

# Effectiveness of nursing interventions based on family needs on family satisfaction in the neurosurgery intensive care unit

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## ABSTRACT

**Background:** Since the family is a social system, the impairment in each of its component members may disrupt the entire family system. One of the stress sources for families is accidents leading to hospitalization particularly in the intensive care unit (ICU). In many cases, the families' needs in patient care are not met that cause dissatisfaction. Since the nurses spend a lot of time with patients and their families, they are in a good position to assess their needs and perform appropriate interventions. Therefore, this study was conducted to determine the effectiveness of nursing interventions based on family needs on family satisfaction level of hospitalized patients in the neurosurgery ICU.

**Materials and Methods:** This clinical trial was conducted in the neurosurgery ICU of Al-Zahra Hospital, Isfahan, Iran in 2010. Sixty four families were selected by simple sampling method and were randomly placed in two groups (test and control) using envelopes. In the test group, some interventions were performed to meet their needs. In the control group, the routine actions were only carried out. The satisfaction questionnaire was completed by both groups two days after admission and again on the fourth day.

**Findings:** Both of the intervention and control groups were compared in terms of the mean satisfaction scores before and after intervention. There was no significant difference in mean satisfaction scores between test and control groups before the intervention. The mean satisfaction score significantly increased after the intervention compared to the control group.

**Conclusions:** Nursing interventions based on family needs of hospitalized patients in the ICU increase their satisfaction. Attention to family nursing should be planned especially in the ICUs.

**Key words:** Intensive care unit, family satisfaction, family nursing

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## INTRODUCTION

The family is the cornerstone of human social support network and its presence is essential in everyone's life.<sup>[1]</sup> Changes inevitably occur in families with illness and hospitalization of a family member.<sup>[2]</sup> In other words, among the sources of stress for families are accidents leading to hospitalization particularly intensive care unit (ICU).<sup>[3]</sup> Statistics show that 8% of hospital beds in the United States are occupied by the intensive care units.<sup>[4]</sup> Stress in the family while the patient is in the ICU can disrupt the harmony power of the family members and finally, it may causes disturbances in the support of the patient.<sup>[5]</sup> In addition to the various sources of stress in intensive care units such as the patient's fear of death, financial problems, lack of awareness about the environment and etc., their satisfaction level is another important source of stress for the patient's family.<sup>[6]</sup> Today, the family needs of hospitalized patients in the ICU are summarized in five sections. These factors may include receiving assurance, staying close to the patient, receiving information, feeling comfortable and receiving support. However, in many cases, the patient's family needs and their expectations in

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the ICU will not be fulfilled which will cause dissatisfaction.<sup>[7]</sup> Since, how families deal with mental stress is the most important components of comprehensive care, it should be known that attention to the family needs of the patients hospitalized in intensive care units could increase their satisfaction and thus a reduction in stress disorders.<sup>[8]</sup> Studies showed that the nurses in particular sections focus primarily on the patient and the disease. However, the families can have a role in the recovery of the patient. Therefore, attention to the families should be considered as an important part in patient management.<sup>[9]</sup> Effective interventions targeted at the needs and expectations of family members should help to reduce the stress and improve their satisfaction. Fox *et al.* stated that the needs of the family members were not often overlooked by the nurses. They focus their energy to meet the needs of the patient.<sup>[10]</sup> However, the nurses spend a lot of time with the patients and their families and are in a good position to assess their needs and plan for meeting these needs with appropriate interventions.<sup>[11]</sup> The reason of investigating the satisfaction of the families of the patients in the ICU is that the patients are facing life-threatening illness experiences and complex treatments, different technologies and different equipment are used for them. These cases could potentially lead to the dissatisfaction of their families.<sup>[12]</sup> In the meantime, the families of trauma and neurosurgical patients are more vulnerable than the other groups of patients. They need supports that are more emotional and should be accepted by the ICU staff.<sup>[13]</sup> Today, there are many theories expressed that in intensive care units, the patient and his family should be considered as a single unit. By providing care to this unit, the best result in the patient's recovery would occur.<sup>[14]</sup> A study by Branco *et al.* was conducted in 2009. The aim of this study was to analyze the satisfaction of the families of ICU patients. The tool of Society of Critical Care Medicine's Family Needs Assessment (SCCMFNA) (which has been validated in 1998 by Johnson) was used in that study. The results showed that most of the family satisfaction was related to the communication and patient care and the lowest level of satisfaction was about the ability of staff to patients' family comfort.<sup>[15]</sup> Bailey *et al.* have conducted a study in 2009 with the purpose of investigating the relationship between informational support to families of special care patients and their anxiety and satisfaction. They showed that there is a direct link between the informational support and their satisfaction. There was little relationship between anxiety and informational support and between anxiety and satisfaction.<sup>[16]</sup> The study of Fumis *et al.* in 2008 also showed that the increase in the availability of physicians

for giving the information to the patient's family and as well as nurses efforts to provide understandable explanations about the patient's condition to them will increase the patient's family satisfaction.<sup>[17]</sup>

This clinical trial was performed with respect to the existing gap for a study carried out for investigating the interventions for the satisfaction of the patients in the special care units and their families in Iran. The purpose of the study was to determine the effectiveness of nursing interventions based on family needs on family satisfaction level of hospitalized patients in the neurosurgery intensive care unit of Al-Zahra Hospital in 2010.

## MATERIALS AND METHODS

The present study was a two-step bi-group clinical trial. The statistical research community was the families of hospitalized patients in neurosurgery intensive care unit of Al-Zahra (SA) Hospital, Isfahan, Iran from May to September 2010. With respect to inclusion criteria, the families of 64 patients were selected with simple sampling. After obtaining the informed consents from the hospitalized patients, by using the envelopes, which were prepaid by using a table of random numbers, they were divided into two groups (intervention and control). The sample size for each group was calculated 32 patients. The inclusion criteria was included as the following cases: to be a first-degree member of the family, to be older than 18 years, willing to participate in the study, having the power to speak and write in Farsi, to be hospitalized one day before the study, lack of physical or mental problem in the family member, no responsibility for the care of another patient, introduced as the first person responsible for the patient care. Obtaining the written informed consent, completion of the questionnaires about demographic information and the families' satisfaction were performed in the second day of hospitalization of the patients in ICU in both groups. Johnson questionnaire for the satisfaction of the family of ICU patients was used to measure the family satisfaction. The questionnaire was comprised of 14 questions. The rating of the questionnaire was performed by using the Likert scale with four options of 0 to 4 as follows: almost all the time (3 scores), often (2 scores), only occasionally (1 score) and never (zero score). Johnson's questionnaire was the modified type of Multer patient's family needs, which was evaluated in various scientific researches and there are extensive evidences for its validity. It has been used in many studies including Branco *et al.*,<sup>[15]</sup> Azoolay *et al.*<sup>[18]</sup> and Damaghi *et al.*<sup>[19]</sup> (with the Cronbach's alpha coefficient of 0.74). The questionnaire was used for the

first time in Iran in this study. The interventions were performed in the second and the third day of hospitalization of the patient in the neurosurgery ICU by the researcher in the morning shift for the intervention group. Thus, the researcher provided understandable explanations about the disease to the patient's family and answered honestly to the questions about the patient and the disease. The researcher ensured them for providing the best care in the section and spoke about the prognosis of the disease. The researcher took the family member to the patient's room and gave the necessary information about the room space, equipment, personnel departments and the actions that were done for the patient. The researcher and the colleague were introduced as the contact. The patient family member was contacted if there was a change in the patient condition. The patient family was involved in the new decisions about the patient. The treatment was also described for the family. They were allowed to speak with the patient's physician. They let the family help the patient in some cases of the public health (such as hand and foot massage and giving food). Locations of rest, nutrition, prayer room, bathroom and buffet of the hospital were introduced to them. The telephone numbers of hospitals and wards (and if necessary, the social worker and supervisor) were given. They also ensured that in their absence, everything would be sorted. Various departments and personnel of the hospital were taught to accept the families and communicate with them. The hospital social worker was introduced and if necessary, the patient's family was allowed to express their feelings. These interventions were performed in the evening shift of the second and the third day of the patient reception. The actions were carried out by the fellow researcher. While, for the control group, only the routine work was done. On the fourth day, the satisfaction survey was completed by the selected family member in both of the intervention and control groups. Statistical methods used in this study were  $\chi^2$  test, Man-Whitney, independent Student's t-test

and paired t-tests. The SPSS statistical software version 17.0 was used for data analysis.

## FINDINGS

The findings did not show statistically significant difference in the demographic characteristics of the intervention and control groups, such as: age ( $p < 0.99$ ), gender ( $p < 0.79$ ), marital status ( $p < 0.41$ ), educational level ( $p < 0.12$ ) and relation with patient ( $p < 0.54$ ). As shown in Table 1, there was no significant difference in the mean satisfaction score before the intervention in the intervention and control groups ( $p > 0.05$ ). The mean satisfaction score after the intervention in the intervention group was significantly more than the control group ( $p < 0.001$ ). The mean satisfaction score in the intervention group after the intervention was significantly higher than before the intervention ( $p < 0.001$ ). There was no significant difference in the mean satisfaction score in the control group before and after the intervention ( $p > 0.05$ ) (Table 2).

## DISCUSSION

The results of the present study showed that the nursing interventions based on the family needs increased the patient's family satisfaction in the neurosurgery Intensive Care Unit of Al-Zahra Hospital. The results of this study were consistent with the results of previous similar studies.<sup>[20]</sup> However, the results of some other studies were inconsistent.<sup>[21]</sup> Due to the differences in the study design, study population, the number of samples and methods of intervention, it would be difficult to compare the results. In Chien et al. study, the results showed that performing the training based on the patients' family needs in the ICU, decreased the anxiety and increased their satisfaction.<sup>[20]</sup> In the study of Myhren et al. indicated that effective communication of the staff with

**Table 1. Comparison of mean satisfaction score (100 \*) of participants in the intervention and control groups**

Group	Time				Paired t-test	
	Before intervention		After intervention		t	p
	Mean	SD	Mean	SD		
Test	46.6	10.2	71.4	13.6	9.9	< 0.001
Control	45.9	11.9	44.3	10.7	0.86	0.19

\* In order to simplify the calculations, the patient's family satisfaction score was multiplied by 100 and the result was divided by 42 to express the final score out of 100.

**Table 2. The mean of satisfaction score changes of the studied subjects in the intervention and control groups after intervention**

Group	Time	After intervention		Statistical test
		Mean	SD	
Test		24.8	14.2	p < 0.001 Independent t = 9.48
Control		- 1.6	6.9	

the families of ICU patients would increase their satisfaction.<sup>[22]</sup> In the study by Rosher and Robinson, it showed that involving the families in patient care led to increase their satisfaction than before the intervention.<sup>[23]</sup> The mentioned results were consistent with the results of this study, because all of these interventions were some parts of the interventions performed in this study. However, the study of Steele et al. indicated that clinical training had no impact on the family satisfaction of the patient hospitalized in the ICU.<sup>[21]</sup> Therefore, there was no statistically significant difference in the satisfaction level in the control and intervention group.

## CONCLUSION

In this study, it was shown that the use of nursing interventions based on family needs (confidence, support, information, proximity and convenience) had significant impact on the family satisfaction of the patient hospitalized in intensive care unit. These interventions can be performed mainly by ICU nurses. They should be based on the family investigation and recognition and their priority needs should be determined in order to cause the greatest satisfaction. The ICU nurses must also accept their role in the care of patient's family members. The findings of this study could be a basis for performing further studies about family needs of the patients in the ICU especially with the different forms of culture and economy. Consequently, the increase in family satisfaction of patients can reduce the stress disorders and improve their mental state and ultimately better support of the patient by the family. This study only examined the effect of nursing interventions in the first days of hospitalization on the satisfaction of the families but the effects on the patient's entire hospitalization period has not been assessed. By performing other researches in this field, it would be possible to compare the differences in the effects of nursing interventions based on the needs of families in the early days and the whole period of the patient's hospitalization.

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