Effectiveness of educational–supportive intervention in satisfaction of Iranian family members of intensive care unit patients

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Abstract

Education and support based on family's needs may reduce anxiety and increase satisfaction of family members of hospitalized patients in Intensive Care Unit (ICU). This study was conducted to determine the effect of educational-supportive intervention on satisfaction of family members. In this quasi-experimental study, 154 participants of family members of hospitalized patients in ICU in Zahedan (Iran) were studied. The participants were allocated to intervention and control groups. Family Satisfaction-ICU (FS-ICU) was used as data collection tool. The validity and reliability of questionnaire was confirmed in Iran. The questionnaires were completed by both groups before and after one- week intervention. The mean change in the score of satisfaction with performance, comfort and participation in decision-making of family members of patients after educational-supportive intervention were 76.62±14.34, 73.86±4.15, and 31.61±19.323 respectively in the intervention group. These scores were significantly higher than those of control group (43.5±3.62, 22.63±5.83 and 18.12±13.84). Analysis of covariance through control of covariate showed that the mean score of satisfaction of family members concerning the three sub-scales were significantly different in two groups after intervention. According to the effect of educational-supportive intervention on the increase of family satisfaction, it is essential to apply these interventions in educational programs and family-centered care. This action reduces the family's concern as well as increases their motivation and power in caring after patient's discharge.

Keywords: Education, Family, Intensive Care Units, Satisfaction

Introduction

Research on family of hospitalized patients in Intensive Care Unit (ICU) is back to 1970. In that research, male patients' needs were examined through interviewing their spouses. In general, they expressed that they are interested in being present bedside their patient in order to know he/she is in convenience, physically and mentally [1]. From the beginning, ICU wards are patient- oriented and make severe limitations on the patients' families which bring about anxiety, stress, and many other problems for them [2]. Being anxious for the patient's status and his/her instability, occurring problem in communication with

the hospitalized patient, and having need for vital decision- making may result in enduring the situation difficult and create dissatisfaction formalities [3].

The family member of the patients has some needs and expectations from the care giving personnel that the amount of estimating them determine the feeling and degree of the family satisfaction [4]. Nowadays, satisfaction assessment is one of the most significant criteria to determine the quality of self-care services [5]. Since, the patients' consciousness is generally reduced in ICU wards and they cannot make decision for their treatment procedure therefore their satisfaction assessment is very difficult [6]. Furthermore, satisfaction of their family members must be reviewed accordingly [7]. Due to the prominent responsibility of families, satisfaction of members will reflect on their patients' ideas and substitute the factor in order to determine the hospitalized patients' satisfaction in ICU. In these cases, patient's satisfaction through knowledge and understanding of family members without considering clinical outcomes is determined [8].

The families believe that the staff of ICU wards provide appropriate emotional services, behave respectfully and tend to respond their questions in comparison with the last years [9]. Regardless, satisfaction has been relatively increased but some recommendations towards improving the patient's conditions are stated. The patients with more satisfaction explained affirmative suggestions [10]. Despite, changes of physical and environmental system in ICU will result in increasing the amount of family members' satisfaction but the experience of families especially staff behavior is highlighted. Indeed, family members have expectations from the ICU staff and nurses and have influence on families' satisfaction from the cares. Nurses' views considering type of need by the families and what they explain are different [11]. The research carried out by Kosco [12] showed that the nurses agreed in four demands of patient families out of ten. The comments of one hundred and eleven family members were classified in five factors including, care, communication, respect and sympathy to the family, family participation and quality of physical environment of the ward

and this research with subject of satisfaction of family members in hospitalized patients in ICU and mode of its increase in reply to an open question, has been conducted [13].

In an investigation, 49 percent of people whose family members were hospitalized in ICU for at least 48 hours expressed their dissatisfaction and had some suggestions and criticism about care giving, communication, respect, compassion and the amount of family contribution[13]. In Iran, Dolatyari et al. [14] demonstrated in a study that 21 percent of ICU hospitalized patients family member have slight to average satisfaction and in another study conducted by Heidari et al. [15] 31.25 percent of the patients' family member had low satisfaction, 56.25% medium satisfaction and only 12.50% of them had great satisfaction. Insufficient information of physicians about the disease' consequences and not having access to the ICU staff are the most impressive indices for the families' satisfaction [16]. So, 50 % family members cannot understand prognosis, diagnosis and treatment of the physicians appropriately [17,18]. Researches indicate that type of communication is important. Occasionally, families report that the staffs disconnect their relation suddenly and they do not present more information so that there is a relationship between understanding and sympathy and better satisfaction [19]. In addition, Mc Donagh [20] pointed out that the family members talk with each other in family meetings and take 70% their time, and listen for 30% rest of time. If the staff listen to them and make them possible to speak, the families' satisfaction is increased subsequently.

Patients and their family members are not satisfied in lack of sensitivity, compassion and sympathy in communications, lack of information frequently and in suitable time, type and amount of information, and their inconsistency and instability [21]. Successful care services is reduced for insufficient and weak communication between staff and families which result in indirect expectations, fears, increased uncertainty, stress, anger, hesitation, despair of family members, conflict

between them as well as medical- centered services [22,23].

Usually, brochure and manual books are accessible for the families in many hospitals but there is no exact information about their effect. Several intervention studies in order to improve satisfaction's status among family members of hospitalized patients in ICU have been executed such as, research of Chein et al. [24] educational program based on individual needs to increase the satisfaction, research of Farzad Mehro et al. [25] influence of nursing consultation on satisfaction of family members of hospitalized patients in ICU, research entitled family- centered information support on satisfaction of patients under open heart surgery by Azouly et al. [26] and studies of Bailey et al. [27], Karlesson et al. [28] and Fumis and et al [16]. With due consideration to the different results and using a variety of intervention programs, the efficiency of studies are dilemma.

During the last decade, family- oriented cares, communication and emotional needs of family members have been considered. In many hospitals, unlimited visiting strategy and closed ICU wards have been converted into open wards in different visiting times in order to meet the families' needs, reduce their stresses and consequently, increase their satisfaction.

The evidences demonstrate that health care givers only concentrate on the patient's needs and often ignore the needs of their family members. Ignoring the needs of family members lead to dissatisfaction and psychological reactions so that 50% of them experience anxiety and 35 percent depression signs [26]. In order to provide general care ground in intensive care unit, we should move toward considering the needs and expectation of the families. Regarding the low level of family satisfaction in ICU, evaluating the satisfaction and performing effective interventions for enhancing the satisfaction of family member and achieving family centre care are necessary. Many descriptive studies regarding psychological needs and reactions of family members of hospitalized patients in ICU [29] have been carried out but literature review

indicates that the comprehensive intervention studies on family members of hospitalized patients in ICU, especially in Iran is rare. Since, closed ICU is common in the local hospitals, so family members' needs of patients must be met via planning and enforcing the educational-supportive interventions programs. Moreover, this present research was conducted aimed to determine the effect of educational-supportive intervention on satisfaction of family members in hospitalized patients in ICU.

Method

This quasi-experimental intervention research allocated into two intervention and control groups was carried out as posttest and pretest. All family members of hospitalized patients in ICU of a hospital in Zahedan city (the east of Iran) formed the statistical population in the summer 2015. Being close relative (first degree) of patient, having and being able to use cell phone, being at least 18 years old, and being educated to enjoy the sessions and use written training materials were inclusion criteria. The exclusion criteria included affected or suffered from known mental disorder, discharge or death of patient five days before hospitalized date, deformation arising from surgeries, and not attending or cooperating during the intervention. The sample size for each group was determined as 70 using related formula of intervention studies, mean and standard deviation of anxiety level in Medland & Ferrans study [30] at confidence level of 95% and statistical power of 80%. With regard to 10% attrition rate, on convenience sampling method totally 154 participants were selected for both groups. Data were gathered through a questionnaire including two parts. The first part was related to patient's demographic characteristics and the second part contained 30 items to determine the satisfaction of family members of patients. The latter part was composed of three subscales such as satisfaction with staff performance with 12 items, satisfaction with feeling of comfort with 12 items, and

satisfaction with decision making process with 6 items. Based on standard coding of FS-ICU 34, a Canadian tool, designed by Heyland et al. [31], was used for rating as follows; the items 1 to 24 (in the first and second subscales) scored on a 5-point Likert scale in which the scores 0, 25, 50, 75, and 100 were allocated to the choices 1 to 5 respectively. The items 25, 29, and 30 (in the third subscale) were answered by 5 descriptive choices in which the score 0 was allocated to choices 1 and 5, score 50 to choices 2 and 4, and score 100 to choice 3. The item 27 was answered by 3 descriptive choices in which the score 0 was allocated to choices 1 and 3 and the score 100 to choice 2. Three descriptive choices also were designated for the item 28 which scored as point 0 for the choice 1 and point 100 for the choices 2 and 3. The total score of each subscale was the sum of the scores of the relevant items which was converted and expressed as percentage. The higher score in each subscale indicated more satisfaction of family members. This questionnaire as a research tool was presented by Dolatyari et al. [32] and it is usual for the Iranian population. Its face and content validity and structural reliability were subsequently confirmed. The reliability of the tool was evaluated by calculating Cronbach's alpha of 0.89, 0.81, 0.92, and 0.78 respectively for the entire tool, satisfaction with staff performance, feeling of comfort, and decision-making process that show an acceptable reliability.

We referred to the hospital after obtaining required permissions and code of ethics. The ICU was a ward with two separate parts supervised by a nursing and a medical group. In order for subjects to avoid communication with each other and/or with patients as well as to prevent intervention in the control group, one ICU part was randomly allocated to the intervention group and another to the control group. Afterwards, both groups completed the questionnaires as pretest after selecting qualified family members. In fact, one of the first degree relative of the hospitalized patient whether father, mother, spouse, brother, sister or child who could make decision better

for the patient's condition and manage the related affairs was selected. The patients' family members of the intervention group were matched in terms of age, gender, family relation, and marital status with those of control group.

Then, the essential coordination for holding training courses and supportive measures individually was made in the intervention group. One week after intervention, both intervention and control groups completed the questionnaire again as posttest. No intervention was received by the control group. The most significant ethical considerations were as follows: acquiring consent orally, ensuring privacy and confidentiality of health services information and demographic characteristics, explaining objectives of the research, and describing intervention procedure.

Accordingly, the intervention was designed and executed on a multidimensional supportive- psychological chart. The first session made an introduction to ICU routine activities and equipment. The second session was held for 60 minutes and discussed about patient's conditions, symptoms and nature of disease, deficiencies, and replied to concerns and questions of family members. The third session was devoted to the clinical procedure of members and medical team (attending physician, anesthesiologist and concerned nurse in ICU). Then, probable changes in patient's consciousness and medical, diagnostic measures were forwarded through SMS for a 5- day period. Head nurse and ward manager were asked to inform all non- emergency diagnostic, medical and consultation measures to the patient's family members in advance. It should be noted that no restriction was applied for visiting so that family members were authorized to contact and ask their questions, if necessary, after receiving SMS to obtain more information.

The data were analyzed after collecting and coding via SPSS-20 software. At first, minimum and maximum frequency, coefficient, mean, and standard deviation using descriptive statistics were determined.

Also, we used paired t-test to compare mean scores of each group between pre- and posttest, independent t-test to compare means between intervention and control groups, and chi-squared test to compare the frequency of qualitative variables between the groups. Moreover, covariance analysis test was used to determine the effectiveness of supportive-educational intervention by controlling some intervening variables simultaneously. In this research, the level of significance was set at 0.05.

Results

The results obtained from Shapiro-Wilk test showed that the data had normal distribution. Hence, we could use parametric tests. The mean age of family members in the intervention and control groups was 32.27±8.92 (Min=18 and Max=57) and 34.15±9.56 (Min=18 and Max=61). Difference between groups in terms of age was not significant (p=0.7). 61.1% in the intervention group and 63.7% in the control group had high school diploma or an upper degree and no significant difference was observed via chi-squared test (p=0.5). In both groups, 31.2% of family members were female and 68.8% male. In terms of relation with hospitalized patient, 22.1%, 39%, 14.3%, and 24.6% in the intervention group and 22.1%, 40.3%, 14.3%, and 23.3% in the control group were parents, sister/ brother, spouse, and children, respectively, and chi-squared test showed no significant difference between the groups (p=0.9).

Table 1 *Comparison of mean and standard deviation of scores obtained from the patient's family member's satisfaction with staff performance before and after intervention between intervention and control groups*

	Pre intervention	Post intervention	Deviations	Paired t-test
	Mean ± SD	Mean ± SD	Mean ± SD	
Intervention	43.58 ± 26.64	76.62 ± 14.34	33.04 ± 28.04	p=0.001
Control	37.20 ± 8.78	43.50 ± 3.62	6.30 ± 3.93	p= 0.2
Independent t-test	p= 0.06	p= 0.001	p= 0.0001	

The results showed that the mean scores of satisfaction of patient's family members with staff performance before supportive-educational intervention in the intervention and control groups were 43.58 ± 26.64 and 37.20 ± 8.78, respectively. After the intervention, they reached 76.62 ± 14.34 and 43.50 ± 3.62 for the intervention and control groups, respectively. Analysis showed that there was a significant difference in the increased mean score of patient's family members satisfaction with staff performance between the intervention group (33.04 ± 28.04) and control group (6.30 ± 3.93) (p=0.0001). The results of covariance analysis indicated that the mean score of satisfaction of patient's family members with staff performance in the intervention group was more than that of control group significantly. It means that supportive-educational intervention increased the level of satisfaction with staff performance among the patient's family members (p=0.001).

Table 2 *Comparison of mean and standard deviation of scores obtained from the patient's family members comfort feeling before and after intervention between intervention and control groups*

	Pre intervention	Post intervention	Deviations	Paired t-test
	Mean ± SD	Mean ± SD	Mean ± SD	
Intervention	25.13 ± 10.78	73.86 ± 4.15	48.73 ± 4.9	p=0.001
Control	21.54 ± 7.96	22.63 ± 5.83	1.06 ± 5.62	p= 0.1
Independent t-test	p= 0.08	p= 0.0001	p= 0.0001	

According to the Table 2, the result of covariance analysis in the posttest indicated that the mean score of comfort feeling in the intervention group is more than that of control

group significantly. It means that supportive-educational intervention increased the level of

satisfaction with comfort feeling among the patient's family members (p= 0.0001).

Table 3 *Comparison of mean and standard deviation of scores obtained from the patient's family members regarding satisfaction with decisions- making process before and after intervention between intervention and control groups*

	Pre intervention	Post intervention	Deviations	Paired t-test
	Mean ± SD	Mean ± SD	Mean ± SD	
Intervention	17.69 ± 15.60	31.61 ± 19.32	13.69 ± 17.70	p=0.001
Control	14.28 ± 12.89	18.12 ± 13.84	3.81 ± 15.10	p= 0.01
Independent t-test	p= 0.1	p= 0.001	p= 0.0001	

Based on the Table 3, the result of covariance analysis in the posttest indicated that the mean score of satisfaction with decision making process in the intervention group was higher than that of control group significantly. It means that supportive-educational intervention increased the level of satisfaction with decision making process among patient's family members (p= 0.0001).

Furthermore, the results of independent t-test indicated that the mean frequency of patient's family members visiting during a week after receiving supportive- educational program in the intervention group was significantly less than the control group (p=0.001).

Discussion

This research was conducted to determine the effect of educational-supportive intervention on satisfaction of family members of hospitalized patients in ICU. We demonstrated that–the employed intervention increased satisfaction level of patient's family members remarkably in three aspects of satisfaction with staff performance, comfort feeling, and decision- making process. Since the patient visit in ICU is limited to the patients' family members in Iran, the significance of educational- supportive intervention is prominently highlighted. Patient's condition hospitalized in ICU is unstable and may change rapidly while death is a permanent threat. Presenting the complete information about the patient's condition is critical for her/his family members. If the staff provide information for families, their satisfaction will be increased (Refer to Midland & Death Threat). The experimental proof suggests that inappropriate

manner to acquire patient's information is the most significant factor in families' dissatisfaction [13]. Therefore, performing supportive- educational intervention through forming a close relationship with medical team as primary process and informing the families about patient's condition and possible changes by a researcher, preferably every day in several times via sending SMS or telephone, if necessary, will reduce anxiety and concern of family members and increase their satisfaction.

However, Bailey et al. [27] pointed out in their research that there is no significant relation between providing informational support and anxiety of family members of hospitalized patients in ICU. In a research carried out by Azoulay et al. [26], it was verified that communicating and training in the first day of admission as well as preparing brochure and guideline have no effect on information support and satisfaction of family members of hospitalized patients in ICU. The result of Chien et al. [24] study proves that participating in two educational- centered sessions and contacting through telephone once a day will result in increasing satisfaction of family members of hospitalized patients in ICU. Bailey et al. [27] stated that there is a significant relationship between information support for family and care satisfaction. In addition, Karlsson et al. [28] found out that preparing regular, clear information as the most expressive factor for families will affect their satisfaction. In this regard, Fumis et al. [16] believe that if physicians and nursing staff are more available, present more information, and try to explain the patient's condition, it results

in the improved satisfaction and understanding of family members of hospitalized patients in ICU. A study carried out by Heyland et al. [33] in Canada demonstrated the increased satisfaction of family members is obtained by receiving complete information along with showing respect and having sympathy for them. Medland & Ferrans [30] indicated more satisfaction of family members from the quality of health services by designing and executing an organized communication program.

The results of researches conducted in Iran were also reviewed in this paper. They included "effect of informational support for patient's family members on anxiety" authored by Imanipour et al. [34], "effect of nursing consultation on family members satisfaction of hospitalized patient in ICU of heart surgery ward" by Farzad Mehro et al. [25], and "effect of informational support on family satisfaction for obtaining information related to heart surgery" written by Heidari et al. [15], that all mentioned determinant factors in the effect of educational- supportive interventions on other groups of patients.

The most studies on this subject show that accessibility of staff, establishing continuous, close relationship with the families respectfully, providing instant information on time, establishing effective interrelations without any prognosis and clinical outcome [8] will enhance satisfaction of family members. As well, Fumis et al. [16] believe that a basic factor in the satisfaction of family members of hospitalized patients in ICU is creation of an effective relationship and understanding of family members. Indeed, if the family members' expectations are met by ICU nurses and staff, their satisfaction will be obtained accordingly [35].

In agreement with the findings of this study, the results obtained by Farnia et al. [36] demonstrated that family based care, involving family member, and informing them on time can increase the satisfaction of ICU hospitalized patient's family members. According to the results of a research conducted by Medland & Ferrans [30], application of educational-supportive intervention will result in a significant increase in satisfaction and remarkable decrease in frequency of family members' visits [30]. It seems that being ignored and having concerns about patient's condition are the most considerable reasons for impatience of families to go to hospital for a visit. Less visiting times will improve the ICU environment and reduce distress of families.

Small sample size, short term intervention duration (for one week), lack of family consultation in treatment and diagnosis of disease, and not having follow-up course to assess the amount of durability of intervention influence up to completion of hospitalized period in ICU are the most important limitations in this research. Likewise, with respect to cultural, social, and religious structures of the families as case study in this region, we should be cautious to generalize the results to the other social, economic, and cultural groups.

Conclusion

Despite evidences on giving family based care, it has not been considered much in ICU wards in Iran. In general, the results of this study indicated that familiarizing the family members with ICU and its equipment, informing them about patient condition and the nature of work in this unit, and providing them with on time, family-based informational support can cause enhancement in the level of patient's family satisfaction. Therefore, designing and executing educational-supportive interventions in nursing routine programs in ICU, emphasizing on the presentation of precise, timely information, making continuous contact with the patient's family, and attracting their views in treatment procedure can reduce the family's concern and unessential visits and hence, will increase satisfaction of family members. This action reduces the family's concern as well as increases their motivation and power in caring after patient's discharge.

Acknowledgements

well as directors, head nurses, and staff of ICU of Khatam- Al-Anbia hospital in Zahedan. This research is extracted from Master's Degree thesis in ICU Nursing in the Faculty of Nursing and Midwifery in Kermanshah (Code of 94291-15.6.94). I would also like to thank Vice Chancellor's Office of Research & Technology Affairs in Kermanshah University of Medical Sciences.

Contribution
Study design: AN
Data collection and analysis: AN, JR, HP
Manuscript preparation: AN, JR, HP

Conflict of Interest
"The authors declare that they have no competing interests."

Funding
The author (s) received no financial support for the research, authorship and/or publication of this article.

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