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Parenting Attitude on Toilet Training of Children with Urinary Incontinence

Üriner İnkontinanslı Çocukların Tuvalet Eğitiminde Ebeveynlerin Tutumu

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Abstract

Introduction and Objective: In this research, we aimed to elucidate parents' knowledge, attitude, and behavior of parents regarding toilet training of children with urinary incontinence and compare the results with normal children.
Method: The study was conducted among 100 pediatric patients aged between 5 – 17 years who applied to our institution with complaints of urinary incontinence (night and daytime). The participants were requested to answer a 2-part-questionnaire including 50 questions prepared by two specialist physicians.
Results: The rate of mothers who trainin starting toilet training before two years of age was 19.7% in the study group and significantly lower than the control group (33.4%, p=0.03). The rate of children whose toilet training lasted over three months was 56 % in the study group and 10.8% in the control group (p<0.05). Completing toilet training after three years of age was 76% and 32% in the study and control groups, respectively (p<0.05). The rate of starting toilet training together during the day and night in the study group was significantly lower than in the control group (5.5% vs. 27.4% in the control group, p <0.05). Similarly, 65.3% of mothers of children with UI continued to tie diapers while toilet training, while only 37.3% of mothers of the control group tied diapers at night (p=0.002).
Conclusion: The duration of toilet training of children varies considerably according to the age of the person responsible for toilet training, whether she had given toilet training before and received training on this subject.

Keywords: Toilet Training, Urinary İncontinence, Enuresis Nocturna, Daytime Enuresis, Diaper.

Özet

Giriş ve Amaç: Bu araştırmada, ebeveynlerin idrar kaçırma (enürezis nokturna ve gündüz enürezisi) olan çocukların tuvalet eğitimine ilişkin bilgi, tutum ve davranışlarını ortaya çıkarmak ve idrar kaçırması olmayan çocuklarla karşılaştırmayı amaçladık.
Yöntem: Çalışma, kurumumuza idrar kaçırma (gece ve gündüz) şikâyeti ile başvuran 5 – 17 yaş arası 100 çocuk hasta üzerinde gerçekleştirildi. Katılımcılardan iki uzman hekim tarafından hazırlanan ve 50 sorudan oluşan 2 bölümden oluşan bir anketi yanıtlamaları istenmiştir.
Bulgular: Tuvalet eğitimine 2 yaşından önce başlamayı destekleyen annelerin oranı çalışma grubunda %19.7 olup, kontrol grubuna göre anlamlı olarak düşüktü (%33.4, p=0.03). Tuvalet eğitimi 3 aydan uzun süren çocukların oranı çalışma grubunda %56 kontrol grubunda %10,8 idi (p<0.05). Ayrıca tuvalet eğitimini 3 yaşından sonra tamamlama oranı çalışma grubu ve kontrol grubunda sırasıyla %76 ve %32 idi (p<0.05). Çalışma grubunda gece ve gündüz birlikte tuvalet eğitimine başlama oranı kontrol grubuna göre anlamlı olarak düşüktü (çalışmada %5.5, kontrol grubunda %27.4, p<0.05). Benzer şekilde Üİ olan çocukların annelerinin %65.3'ü tuvalet eğitimi sırasında gece bez bağlamaya devam ederken, kontrol grubundaki annelerin sadece %37.3'ü gece bez bağlamaya devam etti (p=0.002).

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Sonuç: Çocukların tuvalet eğitimi süresi, tuvalet eğitiminden sorumlu kişinin yaşına, daha önce tuvalet eğitimi verip vermediğine ve bu konuda eğitim alıp almadığına göre oldukça değişmektedir. Çocuğun tuvalet eğitimine hazır olduğuna karar vermek ve belirli metodolojilerle sakin ve sabırlı bir şekilde ilerlemek önemlidir.

Anahtar Kelimeler: Tuvalet Eğitimi, İdrar Kaçırma, Gece İdrar Kaçırma, Gündüz İdrar Kaçırma, Bebek Bezi.

INTRODUCTION

Toilet training is an important aspect of early childhood. It involves a complex integration of neurological and behavioral mechanisms in the growth and development process. At the age of 1 – 3, or when the child starts walking, the ability to control the functions of holding or releasing stool begins as a result of the maturation of the nerves that go to the muscles that contract the anus (1). Children need to gain healthy bladder and bowel control skills for a healthy life and self-confidence. Problems with the urinary and excretory systems can be very stressful for the family and the child. The child's school and social life are also affected since wrong toilet training methods play a role in these problems (2).

Urinary incontinence (UI) is one of the most common complaints in childhood. It is defined as enuresis intermittently during the day and night in children over five without any underlying organic cause (3). The condition is common among school-age children and has psychological and social effects on the family and the child. It has been reported to decrease the child's self-esteem, cause behavioral problems and decrease school success (4). Children with urinary incontinence are more likely to suffer psychiatric disorders such as excessive irritability and depression due to feeling insecure, nervous, and unsuccessful in social environments and friend relations (5). Moreover, especially mothers may also be affected due to the roles of child care and housework, and their quality of life decreases. They can spare less time for themselves and limit themselves from social life (5, 6).

Behavioral approaches of parents towards toilet training are effective in the toilet training process. He concluded that negative attitudes increase children's extroverted problem behaviors and complicate the toilet training process. Cultural differences can also impact the child's toilet starting age (7).

In addition to the parental attitudes toward toilet training, it is necessary to consider the physical and psychological readiness of the child. In the studies conducted on this subject, it has been found that during the toilet training process, parents need information and support to recognize the indicators that their children are ready for toilet training and that the lack of knowledge and support increases the stress in the toilet training process (8).

There are well-known risk factors such as male gender, family history, and behavioral problems for urinary incontinence (9). However, the literature on the relationship between toilet training (TT) and UI needs to be improved. A very recent systematic review has reported that prolonged diaper use, delay in the start or completion of the TT, and use of coercive approaches increase the risk of primary enuresis nocturna. Still, their results can not be expanded to children with daytime enuresis (10).

In this research, we aimed to elucidate parents' knowledge, attitude, and behavior regarding toilet training of children with urinary incontinence (enuresis nocturna and daytime enuresis) and compare the results with children without urinary incontinence.

METHOD

The study was conducted among 100 pediatric patients who were admitted to the pediatric outpatient clinics of Behcet Uz Children's Hospital. The children between 5 – 17 years applying for any reason to our institution were asked if they had UI (night and daytime), and the parents of children who stated 'yes' were invited to participate in the study. All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Ethics committee approval has been granted from our institution in 2021 with protocol number 618, and informed consent has been obtained from all participants.

The participants were requested to answer a 2-part-questionnaire including 50 questions prepared by two specialist physicians. The first part of the questionnaire included 12 questions and was designed to determine the sociodemographic characteristics of the family. The questions, between 12 and 48, were designed to evaluate the parents'/caregivers' attitudes and behavior based on the 'Guide to Toilet Training' by The American Academy of Pediatrics (8). Question 49 was asked only to the study group as it evaluated primary or secondary enuresis, and question 50 was asked only to boys as it assessed if the child was circumcized during the TT period.

The children who had urinary incontinence with an organic cause (urinary tract infection, Diabetes Mellitus, Diabetes Insipidus, Cerebral Palsy, neurologic disorders such as spina bifida, and genitourinary system anomalies) were excluded. The children of similar age and gender who did not have UI constituted the control group.

Statistical Analysis

G*Power 3.1.9.4 (Faul and Erdfelder 1998) analysis program was utilized to calculate the study's sample size. It was concluded that 134 subjects, 67 cases, and 67 controls, should be recruited with a moderate effect level of 0.5, 80% power of 0.05 Type 1 error. As a result, considering that 10% of data may be lost in our study, it was decided to include 150 cases (75 cases, 75 controls).

The data were analyzed via SPSS 21.0 (Statistics Package for the Social Sciences, IBM Corp., Armonk, NY) program. For categorical data, frequency and percentage will be given as mean, standard deviation, median, minimum, and maximum descriptive value for continuous data. Kolmogorov-Smirnov Test will determine the normality test of data. The measurements' kurtosis values and skewness are between +3 and -3, which is considered sufficient for the normal distribution. The difference between the age variables of the mother and the child according to the group was analyzed with the Student t-test. The relationship between the group regarding TT was analyzed with the Chi-square test. The results will be considered statistically significant when the p-value is less than 0.05.

RESULTS

A total of 100 patients were enrolled within the scope of this research. The mean age of the study population (n=68) was 8.20±2.39 years, and the control group (n=32) was 8.35±3.11. The female-to-male ratio was 40/35 in the study group and 42/33 in the control group. There was no difference between the groups regarding age and gender ($p<0.05$). The baseline demographics of the participants are elaborated in Table 1.

Table 1. Baseline Demographics of the Study Population

	Children with UI	Control Group	p-value
Female %	53%	54%	0.008
Male %	47%	46%	0.008
Children Age *	7.82±2.39	8.9	0.049*
Mother Age	34.96±5.77	37.11±5.16	0.023*
Age of Becoming a mother	26.01	26.22	0.812
Education Level of mother **Primary School** **Middle School** **University**	 37.3% 44.3% 18.7%	 30.7% 29.3% 40.0%	0.014
Low income status (%)	45.3%	20.8%	0.006
Presence of Enuresis in Siblings (%)	95.8%	57.1%	0.007
Enuresis in the parent (%)	87.3%	33.8%	0.000*

*Median±SD (SD: standard deviation).

Mothers' educational level was higher in the control group (40%) compared to the study group (18.7%) (p=0.014). When the study group was evaluated in terms of economic status, 45.3% of the patients in the study group had a lower or equal income than their expenses. This rate was 20.8% in the control group, with a statistically significant difference (p=0.006).

The rate of history of urinary incontinence in siblings was 95.8% in the study group and 57.1% in the control group (p=0.007). When parents were asked about their childhood history of urinary incontinence, this rate was 87% in the study group and 33.8% in the control group. The difference was statistically significant (p=0.000) (Table 1).

One of the most important findings in terms of toilet training between the study and control groups was the time and duration of toilet training. The rate of mothers who support starting toilet training before 2 years of age was 19.7% in the study group and significantly lower than the control group (33.4%, p=0.03). The rate of children whose TT lasted over 3 months was 56 % in the study group and 10.8% in the control group (p<0.05).

In addition, the rate of completing toilet training after 3 years of age was 76% and 32% in the study group and control group, respectively (p<0.05). In our study, while the rate of failing to complete toilet training within the targeted time was 56% in the study group, it was only 8% in the control group.

Another important finding in the study was related to the way of starting toilet training. The rate of starting toilet training together during the day and night in the study group was significantly lower than in the control group (5.5% in the study vs. 27.4% in the control group, p <0.05). Similarly, 65.3% of mothers of children with UI continued to tie diapers while toilet training, while only 37.3% of mothers of the control group tied diapers at night (p=0.002).

Another area for improvement regarding toilet training was whether the training was interrupted. While the rate of interruption of toilet training for any reason in the study group

was 20.8%, it was 6.9% in the control group, and the difference was statistically significant (p=0.016) (Table 2).

Table 2. Influential Factors in Deciding to Start Toilet Training

	Children with UI	Control Group	p-value
Child related (%)	32	68	0.000*
Seasonal (%)	72	34	0.000*
Diaper Cost (%)	12	0	0.002

When the participants were asked about the situations in that, they had difficulty during the toilet training, 48% of them in the study group reported that they dealt with stubbornness, fear, and embarrassment. The control group's rate of dealing with these stressors was 12% (p=0.000). When we questioned whether the punishment method was applied during the training in both groups, we observed that the rate of applying the punishment method was 28% in the study group, and 6.7% in the control group (p=0.016). Similarly, while the rate of application of the reward method (loving, kissing, giving reward) was 49.3% in the control group, this rate was 6.7% in the study group. The reward method was applied more commonly in the control group (p=0.000) (Table 2). The behavior of holding urine and stool during toilet training was observed in 64.0% of the study group and 33.3% of the control group. In addition, the 8% urinary tract infection rate during toilet training was 46.7% and 14.9% in the study group and control group, respectively (Table 2). Also, 41.3% of the participants in the study group stated that they had constipation problems, while this rate was 20.3% in the control group (p=0.005) (Table 2).

There were also some other factors than age in deciding to start toilet Training, such as seasonal factors and diaper costs. When we compared the reasons to start toilet training between groups, we found that 72.0% of the study group decided to start toilet training seasonally, planning to start and finish training during summer. On the other hand, the rate of planning training due to seasonal reasons was 34% in the control group (p=0.000). The reasons for deciding to start toilet training are presented in Table 3.

Table 3. Factors associated with toilet training in the case and control groups

	Children with UI	Control Group	p-value
Age to start education is greater than 36 months %	76%	22%	0.104
Training duration more than 3 months %	56%	10.8%	0.000*
Training with Turkish toilet %	40.8%	22.5%	0.015
Continuation of meringue at night during training %	65.3%	37.3%	0.02
Interruption during training %	20.8%	6.9%	0.016
Starting education at the same time day and night %	5.5%	27.4%	0.02

When the participants (of both the study and control groups) were asked about their source of knowledge during toilet training, the most common sources were relatives, neighbors, and grandmothers (39.4%). The second most common source that they received information was the internet and social media (31.3%). The proportion of parents who receive information from a pediatrician or health professional in the entire population was quite low (13.3%).

DISCUSSION

Toilet training is the child's gaining control of stool and urine in the state of sleep and wakefulness, noticing that the toilet is coming without help and reminding, going to the toilet and meeting his needs. The period when toilet training will begin corresponds to the age range of 1 – 3. Every child has no valid date for when toilet training will begin. Voluntary control of the anal and urethral sphincters is usually 18 – 24 weeks after the child starts walking.

Toilet training should be started when both the child and the parent are willing and able to participate (8). When we look at the findings of our study, it is seen that 95% of the participants describe the factor that is effective in deciding to start toilet training as the readiness of the child The behaviors of children should be independently evaluated as signals of being ready for toilet training differs from individual to individual (9).

The interval in which the child fully acquires toilet training is expressed as an average of 5 months (10). In the study of Schum, the girls started toilet training at 24 months and boys at 29 months, and it was reported that the time to complete toilet training was 6 months for girls and 7.5 months for boys (10). Their findings differed from our study in terms of gender and time completed according to the duration of toilet training. In the study conducted by Albaramki et al., toilet training was started in 22.5 to 26.5 months. It was stated that it was completed in a month, and the difference was expressed as 4 months (11). In our study, the rate of children whose TT lasted over 3 months was 56 % in the study group and 10.8% in the control group.

The most appropriate age range for starting toilet training is 22 – 36 months (5). There is also information in the literature that the age range of 18 – 36 months is specified as the age of toilet training. However, although the time for each child to be ready for toilet training is different, toilet training is expected to be completed at 3 (7). The rate of mothers who support starting toilet training before 2 years of age was 19.7% in the study group, significantly lower than in the control group. The proportion of completing toilet training after 3 years of age was 76% and 32% in the study group and control group, respectively ($p<0.05$). In our study, the rate of failing to complete toilet training within the targeted time was 56%

In this context, the start and end times indicated in the literature and the result of our study are parallel. Although the literature does not provide a consensus on the most appropriate age to start and complete toilet training, it has been observed that the age of starting toilet training occurs in a later period when training was started earlier in previous years. In the historical process, parents' finding it easier to use ready-made diapers instead of washing diapers can be said to be effective.

According to the parents, 43.5% of the parents think that their child is ready, 14.7% of them show interest in the toilet behavior of others, 14.6% of them start to give toilet training to their child because they observe that the child does not want to use diapers anymore (12). The state of being ready for toilet training was elaborated as not wanting to be tied to a diaper, wanting to go to the toilet himself, staying dry for a long time, and trying to hide when he comes to the toilet. In another study, the rate of participants who stated that the period of prolonged dryness of the child was higher at night than at daytime, and dryness at night was significantly more satisfactory (13). In our research, the rate of starting toilet training together during the day and night in the study group was significantly lower than in the control group (5.5% in the study vs. 27.4% in the control group, $p <0.05$). Similarly, 65.3% of mothers of children with UI continued to tie diapers while toilet training, while only 37.3% of mothers of the control group tied diapers at night ($p=0.002$).

In the literature, it has been stated that 7 – 8 times incontinence between the ages of 2 – 5 is a normal development (14) stated in his research that the frequency of urinary incontinence is more than 6 times. In the study of Hooman et al., 566 children were examined, and it was stated that the children leaked urine 5-7 times. It is understood that the result of our study is less than the frequencies given in the other research results and the literature. In their study, Huang et al. concluded that early initiation of toilet training increases the frequency of urinary continence at night and during the day (7).

Paquet et al. found that during the toilet training process, parents need information and support to recognize the indicators that their children are ready for toilet training and that the lack of information and support increases the stress in the toilet training process (16). In our study, the low rate of training on toilet training and the decrease in the time allocated to the child due to the high rate of working mothers may have been effective in experiencing difficulties during toilet training.

The permissive attitude of the parents explains why the child who gains urine control at the age of 4 could not achieve the gain in the expected time (1 – 3 years). Permissive parents act with a flexible approach (16). Cultural differences can also have an impact on the child's toilet starting age. More flexible thinking of the parents would facilitate the process so the child can independently gain control of urination/defecation. Therefore, the urine/defecation control age is older. Children who gain urine control at the age of 4 compared to other children are neglected due to the permissive attitudes of their parents, and they acquire the ability to hold urine late (1).

CONCLUSION

The duration of toilet training of children varies considerably according to the age of the person responsible for toilet training, whether he/she had given toilet training before and received training on this subject. It is important to decide that the child is ready for toilet training and to proceed calmly and patiently with certain methodologies.

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Data Analysis / Interpretation	**:** FC, ND
Writing Draft	**:** FC, ND
Technical Support / Material Support	**:** FC, ND
Critical review of content	**:** FC, ND
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