



Investigation of the Fear of 7–18-Year-Old Hospitalized Children for Illness and Hospital

Özlem Öztürk Şahin¹ · Aysel Topan²

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Abstract

Illness and hospitalization are conditions leading to negative effects in children's lives regardless of their age. This study was performed descriptively in order to examine the fears of hospitalized children for illness and hospital. The study was descriptive and sectional and performed in Karabük University (Turkey) Training and Research Hospital between February 1 and May 1, 2015. Sample of the study was composed of 144 children who were hospitalized due to an acute illness and their parents who approved to participate in the study. Participant information form and an information form that was prepared to evaluate the fears of children for illness and hospital were used as data collection tools. Data were collected by face-to-face interview technique. Statistical analyses were used to assess data. It was found that 56.2% of children in the study were males and were between 7 and 10 years of age; 42.4% were scared of getting illness. 39.5% of 86 children who were previously hospitalized have stated that they experienced fear due to hospitalization; injections were in the first place among causes of fear by 64.7%. When the causes of children's fear for illness and hospital were examined, it was determined that “undergoing an operation (3.21 ± 1.13),” “staying away from the family during hospitalization (3.11 ± 0.96)” and “worrying the family when he/she gets an illness (3.02 ± 1.05)” were in the first three ones. When the relationship between some characteristics of the children and their parents and children's status of fear for illness was investigated, it was detected that there was a significant difference between their previous fear of hospitalization and their current status of fear for getting illness ($p = 0.003$). It was observed that children in the study experienced fear for illness and hospitalization and the percentage of children with fears was found to be high. It was also determined that undergoing an operation, staying away from the family during hospitalization and worrying the family when he/she gets an illness were among the first causes of their fears.

Keywords Child · Illness · Hospital · Fear · Nurse

✉ Aysel Topan
ayskose@hotmail.com

Özlem Öztürk Şahin
zlemzturk@hotmail.com

¹ Department of Nursing, Faculty of Health Sciences, Karabük University, Karabük, Turkey

² Department of Nursing, Faculty of Health Sciences, Zonguldak Bülent Ecevit University, Zonguldak, Turkey

Introduction

Illness and hospitalization are conditions leading to negative effects in children's lives regardless of their age (Gönener and Görak 2009; Melnyk 2000). While restlessness, loss of appetite and sleep disorders may be observed among little children in case of illness, responses such as touchiness, aggressiveness and fear may be seen among older children (Ünüvar 2011). It was also reported that anxiety and fear were the most incident emotional response at hospitalization (Foster and Park 2012) and they were observed among children more frequently compared to the adults (Forsner et al. 2009). In the previous studies, it was reported that anxiety and fear were closely related; fear was defined as an emotional response given against threats that were caused by external stimuli (Moraes et al. 2004).

For the child, illness and associated hospitalization are frightening and irritating experiences (Beytut et al. 2009; Üstün et al. 2014). It was accepted that the perception of the children about the illness and their responses to the hospital varied by age. While children under the age of 7 years old perceive illness as a punishment for their faults and an outcome of magical powers, they may associate the cause of illness with the factors as infection after 7 years old (Forsner et al. 2005). Hospitalization of a school-age child may separate her/him from friends; therefore, the child may feel alone and hindered. Moreover, the child may experience the feeling that interventions in the hospital may give harm to her/his body (Gönener and Görak 2009). Illness and hospitalization prevent their independence, their relationships with friends and their school and playing activities (Beytut et al. 2009). The most frequent fears of school-age children regarding the hospital were reported to be staying away from the family, injection and blood tests, staying in the hospital for a long time, hearing bad news about their health conditions (Bloch and Toker 2008), many noisy devices and monitors, invasive interventions that are performed and feeling pain and suffering during these interventions (Üstün et al. 2014; Butler et al. 2005), taking medications, undergoing an examination, fear of doctor/nurse, loss of control, undergoing an operation and death (Marasuna and Eroglu 2013). Besides, their fears were increased since they were not informed about the treatment and procedures (Basbakkal et al. 2010; Matziou et al. 2011).

The fear experienced by the children for illness and hospital causes the development of negative outcomes such as extension of recovery period and the increase in the need for painkillers and sedative drugs (Foster and Park 2012). Fear for injury and medical procedures may prevent providing healthcare service in case of illness by decreasing the participation of children in healthcare applications (Marasuna and Eroglu 2013) and may delay the treatment (Moraes et al. 2004). Besides, child's willingness to cooperate with healthcare professionals was reported to be decreased when he/she had a traumatic experience regarding illness or the hospital (Proczkowska-Björklund et al. 2008).

In preventing or decreasing negative effects of illness on child development, it is important to try to decrease biological stress by providing effective medical treatment for illness and its possible negative effects as well as coping with developed psychosocial stress (Atay et al. 2011). In previous studies, it was reported that support training programs and applications at hospitalization relieved the children and decreased their fear of hospitals (Bloch and Toker 2008; Ünüvar 2011). Nurses are healthcare professionals who frequently communicate with the child and her/his family during hospitalization. Nurses are responsible for the planning and implementation of interventions for understanding concerns and fears of the child and the family and for decreasing them. It was reported that nursing interventions that were performed to the child before and during hospitalization

provided benefit in decreasing concerns and fears of the child (Altay 2008; Gönener and Görak 2009). Provision of realistic information by the nurses and making children discuss their hospital experiences and involve in the decisions will help children in coping with their hospital-induced fears (Salmela et al. 2010). In addition, nurses are required to know the areas of fears and concerns that were created by the illness and hospital on the children in order to describe the child and her/his illness in a better way (Gönener and Görak 2009; Beytut et al. 2009). This study was performed descriptively in order to examine the fears of hospitalized children regarding their illness and the hospital.

Method

Type of the Study

This is a descriptive and sectional study.

Place and Dates of the Study

The study was performed in Karabük University Training and Research Hospital between February 1 and May 1, 2015.

Universe of the Study and Sample Selection

Universe of the study was composed of children between 7 and 18 years old who were hospitalized in a Training and Research Hospital in Karabük City, Turkey, due to an acute illness between February 1 and May 1, 2015. Between these dates, 172 children of this age group have been hospitalized in this hospital. Sample of the study was composed of 144 children with an acute illness and their parents who approved to participate in the study. (83.7% of the universe was achieved.) One of parents (mother or father) has been admitted into the study for each child.

Data Collection Tools

Participant information form and an information form for assessing fears of the children for illness and hospital which were prepared by the researchers based on the literature were used as data collection tools. Participant information form was composed of a total of 20 open-ended and multiple choice questions. In this form, there were questions including socio-demographic characteristics of the child and the family and the child's status of illness, hospitalization and fear. Information form for assessing fears of children for illness and hospital was composed of a total of 28 questions including fear statements for illness and the hospital. Form was presented to three faculty members who were experts in the fields of Children's Health Nursing and Public Health Nursing. All necessary revisions were made according to the recommendations of the experts. Children were asked to score the items for which they did not have fear, as zero (0), and to score between 1 and 4 if they had any fear.

Collection of Data

Data have been collected for 114 children and their parents. Responses to the questions for parents have been provided by the parents, and all data have been collected for the children stayed in the hospital for at least 24 h. Data were collected by face-to-face interview technique. Each interview was lasted for nearly 15 min. Ethics approval was taken from Karabük University Ethics Committee (meeting no: 2014/08), and all necessary consents were taken from the institution where the study was carried out. Written and verbal consents were obtained from the children and their families who were approved to participate in the study.

Assessment of Data

All data have been evaluated by the statistical analysis techniques. Conformity of numerical variables to normal distribution was analyzed by Shapiro–Wilk test. In descriptive statistics, numerical data were expressed as mean \pm standard deviation (minimum–maximum) values and categorical data were expressed as numbers and percentages. Differences between groups in terms of categorical variables were analyzed by Chi-square test. Since parametric test assumptions could not be met for numerical variables, Mann–Whitney U test was performed to compare both groups. Results were assessed within 95% confidence interval, and $p < 0.05$ value was considered as significant.

Results

It was determined that 56.2% ($n = 144$) of children in the study were males; 56.2% were between 7 and 10 years old, 24.3% were between 11 and 14 years old, and 19.5% were between 15 and 18 years old; 56.9% were elementary school students, 73.6% were living in the city center, 48.6% had 2 siblings, and 45.8% were the first children in the family.

50.7% of the families in the study described their incomes as “income is less than the expenses”; 28.5% stated that there was somebody with a significant health problem within their families and 24.3% declared that there had been hospitalizations in their families due to health problems.

It was detected that 59.7% of the children had a previous history of hospitalization and 30.2% of these hospitalizations were due to upper respiratory tract infections. While 39.5% of 86 children, who were previously hospitalized, declared that they experienced fear due to this hospitalization, 64.7% of these children stated that they had a fear of getting injections (Table 1).

While 42.4% of the children in the study stated that they had a fear for illness, “getting hurted” was in the first place among the causes of 61 children who declared that they were scared of getting illness (Table 2).

All children in the study declared that they had a fear for each statement in the information form including fear statements. When scores that were given by the children for fear statements were examined; it was found that the first three statements were “I fear that my family would get worried if I get sick” (3.02 ± 1.05), “I fear that my body would get damaged when I get ill” (2.93 ± 1.10) and “I fear that I would stand alone when I get sick” (2.77 ± 1.19). When scores of children for hospital were examined, “I fear from undergoing an operation” (3.21 ± 1.13), “I fear from staying away from my family when

Table 1 Previous experiences and thoughts of children about hospitalization

Characteristics	Number	%
Previous hospitalization (<i>n</i> = 144)		
Yes	86	59.7
No	58	40.3
Causes of hospitalizations (<i>n</i> = 86)		
URTI	26	30.2
LRTI	24	27.9
Operation	11	12.8
Infection	8	9.3
Abdominal pain	8	9.3
Accidents	6	7.0
Other	3	3.5
Status of experiencing hospital-induced fear (<i>n</i> = 86)		
Yes	34	39.5
No	52	60.5
Causes of experiencing fear (<i>n</i> = 34)		
Injection	22	64.7
Hospital environment	11	32.3
Staying away from home	1	3.0

*% values were calculated according to 86 children who were previously hospitalized

**% values were calculated according to 34 children who experienced hospital-induced fear

Table 2 General thoughts of children for illness

Characteristics	Number	%
Status of having fear for illness (<i>n</i> = 144)		
Yes	61	42.4
No	83	57.6
Cause of fear for illness (<i>n</i> = 61)		
Getting hurted	30	49.2
Having a bad illness	18	29.5
Death	8	13.1
Medications	5	8.2

*% values were calculated according to 61 children who had a fear for illness

I'm hospitalized" (3.11 ± 0.96) and "I fear that nurse or doctor gives a bad news about my health" (2.97 ± 1.06).

When some characteristics of the children and parents were examined, no significant difference was found between status of fear for illness and sex and age of the children, education levels of parents, previous hospitalizations, status of experiencing an important health problem within the family and status of hospitalization within the family ($p > 0.05$).

A statistically significant difference was found between children's status of previous fear for hospitalization and current status of fear for illness ($p = 0.003$) (Table 3).

When the relationship between scores given by the children to fear statements for illness and their status of fear for illness was examined, a statistically significant difference was found between their status of fear for illness and their scores for the statements such as "I fear that my illness would be a standing jest for my friends" ($p = 0.001$), "I would never get well" ($p = 0.002$), "I would need help from others" ($p = 0.004$), "nobody would help" ($p = 0.002$), "I would be alone" ($p = 0.001$), "my body would be damaged" ($p = 0.008$), "I would get hurt" ($p = 0.000$), "I would not perform activities such as games and entertainment" ($p = 0.000$), "I would not go to school" ($p = 0.023$), "I would take medications" ($p = 0.022$) (Table 4).

When the relationship between the scores given by the children to the fear statements for hospital and their status of fear for illness was examined, it was detected that there was a significant difference between their status of fear for illness and their scores for the statements such as I fear from "going to hospital" ($p = 0.000$), "lying on examination table in the hospital" ($p = 0.000$), "undergoing an examination by a doctor and nurse" ($p = 0.000$), "the measurement of my body temperature" ($p = 0.001$), "undergoing injections" ($p = 0.000$), "blood drawal" ($p = 0.001$), "fainting during blood drawal" ($p = 0.003$), "seeing that my blood is drawn" ($p = 0.000$), "having a serum" ($p = 0.000$), "hearing bad news about my health from the doctor or nurse" ($p = 0.011$), "not being informed by the doctor or nurse about the procedures" ($p = 0.001$), "staying away from my friends during hospitalization" ($p = 0.007$), "staying away from my lessons during hospitalization" ($p = 0.000$), "undergoing an operation" ($p = 0.008$) (Table 5).

Discussion

Acute or chronic illnesses experienced by children, hospitalization and frequently performed procedures and repeated hospitalizations are stressful experiences for the children (Wilson et al. 2010; Coyne 2006). In previous studies, it was determined that school-age children had concerns and fears for illness and hospital although age and skills of children increased (Wilson et al. 2010; Coyne 2006; Marasuna and Eroglu 2013; Mahat and Scoloveno 2006; Moraes et al. 2004). In this study, results concerning fears of illness and hospital among 7–18-year-old children who were hospitalized due to an acute illness were included and they were compared with the literature.

It was observed that more than half of the children (59.7%) had a previous history of hospitalization, and acute diseases such as upper respiratory (30.2%) and lower respiratory tract infections (27.9%) were in the first two places among the causes of these hospitalizations. In the studies performed with the same age group, it was found that respiratory tract infections were in the first place among causes of hospitalizations and these results was found to be compliant with the study (Gönener and Görak 2009; Marasuna ve Eroglu 2013; Üstün et al. 2014). It was determined that 39.5% of 86 children who were previously hospitalized have experienced a hospital-induced fear; injections (64.7%) were included in the first place among the fears expressed by the children. In the study by Wollin et al. (2004) that was performed with 5–12-year-old children who would undergo an operation, it was stated that children expressed the worst aspect of hospital as injections. In a study examining fear of dentist among 3–6-year-old children, the highest fear score for both sexes was determined as "injections" (Salem et al. 2012). In the studies which were performed with children of the same age as the children in our study by using fear scale, it

Table 3 Evaluation of children's status of fear for illness based on some characteristics of children and their parents

Characteristics	Status of fear for illness						Test values* χ^2 ; <i>p</i>
	Yes		No		Total		
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Age							
7–10 years	36	44.4	45	55.6	81	100.0	1.503; 0.47
11–14 years	16	45.7	19	54.3	35	100.0	
15–18 years	9	32.1	19	67.9	28	100.0	
Sex							
Male	30	37.0	51	63.0	81	100.0	2.149; 0.143
Female	31	49.2	32	50.8	63	100.0	
Education of mother							
Elementary school	43	43.4	56	56.6	99	100.0	3.021; 0.388
Middle school	6	27.3	16	72.7	22	100.0	
High school	9	52.9	8	47.1	17	100.0	
University and above	3	50.0	3	50.0	6	100.0	
Education of father							
Elementary school	22	37.9	36	62.1	58	100.0	0.962; 0.811
Middle school	17	44.7	21	55.3	38	100.0	
High school	14	43.8	18	56.2	32	100.0	
University and above	8	50.0	8	50.0	16	100.0	
Status of previous hospitalizations							
Yes	40	46.5	46	53.5	86	100.0	1.506; 0.220
No	21	36.2	37	63.8	58	100.0	
Status of previous fear for hospitalization							
Yes	22	64.7	12	35.3	34	100.0	9.102; 0.003**
No	39	35.5	71	64.5	110	100.0	
Status of experiencing an important health problem within the family							
Yes	19	46.3	22	53.7	41	100.0	0.372; 0.542
No	42	40.8	61	59.2	103	100.0	
Status of hospitalization in the family due to health problems							
Yes	19	54.3	16	45.7	35	100.0	2.693; 0.101
No	42	38.5	67	61.5	109	100.0	

*Chi-square test

***p* < 0.005 (statistically significant)

Table 4 Evaluation of the scores given by children to fear statements for illness based on their status of fear for illness

Statements	Status of fear for illness	Mean \pm std. deviation	Median (min–max)	Test values* <i>U</i> ; <i>p</i>
I fear that I would infect my family and my friends when I get ill.	Yes	2.75 \pm 1.13	3 (1–4)	– 1.529; 0.126
	No	2.43 \pm 1.28	2 (1–4)	
I fear that my illness would be a standing jest for my friends when I get ill.	Yes	2.39 \pm 1.13	3 (1–4)	– 3.209; 0.001**
	No	1.78 \pm 1.28	1 (1–4)	
I fear that I would never get well when I get ill.	Yes	2.91 \pm 1.00	3 (1–4)	– 3.162; 0.002**
	No	2.25 \pm 3.31	2 (1–4)	
I fear that I would need help from others when I get ill.	Yes	1.96 \pm 1.13	1 (1–4)	– 2.905; 0.004**
	No	1.50 \pm 1.00	1 (1–4)	
I fear that nobody would help when I get ill.	Yes	3.01 \pm 1.04	3 (1–4)	– 3.099; 0.002**
	No	2.33 \pm 1.25	2 (1–4)	
I fear that I would be alone when I get ill.	Yes	3.19 \pm 0.98	4 (1–4)	– 3.455; 0.001**
	No	2.46 \pm 1.24	2 (1–4)	
I fear that my family would worry when I get ill.	Yes	3.26 \pm 0.83	3 (1–4)	– 1.865; 0.062
	No	2.85 \pm 1.15	3 (1–4)	
I fear that my body would be damaged when I get ill.	Yes	3.22 \pm 0.95	4 (1–4)	– 2.660; 0.008**
	No	2.71 \pm 1.16	3 (1–4)	
I fear that I would get hurt when I get ill.	Yes	3.19 \pm 0.87	3 (1–4)	– 5.047; 0.000**
	No	2.19 \pm 1.17	2 (1–4)	
I fear that I would not perform activities such as games and entertainment when I get ill.	Yes	2.34 \pm 1.04	2 (1–4)	– 4.017; 0.000**
	No	1.68 \pm 1.05	1 (1–4)	
I fear that I would not go to school when I get ill.	Yes	2.50 \pm 1.13	2 (1–4)	– 2.269; 0.023**
	No	2.08 \pm 1.23	2 (1–4)	
I fear that I would take medications when I get ill.	Yes	1.55 \pm 0.92	1 (1–4)	– 2.296; 0.022**
	No	1.26 \pm 0.66	1 (1–4)	

*Mann–Whitney *U* test***p* < 0.005 (statistically significant)

was determined that fear for “undergoing injections” was one of the items with highest score (Mahat and Scoloveno 2006; Moraes et al. 2004), and in other studies evaluating hospital experiences, it was reported that children experienced injection-induced fear (Coyne 2006; Carney et al. 2003). It is accepted as a universal knowledge that particularly injection is a negative experience for children (Wilson et al. 2010). According to the

Table 5 Evaluation of the scores given by children to the fear statements regarding hospital based on their status of fear for illness

Statements	Status of fear for hospital	Mean \pm std. deviation	Median(min–max)	Test values* <i>U</i> ; <i>p</i>
I fear from going to hospital	Yes	2.39 \pm 1.18	2 (1–4)	– 5.173; 0.000**
	No	1.43 \pm 0.82	1 (1–4)	
I fear from lying on examination table in the hospital	Yes	2.40 \pm 1.32	2 (1–4)	– 5.590; 0.000**
	No	1.30 \pm 0.69	1 (1–4)	
I fear from undergoing an examination by doctor and nurse	Yes	1.72 \pm 1.01	1 (1–4)	– 4.699; 0.000**
	No	1.12 \pm 0.50	1 (1–4)	
I fear from measurement of my body temperature	Yes	1.29 \pm 0.73	1 (1–4)	– 3.367; 0.001**
	No	1.02 \pm 0.21	1 (1–3)	
I fear from undergoing injections	Yes	2.91 \pm 1.25	4 (1–4)	– 4.049; 0.000**
	No	2.02 \pm 1.12	2 (1–4)	
I fear from blood drawal	Yes	2.54 \pm 1.34	3 (1–4)	– 3.231; 0.001**
	No	1.78 \pm 1.03	1 (1–4)	
I fear from fainting during blood drawal	Yes	2.34 \pm 1.10	2 (1–4)	– 3.014; 0.003**
	No	1.83 \pm 1.18	1 (1–4)	
I fear from seeing that my blood is drawn	Yes	2.08 \pm 1.09	2 (1–4)	– 3.595; 0.000**
	No	1.51 \pm 0.96	1 (1–4)	
I fear from having a serum	Yes	2.55 \pm 1.38	2 (1–4)	– 5.860; 0.000**
	No	1.30 \pm 0.71	1 (1–4)	
I fear from hearing bad news about my health from the doctor or nurse	Yes	3.27 \pm 0.83	3 (1–4)	– 2.557; 0.011**
	No	2.75 \pm 1.16	3 (1–4)	
I fear from not being informed by the doctor or nurse about the procedures	Yes	2.85 \pm 1.10	3 (1–4)	– 3.272; 0.001**
	No	2.20 \pm 1.14	2 (1–4)	
I fear from staying at hospital for a long time when I'm hospitalized	Yes	2.55 \pm 1.07	3 (1–4)	– 1.590; 0.112
	No	2.26 \pm 1.25	2 (1–4)	
I fear from staying away from my family when I'm hospitalized	Yes	3.19 \pm 0.89	3 (1–4)	– 0.733; 0.463
	No	3.04 \pm 1.01	3 (1–4)	
I fear from staying away from my friends when I'm hospitalized	Yes	2.50 \pm 1.04	2 (1–4)	– 2.698; 0.007**
	No	2.04 \pm 1.12	2 (1–4)	
I fear from staying away from my lessons when I'm hospitalized	Yes	2.81 \pm 1.05	3 (1–4)	– 3.602; 0.000**
	No	2.09 \pm 1.21	2 (1–4)	

Table 5 continued

Statements	Status of fear for hospital	Mean \pm std. deviation	Median(min–max)	Test values* <i>U</i> ; <i>p</i>
I fear from undergoing an operation	Yes	3.50 \pm 0.95	4 (1–4)	– 2.665; 0.008**
	No	3.00 \pm 1.20	4 (1–4)	

*Mann–Whitney *U* test

***p* < 0.005 (statistically significant)

literature, “undergoing injections” was found to be in the first place among the hospital-based fears of children in this study, and this suggests that this invasive procedure is not affected by variables such as age, illness status and cultural characteristics of the children and it is thought to cause negative consequences such as pain and suffering.

In the study, other hospital-based fears of children were found to be “hospital environment” by 32.3% and “staying away from home” by 3%. In a study performed with hospitalized school-age children, 65% of the children have described hospital as “a very bad or bad place” (Gönener and Görak 2009). Hospital is a foreign environment that creates stress on children due to many factors such as various and noisy running devices and monitors, various odors, working healthcare personnel and implemented medical procedures (Üstün et al. 2014). The stress experienced by the child increases as he/she stays away from safe environment at home and from friends support by hospitalization (Basbakkal et al. 2010). In a study by Bloch and Toker (2008) with preschool children who did not have an experience of hospitalization, it was determined that hospital-induced anxiety levels of children who had activities in an established simulated hospital were lower compared to control group (Bloch and Toker 2008). This may be explained by the fact that hospital environment was a source of fear for children, and interventions to improve hospital environments were not still at a desired level. Besides, it is thought that future fears of children about hospitalization and hospital environment can be minimized by providing them information about the hospitals during their school lives when they are healthy or by introducing them toy-like medical environments.

Nearly half of the children (42.4%) in the study have stated that they had a fear for illness, and the statement of “getting hurted” was found to be in the first place by 49.2% among their causes of fear. In the qualitative study by Forsner et al. (2005) which was performed to examine disease experiences of 7–10-year-old children, it was reported that majority of children have indicated that they were sad and scared in case of illness. The child experiences many concerns associated with physical limitations that emerge due to the illness (Üstün et al. 2014). They may experience fear due to the concerns such as pain, immobility and becoming disabled (Coyne 2006). In particular, children between 6 and 12 years old have fears associated with disease-induced body image (Altay 2008). Similar to our study, it was reported in other studies that children have experienced the fear of “getting hurted” when they were ill (Forsner et al. 2009; Mahat and Scoloveno 2006).

All of the children have stated that they had fear for each statement within the information form including fear statements. Among the first three of fear statements regarding disease and hospital, there were I fear from “undergoing an operation,” “staying away from the family during hospitalization” and “worrying the family in case of illness.” Undergoing an operation leads to feelings such as anxiety, anger and fear among children

(Altay 2008). It was determined that nearly 60% of the children experienced anxiety and fear during preoperative period due to the factors such as loss of control, non-family routines, surgical instruments and anesthesia (Vagnoli et al. 2005). In other studies performed, it was reported that school-age children were scared of undergoing an operation as similar to our results (Wollin et al. 2004; Brewer et al. 2006). In a study that was performed with school-age children who were hospitalized in children clinic, it was determined that children were most anxious about the facts that they would feel themselves alone since they would be away from their families and friends and also that their family would pay too much money to the hospital (Gonener and Gorak 2009). In a qualitative, interview-based study performed with hospitalized preschool children in Finland, coping strategies of children with their medical fears were questioned and it was determined that the presence of family members was in the first place (15.7%) (Salmela et al. 2010). In a study with 7–14-year-old hospitalized children in England, it was observed that staying separated from family and friends was included in anxiety and fear themes which were generated according to the statements of the children (Coyne 2006). This might be explained by the fact that the presence and support of family members is very crucial for the children.

No statistically significant difference was found between sex and age of the children in the study and their status of fear for illness ($p > 0.05$). In a study performed with middle school students, no significant difference was found between age of the children and their fears for medical procedures (Marasuna and Eroglu, 2013), and this result was similar to our study. However, in other studies performed with children of similar age group, it was determined that medical procedure-induced fears and anxiety levels of female students were significantly higher compared to males (Mahat and Scoloveno 2006; Salem et al. 2012; Moraes et al. 2004; Chan et al. 2010; Mellon et al. 2004), and this is also compliant with our findings.

While there was not a significant difference between previous hospitalization status of children and current fear for illness, a statistically significant difference was found between previous fear for hospitalization and current status of fear for illness. In a study on middle school students, no significant differences were found between previous hospital experiences of the students, previous hospitalizations, their hospitalization durations and their total and subscale scores of fear scale for medical procedures (Marasuna and Eroglu 2013). In another study performed with 7–17-year-old children, it was determined that there was not a relationship between previous hospital experiences of the children and their medical fear or anxiety status (Tsai et al. 2010). In the study by Wilson et al. (2010), children with and without a hospitalization experience were compared, and no significant difference was found in terms of their fears; it was only reported that children who had a hospital experience were using more medical or hospital terminologies in their stories (Wilson et al. 2010). In the study, it was observed that the presence of previous hospitalization experience among children did not affect current status of fear for illness. This result might be explained by the fact that the children in study group were at an age that they can perceive the actual cause of the disease. In the study, it was observed that children's status of previous fear for hospitalization affected current status of fear for illness. This result might be explained by the fact that the child thinks that he/she will be hospitalized and have the same traumatic experience again after getting illness.

It was found that there was a significant difference between the scores given to illness and hospital-induced fear statements (in 24 out of 28 statements) by the children in the study and their status of fear for illness. Besides, it was seen that mean score of children who declared their fear for disease for all items was higher than the mean score of children

who stated that they did not fear from getting illness. This situation can be interpreted as an expected outcome.

As a result of this study, it was found that children experienced fear for illness and hospitalization, and the percentage of children who were scared was high. In previous studies performed, it was reported that disease and hospital-induced anxiety and fear of children significantly decreased by training and intervention programs (Gönener and Görak 2009; Brewer et al. 2006; Bloch and Toker 2008; Ünüvar 2011). In other studies, it was determined that nurses were in the first place among the people from whom children demand support after their families in case that they experience fear for the hospital (Wilson et al. 2010; Salmela et al. 2010).

Conclusions

Based on the results of this study and the literature, it is recommended to plan and implement nursing interventions for decreasing disease and hospital-induced fears of healthy or ill children. Anxiety and fear areas of children are known by the nurses, and this situation forms a basis for planning and implementing these interventions, and we believe that this study will contribute to the literature.

Compliance with Ethical Standards

Conflict of interest Özlem Öztürk and Aysel Topan declare that they have no conflict of interest.

Ethical Approval This research was approved by the Ethical Committee of Karabük University with the issue 16, documentation number 2014/08 dated December 29, 2014. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Human and Animal Rights This article does not contain any studies with animals performed by any of the authors.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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