0.000 | | |
| To have explanations of the environment before going into the critical care unit for the first time | | | | |
| Before | 5 (17.9) | 15 (53.6) | 5 (17.9) | 3 (10.7) |
| After | 0 (0) | 0 (0) | 9 (32.1) | 19 (67.9) |
| P value | | 0.000 | | |
| To talk to the doctor every day | | | | |
| Before | 6 (21.4) | 8 (28.6) | 7 (25.0) | 7 (25.0) |
| After | 0 (0) | 1 (3.6) | 13 (46.4) | 14 (50.0) |
| P value | | 0.000 | | |
| To have a specific person to call at the hospital when unable to visit | | | | |
| Before | 9 (32.1) | 4 (14.3) | 6 (21.4) | 9 (32.1) |
| After | 2 (7.1) | 7 (25.0) | 11 (39.3) | 8 (28.6) |
| P value | | 0.000 | | |
| To have questions answered honesty | | | | |
| Before | 1 (3.6) | 2 (7.1) | 14 (50.0) | 11 (39.3) |
| After | 2 (7.1) | 11 (39.3) | 12 (42.9) | 3 (10.7) |
| P value | | 0.000 | | |
| To have visiting hours changed for special conditions | | | | |
| Before | 13 (46.4) | 5 (17.9) | 6 (21.4) | 4 (14.3) |
| After | 0 (0) | 1 (3.6) | 10 (35.7) | 17 (60.7) |
| P value | | 0.000 | | |
| To have talked about feelings about what happened | | | | |
| Before | 5 (17.9) | 9 (32.1) | 11 (39.3) | 3 (10.7) |
| After | 9 (32.1) | 8 (28.6) | 9 (32.1) | 2 (7.1) |
| P value | | 0.000 | | |
| To have good food available in the hospital happen | | | | |
| Before | 3 (10.7) | 8 (28.6) | 8 (28.6) | 9 (32.1) |
| After | 0 (0) | 5 (17.9) | 20 (71.4) | 3 (10.7) |
| P value | | 0.000 | | |
| To have directions as to what to do at the bedside | | | | |
| Before | 6 (21.4) | 8 (28.6) | 7 (25.0) 10 | 7 (25.0) |
| After | 0 (0) | 0 (0) | (35.7) | 18 (64.3) |
| P value | | 0.000 | | |
| To visit at any time | | | | |
| Before | 14 (50.0) | 8 (28.6) | 4 (14.3) | 2 (7.1) |
| After | 1 (3.6) | 2 (7.1) | 10 (35.7) | 15 (53.6) |
| P value | | 0.000 | | |
| To know which staff members could give what type of information time | | | | |
| Before | 4 (14.3) | 8 (28.6) | 14 (50.0) | 2 (7.1) |
| After | 9 (32.1) | 10 (35.7) | 5 (17.9) | 4 (14.3) |
| P value | | 0.000 | | |
| To have friends nearby for support | | | | |
| Before | 9 (32.1) | 10 (35.7) | 5 (17.9) | 4 (14.3) |
| After | 2 (7.1) | 4 (14.3) | 14 (50.0) | 8 (28.6) |
| P value | | 0.000 | | |
| To know why things were done for the patient | | | | |
| Before | 2 (7.1) | 6 (21.4) | 14 (50.0) | 6 (21.4) |
| After | 0 (0) | 5 (17.1) | 16 (57.1) | 7 (25.6) |
| P value | | 0.000 | | |
| To feel there is hope | | | | |
| Before | 1 (3.6) | 0 (0) | 10 (35.7) | 17 (60.7) |
| After | 0 (0) | 5 (17.1) | 5 (17.1) | 18 (64.3) |
| P value | | 0.000 | | |

Appendix II Family information needs from nurses' perspectives before and after receiving the training program

| **Family needs items**<br>(Items 15 to 23) information needs | **not important n (%)** | **slightly important n (%)** | **important n (%)** | **very important n (%)** |
|---|---|---|---|---|
| To know about the types of staff members taking care of the patient | | | | |
| Before | 2 (7.1) | 10 (35.7) | 11 (39.3) | 5 (17.9) |
| After | 0 (0) | 1 (3.6) | 11 (39.3) | 16 (57.1) |
| P value | | 0.000 | | |
| To know how the patient is being treated medically | | | | |
| Before | 2 (7.1) | 6 (21.4) | 14 (50.0) | 6 (21.4) |
| After | 0 (0) | 5 (17.9) | 6 (21.4) | 17 (60.7) |
| P value | | 0.000 | | |
| To be assured that the best care possible is being given to the patient | | | | |
| Before | 1 (3.6) | 0 (0) | 11 (39.3) | 16 (57.1) |
| After | 0 (0) | 2 (7.1) | 11 (39.3) | 15 (53.6) |
| P value | | 0.000 | | |
| To have a place to be alone while in the hospital | | | | |
| Before | 11 (39.3) | 11 (39.3) | 4 (14.3) | 2 (7.1) |
| After | 0 (0) | 0 (0) | 9 (32.1) | 19 (67.9) |
| P value | | 0.000 | | |
| To know precisely what is being done for the patient | | | | |
| Before | 3 (10.7) | 10 (35.7) | 7 (25.0) | 8 (28.6) |
| After | 3 (10.7) | 8 (28.6) | 11 (39.3) | 6 (21.4) |
| P value | | 0.000 | | |
| To feel accepted by the hospital staff | | | | |
| Before | 1 (3.6) | 5 (17.9) | 10 (35.7) | 12 (42.9) |
| After | 1 (3.6) | 4 (14.3) | 8 (28.6) | 15 (53.6) |
| P value | | 0.000 | | |
| To have someone to help with financial problems | | | | |
| Before | 0 (0) | 11 (39.3) | 11 (39.3) | 6 (21.4) |
| After | 0 (0) | 1 (3.6) | 12 (42.9) | 15 (53.6) |
| P value | | 0.000 | | |
| To have a telephone near the waiting room | | | | |
| Before | 6 (21.4) | 5 (17.9) | 13 (46.4) | 4 (14.3) |
| After | 0 (0) | 5 (17.9) | 13 (46.4) | 10 (35.7) |
| P value | | 0.000 | | |
| To have a pastor visit | | | | |
| Before | 14 (50.0) | 7 (25.0) | 3 (10.7) | 4 (14.3) |
| After | 2 (7.1) | 4 (14.3) | 12 (42.9) | 10 (35.7) |
| P value | | 0.000 | | |

Appendix III Family proximity and assurance needs from nurses' perspectives before and after receiving the training program

| **Family needs items** (Items 24 to 32) proximity or closeness | **not important n (%)** | **slightly important n (%)** | **Important n (%)** | **very important n (%)** |
|---|---|---|---|---|
| To talk about the possibility of the patient's death | | | | |
| Before | 3 (10.7) | 3 (10.7) | 15 (53.6) | 7 (25.0) |
| After | 3 (10.7) | 8 (28.6) | 11 (39.3) | 6 (21.4) |
| P value | | 0.000 | | |
| To have another person with you when visiting the critical care unit | | | | |
| Before | 10 (35.7) | 6 (21.4) | 9 (32.1) | 3 (10.7) |
| After | 0 (0) | 9 (32.1) | 13 (46.4) | 6 (21.4) |
| P value | | 0.000 | | |
| To have someone concerned with patient health | | | | |
| Before | 2 (7.1) | 1 (3.6) | 10 (35.7) | 15 (53.6) |
| After | 5 (17.9) | 10 (35.7) | 7 (25.0) | 6 (21.4) |
| P value | | 0.000 | | |
| To be assured it is all right to leave the hospital for a while | | | | |
| Before | 8 (28.6) | 5 (17.9) | 12 (42.9) | 3 (10.7) |
| After | 0 (0) | 3 (10.7) | 14 (50.0) | 11 (39.3) |
| P value | | 0.000 | | |
| To talk to the same nurse every day | | | | |
| Before | 14 (50.0) | 7 (25.0) | 6 (21.4) | 1 (3.6) |
| After | 3 (10.7) | 8 (28.6) | 10 (35.7) | 7 (25.0) |
| P value | | 0.000 | | |
| To feel it is all right to cry | | | | |
| Before | 5 (17.9) | 9 (32.1) | 9 (32.1) | 5 (17.9) |
| After | 10 (35.7) | 12 (42.9) | 4 (14.3) | 2 (7.1) |
| P value | | 0.000 | | |
| To be told about other people that could help with problems | | | | |
| Before | 1 (3.6) | 6 (21.4) | 13 (46.4) | 8 (28.6) |
| After | 0 (0) | 7 (25.0) | 10 (35.7) | 11 (39.3) |
| P value | | 0.000 | | |
| To have a bathroom near the waiting area | | | | |
| Before | 1 (3.6) | 4 (14.3) | 15 (53.6) | 8 (28.6) |
| After | 2 (7.1) | 1 (3.6) | 17 (60.7) | 8 (28.6) |
| P value | | 0.000 | | |
| To be alone at any time | | | | |
| Before | 9 (32.1) | 10 (35.7) | 8 (28.6) | 27 (96.4) |
| After | 0 (0) | 2 (7.1) | 8 (28.6) | 18 (64.3) |
| P value | | 0.000 | | |
| **Family assurance needs items** (items 33 to 39) | | | | |
| To be told about transfer plans while they are being made | | | | |
| Before | 7 (25.0) | 6 (21.4) | 10 (35.7) | 5 (17.9) |
| After | 6 (21.4) | 5 (17.9) | 13 (46.4) | 4 (14.3) |
| P value | | 0.000 | | |
| To be told about someone to help with family problems | | | | |
| Before | 15 (53.6) | 6 (21.4) | 4 (14.3) | 3 (10.7) |
| After | 4 (14.3) | 5 (17.9) | 12 (42.9) | 7 (25.0) |
| P value | | 0.000 | | |
| To have explanations given that is understandable | | | | |
| Before | 1 (3.6) | 3 (10.7) | 14 (50.0) | 10 (35.7) |
| After | 0 (0) | 3 (10.7) | 11 (39.3) | 14 (50.0) |
| P value | | 0.000 | | |
| To have visiting hours start on time | | | | |
| Before | 3 (10.7) | 10 (35.7) | 14 (50.0) | 1 (3.6) |
| After | 0 (0) | 1 (3.6) | 12 (42.9) | 15 (53.6) |
| P value | | 0.000 | | |
| To be told about chaplain services | | | | |
| Before | 3 (10.7) | 8 (28.6) | 3 (10.7) | 4 (14.3) |
| After | 3 (10.7) | 8 (28.6) | 7 (25.0) | 10 (35.7) |
| P value | | 0.000 | | |
| To help with patient's physical care | | | | |
| Before | 6 (21.4) | 9 (32.1) | 12 (42.9) | 1 (3.6) |
| After | 0 (0) | 3 (10.7) | 15 (53.6) | 10 (35.7) |
| P value | | 0.000 | | |