

Effect of Implementation of Continuous Care Model on Mothers' Anxiety of the Children Discharged from the Pediatric Surgical Unit

Abstract

Introduction: Child's hospitalization for surgery is a source of anxiety for the child and the family that persists for a long time after discharge. Therefore, it is necessary to provide appropriate solutions in this regard. This study aimed to investigate the effect of implementation of continuous care model on anxiety in mothers of children discharged from pediatric units of educational hospitals of Isfahan University of Medical Sciences in 2016. **Materials and Methods:** In this quasi-experimental study, 64 mothers of children hospitalized in surgical units were categorized in two groups (experimental and control). The intervention was a continuous care model including orientation, sensitization, follow up, and evaluation stages. We used Spielberg's Anxiety Questionnaire to assess mothers' anxiety before, 1 week, and 1 month after the intervention. Data were analyzed using descriptive statistics, (*t*-test and analysis of variance) using the Statistical Package for the Social Sciences version 16. **Results:** The results of the study showed that the mean anxiety scores of the experimental group were 58.9, 36, and 31.4, respectively, before, 1 week, and 1 month after the intervention ($P < 0.001$). These scores were 57.5, 55.8, and 49.7, respectively, for the control group. *t*-test results showed that the mean anxiety scores of the experimental group were significantly less than that of the control group at 1 week and 1 month after the intervention. **Conclusions:** Based on the results, use of the continuous care model led to a decrease in mothers' anxiety during their children's discharge from the pediatric surgery units. Therefore, we suggest the implementation of this model in pediatric units.

Keywords: Anxiety, continuous care, Iran, mothers, patient discharge, pediatric, surgical procedures

Introduction

Child's illness and hospitalization is a crisis and a source of anxiety for both the child and the parents,^[1-3] which results in a shift of anxiety to the child. Parental anxiety may linger as a result of insufficient knowledge and information about care of the child during hospitalization and after discharge,^[4-5] and may also lead to mother's evasion and insufficiency to support her child.^[6] Family member's anxiety will cause emotional, psychological, and physical problems delaying the patient's cure process.^[7] Some studies have indicated that mothers adapt to hospital situations and care-giving behaviors during the hospitalization period if supported by the care-giving staff. However, they regain their anxiety in the last days of hospitalization again. In other words, discharge and home transfer processes are stressful to the parents, and are even worse if the child has undergone surgeries.^[8,9]

Regarding daily increase of outpatient child surgeries and transfer of the role of care giving to the parents, especially to mothers, we in an attempt to alleviate the anxiety, suggest preparation of parents for correct pre and postoperation cares through different strategies.^[10] Parents are normally not trained sufficiently for such care that leads to anxiety and long-term behavioral disorders;^[11,12] hence, the treatment staff, especially the nurses, should intervene in continuous patient preparation at the discharge process.^[13]

Even though training, developing specifications, and training material are fundamental in preparing patient and attendees, they are not enough, i.e., patient follow-up is also needed.^[14] Patient's contact with caregiving centers, home visits by caregivers, and applying telecommunication methods are conventional follow-up methods. Continuous care is a nursing model planned to specify mothers needs

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and problems, sensitize them to imitate continuous healthy behaviors, and help promote and improve their health with respect to the patient's peculiarities and problems.^[15-17]

Despite the importance of follow-up care on patient's and family's health, parents are currently trained shortly and given training pamphlet throughout the country during discharge.^[18] As far as we understand, the effect of follow-up care on child's surgery has not been evaluated so far. Regarding some evidence-based results, nurses' knowledge may affect their responsibility in playing different roles. The present study was conducted to review the implementation of the continuous care model on the anxiety of child's mother after discharge from pediatric surgery units.

Materials and Methods

In a three-stage semi-experimental study, 64 mothers of hospitalized children participated with respect to the inclusion criteria of having been hospitalized at least 3 days before inclusion and aging from 6 months to 5 years old. Each participant signed a written consent. Sampling was done using a convenient method, and then, the participants were randomly divided into two groups. The study was conducted in the surgical pediatric units of educational hospitals of Isfahan University of Medical Sciences in 2016.

The data was collected in three stages of before, 1 week, and 1 month after the intervention using Eshpil Berger's anxiety measuring questionnaire in self-reporting manner. Continuous care model was used for the intervention. The model includes four stages of familiarization, sensitization, follow up, and evaluation. In familiarization stage, the care plan was introduced to the mothers 24–48 hours before discharge by defining different stages of the model, clarifying care giver's and care receiver's expectations, and that, how they could keep contact with the researcher.

The sensitization stage took 40–60 minutes with participation of the mother and other households, preferably the father or someone who would support the mother. The nature of the child's illness together with the signs of side effects after the surgery, prerequisites and ways of controlling these signs, movement limitations, the ways of controlling it, the importance of physician's next visit, medication at home, the importance of follow-up care, and correct use of training material were described in simple language.

The third stage of the model was conducted through three prearranged phone calls starting from 1 week after the discharge, even though round the clock phone call permission was already obtained. Issues such as child's situation after the surgery, diet, pain alleviation, bath limitations, necessity of a timetable for visiting the physician after surgery, change in dressing, and assessment of side effects were the subject of phone calls. In some

cases, patients would be referred to a sergeant for the issues out of researcher's specialty. Mother's anxiety was measured on the 7th day after intervention in the fourth stage. The questionnaires were recompleted 1 month after discharge to assess the durability of the effects of the interventions on mother's anxiety. The mothers, included in the control group, were instructed about routine care at the discharge.

Ethical considerations

For ethical considerations, ethical approval was issued by Research and Technology Deputy of Isfahan University of Medical Sciences (ID code: 394151). The participants also signed a written informed consent.

Results

The findings of the study indicated that both experimental and control groups had similar demographic characteristics [Table 1]. Regarding average anxiety score, the independent t-test indicated no significant difference in anxiety score of the both groups before the intervention ($P = 0.6$),

Table 1: Demographic characteristics of mothers and children in the two groups

Variable	Experimental group		Control group		P
	N	Percent	N	Percent	
Sex					
Boy	19	59.40	21	65.60	0.61
Girl	13	40.60	11	34.40	
Total	32	100	32	100	
Maternal education					
High school diploma	11	34.40	6	18.70	0.19
Diploma	13	40.60	15	46.90	
Collegiate	8	25.00	11	34.40	
Total	32	100	32	100	
Occupation of mothers					
Employed	2	6.20	4	12.50	
Housewife	30	93.80	28	87.50	0.34
Total	32	100	32	100	
Pediatric surgery history					
Yes	10	31.20	11	34.40	
No	22	68.80	21	65.60	0.79
Total	32	100	32	100	
Siblingsurgery history					
Yes	0	0.00	3	9.40	0.12
No	32	100	29	90.60	
Total	32	100	32	100	
Surgery type					
Cleft palate	11	34.40	11	34.40	
Colostomy	2	6.20	2	6.21	
Hypospadiasis	12	37.60	15	47.00	0.71
Cleft lip	4	12.51	1	3.10	
Cleft lip palate	2	6.20	1	3.10	
Hirschsprung	1	3.10	2	6.20	
Total	32	100	32	100	

however, the mean score at 1 week and at 1 month after the intervention in the experimental group was significantly less than those of the control group ($P < 0.001$). Analysis of variance with repeated observations indicated different anxiety mean scores of the experimental group in the three stages ($P < 0.001$). Least square differences (LSD) test also indicated that anxiety mean score of the experimental group was significantly less at 1 week after the intervention than that before the intervention ($P < 0.001$). The mean score was still less at 1 month after the intervention than that at 1 week after the intervention ($P < 0.001$). This mean score was different for the control group at the three stages too ($P < 0.001$). LSD test indicated no difference of the score before and 1 week after the intervention ($P = 0.34$) but a meaningful decrease was found at 1 month after the intervention ($P < 0.001$) [Table 2].

Discussion

The present study was conducted to assess the effect of the implementation of continuous care model on mothers' anxiety after discharge of their hospitalized children and indicated that the mean anxiety score of the experimental group at 1 week and 1 month after the intervention was meaningfully less than that before the intervention. Some studies have indicated that there is a gap between child's discharge and the next visit. Having proper advantages and follow-up phone calls may compensate this gap.^[15,16] In another study, 100% of parents stated that follow-up phone calls could be proper remedies to their problems.^[19] Shu *et al.* (2013) have stated in their study that a discharge plan can improve life quality and satisfaction of the patients and their families.^[20]

Chiang *et al.* (2012) evaluated the effect of telecommunication follow-up nursing care on controlling the stress of families of the patient with heart failure for 1 month. They indicated that once a week phone calls would alleviate family stress after 30 days. Therefore, it is evident that the results of this study confirm our study results.^[21] The results of another study aiming to alleviate stress and depression of the patients after heart surgery indicated that follow-up phone call did not decrease the mean score of the anxiety in the studied groups. The

patients received only two phone calls on the 7th and 21st day after discharge. Nonconformity of this study with ours might be due to the low number of phone calls with a long time interval. Moreover, face to face training, training material, and expounding the contents of pamphlets followed by follow-up care through three phone calls in the first week after discharge could result in decreasing mothers' anxiety mean scores.^[22]

In addition, the results of the effects of nurse's phone call interventions as a follow-up care program on the anxiety of the patients with implanted heart defibrillator indicated that 8-week follow-up phone calls considerably decreased patients' anxiety. The nurses did not have insight training and could reduce patient's anxiety only through follow-up phone calls. Therefore, we can say that perhaps it is needed to have insight trainings and meetings with the patient.^[23] From previous studies, we can understand that implementing care after discharge could result in better life condition for the patient and family after discharge. Even though the researcher emphasizes on phone call follow-up and the lack of a generalized care program in the articles, parents experience loneliness and lack of support when their child is being discharged.^[24] Serious problems, especially delayed diagnosis of post-surgery effects are accompanied with lack of follow-up care after surgery. In other studies, mothers' need for support and care after the child's discharge was noted that necessitates the implementation of a continuous program. It can be said that the nurses should note that family members' anxiety would be decreased and their knowledge is increased by the information they are given in this program.

In the present study, there were some limitations such as the small number of participants in hospitals, difficulties in programming and scheduling to establish phone calls, and convincing mothers to take part in the study after ensuring that their information would be kept confidential.

Conclusion

According to the findings, the continuous care model was effective on reducing mother's anxiety after discharge of her child who was operated. In contrast, there was no meaningful difference in the mean anxiety score of mothers in the control group both before and 1 week after the discharge. Therefore, it can be said that the routine training given to the patients at time of discharge is not enough and it is better to give more accurate insight training accompanied with after discharge follow up program.

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Table 2: Comparison mean score of mothers' anxiety at different times

Time	Experimental Group		Control Group		Independent t-test	
	Mean	SD	Mean	SD	t	P
Before intervention	58.90	8.90	57.50	11.30	0.53	0.60
1 week after intervention	36.00	5.40	55.80	8.40	11.24	<0.001
1 month after intervention	31.40	5.90	49.70	5.70	12.58	<0.001
ANOVA	F	153.44	12.89			
	P	<0.001	<0.001			

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Conflicts of interest

There are no conflicts of interest.

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