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Enhancing family nursing practice: The effect of a supportive-educational programme on the family nursing practice, family satisfaction and family perceived support in the intensive care unit

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A – Study Design, **B** – Data Collection, **C** – Statistical Analysis, **D** – Data Interpretation, **E** – Manuscript Preparation, **F** – Literature Search, **G** – Funds Collection

Summary **Background.** The severity of the disease and the anxiety caused by working with a patient in a critical situation increase the need of supporting both families and nurses.
Objectives. To evaluate the effect of implementing a supportive-educational programme for nurses on the family nursing practice, family satisfaction and family perceived support in the intensive care unit.
Material and methods. A non-randomised intervention study was performed on 90 patients' family members and 72 intensive care unit nurses. The supportive-educational programme included a 6-hour face-to-face workshop for nurse managers to create a supportive work environment for nurses and a one-month online educational programme for nurses. The Family Nursing Practice Scale was completed by the nurses. The Family Satisfaction-ICU scale and ICE-Family Perceived Support Questionnaire were completed by the family members on the third and tenth day after the patient's hospitalisation.
Results. A statistically significant difference was found between the mean score of family nursing practice before (Mean = 26.36, SD ± 4.9) and after the intervention (Mean = 20.66, SD ± 6.6). The mean score of family satisfaction on day 10 showed a statistically significant difference between the groups (intervention Mean = 73.97, SD ± 9.18, control group Mean = 92.15, SD ± 10.25). The mean score of the family perceived support was significantly different in both groups on the third day of hospitalisation (intervention Mean = 45.15, SD ± 9.18 and control group Mean = 48.4, SD ± 4.98) and on the tenth day of hospitalisation (intervention Mean = 43.84, SD ± 6.48 and control group Mean = 53, SD ± 4.29).
Conclusions. Simultaneous support and training of nurses working in the intensive care unit can increase the desired outcomes related to the patient's family by improving their performance in relation to the family.
Key words: nurses' practice patterns, family, personal satisfaction, intensive care unit.

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Background

Hospitalisation in the Intensive Care Unit (ICU) causes psychological stress in the patient and his family due to the severity of the disease and anxiety caused by diagnostic and treatment procedures [1]. Patients' families are the main source of support for patients admitted to ICUs, and family support is essential to prepare them for care and patient support [2]. Patients' family members expect nurses to provide them with information and cognitive and emotional support, while emotional involvement and the inability to communicate properly with families are important physical and psychological stressors for nurses in ICUs [3].

Lack of knowledge and skills related to family-cantered education in the current nursing curriculum is the cause of poor performance of nurses for patients' families in the intensive care unit. Increasing nurses' understanding of family status and emphasising the use of these trainings by nursing managers can be a useful practical strategy in ICUs [4]. Nurses play caring, medical, educational and supportive roles to help patients and their families, which can be important in improving their satisfaction [5, 6]. However, the performance of ICU nurses is

mainly focused on meeting the needs of patients admitted to these wards. Nevertheless, it is necessary to pay special attention to the needs of the families of patients admitted to these wards [7].

Nursing is a developing profession in Iran. Nurses face many challenges at work, particularly when working in stressful units such as the ICU, which leads to an increase in their supportive needs. Studies on family support in Iran are more focused on empowering families in terms of providing information and emotional support, and less attention is paid to the empowerment of ICU nurses in communication with families [8], while nurses have mentioned the need for education to improve their performance in providing better support and information advocacy for families [9].

The family support for patients increases the quality of perceived care, especially with regard to their information needs. However, family-cantered care still requires a change in the mindset of healthcare professionals. This new perspective should eliminate the obstacles and strengthen the culture of cooperation with patients' family members in the ICU [10]. The positive effect of education on the quality of nursing care and the importance of educational programmes and its effect on knowledge, attitude and practice has been shown [9]. In a previous study, an educational programme for nurses caused the level of nurses' knowledge and awareness in the field of family nursing to increase from 60% to about 86% [11]. On the other hand, the severity of the disease and the anxiety caused by working with the patient in a critical situation increased the need for support among nursing. Creating a supportive work environment for nurses by nursing managers leads to the promotion of the nursing profession, providing high quality and safer care for patients and their families, increased job satisfaction, as well as an increase in their self-confidence in the relationship with the patient and family [12].

Evaluation of patient satisfaction is considered one of the most important criteria for determining the quality of healthcare services [13]. Therefore, family satisfaction with the performance of nurses in the ICU is an indicator of the quality of care in these wards [14]. The lowest level of satisfaction of family members of patients admitted to ICUs was in terms of support provided by staff and the participation of families in patient care [15]. More studies are needed to evaluate the impact of integrating both managerial and educational interventions into a single holistic program, and its effect on the nurses' performance as well as patient care outcomes in ICU [16].

Objectives

This study aimed to evaluate the effect of implementing a supportive-educational programme for nurses on the family nursing practice, family satisfaction and family perceived support in the intensive care unit.

Material and methods

A non-randomised intervention study was performed from February to August 2020 in the three ICUs of two teaching hospitals in an eastern province of Iran. The participants included 72 nurses and 90 family members of patients admitted to the ICU (intervention and control group).

To determine the sample size for conducting the statistical tests that evaluate the mean difference between two independent groups, we allowed for a 5% Type I error and a 10% Type II error. We also accounted for an effect size of 5 unit difference in the satisfaction variable with standard deviations of 8 for the intervention group and 5 for the comparison group. This gave us 39 people for each group. However, we increased the number to 45 people per group, considering a possible 10% drop out among family members. The number of nurses was 72, selected based on the total number of nurses in the studied wards. We recruited the families of patients admitted to the ICU by the convenient sampling method, and the census method was used for recruiting ICU nurses. In the patient family group, we included individuals who were the main caregiver of the patient, in the age range of 18 to 60 years, without any diagnosed mental illness and having the ability to read and write in the Persian language. The family member caregiver was excluded from the study if working in any health-related professions.

To collect data from ICU nurses, a demographic characteristics form along with the Family Nursing Practice Scale (FNPS) were used. For the family members of patients admitted to the ICU, the demographic characteristics form, a Family Satisfaction-ICU survey (FS-ICU), and the ICE-Family Perceived Support Questionnaire (ICE-FPSQ) were used. In the present study, in order to confirm the validity of the questionnaires, the content validity was examined first.

The FNPS [17] had 10 items on a 5-point Likert scale. The minimum score in this questionnaire was 10, and the maximum score was in our study 50; a lower score indicated better performance in relation to the family. The reliability of this variable was tested in our study through Cronbach's alpha (0.76), and the lower limit of 95% confidence interval was found to be 0.69. This tool consisted of two parts of management and education.

The FS-ICU [18] tool had three subscales: the medical staff performance satisfaction and comfort subscales, which each had 12 items, and the decision subscale, which included 6 items. In the first and second subscales, the answers were in a 6-point Likert scale with score range from 0 to 6. In the third subscale, answers were on a 5-point Likert scale, but in Items 27 and 28, the answers were in the form of 3 options and descriptive, with a range of scores from 0 to 3. In this questionnaire, the highest score was 146, and the lowest score was 30. The higher score indicated more satisfaction [18]. The reliability of this tool was tested in our study using Cronbach's alpha 0.89, and the lower limit of 0.95% confidence interval, calculated at 0.86.

The ICE-FPSQ [19] was composed of 14 items with 2 subscales of cognitive support with 5 items and emotional support with 9 items on a 5-point Likert scale. The minimum score in this questionnaire was 14, and the maximum was 70. The higher the score, the higher the perceived support. The reliability of the tool was tested for the present study using Cronbach's alpha value of 0.84, and the lower limit of 95% confidence interval was calculated to be 0.80.

In Table 1, the study intervention included the supportive and educational programmes. In the supportive programme, nurse managers and supervisors of ICUs participated in a 6-hour face-to-face training programme in order to implement the supportive programme and promote the supportive work environment. In this programme, the topics of professional communication skills, supervision and feedback skills and methods of motivating employees through lectures and group discussions were held as an in-service training programme. The educational programme was implemented for nurses in intensive care units in order to enhance nurses' family practice skills and knowledge by creating a group on social media for one month. In the educational programme, in order to train nurses for the implementation of family-cantered nursing care, a guiding plan was designed with the help of nurse managers and supervisors of ICUs. In this plan, the nurses had a scheduled face-to-face or telephone appointment with the patient's family member during each shift. In these face-to-face meetings or telephone calls, the patient's family was first introduced to the patient's clinical condition, care and treatment team. A scheduled appointment was arranged to allow the family member to meet the patient if needed. Prior to the family meeting with the patient, the necessary training was given by nurses on how to communicate with the unconscious patient. Each nurse implemented a designed training and support programme for the patient and recorded it precisely. This procedure was performed under the supervision of the nurse managers and supervisors in the wards

Table 1. Supportive-educational intervention

Before intervention	Support part	Education part	After intervention
Data collection before intervention (Control group) 72 nurses working in 3 ICUs & 45 patients admitted to ICUs with a family member	Implementing an educational programme in the form of a 6-hour face-to-face workshop for nursing managers in order to create a supportive work environment for nurses, including: • Teaching professional communication skills • Monitoring and feedback skills • Ways of motivating employees • Developing a codified education programme for the family of ICU patients	Implementing an educational programme for nurses in intensive care units by creating a group on a social network that was active for a month, which included: • Establishing correct communication with the patients' family members • Identifying and diagnosing the needs of the patients' family members • Empathy skills and prevention of violence in the patients' family members • Teach patient home care to patients' family members	Data collection after the intervention (Intervention group) 72 nurses working in 3 ICUs & 45 patients admitted to ICUs with a family member

Table 2. Educational programme for family members of unconscious patients admitted to the intensive care unit

Code	Hospitalisation time	Educational topics for family member
1	Patient admission time	1. Introducing the ward and treatment team 2. Ward regulations related to patient visits for family members 3. Receiving the information of the member of the family 4. Explanation about the patient's condition
2	2nd day of hospitalisation	1. Explanation about the patient's condition 2. Observing personal hygiene of family members during the care and touch of the patient and the necessity of observing hand hygiene 3. Teaching family members how to communicate with the unconscious patient and how to have a purposeful meeting with the patient 4. Having physical contact and reviewing familiar family names with the patient
3	3rd day of hospitalisation	1. Explanation about the patient's condition 2. Explain about the patient's activity level 3. Physical restraint 4. Fall prevention
4	4th day of hospitalisation	1. Explanation about the patient's condition 2. Diagnostic tests required by the patient and necessary preparations 3. Receiving sedatives 4. Patient connection with devices
5	5th day of hospitalisation	1. Explanation about the patient's condition 2. The patient's defecation status 3. Explanation to the family member about feeding the patient
6	Last day of hospitalisation	1. In patients being transferred to the general ward, information and explanation should be given about not using previous routine oral medications without informing the doctor and nurse 2. Due to the fact that most ICU patients are first transferred to the general ward and then discharged, patient care education is provided in the general ward 3. In case of direct discharge of the patient from the ICU to home, patient care education is provided according to the discharge form in the ICU

- The purpose of providing education for the patient's family member is to reduce their anxiety and stress and involve them in the process of treatment and patient care.
- Supportive and empathetic communication should be considered without giving false hope to the patient's family while providing education for family members.
- The codes mentioned in the above discussion are general and should be taught to all ICU patients.
- Further training is provided as a supplement based on patient diagnosis and the training needs of the family member.
- Training of the patient's family member must be done by the nurse caring for the patient.
- The above programme is flexible in terms of implementation based on the need and readiness of the patient's family member to receive the training.
- It should be noted that the programme should be planned in such a way that all the mentioned codes are taught based on the number of days of the patient's hospitalisation.

of the research site for 4 weeks (Table 2). In order to train and empower nurses to implement the above plan, a training programme including communication training for dealing with the family of unconscious patients, recognising the family needs of unconscious patients, empathy and violence prevention skills and the patient's home care training was designed. This programme was initially designed as a training course with a 6-hour in-service programme in the form of a face-to-face class. Due to the prevalence of coronavirus and the impossibility of holding a face-to-face class, this programme was performed as distance

learning. First, the list of nurses working in the wards of the intervention was collected, and after obtaining the permission of these people, the mobile phone number of the nurses participating in the study was added to a social media group. For the above topics, the educational materials were shared in the form of ten educational files, including educational slides with audio and video of the relevant instructor. This group in social media was active for a month. After one month of the training and support course, data was collected from the patients' family members and nurses.

Data analysis

Data analysis was performed using Stata software version 16. First, the Shapiro-Wilk test was used to determine the normal distribution of quantitative variables, then the frequency, mean, standard deviation, minimum and maximum were determined using descriptive statistics. Paired *t*-Test, independent *t*-Test, Mann-Whitney and Wilcoxon test were used to compare the means before and after intervention in each group.

Table 3. Frequency distribution of families of patients admitted to the ICU in terms of contextual variables in two groups of intervention and control (*n* = 90)

Variable		Intervention group (*n* = 45)	Control group (*n* = 45)	Statistical test
		No (%)	No (%)	
Gender	female	10 (22.22)	12 (26.67)	Chi square = 0.24 *p* = 0.62
	male	35 (77.78)	33 (73.33)	
Education	elementary school	3 (6.67)	2 (4.55)	Chi square = 1.60 *p* = 0.65
	secondary school	11 (24.44)	16 (36.36)	
	high school	20 (44.44)	16 (36.36)	
	associate degree and higher	11 (24.44)	10 (22.73)	
Employment status*	employee	23 (51.11)	14 (31.11)	Chi square = 8.46 *p* = 0.03
	housewife	(0) 0	4 (8.89)	
	retired	5 (11.1)	11 (24.44)	
	unemployed	17 (37.78)	16 (35.56)	
Hospital	Shahid Kamyab	22 (48.89)	22 (48.89)	Chi square = 0.00 *p* = 0.58
	Shahid Hasheminejad	23 (51.11)	23 (51.11)	
Marital status*	single	12 (26.67)	4 (9.09)	Chi square = 4.66 *p* = 0.03
	married	33 (73.33)	40 (90.91)	
Insurance	insured	38 (84.44)	40 (90.91)	Chi square = 0.85 *p* = 0.35
	not insured	7 (15.56)	4 (9.09)	
Relation to patient	spouse	6 (13.13)	9 (20)	Chi square = 9.23 *p* = 0.16
	child	15 (33.33)	13 (28.89)	
	father	6 (13.13)	13 (28.89)	
	mother	1 (29.22)	(0) 0	
	brother	15 (33.33)	7 (15.56)	
	sister	1 (2.22)	3 (6.67)	
	other	1 (2.22)	(0) 0	
Place of residence	city	39 (86.67)	35 (77.78)	Chi square = 2.21 *p* = 0.27
	village	6 (13.33)	10 (22.22)	
Current residence	personal house	39 (86.67)	37 (82.22)	Chi square = 1.40 *p* = 0.7
	hotel	3 (6.67)	4 (8.89)	
	house of relatives	3 (6.67)	4 (8.89)	
Hospitalisation*	yes	18 (40)	4 (8.89)	Chi square = 11.79 *p* = 0.001
	no	27 (60)	41 (91.11)	
Other hospitalised family member	yes	11 (54.55)	33 (73.33)	Chi square = 3.41 *p* = 0.06
	no	20 (45.45)	12 (26.67)	
History of accompanying patient in hospital*	yes	29 (64.46)	15 (33.33)	Chi square = 8.71 *p* = 0.003
	no	16 (35.56)	30 (66.67)	
History of ICU hospitalisation	yes	6 (13.64)	1 (2.22)	Chi square = 3.99 *p* = 0.05
	no	38 (86.36)	44 (97.78)	
History of ICU hospitalisation of other family member	yes	14 (31.82)	21 (46.67)	Chi square = 2.05 *p* = 0.15
	no	30 (68.18)	24 (53.33)	
History of accompanying patient in ICU*	yes	11 (24.24)	5 (11.11)	Chi square = 2.73 *p* = 0.09
	no	34 (75.56)	40 (88.89)	
Living with patient	yes	26 (57.78)	26 (57.78)	Chi square = 0.00 *p* = 0.58
	no	19 (42.22)	19 (42.22)	

* Significant difference.

Table 4. Demographic information of ICU nurses, mean and standard deviation of family nursing practice score before and after intervention and its comparison (*n* = 72)

Variables	Mean ± SD
Age	32.93 ± 6.78
Work experience	8.36 ± 5.67
Work experience in ICU	6.59 ± 4.80
Passion in the nursing profession	7.79 ± 2.20
Passion for working in the ICU	8.33 ± 1.94
Mean and standard deviation of family nursing practice score before intervention	26.36 ± 4.9
Mean and standard deviation of family nursing practice score after intervention	20.66 ± 6.6
Comparison of mean and standard deviation of family nursing practice score before and after intervention	$p < 0.000$*

* Wilcoxon test.

Table 5. Comparison of mean and standard deviation of total score of family satisfaction in two groups of intervention and control

Total score of family satisfaction	Intervention group (*n* = 45)	Control group (*n* = 45)	Result of statistical test
3rd day	76.53 ± 16.23	78.71 ± 11.23	$p = 0.23$*
10th day	73.97 ± 9.18	92.15 ± 10.25	$p < 0.001$*
Difference of 3rd and 10th days	-2.55 ± 14.51	13.44 ± 10.27	$p < 0.001$*
Result of statistical test	$p = 0.12$**	$p < 0.001$**	

* Independent *t*-Test; **Paired *t*-Test.

Table 6. Comparison of mean and standard deviation of the total score of family perceived support in the ICU in the intervention and control groups

Total score of family perceived support	Intervention group (*n* = 45)	Control group (*n* = 45)	Result of statistical test
3rd day	45.15 ± 9.18	48.4 ± 4.98	$p = 0.02$*
10th day	43.84 ± 6.48	53 ± 4.29	$p < 0.001$*
Difference of 3rd and 10th days	1.31 ± 6.56	4.6 ± 4.55	$p < 0.001$*
Result of statistical test	$p = 0.09$**	$p < 0.001$**	

* Independent *t*-Test; ** paired *t*-Test.

Ethical considerations

The present study was conducted after receiving the approval of the Research Ethics Committee with the code IR.MUMS.NURSE.REC.1398.099. Before the intervention, the first author (A S S, M) met with the family members of the patients who fulfilled the inclusion criteria, and after obtaining informed consent, they were asked to complete the study questionnaires. The ICU nurses voluntarily entered the study after providing oral consent.

Results

Regarding the demographic characteristics of patients' families, the results showed that the two groups before and after the study were homogeneous in terms of gender, socio-economic status (i.e. education, insurance status, residence place), number of participants from each hospital, type of relationship with patients, current accommodation, having other hospitalised family members, history of ICU hospitalisation for themselves or any family member, history of accompanying a patient in the ICU and living in the same household with the patient (Table 3).

The mean and standard deviation of age (32.93, ± 6.78) and work experience of the nurses in the intensive care unit (8.36, ± 5.67) were calculated. The average work experience of nurses in the ICU was 6.59 years (SD = ± 4.8). From scores of 1 to 10, the mean score for passion in nursing was 7.79 (SD = ± 2.2), and passion for work in the ICU was 8.33 (SD = ± 1.94). The family nursing practice score before and after the intervention was significantly different ($p < 0.000$) (Table 4).

The results presented in Table 5 showed that on the third day of the intervention, the mean total score of family satisfaction in the intervention group was 76.53, SD ± 16.23, and in the control group, this was 78.71, SD ± 11.23. The independent *t*-Test did not show a statistically significant difference between the two groups. The mean total score of family satisfaction in the control group after intervention increased from 78.71, SD ± 11.23 on the third day to 92.15, SD ± 10.25 on the tenth day, which was significant based on the paired *t*-Test. There was a statistically significant difference in the mean satisfaction score on the tenth day of hospitalisation between the intervention group (Mean = 73.97, SD ± 9.18) and control group (Mean = 92.15, SD ± 10.27) ($p < 0.001$).

In Table 6, on the third day of the intervention, the mean total score of family perceived support in the intervention group was 45.15, SD ± 9.18, and in the control group, this was 48.4, SD ± 4.98. The independent *t*-Test between the two groups was statistically significant. After intervention, the mean total score of family perceived support in the control group increased from 48.4, SD ± 4.98 on the third day to 53, SD ± 4.29 on the tenth day. Based on the independent *t*-Test, this increase was significant. There was a statistically significant difference in the mean score of family perceived support on the tenth day of hospitalisation between the intervention group (Mean = 43.84, SD ± 6.48) and control group (Mean = 53, SD ± 4.29) ($p < 0.001$).

Discussion

The results of the present study showed that after the implementation of the supportive-educational intervention in ICUs, the performance of nurses increased significantly compared to before the intervention. The results also showed that family

satisfaction and family perceived support after the intervention increased significantly compared to before the intervention.

One of the most important factors promoting nurses' performance is providing education and empowering them. Training nursing staff can improve knowledge and skills, create a positive attitude and improve performance to provide better care for patients. Therefore, to improve the quality of patient care, educational programmes can be used for increasing the skills and quality of nursing practice and performance [20].

A previous study result showed that educational-supportive intervention increases nurses' knowledge, skills, performance and trust in working with the family [11]. The training intervention protocol in that study consisted of a 4-hour workshop that focused on the mutual understanding of nurses and families of patients admitted to the ICU, as well as providing various strategies for designing and developing appropriate strategies for effective communication and dialogue between ICU nurses and patients' families [11]. These findings are consistent with our study findings, as in both studies, the educational programme for nurses improved the level of nursing practice. Nevertheless, the duration of training in that study was 4 hours, which was in the form of a workshop and face-to-face meeting, and in the present study, 4 weeks were considered for nurses in the form of a group on social media. Besides, in the present study, the support part of the programme included 6 hours of training in the form of lectures and group discussions for nurse managers and supervisors. This training was implemented with the aim of creating a supportive work environment for nurses and included professional communication skills, supervision and feedback skills and methods of motivating employees.

There is a positive correlation between social support from colleagues and the performance of nurses, and with increasing social support from colleagues, the rate of nurses' performance also improves [21]. Similarly, in the present study, creating a supportive work environment for nurses improved nurses' performance and nursing practice by reducing job stress and creating a safe environment. Considering nursing practice as the initial outcome, we found that the change in nursing practice had positive consequences on family satisfaction and their perceived support.

Changes in family-oriented nursing practice can be the result of changes in managers' monitoring and feedback practices and the creation of a supportive work environment. In this regard, changes in the way of monitoring and implementation of a group monitoring programme could increase patient and family satisfaction with the educational competence of nurses [22].

It was indicated that most nurses in the ICU consider communication with families as a vital part of their role and described their supportive behaviours for families [23]. However, there are significant barriers to effective communication. Nurses believe that families have no necessary information and support. So nurses' support and providing formal education are identified as key strategies for overcoming these barriers [23]. In this regard, the present study confirmed that teaching communication skills to nurses promotes satisfaction and the perceived support of patients' family members. Teaching communication skills to nurses increases patients' satisfaction with nursing care [24].

Patients' satisfaction with nursing care is higher in nurses who have higher clinical competence. Higher clinical competence included the individual's greater ability in the areas of clinical care, leadership, interpersonal communication, legal and ethical practice, professional progress, guidance, critical thinking and willingness to research [25]. It seems that acquiring communication skills, such as the ability to communicate with patients' families, gaining empathy skills and responding to the questions and ambiguities of families increases patients' families' satisfaction by reducing stress and anxiety, on the one hand, and improving nursing practice, on the other [23]. Accordingly, the present study showed that the implementation of a supportive-educational programme for nurses increased the family perceived support in the emotional and cognitive dimensions in ICUs.

Training the nurses can help in understanding and meeting the emotional needs of the families of patients with brain injuries [26]. 172 nurses in surgery and neurology departments were asked to answer a self-report questionnaire on understanding the emotional needs of patients' families. 65% of nurses stated that they respect the patients' families at all times. It was also reported that further training services to deal with the difficult feelings of family members can be effective for nurses in dealing with these conditions and creating a supportive environment for families. Nurses' support of patients' families in the form of proper communication with patients' families, such as listening to conversations, providing explanations appropriate to an individual's understanding and empathy can reduce the anger, anxiety and confusion of families and increase the perceived support of families in the emotional and cognitive dimensions [26].

In another intervention study, supporting patients' families had an influence on the mental state of families, and families reported a higher quality of communication and family-cantered care [27]. The appropriate education of families reduces the burden of caring for family members, decreases their unmet needs and also promotes self-care and patient care behaviours [28]. Likewise, in our study, the family-cantered nursing programme helped nurses to perform consistently in communicating with the patient's family, providing daily reports on the patient's clinical condition and preparing the family for patient care at home. On the other hand, the educational programme developed their communication and empathy skills. Improving the satisfaction of families after the implementation of this programme can indicate the improvement of family-oriented nursing practice in nurses.

Limitations of the study

One of the study limitations relates to the special circumstances caused by the COVID-19 pandemic, which led to a change in the routine procedures of ICUs. Furthermore, various factors influenced the responses, such as the stress families experienced due to the hospitalization of their loved ones, the precision of the research team in implementing the intervention, and the emotional state of participants. Nonetheless, by collecting data simultaneously from groups in a serene environment, we tried to overcome some of these limitations. Although the two groups of family members in this study were homogenous in terms of background variables, we found differences among the groups which might influence our outcome. Further studies with homogenous groups of participants are needed to examine the effect of supportive-educational programmes on the nurses and family members of ICU patients. Moreover, factors improving the family-cantered nursing practice of nurses working in ICUs need further investigation in future studies.

Conclusions

Simultaneous support and training of nurses working in the intensive care unit can increase the desired outcomes related to patients' family satisfaction by improving nursing performance in relation to the patients' family. Nurses in the ICUs work in stressful condition, and supporting both nurses and family members is crucial for improving the quality of care. In clinical practice, nurse managers, by providing management and educational support for ICU nurses, can create a safe working environment to enhance nursing practice.

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