



Determining the Knowledge Level of Parents Relating to Circumcision

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ABSTRACT

Aim: This study was conducted to determine the knowledge level and opinions of parents regarding circumcision.

Materials and Methods: This descriptive style study was conducted with 258 individuals who were the parents of male patients being treated in the pediatric surgery department of a university hospital. The data of the study were collected through a questionnaire which was designed in line with the literature and given through a face-to-face interviewing method. The data were analyzed by using descriptive statistics with the SPSS 21.0 package program for Windows.

Results: A total of 84.9% of the parents were the mothers of the children. A total of 70.2% of the parents stated that they had had their child circumcised by a physician in a hospital setting. Regarding the purpose of circumcision, a total of 27.5% of the parents stated medical and emergency requirements while 25.6% of them stated cultural factors. A total of 23.3% of the parents stated that their children did not want to be circumcised while 57.4% stated that they had made decision to circumcise together with their spouse. A total of 54.3% of the parents mentioned that their children experienced pain after circumcision. It was determined that the parents had a moderate level of knowledge regarding the benefits of circumcision, however, most of them had no idea about the practices of circumcision.

Conclusion: Parents emphasized the cultural and medical factors as being the most important factors in the decision to circumcise their child. Parents have a lack of knowledge of circumcision practice, its benefits, and post-circumcision care. Training with the aim of increasing the knowledge of parents regarding circumcision should be planned. Qualitative and quantitative studies on the subject are recommended to be conducted in different regions and with large populations.

Keywords: Circumcision, parent, level of knowledge

Introduction

Circumcision is one of the oldest and most common surgical procedures around the world (1,2). Some factors such as religion, culture, geographical area, race, and ethnicity affect circumcision rates. Although the frequency of circumcision shows differences regionally, it is carried out in almost every region of the world (3,4). According

to the World Health Organization report, it is estimated that almost 30-33% of the men aged 15 and above are circumcised (5). It is a commonly performed practice in some parts of South East Asia, in the Americas, The Philippines, The Middle East, Australia, Israel, South Korea, and regions where there is a high density of Muslim population (3,6,7). The majority of men in Turkey, where most of the population is Muslim, are circumcised (8).

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While circumcision is considered as an expression of cultural identity in certain groups, it is associated with social life, health, and reproductive health in many societies (4). It is accepted as a religious component in Jewish and Muslim societies (2). An average of 25% men around the world are circumcised due to religious, cultural, medical reasons, and family preferences, according to reports (9,10).

Circumcision is considered as being a symbol of the ability to reproduce and of a child entering into manhood. Circumcision is directly related to health in addition to its religious and traditional connection (4,8). However, there is no clarity regarding the ethical aspect of circumcision. In the literature, while it is thought that child circumcision is unethical and against human rights, it is also stated that it is a beneficial intervention which can prevent some diseases (2,11).

It is stated that circumcision which is performed in the phallic period may lead to acute psychological issues in children. Therefore, circumcision is recommended to be performed before the age of three or after the age of six (3,12). Religious beliefs, traditions, human rights, financial issues, and scientific data are important aspects of discussions regarding circumcision (8,13). Regardless of the meaning that is attached to circumcision, necessary consideration must be given to the fact that this practice should be carried out for men of all age groups in the best conditions and with the least risk (8,12).

Since circumcision is an important surgical procedure, it should be performed by an experienced doctor in a hospital operating room environment (10,14). Circumcisions performed outside the hospital environment may lead to more complications. It is stated that complications happen mostly in the early period after circumcision and the frequency of the complications varies between 0.2% and 5% (15). Generally, in eastern societies, circumcisions are performed in environments such as the home or neighborhood health center, which are not suitable for any kind of surgical procedure, and they are carried out by people without any expertise or professional competence (10,15,16). While the complication rate of circumcision performed by trained professionals in developed countries is 5%, it may go up to 95% in developing countries when the circumcision is performed by a traditional circumciser (10).

There are a limited number of studies that investigate the opinions and knowledge of parents on circumcision. To give information about circumcision to the parents and raise their awareness about this frequently applied procedure is very important. This study was conducted to determine the knowledge level and opinions of parents regarding circumcision.

Materials and Methods

Study Design

This study is of a descriptive type. This study was conducted between July 2016 and July 2017 with the parents of boys who were treated in the pediatric surgery wards of a university pediatric hospital. The boys had been previously circumcised or were hospitalized due to an existing circumcision operation. The parents' behaviors, thoughts, and knowledge regarding the circumcision process of their boys were evaluated.

Study Population

The parents of child patients being treated in the pediatric surgery department formed the population of this study. The sample of the study was 258 individuals who were the parents of male patients between the ages of 0 to 18 years. The inclusion criteria for the study were as follows; being the parent of a previously circumcised male child between the age of 0 to 18 years who was being treated in the pediatric surgery department or being the parent of child who was at that time in the pediatric surgery ward due to a circumcision operation, and being the primary care provider of the child and agreeing to participate in the study.

Data Collection and Instruments

The questionnaire used in this study was designed by the researchers in line with the literature (17,18). The data were collected through a face-to-face interview method by two of the researchers. The researchers briefed the parents about the study and informed verbal and written consent was obtained from the parents. A "Personal Information Form" and "Circumcision Information Form" were used as the tools to collect data. The personal information form has two sections. The first section includes questions on the socio-demographic parameters of the parents (gender, age, educational background, occupation and income), and the second section includes questions on their behaviors and opinions regarding the practice of circumcision as well as the method they chose for the circumcision of their child. The Circumcision Information Form includes 23 questions which investigate information regarding the parents' level of knowledge on circumcision and care after circumcision.

Statistical Analysis

The SPSS 21.0 package program for Windows was used to analyze the data. The socio-demographic characteristics of the parents and their knowledge regarding circumcision were evaluated by using descriptive statistical methods (frequency and percentage distribution, mean, standard

deviation, etc.). Parametric tests (t-test, variance analysis, etc.) were used to analyze the relationship between the parents' socio-demographic characteristics and their total knowledge scores by considering the data structure (normal distribution of data, homogeneity of variance, etc.). The results were evaluated with a 95% confidence interval and a significance level of $p < 0.05$.

In order to conduct this study, the implementation permit (no: 27344949/478-2549) was obtained from the Scientific Ethics Committee of Ege University, and institutional permission was obtained from the children's hospital. In addition, written and verbal informed consent of the parents was obtained before starting the study.

Results

A total of 84.9% of the participants were mothers. Parents who were aged 35 years or above comprised 46.1%. A total of 48.8% of the parents had only primary school graduation and 58.5% of them were housewives. A total of 55.0% of the parents stated that their income is equal to their expenses (Table I).

The results regarding the behaviors of parents related to circumcision are presented in Table II. This table includes the parents' experience and knowledge in the process of circumcision of their boys. The doctors performed the circumcision of 82.2% of the children and a total of 70.2% of the children were circumcised in a hospital environment. 41.5% of the parents stated that the child was not briefed before the circumcision, and 57.4% of parents stated that they made the circumcision decision as a parent of their children. A total of 25.6% of the parents stated that they had the circumcision of their children done for cultural reasons and 23.6% of them for medical reasons. After circumcision, 64.7% of the parents performed the dressings, and 10.5% kept the foreskin. After circumcision, 54.3% of children experienced pain, and 8.9% of them had complications (Table II).

The distribution of the parents' level of knowledge about circumcision is shown in Table III. The mean total score of knowledge is 11.07 ± 16 (minimum 2; maximum 18). Regarding the benefits of circumcision, 64.0% of the parents gave the answer of "the risk of penile cancer decreases" and 48.1% of them gave the answer of "sexually transmitted diseases are less common". Parents mostly lack knowledge about "No clothes should be worn after circumcision.", "The best period for circumcision is between the ages of 3-6 years", "having a shower immediately after circumcision" and "attaching a baby's diaper". The parents

Table I. Distribution of parents' socio-demographic features (n=258)

Variables	Groups	n	%
Gender	Female	219	84.9
	Male	39	15.1
Age	19 years or below	9	3.5
	20-24 years	19	7.4
	25-29 years	37	14.3
	30-34 years	74	28.7
	35 year or above	119	46.1
Education status	Uneducated	6	2.3
	Primary school	126	48.8
	High school	77	29.8
	Undergraduate	35	13.6
	Graduate	14	5.4
Occupation	Housewife	151	58.5
	Private sector employee	38	14.7
	Self-employed	17	6.6
	Government employee	42	16.3
	Retired	10	3.9
Income status	Income is less than spending	93	36
	Balanced	142	55
	Income is more than spending	23	9

Table II. Distribution of parents' behavior related to circumcision (n=258)

Variables	Groups	n	%
The person who performed the circumcision	Doctor	212	82.2
	Health technician	12	4.6
	Circumciser	34	13.2
Place of circumcision	Hospital	181	70.2
	Health center	13	5.0
	Home	64	24.8
Briefing before circumcision	Yes	151	58.5
	No	107	41.5
The decision on circumcision age	Father	41	15.9
	Mother	24	9.3
	Parental decision	148	57.4
	Health professional	35	13.5
	Family elders	10	3.9
Willingness of children	Yes	60	23.3
	No	198	76.7

Reasons for circumcision			
Cultural reasons	Yes	66	25.6
	No	192	74.4
Medical reasons	Yes	61	23.6
	No	197	76.4
Emergency indication	Yes	10	3.9
	No	248	96.1
Performing the dressing after circumcision	Yes	167	64.7
	No	91	35.3
Observing the presence of post-circumcision pain	Yes	140	54.3
	No	118	45.7
Keeping the foreskin	Yes	27	10.5
	No	231	89.5

gave the answer of "I have no idea" most to the following topics: "Sexually transmitted diseases are less common in circumcised children", "Neonatal circumcision is not applied to children with a small genital or congenital disorder", "Neonatal circumcision is not applied to children who are born small, cannot maintain body temperature, and cannot be fed", and "bleeding after circumcision is common".

The results of the analysis performed for the comparison of the total scores of the parents' knowledge on circumcision according to socio-demographic characteristics are given in Table IV. No significant relationship was found between the socio-demographic characteristics of the parents and their total knowledge scores.

Discussion

Parents' opinions and knowledge-levels regarding circumcision were determined with this study. Circumcision has been a common surgical procedure since ancient times (4,19). This study determined that approximately one-fourth of the parents had their children circumcised due to cultural factors. Sardi and Livingston (20) stated in their study that parents had their children circumcised primarily for cultural and personal expectations and then for health reasons. Similarly, in the study of Rizalar et al. (8), 69.3% of the parents stated religious beliefs as the reason for circumcision while 29.1% of them stated cultural factors. Other studies in the literature also stated that almost all parents had their children circumcised due to religious and cultural reasons (19,21). The results of our study show similarities with the literature. The results reveal once again that cultural factors are an important component of circumcision practice. The proportional differences in the

results of the research may be related to the size of the study samples, participants living in different regions, and having different traditional structures. While circumcision is considered a religious component in Muslim and Jewish societies (2), it is associated with medical reasons and health in western societies (7). Waskett (22) stated in his report that circumcision is becoming more and more common around the world, however, it is being preferred for health and medical purposes, more than for the cultural and religious reasons. It is stated in another study that some of parents had their children circumcised because of beliefs related to sexuality and cosmetics (23). Similar to studies in the literature, this study's findings show that almost 25% of the parents had their children circumcised due to medical reasons, while a total of 4% of them were due to emergency medical indications. Our study results are consistent with the literature.

Since circumcision is a surgical procedure, it should be performed by specialists following aseptic techniques (4,16). It was determined in this study that more than half of the parents had their children circumcised by a doctor in a hospital setting. In another similar study, 57.9% of the parents stated that they preferred to have their children circumcised by a doctor in a public hospital (23). According to the study of Koç et al. (24), 63.5% of the families had their children circumcised in a hospital setting. Although literature information and study results show that the vast majority of families have their children circumcised safely in a hospital setting, there are also reports that in developing countries and eastern communities, circumcision is still performed at home, in neighborhood health centers, and in crowded areas (such as mass circumcision ceremonies). It is also stated in research reports that in developing countries, circumcision continues to be conducted by non-professional people, who are referred to as "circumcisers" (7,22). The families' lack of knowledge on circumcision, their consideration of circumcision as a simple operation, economic factors, family rituals, and the density of health institutions might be considered as the reasons leading to these situations.

Since circumcision is a surgical procedure, the risk of developing complications may increase if it is not performed under suitable conditions (4,25). In this study, parents stated that 10% of the children developed complications (4,25). Similarly, Altunkol et al. (25) mentioned that 8.7% of the patients that were circumcised developed complications either minor or major. Also, Türkan et al. (26) reported in their study that 12.0% of the children had

Table III. Distribution of the parents' level of knowledge about circumcision (n=258)

Statements	Know		Don't know		No idea	
	n	%	n	%	n	%
Urinary tract infections are more common in circumcised children.	138	53.5	34	13.2	86	33.3
Circumcision leads to better penile cleansing and the rate of penile cancer in children with circumcision decreases.	165	64.0	7	2.7	86	33.3
Sexually transmitted diseases are less common in circumcised children.	124	48.1	10	3.9	124	48.1
Circumcision is used as a treatment for conditions such as tightness in the foreskin, bonded foreskin, and paraphimosis.	199	77.1	12	4.7	47	18.2
In our country, males must be circumcised to get married.	207	65.9	46	17.8	42	16.3
Circumcision may lead to emotional stress in children.	170	65.9	46	17.8	42	16.3
No clothes should be worn after circumcision.	90	34.9	117	45.3	51	19.8
Neonatal circumcision is not applied to children with small genitals or a congenital disorder.	65	25.2	27	10.5	166	64.3
Neonatal circumcision is not applied to children who are born small, cannot maintain body temperature, or cannot be fed.	52	20.2	41	15.9	165	64.0
The child who is entering the adolescence period cannot be circumcised.	99	38.4	71	27.5	88	34.1
Children with hemophilia should not be circumcised without taking the necessary precautions.	193	74.8	19	7.4	46	17.8
Complications will develop after circumcision if the aseptic conditions are not maintained.	170	65.9	26	10.1	62	24.0
The younger the child is, the more difficult the circumcision is.	119	46.1	69	26.7	70	27.1
The most common thing after circumcision is bleeding.	105	40.7	43	16.7	110	42.6
Circumcision should not be performed in the neonatal period.	118	45.7	67	26.0	73	28.3
The best period for circumcision is between the age of 3-6 years.	76	29.5	102	39.5	80	31.0
The child can ride a bicycle the day after circumcision.	222	86.0	14	5.5	22	8.5
The child can take a shower immediately after circumcision.	26	10.1	181	70.2	51	19.8
Having a shower every day after circumcision speeds up the recovery.	38	14.7	121	46.9	99	38.4
If the baby is using a diaper, it should not be changed frequently.	117	45.3	98	38.0	43	16.7
If the baby is using a diaper, it should be attached loosely.	20	7.8	198	76.7	40	15.5
Straining leads to increased bleeding and constipation in circumcised children.	87	33.7	37	14.3	134	51.9
Since the sense of pain does not develop in the newborn, circumcision can be performed without anesthesia.	41	15.9	80	31.0	137	53.1

complications developing after circumcision. The results of this study show similarities with the complication rates in the literature. Performing circumcision in settings not suitable for surgical procedures, circumcision being performed by non-professionals, and the parents' lack of knowledge on post-circumcision care might be the leading factors for the development of complications. Moreover, it is widely believed that hastily performing circumcision when performed in a mass environment might lead to the development of complications as well as infections.

Although circumcision is considered to be a sociological need, it is a topic of discussion on medical ethics and

patient rights due to its possible psychological effects on male children. Especially, there are different opinions on the appropriate age for circumcision (27,28). The findings of our study determined that almost two-thirds of the children were not willing to be circumcised, while more than half of the parents stated that they decided on the circumcision. Similar studies in the literature mention that parents decide on circumcision (24,29). According to the results of this study, although parents have the biggest determining element on circumcision, briefing the child about circumcision and getting his opinion should be considered in terms of personal rights and ethics.

Table IV. Comparison of parents' total scores on circumcision knowledge levels by socio-demographic characteristics

Variables	Groups	n	X ± SD	Statistical value
Gender	Female	219	43.76±6.81	t: 0.02* p: 0.98*
	Male	39	43.79±6.74	
Age	19 year or below	9	40.66±6.02	F: 0.57** p: 0.68
	20-24 years	19	43.94±6.84	
	25-29 years	37	44.13±5.21	
	30-34 years	74	43.48±6.05	
	35 year or above	119	44.04±7.67	
Education status	Uneducated	6	42.66±5.53	F: 1.67** p: 0.15
	Primary school	126	44.34±6.88	
	High school	77	42.17±1.21	
	Undergraduate	35	40.50±7.06	
	Graduate	14	43.77±6.78	
Occupation	Housewife	151	43.77±6.49	F: 1.61** p: 0.17
	Private sector employee	38	45.55±7.84	
	Self employed	17	42.11±6.78	
	Government employee	42	42.33±6.78	
	Retired	10	45.80±2.97	
Income status	Income is less than spending	93	45.52±6.97	F: 1.80** p: 0.16
	Balanced	142	43.10±6.43	
	Income is more than spending	23	44.35±7.19	
The person who performed the circumcision	Doctor	212	43.75±6.76	F: 1.47** p: 0.86
	Health technician	12	42.91±6.81	
	Circumciser	34	44.14±7.11	

*t- test, **ANOVA
 SD: Standard deviation

Circumcision might be a painful, traumatic experience that is perceived as emotionally negative (29,30). There are a few studies about the prolonged psychological effects of male circumcision. Goldman (31) stated in their study that circumcised males generally experience feelings of anger, embarrassment, grief, instability, and of being abused. Therefore, circumcision is recommended to be performed at the ages when the psychological effects are minimal and by a doctor (28). It was determined in this study that parents do not have sufficient knowledge of the appropriate age for circumcision. Similarly, in other studies in the literature, parents did not know much about the appropriate age levels

for circumcision (24,29,32). These studies mostly state that children are circumcised at school age. Özkan et al. (33) stated in their study that 44.8% of circumcisions were conducted while the children were in the phallic period. Circumcision is a condition that significantly affects a child's inner world and sense of self. Therefore, when determining the age of circumcision, the psychological effect of the circumcision on the child should be taken into consideration, and children's emotional reactions and their perceptions should be evaluated (15). Especially, circumcision that is conducted between the ages of 3 to 6 years might lead to a negative experience for the children as, during this period, the children's sexual identity begins to develop and their genitals start to have meaning and value from the child's point of view. Especially, they might experience fear of losing their genitals (castration) during this period. Due to these reasons, it is recommended that circumcision is conducted before the age of 3 or after the age of 6 years (27,28). Also, it is thought that families prefer to carry out circumcision during the school-age after children develop concrete perceptions so that their children can remember it as a pleasant ritual.

It was determined that the parents in this study did not have sufficient knowledge regarding the benefits of circumcision. Approximately half of the parents have wrong information regarding the practice of neonatal circumcision. There is scientific evidence on the possible medical benefits of neonatal circumcision. However, this evidence is not sufficient to recommend neonatal circumcision as a routine practice (34). It is stated that neonatal circumcision decreases the risk of urinary tract infections, HIV, and other sexually transmitted diseases and the development of carcinoma in the penis (34,35). In a meta-analysis study in which 1,000 circumcised adults in Africa were examined, it was reported that circumcision reduces the risk of HIV by 38-64% (11). A low level of education among the parents and the fear of newborns being harmed might affect the knowledge level of the parents regarding neonatal circumcision. Besides, the parents' lack of knowledge on a child's development periods as well as not knowing about sexual identity acquisition of the child in the phallic period may cause them to have difficulties with the decision of circumcision age.

Correctly applied post-circumcision care is effective in reducing the risk of complications after circumcision (36). According to the results of this study, parents have a moderate level of knowledge of post-circumcision care and procedures. In contrast to our results, a study conducted

with mothers revealed that the knowledge level of the mothers on post-circumcision care and complications was above average (21). It was reported in studies investigating the post-circumcision status that bleeding, insufficient circumcision, fistula, and infection are the complications observed frequently (16,33). These results reveal the necessity of following aseptic techniques for care both during the circumcision procedure and in the post-circumcision period. It is thought that it is necessary to provide education on post-circumcision care to mothers, as they are often the primary caretakers, in order to manage successful post-circumcision care and reduce the risk of infection.

Study Limitations

This study had some limitations. This study was conducted with the parents of male patients being treated in the pediatric surgery department of a university hospital. The data was limited to the level of knowledge of parents regarding circumcision and provided information about the current situation. During data collection, 20 participants did not want to complete the study, and therefore, their data were excluded from the study. The targeted number of samples was reached in the general framework and a reliable and high rate of response was received from the participants. Applying valid and reliable assessment tools which are used to measure the knowledge of individuals regarding circumcision in the study could contribute to a clearer demonstration of the effectiveness of the results.

Conclusion

Circumcision is a process that includes religious, traditional, and medical dimensions. In addition, this process has an important effect on a child's psychology and their sense of self. The results of this study revealed that parents do not have sufficient or accurate information on circumcision. Also, a child's opinion is not taken into account when making decisions on circumcision and parents have the final say on these decisions. Due to this, health professionals (doctors, nurses, primary care physicians, etc.) should provide the necessary education to the parents and society on circumcision, and awareness should be increased with educational activities. It is recommended to conduct qualitative and quantitative studies in larger sample groups and in different regions to evaluate families' knowledge and opinions on circumcision. In addition, qualitative studies evaluating the children's perception of circumcision should be conducted in order to take their opinions into consideration.

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Ethics

Ethics Committee Approval: This study was approved by the Ege University Faculty of Nursing, Scientific Ethics Committee of the University (approval number: 27344949/478-2549) and by the clinic where the study was conducted.

Informed Consent: Written informed consent was obtained from the participants before enrollment.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Concept: N.A.D., A.K., H.N.Ç.Ö., Design: N.A.D., A.K., H.N.Ç.Ö., Data Collection or Processing: H.N.Ç.Ö., A.K., Analysis: A.K., Interpretation: A.K., H.N.Ç.Ö., Literature Search: N.A.D., A.K., H.N.Ç.Ö., Writing-review: H.N.Ç.Ö., A.K., Editing, and supervision: N.A.D., A.K., H.N.Ç.Ö.

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