Original Article

The effect of family member's presence during teaching rounds on their anxiety in cardiac intensive care unit

Fahimeh Zamani[1], Ali Ansari Jaberi[2], Tayebeh Negahban Bonabi[3]

[1]Department of Nursing, Malayer School of Nursing, Hamadan University of Medical Sciences, Hamadan, Iran, Departments of [2]Psychiatric and Mental Health Nursing and [3]Community Health Nursing, Social Determinants of Health Research Center, School of Nursing and Midwifery, Rafsanjan University of Medical Sciences, Rafsanjan, Iran

ORCID:
Fahimeh Zamani: http://orcid.org/0000-0002-0506-2601;
Tayebeh Negahban Bonabi: http://orcid.org/0000-0001-9096-5647

Abstract

Context: The family-centered round as a dimension of family-centered care has become a challenging issue in adult patient settings. There is insufficient evidence of the impact of the presence of the adult patient's family members during the teaching round on their anxiety.

Aims: The aim of this study was to evaluate the effect of family presence during teaching rounds on their anxiety in cardiac intensive care units (CICUs).

Settings and Design: This interventional study was conducted at a CICU in Ali ibn Abi Talib Hospital in Rafsanjan, Iran, from May to August 2018.

Materials and Methods: Sixty hospitalized patients at CICU were selected based on inclusion criteria and then, randomly assigned into two equal-sized groups (with and without family members' presence during teaching rounds). The anxiety score of family members was measured before and after rounds using the Spielberger State-Trait Anxiety Inventory (STAI).

Statistical Analysis Used: Data were analyzed by the Statistical Package for the Social Sciences (SPSS) software using Kolmogorov–Smirnov test, Chi-square test, independent-sample *t*-test, and paired sample *t*-test, at the significance level of <0.05.

Results: Two groups were similar in terms of demographic variables. The STAI score in the family members' presence group significantly decreased after intervention ($P < 0.001$). However, the STAI score in without the family presence group did not change significantly ($P = 0.175$). After the intervention, the STAI score in the family members' presence group was significantly lower than the without family presence group ($P = 0.016$; effect size $= 0.642$).

Conclusions: Family presence during teaching rounds at CICU can reduce their anxiety.

Keywords: Anxiety, Clinical rounds, Family-centered nursing, Teaching rounds

Address for correspondence: Dr. Tayebeh Negahban Bonabi, Department of Community Health Nursing, Social Determinants of Health Research Center, School of Nursing and Midwifery, Rafsanjan University of Medical sciences, Rafsanjan, Iran. E-mail: negahbant@yahoo.com
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INTRODUCTION

Hospitalization, especially in intensive care units (ICUs), is considered a critical period and may have a severe psychological impact on family members.[1] Family members of the patients admitted in the ICU are under tremendous psychological pressure, including stress, anxiety, and depression.[2,3] They are also deprived of sleep. As a result, loved ones of ICU patients may experience maladaptation or impaired cognitive processing. This set of symptoms can be known as ICU family syndrome.[4] Previous studies have reported these symptoms in one-third (32%) of patients' family members.[3] It has been previously shown that five of the most important needs of the families of patients admitted to ICU are: "feeling that the hospital staff care about the patients," "ensuring that the best possible care is provided for patients," "answering questions honestly," and "knowing patient's record and staying on call for any change in the patients' conditions."[5] However, usually, the family needs are not met during the patient's hospitalization, which heightens anxiety.[1,6] By definition, patient- and family-centered care (PFCC) addresses the preferences and needs of patients and their families. This form of care has been introduced as an essential dimension of high-quality care.[7]

The family-centered round (FCR) is a model of communication and learning between the patient, family, and health professionals which can create and enhance the PFCC[8] and improve patient and medical education outcomes.[9,10] However, as a dimension of FCC, FCRs have become a challenging issue.[11] Despite the lack of clinical education for the practitioners and the relevant challenges, FCR can offer direct communication between patients and team members, hence enhancing medical education.[12]

The presence of family members during educational rounds in Iran, like most developing countries, is a new issue and is against the regulations of health-care centers. So far, there has been no sufficient evidence about the effect of the presence of family members of adult patients during the round on their anxiety in the Iranian context. Results of studies showed that despite the concerns from some physicians and staff about the increasing anxiety and stress of family members during the rounds, these experiences were not reported by the family members,[13] and there is less concern about the anxiety caused by the presence of family members during the round than their need for information.[14] The purpose of this study was to determine the effect of family member's presence during teaching rounds on their anxiety at the cardiac ICU (CICU).

MATERIALS AND METHODS

This interventional study was performed from May to August 2018, in Ali ibn Abi Talib Hospital in Rafsanjan, Iran. Sixty eligible family members of the hospitalized patients enrolled in the study, who were selected randomly based on the inclusion criteria. The inclusion criteria for family members were being a first-degree biological relative; having a request to attend at the patient's bedside; being over 18 years old; having no history of attending at educational rounds; having no known history of mental illness; and having enough cognitive abilities. The inclusion criteria for patients were age over 18, alert status, no history of hospitalization with the CICU, and being a candidate for the first round. The exclusion criteria were to cancel the round, refusing family members to attend the study, and creation an emergency for the patient or family members.

One of the researchers assigned equally eligible family members in two groups (with and without the presence of family members beside the patients during the teaching rounds) by the random minimization method. The samples were randomly assigned into study groups based on the basic Spielberger State-Trait Anxiety Inventory (STAI) levels in three categories (20–40, 41–60, and 61–80). The first samples are entered into each classes of each group in a simple random way and the rest are based on the total number of samples per class until the total number of the classes of groups to be equal. Sampling continued until the sample size was obtained.

In this study, the round team, patients, and family members were blinded about the exact purpose of the study, which affected the presence of family members during the rounds, and their level of anxiety. The samples in the study groups only knew they were collaborating with researchers to conduct research.

Data collection

According to the rules of most hospitals in Iran, during teaching rounds, family members are not allowed to stay beside patients. However, in coordination with the head of the department of CICU, who was one of the executives of the research project, the strategy of the department was changed to allow the presence of some family members during teaching rounds. The teaching rounds, which typically last 30–45 min for each patient, were started after the morning rounds at 9:00 am. The rounds should be the first round, usually performed 24 h after admission to the hospital. The round members consist of professors, assistants, trainee students, head nurses, or nursing staff. The CICU ward of Ali ibn Abi Taleb Hospital has 17 active units. The space around the units is enough for

12–15 people. The nursing station is located in the center of the ward. In the intervention group, the selected family members participated in the teaching rounds. In the control groups, the rounds were conducted without the presence of family members. Before and after the completion of rounds, the STAI questionnaire was completed by family members in the two groups. Data were collected through face-to-face interviews by one of the researchers.

Data collection tools consisted of a demographic characteristic of patients and families and Spielberger STAI. The STAI contains 40 questions on a self-report basis. This questionnaire consists on two parts: obvious and hidden anxiety. The hidden anxiety scale, which includes 20 questions measuring the general emotions of individuals and the obvious anxiety scale consists of 20 questions about individual emotions at the moment of answering. In this study, the obvious anxiety scale was used. This tool has been standardized in Iran. The reliability of the test has been calculated by Cronbach's alpha formula to be 0.9451. Furthermore, for the criterion group separately, this reliability has been calculated to be 0.9418. The standard error of the test measurement was 4.643. Furthermore, the correlation of the observed scores with the true score is equal to 0.972 and with an error of 0.234.[15]

Sample size calculation

Based on the following formula and results of similar studies,[16] the sample size was calculated at 30 for each group, considering the effect size of 5.21, the standard deviation of 3, the second type error of 90%, and the 95% confidence level.

$$n = \frac{2(Z_1 - \frac{\alpha}{2} + Z_1 - \beta)^2 (\sigma)^2}{d^2}$$

Statistical analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) software version 16 (Data were analyzed using IBM SPSS, American multinational technology company, Armonk, New York). We employed the Kolmogorov–Smirnov test for determining the normality of the distribution of quantitative variables; the Chi-square test for the comparison of ratios; the paired sample *t*-test for the comparison of mean scores within groups; and the independent-sample *t*-test for the comparison of mean scores between groups at the significance level of 0.05.

Ethical consideration

This study was approved by the Ethics Committee of Rafsanjan University of Medical Sciences (code of ethics: IR.RUMS.REC1397.196). The study protocol was designed according to the ethical principles of the Declaration of Helsinki. All participants agreed to participate in the study, and written informed consent was obtained and all of them were ensured that participation or nonparticipation in the study does not affect patients' quality of care.

RESULTS

A total of 78 people were initially assessed for eligibility. Of these, 18 were excluded, 16 people were due to a lack of inclusion criteria, and 2 were dissatisfied to participate in the study [Figure 1]. After ensuring the normality of data distribution, it was found that about 7 (11.6%) of family members were parents, 24 (40%) were spouses, and 29 (48.3%) were children. No significant difference was observed between the two groups regarding the family members' demographic characteristics [Table 1]. Furthermore, the results revealed no significant difference between the study groups in terms of the patients' characteristics such as gender, age, duration of hospitalization, and medical diagnosis ($P > 0/05$).

At the family presence group, the mean and standard deviation of family members' STAI score before the intervention were 52.60 ± 7. Forty-eight and reached to 47.80 ± 9 after the intervention phase. STAI scores in the intervention group showed statistically significant decrease ($P < 0.001$; 95% confidence interval [CI]: 2.915–6.684). In another group (without the family members' presence), the mean and standard deviation of STAI scores before intervention were 54.16 ± 6. Ten and reached to 52.93 ± 6. Eighty three after the intervention. The results of paired sample *t*-test showed that the STAI scores were not significantly different before and after the intervention ($P = 0.112$; with 95% CI: −0.303–2.770) [Table 2].

Table 1: Comparison of demographic characteristics family members across the study groups

	Control group	Intervention group	*P*
Age, mean±SD	53.9±9.56	48.27±14.28	0.78
Education, *n* (%)			
Under diploma	10 (33.3)	12 (40)	0.199
Diploma	11 (36.7)	8 (26.7)	
Undergraduate	6 (20)	10 (33.3)	
Postgraduate	3 (10)	0	
Marital status, *n* (%)			
Single	0	3 (100)	0.237
Married	30 (100)	27 (90)	
Gender, *n* (%)			
Male	15 (50)	12 (40)	0.436
Female	15 (50)	18 (60)	
Family relationship, *n* (%)			
Parents	3 (10)	4 (13.4)	0.733
Spouse	11 (36.7)	13 (43.3)	
Children	16 (53.3)	13 (43.3)	

SD: Standard deviation

Results of the intergroup comparison of the family members showed that there was no statistically significant difference between the two study groups before the intervention phase ($P = 0.378$); but, after the intervention, this difference was significant, so that the SATI score in the intervention group was lower than the control group ($P = 0.016$, 95% CI: −9.265–1.001, effect size = 0.642) [Table 3].

DISCUSSION

The results of the current study indicated that the presence of family members beside their relatives during teaching rounds significantly reduced their anxiety score compared to the baseline score. The STAI score in the family members who were present was significantly lower than those who were not allowed to attend besides their loved ones.

A review of the available literature suggests that the consequences of FCRs in the adult patient setting are less respected by researchers and the focus of most studies was done on the parents of children and infants. Although the researchers have been introduced several benefits for family members presence during the rounds such as receiving support in clinical decision-making, increase employee confidence to provide patient care, family controlling on patient care,[17] receiving new and needed information about the patient's condition,[18] Improving the quality and accuracy of patient information and care plans,[19] Also, researchers have mentioned other

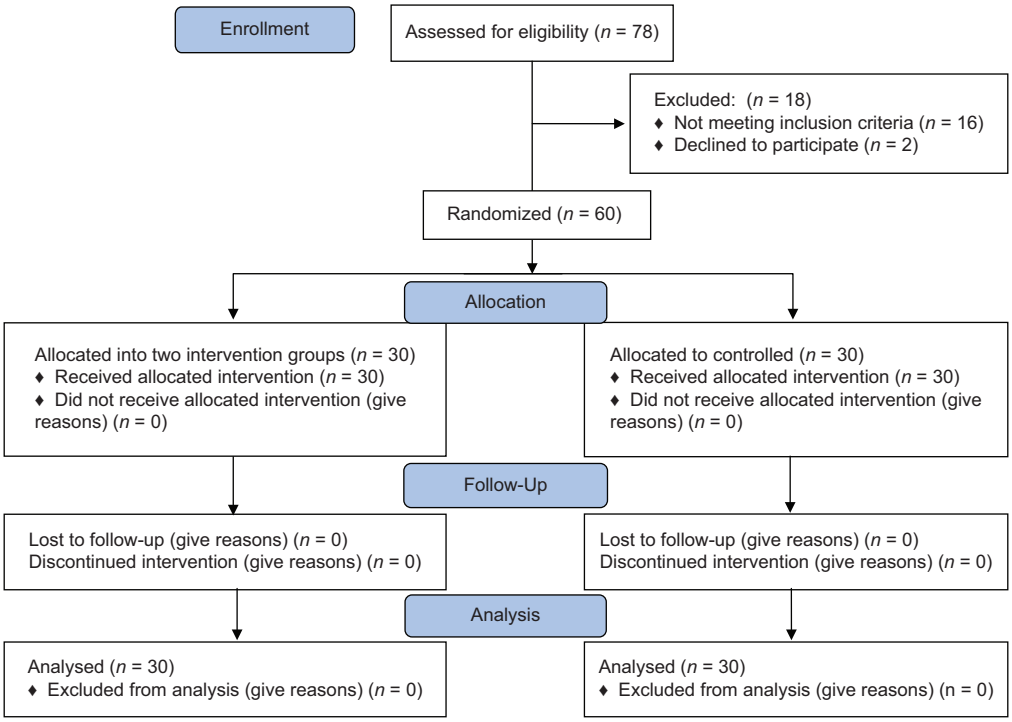

Figure 1: COSORT flowchart of the sampling process

Table 2: Comparison of family member's Spielberger State-Trait Anxiety Inventory score before and after intervention inside each group

	Mean±SD		Mean changes±SD	95% CI of the difference		*P*
	Before intervention	After intervention		Lower	Upper	
With the family presence	52.60±7.48	47.80±9.00	−4.80±5.04	2.915	6.684	0.001
Without the family presence	54.16±6.10	52.93±6.83	−1.23±4.11	−0.303	2.770	0.112

SD: Standard deviation, CI: Confidence interval

Table 3: Comparison of family member's Spielberger State-Trait Anxiety Inventory score before and after intervention and its changes between groups

	Mean±SD		Mean difference±SE	95% CI of the difference		*P*
	With the family presence group	Without the family presence group		Lower	Upper	
Before intervention	52.60±7.48	54.16±6.10	−1.566±1.764	−5.097	1.964	0.378
After intervention	47.80±9.00	52.93±6.83	−5.133±2.064	−9.265	−1.001	0.016

SD: Standard deviation, CI: Confidence interval

positive aspects such as: providing a sense of calm, having the opportunity to listen to medical staff, and an opportunity to provide comprehensive information on patient care to medical staff, obtaining positive and helpful experiences[20] and promoting future meetings in the family by improving communication,[13] On the other hand, the results of the studies have pointed out some concerns regarding the presence of family members, such as: the results of some studies indicate other concerns of family members, such as lack of understanding of the treatment plan and the need for further explanation from another person after round, incompetence of family members to ask questions, intolerance of bad news,[21,22] feelings of anger, frustration, fear[23] lack of receiving emotional support,[24] reduction the rounds efficacy[25] and lengthening the rounds.[26,27] Likewise, the results of Jakab *et al.* showed that the presence and participation of family members did not have a negative psychological effect on family members.[28]

Nevertheless, on the FCR outcomes, family members report a strong desire to participate in rounds.[29] On the other hand, since, the family needs vary according to gender, relationship with the patient, and length of stay in the ICU,[20] the geographical characteristics of each area,[30] the FCRs applied in a heterogeneous manner in a different area, as a result, its various aspects remain unclear and have created challenges for future studies in the field of quality improvement and decision-making. Further research is required on the impact of family presence on the quality of the patients' treatment plan and its outcomes[19,31] in different contexts.[32] Involvement of family members in ICU wards whose loved ones are critically ill, creates different conditions, so that, in some studies, family members of critically ill ICU patients were reluctant to participate in discussing prognosis with the medical staff. These results suggest that, while efforts to involve family caregivers in clinical dialogue are essential, the quality of information and the way that information is conveyed, the communication strategy in presenting bad news and discussing precare planning should be tailored to the sociocultural context of the patient and family members.[20]

This study had several limitations. First, in this study, family members who were referred to the hospital were included in the study. Perhaps, family members who did not attend to the hospital had different characteristics that may affect the results. Second, different health conditions of patients and their prognosis and the round team interacts manner with family members may affect the level of anxiety of family members, which has not been considered in this study.

CONCLUSIONS

The results of the present study revealed that there is less concern about the anxiety caused by the presence of family members during the rounds. Therefore, the rounds can be safely practiced in ICUs. Due to the differing conditions and characteristics of family members of adult patients compared to children for the presence of family members during the teaching rounds and to the limited number of studies available for comparing various aspects of FCR outcomes, further clinical trials are recommended in various patients and family members situations, and specialized samples.

Conflicts of interest

There are no conflicts of interest.

Authors' contribution

1. F. Zamani contributed with conceptualization and designation the study and collected data
2. A. Anasri Jaberi contributed with conceptualization and designation the study. Drafted the manuscript, supervised the study, Critical revised the manuscript
3. T. Negahban Bonabi contributed with conceptualization and designation the study. Statistical analyzed and interpreted the data, wrote the first draft.

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