



The Effect of Preparation for Hospitalization on School-age Children's Fear during Admission in Iranian Hospitals

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DOI: 10.24896/jrmds.2017555

ABSTRACT

Hospitalization has unpredictable and often negative consequences for children, including fear. The purpose of this study is to determine the effect of preparation for hospitalization on school-age children's fear during admission in Iranian hospitals in 2017. In this quasi-experimental pretest-posttest control group study, 54 school-age children (6 to 12 years old) referred to the children departments (1 and 2) of Besat Hospital of Hamadan were randomly assigned to two groups. A demographic questionnaire and Broome Children Medical Fear Scale were used to collect data. In the treatment group, after completing the questionnaires, the preparation program was provided: this included familiarizing the child with the department and personnel, the tools, and presentation of a cartoon booklet for 30 minutes. For the control group, the usual tasks of the department were applied, after which the questionnaires were re-filled by both groups. Data was analyzed by SPSS software version 16 and Fisher and Chi-square tests were used. There was no significant difference between the scores of fear at the pre-intervention stage in the two groups ($P = 0.227$), while these means were significantly different after the intervention in the two groups ($P = 0.001$). This establishes the positive effect of intervention in reducing hospital fear for school-age children. Based on the findings of the present study, the preparation program is an effective way to reduce the fear of school-age children. Therefore, it is recommended that this method should also be investigated for other age groups.

Key words: Hospitalization, Fear, Patient Admission, School Age Population, Child

HOW TO CITE THIS ARTICLE: Efat Sadeghian, Marziyeh seif, Mohammad Mehdi Daraei, Hassan Aahmadinia, Arash khalili, The Effect of Preparation for Hospitalization on School-age Children's Fear During Admission in Iranian Hospitals, J Res Med Dent Sci, 2017, 5 (5):24-29, DOI: 10.24896/jrmds.2017555

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Received: 02/08/2017

Accepted: 20/09/2017

INTRODUCTION

Hospitalization is an event with unpredictable and often negative consequences for children [1]. A child admitted to the hospital is subject to various threats, such as separation from parents, lack of a reliable person, physical harm, pain, unfamiliar environment, loss of independence, additional stimuli such as noise and odor [2], unfamiliar medical methods, and lack of awareness of the

reasons for being hospitalized. These can lead to anger, uncertainty, feelings of helplessness, lack of cooperation of the child, and a negative feeling towards health care professionals [3]. Regardless of other complications of hospitalization, this event can cause fear in children [4]. Some studies have shown that children are afraid of doctors, nurses, hospital crew and workers. That is to say, they are afraid of seeing the white cap, which is due to the fear of not having an abstract thinking in this group [5]. Fear is a warning which occurs in response to a known, exterior, determined, or non-conflictual danger [6]. The fear of hospitalization is a fear characterized by anxiety,

uncertainty, stimulation of the automated nervous system, and avoidance behaviors [4]. One of the most important complications of fear for children is reduction of working capacity, followed by a reduction in the child strength and a delay in the recovery of the child [2]. Several pharmacological and non-pharmacological methods have been proposed to reduce the effects of fear caused by hospitalization. Today, non-pharmacological methods have attracted the attention of nurses. Patients, also, tend to use these methods. These interventions are effective, simple, cost-effective, and low-risk. Nurses can apply these methods to reassure children with fear and anxiety of hospitalization [5]. In the meantime, the preparation program is one of the non-pharmacological methods used to reduce the negative perceptions of children [7]. The use of preparation methods began in the mid-1990s to allow for sustained attention to hospitalized children [1]. The impact of this approach in reducing the fear of admitted children has been studied by some researchers: in a study of 104 children aged between 8 and 11 in Thailand, it was found that preparation intervention was effective in reducing children's fears [4]. On the other hand, school-age is a part of life that starts at age 6 and lasts up to 12 years old, often referred to as the school-age for middle-age children [8]. Not only do schoolchildren adapt to the hospitalization plans better than younger children, they also respond better to information from this program [4]. Therefore, it can be said that these children need to be prepared for hospitalization and for receiving adequate support from nurses at the time of illness and admission [9]. Although reducing the fear of being hospitalized is among the roles of nurses [10], and they can help children cope with the stressful conditions of hospitalization and reduce their complications based on their knowledge and experiences, unfortunately this aspect of nursing is not considered [11]. Most studies conducted in Iran have only addressed children's anxiety reduction methods [12, 13], such as play therapy [9, 14] during pre-operation time [15, 16], while the role of fear and the important role of nurses have not been taken into consideration in preparation for hospitalization. Therefore, the present study was conducted with the aim of investigating the effect of preparation for hospitalization on school-age children's fear during admission in Iranian hospitals in 2017.

MATERIAL AND METHODS

This was a quasi-experimental pretest-posttest control group design study. The place of research, admission unit and children's department was one of the hospitals in Hamadan, in western Iran, throughout 2016-2017. The criteria for entering the study included children aged 6 to 12 years, full vigilance and awareness, elective patients admitted for follow-up, illness, surgery or non-emergency care, first-time admission experience, lack of physical and mental disability, lack of using any psychiatric medicines, and living with both parents. The exit criteria included regret of continuing participation for any reason and incomplete completion of the questionnaire. The schoolchildren who were admitted to the study were selected based on availability sampling method. The method of dividing the samples into the treatment and control groups was simple randomization. In order to prevent the impact of some confusing variables, they were controlled by modeling them in data analysis stage. Sample size was determined according to the study of Reyhani et al. [12] with the help of the following formula; the required sample size was calculated for each group to be 24 based on the significance level of 5% and the statistical power of 90%. Finally, considering the 10% drop in the samples of each group, 27 individuals were determined for each group. The total sample is 54.

$$n = \frac{2\sigma^2(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta})^2}{(\mu_1 - \mu_2)^2}$$

$$= \frac{2(1.96 + 1.28)^2 3.74^2}{(44.7 - 41.2)^2} = 24$$

Data collection tools included:

1) Demographic information questionnaire: A two-part questionnaire was used. First section related to gender, age of the child, birth rank (several children), child's education, parental education, parent's job, marital status of father and mother, and parent's age. The second section was related to diagnosis of the disease, main complaint, and date of admission, history of previous admission, history of disease, and history of drug use.

2) Children's Medical Fear Scale questionnaire (CMFS): This questionnaire was designed to investigate the fear of hospitalized children by Broome. It has 17 items which have four parts in total: fear of treatment methods (questions 4, 5, 7, 13); environment-related fears (questions 6, 8, 9);

fear of communication with others (questions 1, 11, 12, 14); and self-perceived fear (questions 2, 3, 10, 15, 16, 17). Each question has a Likert scale of three with very low (1), moderate (2), high (3) options, based on which the range of points obtained was 17 to 51. Score 17–28 indicates mild fear, score 29–39 moderate fear, and score 40–51 severe fear [2]. Validity of the questionnaire was determined by Talebi (2015) using content validity method based on the opinions of ten professors and experts: its reliability was measured by him to be 74% [5]. The researcher referred to the admittance unit for selecting samples based on the criteria for entry. After self-introduction, research goals were orally explained by the researcher and written consent was taken from the parent. The demographic and the fear questionnaires were explained verbally to the child and the parent (both groups) and completed with the help of the child. Then, for the children of the treatment group, the educational content of the preparation for hospitalization was carried out individually and in the presence of the parent. Preparation was performed in a suitable place (no noise and with the convenience of the child) for 30 minutes. For the control group, the usual tasks of the department were applied. After completing the preparation program (15 minutes) [9], post-test questionnaires were completed by both groups. The control group was also given cartoon booklet following research ethics.

Educational content: The introduction of the department, personnel, and play room in the children's section was done. Familiarization of the child with the remedies was done according to the study of Aslani using masks, medical devices, abaisse-langue, blood pressure meter, bandage, gas, and syringe without needle [7]. Using the Kathalae study (2007) and the book "in hospital" translated by Fatahi (2014), a cartoon booklet was provided for the children: this contained material about the causes of hospitalization, fear of being hospitalized, necessary medical readiness, nursing care, living in a hospital, asking questions, maintaining morale, and day of discharge [4, 17]. All ethical standards, such as obtaining permits, written consent, confidentiality of information, and use of information for research purposes were considered. For descriptive data analysis, descriptive tables and descriptive graphs were used for continuous and non-continuous data. Fischer and Chi-square tests were performed using SPSS software version 16.

RESULTS

Different demographic variables were compared in two groups. For comparison of quantitative variables in two groups, independent sample t-test was used based on the normalization assumption.

According to the Chi-square test results in the above table, the distribution of all of the qualitative demographic variables was similar in the two groups. At first, the assumption of normality of fear before and after the intervention was investigated using the Kolmogorov-Smirnov test. The results of this test showed that both variables had a normal distribution. Then, independent t-test was used to test the mean differences in the two groups and paired t-test was used to evaluate the mean differences of each group at two different times.

According to the results of this table, and based on independent sample t-test result, the mean scores of fear at the first stage (before intervention) showed no significant differences, but these means were statistically different at the second stage (after intervention). This can indicate that intervention had a positive effect on reducing fear in the subjects being tested.

Also, the results of the above diagram indicate that the fear scores in the control group increased after intervention, but in the treatment group the fear score decreased after intervention. This implies that, at the first stage, fear in the treatment group was higher, but the intervention reduced fear in this group. At the second stage, the mean of fear in the treatment group was significantly lower than the control group.

In order to determine whether the intervention would reduce fear in individuals, it was necessary to eliminate the impact of fear variable at the first stage. For this purpose, analysis of covariance was used: the results are given in the table below.

According to the results of the analysis of covariance in the above table and the significance of the effect of the group, it can be said that the intervention affected the fear variable and reduced it.

DISCUSSION

The basis of the effect of preparation methods is the fact that the fear of known is less than the unknown. Therefore, the reduction of unknowns can reduce the fear of children [8].

Table 1: Demographic variables in the treatment and control group of school-age children in Besat Hospital, Hamadan

Variables	Group	Control		Treatment		A significant level of Chi ²
		Percent	N	Percent	N	
Gender	Girl	51.9%	14	48.1%	13	0/785
	Boy	48.1%	13	51.9%	14	
Birth rank	1.00	40.7%	11	44.4%	12	0/960
	2.00	29.6%	8	22.2%	6	
	3.00	18.5%	5	22.2%	6	
	4.00	7.4%	2	7.4%	2	
	5.00	3.7%	1	0	0	
	6.00	0	0	3.7%	1	
Illness history	Yes	14.8%	4	3.7%	1	0/351
	No	85.2%	23	96.3%	26	
Medication history	Yes	3.7%	1	3.7%	1	0/999
	No	96.3%	26	96.3%	26	

Table 2: Mean and standard deviation of fear scores in two groups of control and treatment before and after intervention in school-age children in Besat Hospital, Hamadan

	Before intervention		After intervention		p-value (paired t-test)
	M	SD	M	SD	
Fear	30.1111	6.98533	32.1852	5.37828	0/007
	32.5185	7.58729	25.8519	4.43503	<0/001
p-value (t-test)	0/227		<0/001		

Diagram 1: The mean score of fear in the control and treatment groups before and after the intervention

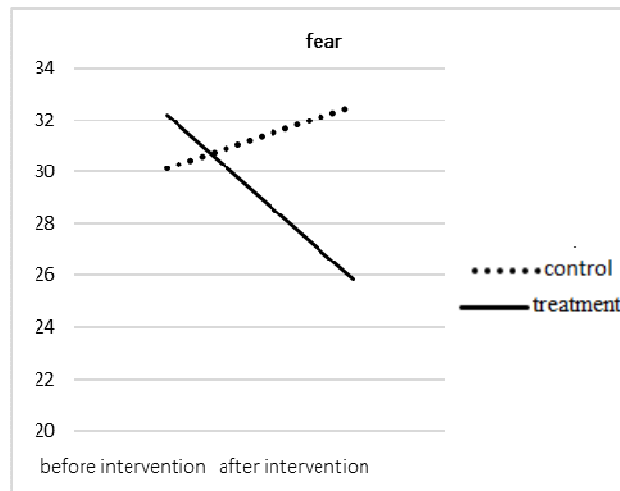


Table 3: Comparison of fear after intervention, in two groups, by adjusting the effect of first phase fear using covariance analysis

Variable	Source	Total changes	Mean square	Df	F	Sig
Fear	Fear before intervention	1138.713	1138.713	1	65.842	0.000
	Group	523.129	523.129	1	30.248	0.000
	Error	882.028	17.295	51		

The findings of this study show that while there was no significant difference between the scores of fear of hospitalization before intervention, but after that this difference was significant.

This is in agreement with the findings of Katalae et al. They stated that preparation intervention can reduce the anxiety and fear of children who are candidates for surgery [4]. Talebi et al. also confirmed this finding [5]. Tavasoli et al. also

confirmed the results reached in the present study [18]. But the results of Mola *et al.* were not consistent with the above findings, which could be due to a different method of work, including measuring the amount of fear after entering the play room and then measuring the amount of fear 5 hours after leaving the play room [2]. Also, these findings were not consistent with the results of Nematollahi *et al.* The results of their study are not reliable since the only method was distortion of thought of fear, which was not significant during and after intervention (before and after injection) [19]. The study of Sparks *et al.* also showed that fear in the intervention group was not significant before and after the intervention. The findings of this study do not conform to the findings of the present study. By reviewing their study, it can be seen that there were differences between types of studies (vaccine injection), ages of the participants (young children), and different environments [20].

CONCLUSION

According to the results of this study, using the preparation program can reduce the fear of hospitalization in school-age children. Regarding the negative impact of fear on children's health, the researcher suggests that this method should be used to reduce the fear of other age groups. The limitations of this study were children's individual differences and parental support.

Conflict of interest

There is no conflict of interest in this study

Acknowledgment

This research is based on a Master's thesis approved by Hamadan University of Medical Sciences with IR.UMSHA.REC.1395.494 ethic code. We are grateful to the Deputy of Research of Hamadan University of Medical Sciences, and all others who willingly cooperated and participated in the study.

REFERENCES

- Gordon BK, Crisp J. The content, format and timing of a preparation for childhood hospitalization booklet: An action research project. *Journal of Child Health Care*. 2016;20(2):214-23..
- Mola F, Khanjari S, Davachi A, Haghani H. Effect of play on fear of hospitalized. *Iran Journal of Nursing*. 2001;13(27):51-6.
- Li WH, Chung JO, Ho KY, Kwok BM. Play interventions to reduce anxiety and negative emotions in hospitalized children. *BMC Pediatr*. 2016;16:36.
- Kathalae D. An intervention to reduce anxiety/fear in hospitalized Thai school age children (Doctoral dissertation, State University of New York at Buffalo), 2007.
- Talebi S, Ganjlo J, Rakhshani MH, Asghari nekah M. Comparison the effect of orientation program used by visual concept map and face to face method on fear and anxiety of children. *Journal of Pediatric Nursing*. 2015;4:32_44.
- Sadock B, Sadock V, Ruiz P. Kaplan & Sadock's Synopsis of Psychiatry Behavioral Sciences/Clinical Psychiatry 7, editor: Lippincott williams & wilkins; 2015.
- Aslani A, Dejkam M. Effect of psychological preparation on understanding children (4-6 years old) of hospital before hospitalization. Tehran: Shahid Behashti University of Medical Sciences and Health Services; 1996.
- Wilson D, Wong DL, Hockenberry MJ, Wilson D. Wong's nursing care of infants and children. Mosby/Elsevier, 2011.
- Yagobi Y, Niknami M, Shafipoor Z, Atrekar Rooshan Z. Effect of playing on anxiety of hospitalized school age children. *Holistic Nursing and Midwifery Journal*. 2005;15(35):65_71.
- NikbakhtNasrabadi AR, Bakhshayeshi O, Parsayekta Z, Hoseyni M, Taghavi T, Rezvani H. The effectiveness of implementation nursing consultation on the anxiety of patients undergoing GI endoscopy. *Iran Journal of Nursing*. 2012;25(79):54_62.
- Sanjari M. Child hospitalization and parent's anxiety. *Iran Journal of Nursing*. 2004;17(39):41_8.
- Reyhani T, Pourghaznain T, Mousavi Z, Ghorbani S. The effects of presence and guidance of a teacher on the anxiety of hospitalized children. *Evidence Based Care*. 2014;4(3):15-22.
- Zarei K, Parandeh Motlagh Z, Seyedfatemi N, Khoshbakht F, Haghani H, Zarei M. Impact of storytelling on physiological worry and social anxieties in hospitalized school-aged children. *Medical-Surgical Nursing Journal*. 2013;2(3,4):115_21.

14. Khanjari S, Mola F, Davachi A, Haghani H. Effect of play on anxiety of hospitalized children. *Iran Journal of Nursing*. 2001;14(28):31-8.
15. Ghabeli F, Moheb N, Hosseini Nasab SD. Effect of toys and preoperative visit on reducing children's anxiety and their parents before surgery and satisfaction with the treatment process. *J Caring Sci*. 2014; 3(1):21-8.
16. Karimi R, Fadaiy Z, Nikbakht Nasrabadi A, Godarzi Z, Mehran A. Effectiveness of orientation tour on children's anxiety before elective surgeries. *Japan Journal of Nursing Science*. 2014; 11(1):10-5.
17. Wardi AC. In Hospital. 7, editor. Tehran: Ghadyani 2014.
18. Hamed Tavasoli S, Alhani F, Hajizadeh E. Investigating of the effect of familiarization play on the injective procedural anxiety in B Thalassemic pre-school children. *Nursing Research*. 2012;7(26):42_9.
19. Nematollahi MS, Mehdipour rahbari R, Esmaeil zadeh Noughabi F. Comparison of the effect of deviations and routine care on the severity of pain fear in children with strabismus. *Journal of Health and Care*. 2011;13(4):19_24.
20. Sparks L. Taking the "ouch" out of injections for children: Using distraction to decrease pain. *MCN: The American Journal of Maternal/Child Nursing*. 2001; 26(2):72-8.