

FACTORS AFFECTING THE FEAR OF MEDICAL PROCEDURE IN CHILDREN 7-14 YEARS OLD

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Abstract

The study was conducted in order to determine the factors affecting the fear of medical procedures of school children aged 7-14 years. The sample was calculated by using the formula used when the number of individuals in the universe was known and consisted of 300 children willing to participate in the study. The data were collected with the "Data Collection Form" and the "Medical Procedure Fear Scale (MPFS)", which inquired about the sociodemographic characteristics of the child and family, and the child's hospital experience. The difference between the gender and total MPFS, procedural, personal and interpersonal sub-dimension scores, and the age and mean scores of MPFS, procedural and interpersonal sub-dimensions were statistically significant. Children with hospital experience had higher environmental and interpersonal subscale scores than those without ($p<.05$). It was determined that average score of MPFS and subdimension scores of the children who defined income as less than expense was higher ($p<.05$). As a result, it is seen that the majority of children are "a little afraid during medical procedures. It is seen that the age and gender of the children, mother's age and educational status of mother and father and perceived income status affect the fear of medical procedure.

Keywords: Medical procedure, fear, school child

7-14 YAŞ GRUBU ÇOCUKLARDA TIBBİ İŞLEM KORKUSUNU ETKİLEYEN FAKTÖRLER

Öz

Araştırma, 7-14 yaş okul çağındaki çocukların tıbbi girişim korkusunu etkileyen faktörleri belirlemek amacıyla yapılmıştır. Örneklem, evrendeki birey sayısı bilindiğinde kullanılan formül kullanılarak hesaplanmış ve araştırmaya katılmayı kabul eden 300 çocuktan oluşmuştur. Veriler çocuk ve ailenin sosyodemografik özelliklerini ve çocuğun hastalık ve hastane deneyimine ilişkin durumu sorgulayan "Veri Toplama Formu" ve "Tıbbi İşlem Korku Ölçeği (TİKÖ)" ile toplanmıştır. Çocukların cinsiyeti ile TİKÖ toplam, işlemsel, kişisel ve kişilerarası alt boyut puanları ile; yaş ile TİKÖ, işlemsel ve kişilerarası alt boyut ortalama puanları arasında istatistiksel olarak ilişki olduğu saptandı. Hastane deneyimi olan çocukların çevresel ve kişilerarası alt ölçek puanları daha yüksek bulundu ($p<.05$). Geliri giderden az olarak tanımlayan çocukların TİKÖ ve alt boyut puan ortalamalarının daha yüksek olduğu belirlendi ($p<.05$). Araştırma sonuçlarına göre çocukların büyük çoğunluğunun tıbbi işlemler sırasında "biraz korktuğu" belirlendi. Çocukların yaşı ve cinsiyetinin, anne yaşı, anne ve baba öğrenim düzeyinin ve algılanan gelir durumunun tıbbi işlem korkusunu etkilediği saptandı.

Anahtar Kelimeler: Tıbbi prosedür, korku, okul çocuğu

1. INTRODUCTION

Fear, which is a common feeling experienced by all people, can be defined as an involuntary behavior and an emotional response to a real or unreal situation or danger (1-3). The individual feels fear in situations he/ she first experiences. In this context, childhood is one of the important periods in which fear is frequently experienced due to the high number of unknowns due to its nature (3,4). The fears seen in children vary according to age periods. Fears that begin in the first years of life decrease and change with the experiences of children. Because children have little experience and limited thinking abilities, they may experience exaggerated feelings such as fear in situations they see/hear (5-7). As cognitive development starts to progress rapidly, especially in school-age children, it is known that the ability to learn, think and establish a cause-effect relationship between events develop rapidly (7,8). Parallel to the characteristics of the developmental period; personal, visual, and spatial fears are seen in school children. Fears of darkness, closed environments, supernatural creatures and death, as well as fears about separation from parents and friends, not being able to go to school, and decreasing in academic success have also increased (4,7).

In addition to health, deviations from health can also occur in life. In case of deviation from health, outpatient or inpatient treatment and care is taken. Hospital, medical procedure applications, hospitalization in all life periods are experiences that will leave significant traces especially in the lives of children who are special groups. The response to these experiences may vary depending on variables such as the age of the child, family characteristics, the severity of the disease, the level of difficulty and frequency of the procedures performed, and the developmental period of the child (4, 8-10).

The hospital process and procedures are full of unknowns for the child's life. These ambiguities particularly relate to equipment and procedures used in treatment, examination and care. The fear of medical procedures is a feeling that needs to be examined closely by health professionals in terms of children's resistance to these procedures, reduced participation in healthcare practices and prevented disease treatment, examination and care, and prolonged the process (8,10).

In this study the support and contribution of the primary caregiver who is the nurse and all child-related health personnel is important for the child and the family to complete the process without adversely affecting or even achieving gains. The aim of this study was to determine the factors affecting the fear of medical procedures in school children aged 7-14 years.

2. MATERIALS AND METHODS

Sample and procedures

The research was carried out as a descriptive cross-sectional type between 30 October 2017 and 30 January 2018 in Perran Kutman Sarıtaş Primary School in Istanbul, Turkey. The population of the study consisted of 857 children aged 7-14 years attending Perran Kutman Sarıtaş Primary School. Eleven students with intellectual disabilities were excluded from the sample. The formula used when the number of individuals in the universe is known was used in determining the research sample. Sample size was calculated as 265 children according to this formula. The sample of the study consisted of 300 children who agreed to participate in the study.

Instruments

The data were collected by the Data Collection Form, which consisted of 16 questions that questioned the sociodemographic characteristics of the child and family, and the situation of the child's illness and hospital experience, and "Medical Procedure Fear Scale" prepared to measure children's fears related to medical procedures and practices.

Medical Procedure Fear Scale (MPFS): This scale was developed by Marion Bloom et al. (1985) to measure children's fears about medical procedures and practices. The Turkish validity and

reliability study of the scale was conducted by Alak (1993). The scale consists of 29 items and has 4 sub-dimensions as “Operational” (1, 2, 3, 4, 5, 6, 7, 8, 9), “Environmental” (10, 11, 12, 13, 14, 15, 16), “Personal” (17, 18, 19, 20), “Interpersonal” (21, 22, 23, 24, 25, 26, 27, 28, 29). The lowest score that can be obtained from the scale is 29 and the highest score is 87. The scale is a triple likert type and is scored as "I am not afraid at all" (1), "I am a little afraid" (2), and "I am very afraid" (3). The score (0-29) score was less scared; the scale between (29-58) points is a bit scared; (58-87) points are considered to be very scared. The sub-dimensions of the scale are evaluated as operational “min: 9-max: 27”, environmental “min: 7-max: 21”, personal “min: 4-max: 12” and interpersonal “min: 9-max: 27”(11). In this study, the alpha value of the scale was found to be 0.867.

Data were collected face to face by researchers by distributing forms to children. The content of the diagnostic form was pre-applied to eight students in terms of the functionality and comprehensibility of the questions, and the form was finalized. Pre-applied forms were not included in the study.

Statistical Analysis

The data obtained in the study were analyzed using SPSS 21.0 program. Number, percentage, mean and standard deviation were used as descriptive statistical methods in the evaluation of the data. Prior to data analysis, Kolmogorov Smirnov Z test was applied to test the normal distribution condition in order to test compliance with parametric test methods. The results were analyzed using Independent t-test and ANOVA tests. The findings were evaluated in 95% confidence interval and 5% significance level.

3. RESULTS

Descriptive characteristics of the children and parents who participated in the study are given in Table 1. More than half of the children (54%) were boys and 60.3% were in the 11-14 age group and 90% had siblings. 72.7% of the children had hospital experience, 38.7% had hospitalization experience, 13.3% had chronic disease, 18% had continuous medication and the majority (86.7%) experienced invasive procedures. When the sociodemographic characteristics of the parents of the children are examined; it was determined that 52.3% of the mothers were 36 years old and over, 42.3% were primary / secondary school graduates and 59.3% were working. It was found that 58.3% of the fathers were between 30-40 years old, 48.7% were high school graduates and the majority (94%) was working. When the income status of the family is analyzed, it is determined that 58% of the family evaluates their income equal to their expenses (Table 1).

Table 1. Characteristics of the children and parents (n:300)

| Variables | n | % |
|-----------------------------------|----------|----------|
| Sex | | |
| Girl | 162 | 54,0 |
| Boy | 138 | 46,0 |
| Age | | |
| 7-10 years | 181 | 60,3 |
| 11-14 years | 119 | 39,7 |
| Having a sibling | | |
| Yes | 270 | 90,0 |
| No | 30 | 10,0 |
| Hospital experience | | |
| Yes | 218 | 72,7 |
| No | 82 | 27,3 |
| Hospitalization experience | | |
| Yes | 116 | 38,7 |
| No | 184 | 61,3 |
| Having a chronic disease | | |
| Yes | 40 | 13,3 |

| | | |
|--------------------------------------|-----|------|
| No | 260 | 86,7 |
| Use of continuous medication | | |
| Use | 54 | 18,0 |
| No use | 246 | 82,0 |
| Invasive prosedüre experience | | |
| Yes | 260 | 86,7 |
| No | 40 | 13,3 |
| Age of mother | | |
| 24-35 years | 143 | 47,7 |
| 36 years and over | 157 | 52,3 |
| Educational status of mother | | |
| Primary school | 127 | 42,3 |
| High school | 126 | 42,0 |
| University | 45 | 15,0 |
| Graduate | 2 | 0,7 |
| Employment status of mother | | |
| Employed | 178 | 59,3 |
| Unemployed | 122 | 40,7 |
| Age of Father | | |
| 30-40 years | 175 | 58,3 |
| 41 years and over | 125 | 41,7 |
| Educational status of father | | |
| Primary school | 91 | 30,3 |
| High school | 146 | 48,7 |
| University | 60 | 20,0 |
| Graduate | 3 | 1,0 |
| Employment status of mother | | |
| Employed | 282 | 94,0 |
| Unemployed | 18 | 6,0 |
| Income status | | |
| Income less than expense | 58 | 19,3 |
| Income epual | 174 | 58,0 |
| Income more than expense | 68 | 22,7 |

MPFS and subscale mean scores of children are given in Table2. The mean of the operational sub dimension was 17.56; the average of the environmental sub-dimensions was 14,80; the mean personal sub dimension was 8.10, the mean interpersonal sub dimension was 16.02 and the total MPFS score was 56.58, and the fear of medical procedure was lower than the mean scores of the children (Table 2).

Table 2. MPFS and subscale mean scores of children (n:300)

| MPFS and subscale | Mean | Sd | Min | Maks |
|-------------------|-------|-------|-----|------|
| Operational | 17,56 | 4,052 | 9 | 27 |
| Enviromental | 14,80 | 3,185 | 7 | 21 |
| Personal | 8,10 | 1,927 | 4 | 12 |
| Interpersonal | 16,02 | 3,597 | 9 | 23 |
| Total | 56,58 | 9,832 | 29 | 83 |

The comparison of the characteristics of the child and disease status with the mean and sub dimension scores of MPFS is given in Table 3. When the scale and sub-dimension mean scores of children were compared; the difference between total MPFS, procedural, personal and interpersonal subscale mean scores was significant ($p < 0.05$) and it was noted that girls had higher fear of medical procedures than boys. When the scale and sub-dimension mean scores of the children was examined;

the difference between total MPFS, procedural and interpersonal subscale mean scores was significant ($p < 0.05$) and it was found that fear levels decreased with age. Children with hospital experience had higher environmental and interpersonal subscale scores than those without this experience, and the difference was statistically significant ($p < 0.05$). The difference between status of being a sibling, experiencing hospitalization, having a chronic disease, having continuous medication and, experiencing invasive intervention and the mean scores of MPFS and the sub-dimension was not statistically significant ($p > 0.05$) (Table 3).

Table 3. Comparison of the characteristics of the child and disease status with the mean and sub dimension scores of MPFS (n:300)

| Variables | Operational | | Enviromental | | Personal | | Interpersonal | | Total MPFS | |
|--------------------------------------|---------------|-------|---------------|-------|---------------|-------|----------------|-------|---------------|--------|
| | Mean | sd | Mean | sd | Mean | sd | Mean | sd | Mean | sd |
| Sex | | | | | | | | | | |
| Girl | 18,02 | 3,818 | 14,94 | 3,131 | 8,35 | 1,746 | 16,48 | 3,410 | 57,78 | 9,091 |
| Boy | 17,01 | 4,260 | 14,64 | 3,251 | 7,82 | 2,090 | 15,48 | 3,746 | 54,95 | 10,462 |
| t/p | 2,152/ 0,032* | | 0,831/ 0,407 | | 2,379/ 0,018* | | 2,412/ 0,016* | | 2,511/ 0,013* | |
| Age | | | | | | | | | | |
| 7-10 years | 18,15 | 3,861 | 15,00 | 2,983 | 8,18 | 1,938 | 16,49 | 3,455 | 57,82 | 9,097 |
| 11-14 years | 16,65 | 4,179 | 14,50 | 3,461 | 7,99 | 1,911 | 15,29 | 3,701 | 54,44 | 10,569 |
| t/p | 3,201/ 0,002* | | 1,321/ 0,188 | | 0,814/ 0,416 | | 2,855/ 0,005* | | 2,956/ 0,003* | |
| Having a sibling | | | | | | | | | | |
| Yes | 17,55 | 4,099 | 14,89 | 3,170 | 8,07 | 1,953 | 15,98 | 3,634 | 56,49 | 9,923 |
| No | 17,60 | 3,663 | 14,07 | 3,279 | 8,40 | 1,673 | 16,33 | 3,284 | 56,40 | 9,126 |
| t/p | -0,062/ 0,951 | | 1,337/ 0,182 | | -0,889/ 0,375 | | -0,508/ 0,612 | | 0,047/ 0,963 | |
| Hospital experience | | | | | | | | | | |
| Yes | 17,46 | 4,291 | 15,07 | 3,246 | 8,11 | 1,998 | 15,76 | 3,781 | 56,40 | 10,416 |
| No | 17,82 | 3,341 | 14,09 | 2,915 | 8,10 | 1,733 | 16,70 | 2,972 | 56,70 | 8,130 |
| t/p | -0,763/ 0,446 | | 2,534/ 0,012* | | 0,032/ 0,975 | | -2,243/ 0,026* | | -0,232/ 0,817 | |
| Hospitalization experience | | | | | | | | | | |
| Yes | 17,58 | 4,447 | 15,16 | 3,380 | 8,14 | 1,883 | 15,52 | 3,848 | 56,40 | 10,878 |
| No | 17,54 | 3,794 | 14,58 | 3,043 | 8,08 | 1,958 | 16,33 | 3,403 | 56,53 | 9,141 |
| t/p | 0,071/ 0,944 | | 1,560/ 0,120 | | 0,247/ 0,805 | | -1,9865/ 0,063 | | -0,112/ 0,907 | |
| Having a chronic disease | | | | | | | | | | |
| Yes | 17,60 | 4,765 | 14,85 | 3,325 | 7,63 | 2,059 | 15,23 | 3,752 | 55,30 | 10,969 |
| No | 17,55 | 3,941 | 14,80 | 3,170 | 8,18 | 1,899 | 16,14 | 3,565 | 56,66 | 9,655 |
| t/p | 0,442/ 0,659 | | 1,781/ 0,076 | | 0,111/ 0,912 | | -0,957/ 0,340 | | 0,429/ 0,669 | |
| Use of continuous medication | | | | | | | | | | |
| Use | 17,78 | 4,620 | 15,50 | 3,278 | 8,13 | 1,781 | 15,59 | 3,965 | 57,00 | 10,352 |
| No use | 17,51 | 3,925 | 14,65 | 3,151 | 8,10 | 1,960 | 16,11 | 3,513 | 56,37 | 9,732 |
| t/p | 0,442/ 0,659 | | 1,781/ 0,076 | | 0,111/ 0,912 | | -0,957/ 0,340 | | 0,429/ 0,669 | |
| Invasive prosedüre experience | | | | | | | | | | |
| Yes | 17,63 | 4,132 | 14,93 | 3,203 | 8,14 | 1,949 | 15,99 | 3,660 | 56,69 | 9,981 |
| No | 17,08 | 3,489 | 13,98 | 2,974 | 7,85 | 1,777 | 16,20 | 3,196 | 55,10 | 8,788 |
| t/p | 0,807/ 0,420 | | 1,773/ 0,077 | | 0,893/ 0,373 | | -0,346/ 0,730 | | 0,953/ 0,341 | |

t= Independent t test; $p < 0,05$ *

The comparison of the descriptive characteristics of the parents with the mean scores of MPFS and sub dimension is examined in Table 4. When the mean scores of the scale and the sub-dimension were compared according to the maternal age; the difference between total MPFS, procedural, personal and interpersonal subscale mean scores was significant ($p < 0.05$), and it was found that as the age of the mother increased, the fear of medical procedure decreased.

Tablo 4. Comparison of the descriptive characteristics of the parents with the mean scores of MPFS and sub dimension (n:300)

| Değişkenler | Operational | | Enviromental | | Personal | | Interpersonal | | Total MPFS | |
|--|---------------|-------|---------------|-------|---------------|-------|---------------|-------|---------------|--------|
| | Mean | sd | Mean | sd | Mean | sd | Mean | sd | Mean | sd |
| Age of mother | | | | | | | | | | |
| 24-35 years | 18,26 | 4,131 | 15,10 | 3,108 | 8,37 | 1,864 | 16,57 | 3,424 | 58,31 | 9,496 |
| 36 years and over | 16,92 | 3,881 | 14,53 | 3,240 | 7,86 | 1,956 | 15,51 | 3,686 | 54,82 | 9,866 |
| t/ p | 2,900/ 0,004* | | 1,569/ 0,118 | | 2,310/ 0,022* | | 2,583/ 0,010* | | 3,117/ 0,002* | |
| Educational status of mother | | | | | | | | | | |
| Primary school ¹ | 18,46 | 4,167 | 15,53 | 3,207 | 8,35 | 1,962 | 16,03 | 3,528 | 58,37 | 10,060 |
| High school ² | 16,98 | 4,032 | 14,49 | 3,105 | 7,96 | 1,899 | 16,14 | 3,760 | 55,58 | 9,999 |
| **University and graduate ³ | 16,66 | 3,318 | 13,68 | 2,927 | 7,81 | 1,891 | 15,64 | 3,378 | 53,79 | 7,737 |
| F/p | 5,719/ 0,004* | | 7,080/ 0,001* | | 1,988/ 0,139 | | 0,337/ 0,714 | | 4,755/ 0,009* | |
| | I>2>3 | | I>2>3 | | | | | | I>3 | |
| Employment status of mother | | | | | | | | | | |
| Employed | 17,44 | 4,024 | 14,80 | 3,223 | 8,11 | 2,013 | 16,08 | 3,813 | 56,44 | 9,994 |
| Unemployed | 17,72 | 4,103 | 14,80 | 3,143 | 8,10 | 1,802 | 15,92 | 3,269 | 56,54 | 9,639 |
| t/p | -0,582/ 0,561 | | 0,000/ 1,000 | | 0,037/ 0,971 | | 0,393/ 0,695 | | -0,089/ 0,929 | |
| Age of Father | | | | | | | | | | |
| 30-40 years | 17,73 | 4,003 | 14,69 | 3,187 | 8,15 | 1,867 | 16,34 | 3,410 | 56,92 | 9,525 |
| 41 years and over | 17,31 | 4,122 | 14,96 | 3,189 | 8,03 | 2,012 | 15,56 | 3,811 | 55,86 | 10,253 |
| t/p | 0,884/ 0,378 | | -0,719/ 0,472 | | 0,5421/ 0,589 | | 1,866/ 0,063 | | 0,917/ 0,360 | |
| Educational status of father | | | | | | | | | | |
| Primary school ¹ | 18,07 | 4,253 | 15,53 | 3,254 | 8,24 | 2,167 | 15,96 | 3,841 | 57,79 | 10,525 |
| High school ² | 17,62 | 4,210 | 14,86 | 3,157 | 8,16 | 1,795 | 16,06 | 3,572 | 56,71 | 9,978 |
| **University and graduate ³ | 16,67 | 3,203 | 13,62 | 2,837 | 7,78 | 1,844 | 16,00 | 3,336 | 54,06 | 7,996 |
| F/p | 2,278/ 0,104 | | 7,002/ 0,001* | | 1,194/ 0,305 | | 0,025/ 0,975 | | 2,784/ 0,063 | |
| | | | I>2>3 | | | | | | | |
| Employment status of mother | | | | | | | | | | |
| Employed | 17,54 | 4,022 | 14,72 | 3,152 | 8,09 | 1,912 | 15,97 | 3,630 | 56,32 | 9,760 |
| Unemployed | 17,83 | 4,605 | 16,06 | 3,523 | 8,33 | 2,196 | 16,78 | 3,021 | 59,00 | 10,879 |
| t/p | -0,298/ 0,766 | | -1,726/ 0,085 | | -0,522/ 0,602 | | -0,926/ 0,355 | | -1,222/ 0,263 | |
| Income status | | | | | | | | | | |
| Income less than expense ¹ | 18,57 | 4,421 | 15,53 | 3,224 | 8,55 | 1,957 | 16,74 | 3,630 | 59,40 | 10,576 |
| Income epual ² | 17,68 | 4,062 | 15,02 | 3,159 | 8,10 | 1,913 | 16,13 | 3,579 | 56,93 | 9,630 |
| Income more than expense ³ | 16,38 | 3,421 | 13,63 | 2,947 | 7,74 | 1,882 | 15,10 | 3,482 | 52,85 | 8,689 |
| F/p | 4,868/ 0,008* | | 6,767/ 0,001* | | 2,847/ 0,042* | | 3,519/ 0,031* | | 7,687/ 0,001* | |
| | I>3 | | I>2>3 | | I>3 | | I>3 | | I>2>3 | |

t= Independent t test; F=ANOVA; p<0,01*

When the relationship between mother's educational status and MPFS and mean subscale scores were examined; as the mothers' education level increased, it was determined that the mean scores of children's MPFS and procedural and environmental subscales decreased ($p<0.05$). There was no statistically significant difference between father age and fear of medical procedure ($p>0.05$). When the education level of father and MPFS and sub-dimension mean scores were examined, environmental sub-dimension score decreased as the education level of father increased and the difference was found to be statistically significant ($p<0.05$). There was no statistically significant difference between the working status of the parents and the fear of medical procedure of the children ($p>0.05$). It was found that MPFS and all sub-dimension scores of the children who defined income as less than expense were higher ($p<0.05$) (Table 4).

4. DISCUSSION

Disease and hospitalization, invasive/ noninvasive procedures may leave important traces in the lives of people, especially children (4, 12, 13). Children can be resistant to medical procedures and are known to experience fear and anxiety related to these procedures. The fear of hospital and procedure is affected by many variables such as child's age, disease status, and family's approach to

the situation (4, 8). In the hospitalization of children, due to the fear of medical procedures, refusal of treatment, inward closure, thinking of being punished, increase in hospital stay and continuing fears in adulthood may be observed. Therefore, it is important to determine the factors that affect children's fears of medical procedures for taking appropriate measures. In this section, the findings of the research are discussed in accordance with the literature.

More than half of the children participated in the study were boys and 60.3% were in the 11-14 age group. 72.7% of the children had hospital experience and 38.7% reported that they had previously been hospitalized. The majority of children experienced invasive intervention. The median fear score of the children was 56.58. Children's fear scores are below average and it is found that they are "slightly scared" (Table 1,2). It is stated in the literature that children have fears about hospitalization and medical procedures (13, 14). When the studies investigating children's fears about medical procedures were examined; As a result of the study conducted by Adsız Maraşuna and Eroğlu (2013) with 322 children in the age group of 12-14, the median fear of medical procedure was 42.14; In a similar study by Alak (1993) with children in the 7-14 age group planned for surgery, it was found that the mean fear of medical procedure was 42.79 and the majority of the children whose results showed parallelism were found to be slightly scared (11, 12).

When the scale and sub-dimension mean scores of children were compared according to their genders; the difference between total MPFS, procedural, personal and interpersonal subscale mean scores was significant ($p<0.05$) and it was found that girls had higher fear of medical procedures than boys. In a similar study, it was reported that the average fear scores of girls (44.74 ± 10.25) were higher than boys (39.61 ± 8.48) (12). When the results of the study and similar studies are examined, it is noteworthy that girls have higher fear of medical procedures. This result may be related to the upbringing way of boys and girls in our country and may be related to the inability of boys to reflect their fears.

Fears in children vary according to age and each development period has its own sources of fear (5, 6, 15-17). Therefore, in order to ensure homogeneity, the research sample was conducted only with school children. In the study, when the scale and sub-dimension mean scores of the children were examined; the difference between total MPFS, procedural and interpersonal subscale mean scores was significant ($p<0.05$) and it was found that fear levels decreased with age. This result suggests that older children experience less obscurity because of having more experience in hospital and medical procedures, and this makes us think that their fears may be reduced. In addition, the personal, visual and spatial fears of children in the 7-10 age groups are higher than those of other age groups and these children experience more fear of injury, pain, disability, illness and death. The reason for these fears is that medical equipment and procedures will harm them (17-20). Fear response is expected to decrease with increasing age (6, 15, 17). In one study, it was reported that children under 36 months had more hospital fears (7). In a similar study conducted with school-age children in Cyprus, it was stated that the total fear of medical procedures was not associated with age but the fear scale subscale scores decreased with increasing age (12). This information also supports the research result. Similar studies have reported that the fear of medical procedures decreases with increasing age in parallel with the research findings (21-23).

Children with hospital experience had higher environmental and interpersonal subscale scores than those without hospitalization, and the difference was statistically significant ($p<0.05$). Hospitals are foreign environments away from home of children, full of obscurity, often painful procedures, where parents are seen less (9, 24, 25). Children in such an environment may experience more fear because of their experiences.

Differences between MPFS and sub dimension scores and children's status of being a sibling, staying in a hospital, having chronic illness, and having continuous medication and experiencing invasive intervention and mean subscale score were found to be statistically insignificant ($p>0.05$).

Similarly, as a result of the study conducted by Adsız Maraşuna and Eroğlu (2013); being a sibling, hospitalization, reasons for hospitalization, length of stay, previous diagnosis and treatment methods have been reported to have no effect on the fear of medical procedure in children (12). When the results of Samela et al. 2009 about the fear levels of both groups in school and hospitalized children to equipment used in hospital were compared, it was stated that the fear levels of both groups were the same (26). In line with these results, it is seen that the child's fear of medical procedures, whether or not they have hospital and procedure experience, has not changed. Contrary to the results of the research and similar studies, it was stated that hospitalized children have higher fear of medical equipment than children in school in a similar study conducted by Kök Eren and Örsal (2018) (23). In addition, another study examining hospital fear reported that children who had experienced injections had higher hospital fear (7).

When the mean scores of the scale and the sub-dimension were compared according to *the maternal age*; the difference between total MPFS, procedural, personal and interpersonal subscale mean scores was significant ($p < 0.05$), and it was found that as the maternal age increased, the fear of medical procedure decreased. However, the difference between *the age of father* and fear of medical procedure of children was statistically insignificant ($p > 0.05$). Parallel to the fact that the mother spends more time with the child, it can be thought that the child may be more affected by the mother's attitudes and behaviors. The increase in maternal age and experiences, and more experienced in providing care and information to the child may explain the lower fear scores of the child.

When the relationship between mother's educational status and MPFS and mean subscale scores were examined; as the mother's education level increased, it was determined that the mean scores of children's MPFS and procedural and environmental subscales decreased ($p < 0.05$). When the father's education level and MPFS and sub-dimension mean scores were examined, environmental sub-dimension score decreased as father's education level increased and the difference was found to be statistically significant ($p < 0.05$). Parents having a high level of education can communicate better with the child and can convey information to the child about the hospital and procedures; it also makes easier for the child to express their fears more easily to the family. When the literature is examined; Gündüz et al. (2016) reported that parents of children whose education level is lower than high school are more afraid of the hospital (7). In another study conducted with secondary school students, it was seen that as the education level of the father increased, the total medical procedure fear score and sub dimension scores decreased; it was reported that there is no relationship between mother's education level and children's fears of medical procedures (12). As a result of other similar studies, it has been reported that as the education level of the father increases, the child's fear of medical equipment and procedures decreases (4, 23, 24).

There was no statistically significant difference between *the working status of the parents* and the fear of medical procedure of the children ($p > 0.05$). Whether parents work or not does not affect the child's fear of medical procedures.

It was found that MPFS and all sub-dimension scores of the children who defined income as less than expense were higher than those who defined income as higher than expense ($p < 0.05$). Contrary to the results of this research, some studies have reported that there is no relationship between family income and children's fear of medical procedures (12). No parallelism of results can be attributed to the fact that the sample group is from different populations.

5. CONCLUSION

According to the results of the study, it is seen that the mean fear score of the medical procedure is below the average and the majority of the children was "slightly feared" during the medical procedures according to the scale evaluation. It is noteworthy that as the age of children increases, the fear of medical procedures decreases and the fear of medical procedures are higher for girls. It was determined that the fears of the children decreased with increasing maternal age. Also,

the high level of education of parents is seen to be a factor that reduces the child's fear score. In addition, it was found that children who defined their income status as more than expense were less afraid of medical procedures.

Limitations

The study was conducted with 7-14 age group students of an elementary school and cannot be generalized to the universe. The findings of the study are based on self-report of children.

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