



ORIGINAL ARTICLE

Psychosocial Evaluation of Children Aged 3-6 Years After Circumcision

3-6 Yaş Çocukların Sünnet Sonrası Dönemde Psikososyal Yönden İncelenmesi

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Abstract

Objective: Circumcision can be quite traumatic for children between the ages of 3 and 6 because of their cognitive, social, emotional, and psychological developmental characteristics. This study aimed to evaluate the psychosocial effects of circumcision at the age of 3-6.

Method: This is a descriptive comparative study. The participants of the study consisted of 116 boys and their mothers (circumcised group, n=58; non-circumcised group, n=58). A "the descriptive characteristics form" and "psychosocial status evaluation scale-parents form for children 3-6 years of age" were used to collect data.

Results: The mean "psychosocial status evaluation scale-parents form for 3-6 years old children" score of the non-circumcised group was 23.21±8.99, while the mean "psychosocial status evaluation scale-parents form for 3-6 years old children" score of the children in the circumcision group before circumcision was 23.21±12.18; this value was 28.17±14.34 after circumcision. There was a statistically significant difference ($p<0.05$) in the mean scores between the circumcised group before and after circumcision and between the mean scores of the circumcised and uncircumcised groups.

Conclusion: Children aged 3-6 may experience psychosocial problems after circumcision. Therefore, it is recommended that circumcision should not be preferred unless there is a medical necessity in the 3-6-year-old age group and that the child should be psychologically prepared for the procedure when it is necessary.

Keywords: Child, circumcision, nurses, parents, pediatrics

Öz

Amaç: Sünnet, 3-6 yaş grubu çocukların bilişsel, sosyal, duygusal ve psikolojik gelişim özellikleri nedeniyle oldukça travmatik olabilir. Bu çalışmada 3-6 yaş grubundaki çocuklarda sünnetin psikososyal etkilerinin değerlendirilmesi amaçlanmıştır.

Yöntem: Araştırma tanımlayıcı-karşılaştırmalı bir çalışmadır. Araştırmanın katılımcılarını 116 erkek çocuk ve anneleri (sünnetli grup, n=58; sünnetsiz grup, n=58) oluşturmuştur. Verilerin toplanmasında "tanımlayıcı özellikler formu" ve "3-6 yaş çocuklar için psikososyal durum değerlendirme ölçeği-ebeveyn formu" kullanılmıştır.

Bulgular: Sünnet olmayan grubun ortalama "3-6 yaş çocuklar için psikososyal durum değerlendirme ölçeği-ebeveyn formu" puanı 23,21±8,99, sünnet grubundaki çocukların sünnet öncesi ortalama "3-6 yaş çocuklar için psikososyal durum değerlendirme ölçeği-ebeveyn formu" puanı 23,21±12,18'dir. Sünnet sonrası dönemde bu değer 28,17±14,34 bulunmuştur. Sünnet olan gruptaki çocukların sünnet öncesi ve sonrası ortalama puanları ile, sünnet olan gruptaki çocuklarla sünnet olmayan gruptaki çocukların ortalama puanları arasında istatistiksel olarak anlamlı bir fark vardır ($p<0,05$).

Sonuç: Çocuklar, 3-6 yaşlarında, sünnet sonrası psikososyal problemler yaşayabilir. Bu nedenle 3-6 yaş döneminde tıbbi zorunluluk olmadıkça sünnet operasyonunun tercih edilmemesi, yapılması gerekli durumlarda da çocuğun işleme psikososyal olarak hazırlanması önerilmektedir.

Anahtar Kelimeler: Çocuk, sünnet, hemşire, ebeveyn, pediatri

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Introduction

Circumcision is the process of excising the skin covering the glans penis, which is called the prepuce, by cutting it to a certain length and shape with a surgical procedure and exposing the head of the penis (1,2). Data from the World Health Organization show that 30% of men worldwide, that is, approximately one-third, are circumcised (3). Morris et al. (4) found the prevalence of circumcision worldwide to be approximately 37.7%. The prevalence of circumcision for boys is as follows in selected countries: 99.8% in Afghanistan, 98.6% in Turkey, 77% in South Korea, 71.2% in the United States, 44.7% in South Africa, 14% in China, 10.9% in Germany, 5.7% in the Netherlands, and 0.1% in North Korea.

Circumcision can be performed at any age (5,6) but is generally recommended for children under 1 year of age (7,8) or over 6 years of age (9-11). It is observed that circumcision is mostly performed in children between the ages of 3 and 6 years and over the age of 6 years (12-15), and the proportion of children circumcised between the ages of 3 and 6 is particularly high in Turkey (12,16,17). Considering that circumcision may affect the psychology of children aged 3 to 6 years (18) and may cause post-traumatic stress disorder, it is not recommended to perform the procedure during this period (19).

According to Freud, it is during this period that the child begins to notice the difference between boys and girls. His interest is focused on the sexual area, and the sexual organ becomes important. During this period of developing the child's sexual identity, boys show extreme interest in their mothers, and this interest begins to become evident starting at age 3 and reaches its peak at age 4-5. These feelings can lead to a complex fear that their father will take the male organ away from them (20). Circumcision can be perceived by children as a punishment because it can be a highly traumatic situation for children aged between the ages of 3 and 6 years. These ages have critical importance in the development of castration fear, anxiety, acute psychosocial problems, post-traumatic stress disorder (21-26), and behavioral problems (27). Compared with children in other age groups, children aged 3-6 years are more prone to experience stress related to the surgical procedure, illness, and hospitalization due to reasons such as developmental characteristics, limited cognitive capacity, lack of self-control, being more dependent, and limited

understanding (21,28,29). Moreover, it may cause children to have developmental regressions; emotionally, cognitively, and behaviorally (30).

Aim

The study determined the psychosocial effects of circumcision between the ages of 3 and 6 years. In Turkey, there is a general preference among parents to have their children circumcised at this age for religious reasons. There are insufficient studies in the literature describing the psychosocial effects of the procedure at 3-6 years of age. The results are expected to help guide healthcare professionals and parents.

Material and Method

Research Design

The study was conducted between June 12, 2018 and April 01, 2019 in the pediatric surgery and urology clinics of a state hospital in a provincial center in the Central Anatolian Region of Turkey.

Participants

The circumcised children group in this study consisted of children who underwent circumcision under general anesthesia using the sleeve method on a determined date. The sample size of the circumcised children group was determined by power analysis. Because there were no other studies in the literature, a pilot study was conducted. Descriptive obtained from the pilot study were used to determine the sample size. Therefore, 21 parents were reached first. Power analysis was then performed using G*Power 3.1 software (31) to determine the number of participants in the circumcised children group. Because of the power analysis, 52 participants were found to be sufficient, with a confidence interval of 80% and an error margin of 5% for circumcised children. The effect size of the data from 21 participants was 0.39 (small effect). Values of 0.20, 0.50, and 0.80 were considered indicative of small, medium, and large effect sizes for calculating Cohen's d (32,33).

The inclusion criteria of the study are as follows: (a) being in the age group of 3 to 6 years, (b) willingness to participate in the study (parents), (c) being able to read and write (parents), and (d) speaking Turkish (parents).

The exclusion criteria of the study are as follows: (a) history of any previous surgical procedure, (b) any chronic disease, (c) any stressful event (acute illness, the divorce of parents, loss, moving, new sibling, death, etc.) in the last 6 months, and (d) undergoing a surgical procedure other than circumcision (this criterion applies only to children in the circumcised group).

In both groups, according to the age of the children, three layers were created: 3 years (36-47 months), 4 years (48-59 months), and 5 years (60-72 months). Simple random

Main Points

- Psychosocial problems may occur in children if circumcision is not performed at an appropriate age.
- If not deemed essential, male circumcision should be delayed in children of this age group.
- For medical circumcision, it is essential to adequately prepare children for the surgical procedure in accordance with their developmental stage. This involves using understandable language and avoiding potentially harmful or distressing information.
- It is crucial to ensure that children's mental and physical welfare is prioritized throughout the process. Overall, a child-centered approach should guide the preparation process to ensure a successful and safe surgical procedure.

sampling was used to select children from each class (58 children).

Within the scope of the study, 70 boys between the ages of 3 and 6 years who were circumcised and their mothers were interviewed. The number of children not included in the participants was 12-two patients had a diagnosis of mental retardation (cerebral palsy and hydrocephalus), six patients had a diagnosis of chronic disease, two children had undergone previous surgical procedures, and the parents of two children did not want to participate in the study. Considering the possible participant loss during the study, 58 mothers and their children were included in the study.

Thereafter, the participants of the non-circumcised group of children in the same age group as this group were determined. For the participants of the non-circumcised children group, 462 boys in six kindergartens in the same city center were stratified according to their classes, 58 mothers and their children were included in the study.

Data Collection Tools

Descriptive Characteristics Form

This form, which was developed by researchers using the literature (34-36), consists of 15 questions. The form includes parents' ages, employment status, educational status, economic status, and chronic illnesses. In addition, the date of birth of the child, the number of siblings, and the birth order in the family are included in the form. The following information is provided regarding the circumcision procedure (this section was asked only to the circumcised children group): The decision process for the circumcision procedure of the child (this was an open-ended question), whether any consultancy has been obtained regarding the circumcision procedure, whether the child is informed during the circumcision process, and whether the child is informed about the circumcision procedure.

Psychosocial Status Evaluation Scale-parents Form for 3-6-year-old Children (PSAS 3-6)

This scale was developed by Şan and Altay (36) to evaluate the psychosocial status of children aged 3 to 6 years, and its validity and reliability have been verified. The scale consists of 6 factors and 31 items. There are no factors named on this scale because it was not developed to diagnose children. There are five-point Likert scale options for each item in the form: 0- "never", 1- "rarely", 2- "sometimes", 3- "often", and 4- "always". The lowest score that can be obtained from the test is 0 and the highest score is 124. There are no reverse items in the scale. A higher score indicates that the child is at psychosocial risk. It can be used to determine the early psychosocial effects of illness and hospitalization on the child. The scale's items are the most common psychosocial problems in children aged 3-6 years. These include sleep problems, introversion, attention problems, aggressive behaviors, hyperactive behaviors, regression behaviors,

eating disorders, anger, shyness, jealousy, fear, separation anxiety, and irritability. The Cronbach α value is 0.83 (37). Another study is 0.88 (38) and for this study, it is 0.76.

Data Collection

For both groups, the parents were first met and informed about the study. Written consent was obtained from the parents who volunteered to participate in the study. At the first meeting, data were collected from both groups of children, and one month later, data were collected only from the circumcised group. Measurements were taken twice in the circumcised group.

The first meeting with the parents of the circumcised group was held in a room on the polyclinic floor. The descriptive characteristics form and PSAS 3-6 were filled in by the researcher in a face-to-face interview. Completing the forms took an average of 10 to 15 min. Following the completion of the forms, the day and time were determined for a telephone interview with the parents on the 30th day of the postoperative period. PSAS 3-6 was re-administered to the parents during a phone call on the 30th day of the postoperative period. This phone call lasted about 5 to 10 min.

The data collection of the non-circumcised group was carried out once parents came to pick up their children from the kindergarten and in the form of a face-to-face meeting in the waiting room of the kindergarten. The descriptive characteristics form and PSAS 3-6 were completed by the researcher in a face-to-face interview. It took 10 to 15 min to fill in the forms.

Statistical Analysis

The data obtained in this study were evaluated using SPSS 21 (Statistical Package of the Social Sciences) software (SPSS, Inc., Chicago). For descriptive statistics, $p < 0.05$ was considered statistically significant. Whether or not the data were normally distributed was determined using visual (histogram) and analytical methods (Kolmogorov-Smirnov) (Table 1). The paired sample t-test was used to determine the difference between the scale scores of children in the circumcised group before and after the circumcision. While comparing the scale scores in the circumcised and non-circumcised groups according to the socio-demographic

Table 1.
Kolmogorov-Smirnov Values of the Scale Scores of the Non-circumcised Group and the Circumcised Group Before and After Circumcision

Kolmogorov-Smirnov	Z	p*
Non-circumcised group	0.070	0.200
Circumcised group		
Before circumcision	0.112	0.068
After circumcision	0.092	0.200

*= $p > 0.05$

characteristics of children and parents, the following tests were used: Independent samples t-test for in-group paired comparisons, One-Way ANOVA test for triple comparisons, and independent samples t-test for intergroup comparisons. In the circumcised group, the following tests were used when comparing the mean scale scores of the children who knew about circumcision and were informed about the operation: Paired sample t-test was used for intergroup comparisons and independent samples t-test was used for in-group comparisons.

Ethical Consideration

Scientific research permissions were obtained from the Ethics Committee of Gazi University the Institute of the University of Health Sciences Turkey (no. 77082166-302.08.01-), provincial health (no. 39991120-799) and provincial national education (no. 57270673-60.04-E.11550249) directorates of the province where the study was conducted. Written consent was obtained from all parents who agreed to participate in the study. Participants were informed that the data obtained would only be used for scientific purposes, provided that their identities were not disclosed, and that they could leave the study at any time with prior notice.

Results

Data on the demographic characteristics of the children are presented in Table 2. The average age of the children in the non-circumcised group was 56.02±10.72 months, and the average age of the circumcised group was 54.62±10.86 months. The average age of the children, number of siblings, birth order in the family, and hospital experience were similar in both groups, and there was no significant difference between the groups (p>0.05).

Data on the demographic characteristics of the parents are presented in Table 3. The parents’ ages, education, employment status, and the presence of an individual with chronic disease in the family were similar in the circumcised and non-circumcised groups, and there was no statistically significant difference between the groups (p>0.05).

Table 4 contains information about the reasons why parents had their children circumcised and informs them about the operation. While 37.9% (n=22) of the parents did not state any reason for circumcision, 24.1% (n=14) stated that they decided on the circumcision due to familial reasons (pregnancy and to be circumcised together with the sibling). While 19% (n=11) of the parents preferred to have their children circumcised due to medical reasons (doctor’s recommendation, frequent

Table 2.
Children’s Socio-demographic Characteristics (n=116)

Socio-demographic characteristics	Non-circumcised group (n=58)		Circumcised group (n=58)		χ ^{2*}	p [†]
	Min-max	Mean ± SD	Min-max	Mean ± SD		
Child’s age (month)	36-72	56.02±10.72	36-72	54.62±10.86	30.868	0.699
	n	%	n	%	χ ²	p
Age (month)						
36-47 month	14	24.1	16	27.6	0.592	0.744
48-59 month	20	34.5	22	37.9		
60-72 month	24	41.4	20	34.5		
Number of siblings						
No siblings	9	15.5	12	20.7	0.564	0.905
1 sibling	30	51.7	28	48.3		
2 siblings	11	19.0	11	19.0		
3+ siblings	8	13.8	7	12.0		
Birth order in the family						
1	15	25.9	23	39.7	2.568	0.277
2	27	46.6	21	36.2		
3+	16	27.6	14	24.1		
Hospital experience						
No	8	13.8	12	20.7	1.232	0.745
0-12 month	8	13.8	9	15.5		
13-36 month	6	10.3	6	10.4		
37-66 month	36	62.1	31	53.4		

*=Differences were examined using the chi-square test (χ²), †=(p<0.05), SD=standard deviation

urinary tract infection history, or phimosis), 17.2% (n=10) of the parents preferred that their children be circumcised before they started school; 12.1% of the parents stated that they did not find the opportunity before and preferred to have circumcision at this age because they thought they were late. The percentage of mothers who stated that they received consultancy service from the doctor before the circumcision operation was 25.9% (n=15). While 77.6% of the children (n=45) were aware of the circumcision beforehand, 67.2% (n=39) of the children were not informed about the method of the operation.

Table 5 shows a comparison of the mean scale scores of children in the non-circumcised group and those in the circumcised group. There was no statistically significant difference between the PSAS 3-6 scores of the children in the non-circumcised group and the PSAS 3-6 scores of the children in the circumcised group before circumcision ($p>0.05$). The difference between the PSAS 3-6 scores of

the children in the circumcised group before and after the circumcision was statistically significant ($p<0.05$). As for the age groups, while the difference between the scale scores of children aged 48-59 months and 60-72 months before and after the circumcision was statistically significant ($p<0.05$), it was not statistically significant in children aged 36-47 months ($t=1.117, p=0.281$).

Discussion

Circumcision, which is elective unless medically necessary, is the most common surgical operation performed in children aged 3 to 6 years and above 6 years in Turkey (12,13,15,39). Children with limited cognitive understanding can be highly traumatized by stressful situations such as surgery. It is different for the child who is unfamiliar with the hospital environment (40). It is known that, after surgical operations performed between the ages of 3 and 6 years, fear of castration, phobias, aggressive behavior, nightmares,

Table 3.
Parents' Socio-demographic Characteristics (n=116)

Socio-demographic characteristics	Non-circumcised group (n=58)		Circumcised group (n=58)		χ^{2*}	p [†]
	Min-max	Mean \pm SD	Min-max	Mean \pm SD		
Age						
Mother's age	22-46	32.09 \pm 5.13	24-47	33.10 \pm 5.67	17.187	0.743
Father's age	24-48	35.24 \pm 5.63	28-69	36.91 \pm 6.88	29.609	0.180
Mother's education level	n	%	n	%	χ^2	p
Primary and secondary school	29	50.0	26	44.8		
High school	15	25.9	21	36.2		
University and higher	14	24.1	11	19.0		
Father's education level						
Primary and secondary school	19	32.8	16	27.6	0.449	0.799
High school	22	37.9	25	43.1		
University and higher	17	29.3	17	29.3		
Mother's employed status						
Employed	20	34.5	19	32.8	0.039	0.844
Not employed	38	65.5	39	67.2		
Father's employed status						
Employed	53	91.4	55	94.8	0.717	0.358
Not employed	5	8.6	3	5.2		
Income status						
Income lower than expenses	15	25.9	4	6.9	7.717	0.027
Income equal to expenses	40	69.0	50	86.2		
Income higher than expenses	3	5.1	4	6.9		
Chronic illness in the family						
Yes	8	13.8	10	17.2	0.263	0.608
No	50	86.2	48	82.8		

*=Differences were examined using the chi-square test (χ^2), [†]=($p<0.05$), SD=standard deviation

regression, eating disorders, and sleep disorders can be seen (22,26,41). Moreover, insufficient information given before the surgical intervention (such as medical device,

painful procedure, and preoperative preparation) causes anxiety and emotional stress in both the family and the children (22,42,43).

Table 4.
Parents' Reasons for the Circumcision of Their Children and Informing the Child About Circumcision (n=58)

Reasons for circumcision*	n	%
No specific reason	22	37.9
Familial reasons (pregnancy†, to be circumcised together with the sibling)	14	24.1
Medical reasons (doctor's recommendation, frequent urinary tract infection history, phimosis)	11	19.0
Desire to have the children circumcised before they started school	10	17.2
No opportunity before/they thought they were late	7	12.1
The children put their hands on their genitals	1	1.7
Did the family receive any consultancy before circumcision?	n	%
Yes‡	15	25.9
No	43	74.1
Was the child aware of the circumcision beforehand?	n	%
Yes	45	77.6
No	13	22.4
Was the child informed about the operational procedure?§	n	%
Yes	19	32.8
No	39	67.2

*=Parents have given more than one reason. Row percentages are given over n=58, †=pregnant women want it done as soon as possible before delivery, ‡=consultancy service received from the doctor (n=15), §=explaining to the child how the operation will be performed and what will be done during the operation

While the PSAS 3-6 scores of the children who were aware of the circumcision beforehand (n=45) in our study were low after circumcision, the PSAS 3-6 scores of the children who were not aware (n=13) were high (p<0.05). Children who were informed about the circumcision procedure (19 children) had a PSAS 3-6 score that was low after circumcision, whereas the PSAS 3-6 scores of children who were not informed before circumcision (39 children) were high after circumcision (p<0.05). In conclusion, our study found that the psychosocial scale scores of the children who were aware of the circumcision and were informed about the circumcision procedure were lower (p<0.05), most circumcised children (77.6%) were aware of the circumcision, and only one-third of the circumcised children were informed about the operation. Similarly, Sancar et al. (11) found that children who knew circumcision experienced less fear. A study by Suzan et al. (42) concluded that children who were under-informed about the circumcision procedure, pain, and anesthesia experienced more fear and anxiety. Karayagmurlu et al. (13) found that children who were not informed about circumcision had higher levels of preoperative anxiety. A study by Yılmaz et al. (43) showed that 38.9% of mothers explained the circumcision procedure to their children. A study by Çatakli et al. (17) found that 58.4% of mothers gave information to their children about the circumcision procedure. Of the mothers who informed their children about the circumcision procedure, 70.4% said "men would be circumcised" and 25.4% said "circumcision is necessary to be a father". A study by Corduk et al. (44) found that parents informed 44% of their children about circumcision and used the following expressions: 35.4% "no need to be afraid", 27.5% "it will not hurt", and 16% "you have to be a man". Rizalar et al. (38) showed that 27.3% uninformed about circumcision to children. A study by Bartik and Toruner (45) concluded that the information given before day-case surgery affects children positively (p<0.05). Studies have shown that informing children about circumcision in the

Table 5.
Comparison of the Mean Scale Scores of Children in the Non-circumcised Group and the Children in the Circumcised Group

	Non-circumcised group			Circumcised group- (before circumcision)			NCG-BC		Circumcised group- (after circumcision)		BC-AC	
	n	Min-max	Mean ± SD	n	Min-max	Mean ± SD	t*	p*	Min-max	Mean ± SD	t†	p†
Scale total score	58	1-42	23.21±8.99	58	2-54	23.21±12.18	0.000	1.000	5-58	28.17±14.34	-4.616	0.001
Age groups (month)												
36-47 month	14	11-42	29.86±9.05	16	8-54	27.50±12.88	0.572	0.572	12-51	29.94±13.44	-1.117	0.281
48-59 month	20	8-29	20.45±6.60	22	2-44	21.77±12.86	-0.425	0.674	5-58	26.73±17.08	-3.439	0.002
60-72 month	24	1-37	21.63±9.05	20	4-43	21.35±10.48	0.093	0.926	6-54	28.35±12.12	-3.477	0.003

NCG=Non-circumcised group, SD=standard deviation, BC=before circumcision-circumcised group, AC=after circumcision-circumcised group, *=independent samples t-test was used for comparison between groups, †=paired sample t-test was used for comparison between groups, †=p<0.05

pre-circumcision period and being aware of circumcision are insufficient (13,17,38,43,44). Lack of information about the circumcision process can have negative psychosocial consequences for children.

While the PSAS 3-6 scores of the children in the non-circumcised group and the pre-circumcision PSAS 3-6 scores of the children in the circumcised group were similar in our study, the post-circumcision scale scores of the children in the circumcised group were significantly higher ($p<0.05$). Similarly, a study by Özkıdık et al. (46) on children aged 9-12 years evaluated the stress levels of children due to circumcision and found that the stress levels of circumcised children were significantly higher than those of children who were not circumcised ($p<0.05$). A study by Polat et al. (47) evaluated pre-circumcision and post-circumcision anxiety and found a high increase after circumcision in the anxiety levels of children who experienced pain at the beginning of the circumcision procedure. A randomized controlled study by Akgün Kostak et al. (48) on children between the ages of 5 and 10 years showed that children with similar fear scores before circumcision had statistically lower fear scores after playing the puppet game ($p<0.05$). Contrary to our study, a study by Uruc et al. (15) found that pre-circumcision depression and anxiety scores (children aged 6-8) were significantly higher than post-circumcision (6 months later) depression and anxiety scores. A study conducted by Yavuz and Akdeniz (40) on children between the ages of 6 and 11 years found that children's depression, anxiety levels, and behavioral problems did not increase in the post-circumcision period (1 month and 6 months later). In addition, a study by Başbakkal et al. (34) found that a child who was hospitalized between the ages of 3 and 6 years had behavioral changes before hospitalization.

While 37.9% of the parents did not state any reason for circumcision in our study, 24.1% stated that they decided on circumcision for familial reasons, and 19% preferred to have their children circumcised for medical reasons. Studies in the literature show that between 32% and 84.8% of families have their children circumcised for religious reasons (12,14,39,45,49,50). The act of not being circumcised is seen as a step outside one's own cultural and religious family traditions in many cultures, such as Turkey (51). Contrary to these studies, Özveren's (14) study with newborns showed that 70.65% of parents decide on circumcision for medical reasons. Other reasons in our study were as follows: 17.2% of the families wanted their children circumcised before they reached the age to be aware of the situation, and 12.1% wanted their children circumcised at this age because they could not find time before. Studies in the literature show that those who prefer circumcision under the age of 3 think that the child will recover quickly and will not feel pain (52,53), while those who decide to have circumcision between the ages of 3 and 6 years (47.8%) and over 6 (57.2%) think that their children will not be afraid of circumcision (53). The studies show that families do not know the medical necessity of circumcision, and they have their children circumcised mostly for religious reasons in Turkey (12,36,40,41).

Considering the literature together with our study, circumcision and other surgical procedures performed between 3 and 6 years of age and hospitalization cause behavioral changes, psychosocial problems, and psychological trauma in children. For this reason, it is recommended that circumcision is not preferred during 3 to 6 years unless there is a medical necessity, and if it is unavoidable, the child should be prepared for the procedure.

Study Limitations

The study is limited to the characteristics measured by PSAS3-6 for the psychosocial problems of children circumcised between 3 and 6 years of age. The research results represent only the participants and cannot be generalized to the country in which the study was conducted. The children were not followed up for post-circumcision complications such as swelling, pain, and bleeding. The parents' psychosocial status was not assessed before surgery. It is recommended that future studies examine these variables in more detail. In addition, to determine whether circumcision is appropriate, it is recommended that children between the ages of 3 and 6 years be assessed using a variety of measurement tools.

Conclusion

Children aged 3-6 may experience psychosocial problems after circumcision. The psychosocial problems that may be caused by circumcision in children between the ages of 3 and 6 years should be explained to the parents, and detailed information should be given from health professionals about the appropriate age and reasons for circumcision and the benefits and necessity of circumcision. Besides, warnings should be made that it is inconvenient to perform circumcision between the ages of 3 and 6 for only religious and cultural reasons, except for medical necessity. In a circumcision operation due to medical necessity (doctor's recommendation, frequent urinary tract infection history, and phimosis), information should be given about the importance of preparing in advance in accordance with the developmental period of the child, adopting a multidisciplinary approach, and performing the procedure in the hospital environment and by specialists. In the pre-circumcision period, children should be informed about the circumcision process in a way that they can understand (with simple words and a method appropriate to their age) and the how-why-by whom the circumcision procedure will be performed. Besides, they should be reminded that circumcision is not a punishment.

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