

Original Research / Orijinal Araştırma

## Comparison of The Personal Characteristics of Young Adults and Their Mothers with Toilet Training Experience and Toilet Habits

### Genç Yetişkinler ve Annelerinin Kişisel Özellikleri ile Tuvalet Eğitimi Deneyimi ve Tuvalet Alışkanlıklarının Karşılaştırılması

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#### Abstract

**Background-Purpose:** Individuals' future lives can be influenced positively or negatively by the toilet training they receive as children. The purpose of this study was to compare the personality traits of young adults and their mothers, as well as their toilet training experience and toilet habits. **Method:** The study uses a descriptive, cross-sectional design to look for a relationship between young adults and their mothers between February and May 2020. The study's sample consists of 516 participants (263 young adults and 263 mothers) who meet the inclusion criteria. The Information Form and the Cervantes Personality Scale were used to collect data. For data analysis, descriptive statistics, Kruskal Wallis, Mann Whitney U, and Spearman correlation tests were used. **Findings:** It observed that 86.7% of the young adults had a history of urinary tract infection, 50.9% had trouble going to the toilet outside their usual place of residency (home), and the type of toilet (water closet/squat toilet) was also effective in this situation. It was determined that one-third of them always washed their hands before going to the toilet and 27.4% paid attention to attention to wash vulva first and then the anus. The study also revealed a relationship between the personality traits of the young adults and their constipation history and the use of punishment/reward methods in toilet training. **Conclusions:** The right approach to problem-solving during toilet training can help people develop more consistent personalities in their later lives. It is clear that there is a lack of health education in this area because mothers primarily perform toilet training by utilising social support and peer experience. The eradication of health issues caused by improper urination practises can be facilitated by positive personality traits. Mothers' personalities can affect how well their children learn to use the restroom, and data analysis was done using their children's personalities.

**Key words:** Toilet training, personality traits, childhood, young adults, mother.

#### Özet

**Giriş-Amaç:** Çocukluk döneminde verilen tuvalet eğitimi doğrultusunda bireylerin gelecek yaşamları olumlu ya da olumsuz olarak etkilenebilir. Bu araştırma, genç yetişkinlerin ve annelerinin kişilik özelliklerini, tuvalet eğitimi deneyimlerini ve tuvalet alışkanlıklarını karşılaştırmak amacıyla yapılmıştır. **Yöntem:** Genç yetişkinler ve anneleri ile Şubat-Mayıs 2020 tarihleri arasında gerçekleştirilen araştırma, ilişki arayan tanımlayıcı, kesitsel bir desene sahiptir. Araştırmanın örneklemini dahil etme kriterlerine uyan 516 (263 genç yetişkin, 263 anne) katılımcı oluşturmaktadır. Veriler Bilgi Formu ve Cervantes Kişilik Ölçeği kullanılarak toplanmıştır. Verilerin analizinde tanımlayıcı istatistikler, Kruskal Wallis, Mann Whitney U ve Spearman korelasyon testleri kullanılmıştır. **Bulgular:** Genç yetişkinlerin %86,7'sinin idrar yolu enfeksiyonu öyküsü olduğu, %50,9'unun ev dışında tuvalete gitmekte zorlandığı ve tuvalet tipinin (klozet/alaturka) bunda etkili olduğu görüldü. Üçte birinin tuvalete gitmeden önce ellerini yıkadığı ve %27,4'ünün önce vulvayı sonra anüsü yıkamasına dikkat ettiği belirlendi. Genç yetişkinlerin kişilik özellikleri ile kabızlık öyküsü ve tuvalet eğitiminde ceza/ödül yöntemlerinin kullanımı arasında bir ilişki olduğu saptandı. **Sonuç:** Tuvalet eğitimi sırasında yaşanan sorunların doğru yaklaşımla çözülmesi, bireylerin ileriki yaşamlarında daha tutarlı bir kişiliğe sahip olmalarını sağlayabilir. Annelerin tuvalet eğitimini daha çok sosyal destek ve akran deneyiminden yararlanarak gerçekleştirmesi bu alanda sağlık eğitiminin eksikliğini ortaya koymaktadır. Olumlu kişilik özellikleri, tuvalet alışkanlıklarına bağlı sağlık sorunlarının giderilmesinde rol oynayabilir. Annelerin kişilik özellikleri, tuvalet eğitimi deneyimlerinde ve çocuklarının kişilik özelliklerinde belirleyici olabilir.

**Anahtar kelimeler:** Tuvalet eğitimi, kişilik özellikleri, çocukluk, genç yetişkinler, anne.

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## **Introduction**

Toilet training is the mastery of skills necessary for urinating and defecating in a socially acceptable time and manner.<sup>1</sup> It can be said that the foundations of healthy toilet habits are based on the toilet training given in childhood, which is an important developmental stage for parents and children. Toilet training is affected by physiological, psychological, and sociocultural factors.<sup>2,3</sup> Culture is an important factor affecting the time and method of toilet training.<sup>4</sup> In many cultures, parents regard the achievement of independent toileting as a significant accomplishment and a step toward self-sufficiency.<sup>1</sup> There appears to be variation in the time to start toilet training across cultures. To start toilet training, children must be physiologically, psychologically, and cognitively ready. Some experts report that children are not physiologically and psychologically ready between 24-30 months; however, it is seen that parents start toilet training before the child is 30 months old.<sup>4</sup> On the other hand, it has been reported that toilet training, which is started late, causes such problems as constipation and urinary retention.<sup>3</sup> In addition, cognitive development, especially speaking ability, is important to start education because; the child must say that the toilet is coming.<sup>5</sup> Toilet training is an important stage and a milestone in the development of the child.<sup>3</sup> It is reported that toilet training in childhood affects toilet habits.<sup>6</sup> Acquiring positive toilet habits (not to strain during defecation chronically, not spending a long time on the toilet, avoiding constipation and diarrhea, not delaying when the feeling of defecation and urination, to empty the bladder fully, etc.) is important in preventing some health problems (hemorrhoids, urinary tract infections, urinary incontinence, etc.) in the future life of individuals.<sup>6,8</sup> Bladder emptying problems, urinary tract infections, and constipation can be listed among the common health problems associated with irregular toilet habits.<sup>9,10</sup> Studies have found that the formation of hemorrhoids and urinary tract infections are also closely related to toilet habits.<sup>6,8</sup> One study revealed that such conditions as staying on the toilet for more than five minutes and straining frequently during defecation are more common in patients with the hemorrhoidal disease or anal fissure. For this reason, it is very important for individuals to acquire healthy toilet habits.<sup>11</sup>

It has been reported that toilet training influences the future independence and personality traits of the child.<sup>12</sup> Personality can be defined as individual differences in such characteristics as thinking, feeling, as well as behavior. Personality traits involve psychological dimensions such as extraversion, regularity, emotional stability, and curiosity. According to Freud, early childhood experiences are extremely important for personality development.<sup>13,14</sup> It is stated that due to the problems experienced in the period between the ages of 18 months and 3.5 years, during which children usually receive toilet training, the child may exhibit such behaviors as compulsively abiding by the rules or being obsessed with the order or, on the contrary, being rebellious, chaotic, and anti-authoritarian.<sup>14</sup> Like Freud, Erikson also believed that toilet training is an important part of the early childhood period and argued that learning to control body functions promotes a sense of control and independence. For Erikson, children who successfully complete this stage feel a sense of safety and self-confidence, and if not so, inadequacy and self-doubt.<sup>15</sup> It has further been determined that the working status of parents and parental characteristics such as age, education, and economic status affect the toilet training process.<sup>16</sup>

In line with this, toilet training in childhood, diversified with parental attitudes, has positive and/or negative impacts on both the toilet habits and personality traits of individuals in the future. Parents' knowledge, their perceptions of toilet training and views on how to give the training, and the toilet training methods they use are listed as the factors affecting the toilet training process in the current literature on toilet training.<sup>2,3,16-18</sup> When the literature was reviewed, showed that no studies have yet examined retrospective toilet training experience, toilet habits, and personality traits. This study was conducted to compare the personality traits of young adults, and their mothers, their toilet training experience, and toilet habits. The results of the study are believed to contribute to the literature that aims to improve the toilet training experience.

## **The research questions**

1. What are the personality traits and toilet habits of young adults?
2. What are the personality traits and toilet training experiences of mothers of young adults?
3. Is there a relationship between the personality traits of the young adults and the personality traits of their mothers?
4. Do young adults' personality traits differ according to their toilet habits and their mothers' toilet training experience?

## Material and Methods

### Study Design, Place and Date

The study was conducted in a descriptive, cross-sectional design searching for a relationship. The study was carried out with first-year students enrolled in a private foundation university in the Central Anatolia Region of Turkey and their mothers between February 24 and May 15, 2020.

### Target Population and Sample of The Study

The target population of the study consisted of a total of 677 students studying at a private foundation university and their mothers. The sample was determined in line with the sample size calculation formula for the studies whose target population is known.<sup>19</sup>

$$n = \frac{N.t^2.p.q}{d^2.(N-1)+t^2.p.q}$$

n: Number of individuals to be sampled

p: Incidence of the investigated events= 50% (calculated as 50% as the investigated event cannot reach the incidence probability, in line with the literature on the subject.)

q: incidence of the investigated event = 50%

t: Theoretical value obtained from the t table at a certain degree of freedom and detected error level = 1.96 (theoretical t value found for  $\infty$  degrees of freedom at  $\alpha= 0.05$ )

d: The standard errors of the ratios to be determined in the study=0.05

$n = \frac{677 \times 1,96^2 \times 0,5 \times 0,5}{0,05^2 \times (677-1) + 1,96^2 \times 0,5 \times 0,5} \cong 246$  students is the minimum number of individuals to be reached in the study.

The students included in the study were young adults<sup>20</sup> between the ages of 18-24, studying as first-year students at the relevant university. The inclusion criteria were being able to read and understand the statements on the scale and the questionnaire and volunteering to participate in the research. In this study, the reason for the participation of mothers is that mothers undertake the responsibility of caring for children and especially toilet training in Turkish society. At the end of the study, a total of 526 people (263 students, 263 mothers) completed the study and were included in analyses.

### Data Collection Forms

The information form, which was prepared by the researchers for socio-demographic characteristics, toilet habits and toilet training, 'Cervantes Personality Scale (CPS)' were administered to all participants.

**Information Form:** This form, which was developed by the researchers in line with the literature, includes questions about sociodemographic characteristics, toilet habits and toilet training.<sup>2,8</sup> The form consists of two parts. The first part includes questions for the young adults, while the questions in the second part are for mothers. In the first part, there are 17 questions aiming at seven questions about revealing the sociodemographic traits of the young adults (age, sex, income status, mother's education etc.), and ten questions about their current toilet habits (number of daily defecation and urination, history of urinary tract infection, frequency of constipation, washing hands before going to toilet, changing underwear and genital hygiene after using the toilet etc.), while in the second part, there are 20 questions aiming at revealing the toilet training characteristics of the mothers (use of reward/punishment method, tools used during toilet training, problems in the toilet training process, etc.).

**Cervantes Personality Scale (CPS):** The Cervantes Personality Scale consists of three dimensions covering the basic personality traits which are extraversion/introversion, emotional stability/neuroticism, and

consistency/inconsistency.<sup>21</sup> The scale was developed by Castelo-Branco et al.<sup>21</sup> and its reliability and validity studies were conducted by Bal and Sahin.<sup>22</sup> The scale is a six-point Likert-type scale consisting of 20 items.<sup>21</sup> Each item is rated by giving a score between zero and five. An increase in the score obtained from each sub-dimension of the scale points to an increase in introversion, emotional instability (neuroticism) and inconsistency traits. On the other hand, extraversion, a decrease in the score obtained from each sub-dimension of the scale indicates an increase in the traits of emotional stability and consistency.<sup>21,22</sup> In the Turkish adaptation study, Cronbach's alpha values were 0.97 in the dimension of extraversion/introversion; 0.81 in the emotional stability/neuroticism dimension, and 0.71 in the consistency/inconsistency dimension.<sup>22</sup> In the present study, Cronbach's alpha values were 0.62, 0.78, and 0.68 for young adults and 0.69, 0.81, and 0.72 for mothers, respectively.

### **Data Collection Process**

The data collection forms were sent to the students via the Google Forms, and the students were asked to answer the questions in the first part of the questionnaire, while the mothers answered the questions in the second part. Participants were asked to answer the questions separately, as they were thought to affect the results of the study. Verbal informed consent was obtained from the participants.

### **Data Analysis**

The data were analyzed using SPSS Version 22.0 (IBM Corporation, Armonk, NY, USA). The descriptive data were presented with numbers, percentages, mean, standard deviation, minimum and maximum values, and the compatibility of the data with normal distribution was tested using the Kolmogorov-Smirnov test. The statistical significance level was set at 0.05, and the difference between dependent and independent variables was analyzed using the non-parametric tests of Kruskal Wallis and Mann Whitney U. The Bonferroni pairwise comparison test, one of post hoc analysis methods, was used to understand the source of difference. The Cronbach's alpha coefficient was calculated for reliability analysis. The results of the study were reported according to the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist.

### **Research Ethics**

Ethical approval was obtained from Istanbul Medipol University Non-Interventional Clinical Research Ethics Committee (IRB No: 10840098-604.01.01-E.5010, Date: 31.01.2020). Participants' informed consent was obtained. The participants were given the confidence that any details relating to them would be kept private and used only for research. To protect their privacy, no names were entered on the data collection form. The authors of the Turkish Cervantes Personality Scale validity and reliability studies granted their consent. Every action was taken in accordance with the Helsinki Declaration.

### **Results**

The age of the young adults in the study ranged between 18-24 and their mean age was 19.60±1.10 years. 77.9% of them are female, and 89.7% were studying at a vocational school of health services. 66.5% reported that their income met their expenses; 44.9% have two siblings; 40.7% are mostly the first children, and 38.5% have a mother with an education level of elementary school or below.

The mean daily number of defecations for young adults was 1.70 ± .92 (min=0, max=8), while the mean number of daily urinations was 5.38±2.48 (min=2, max=15). 86.7% had a history of urinary tract infection, and 45.2% rarely had a complaint of constipation. 50.9% had problems with going to the toilet outside of their place of residence. 63.1% stated that they are concerned whether the toilet outside is squat or water closet. 31.2% always or frequently wash their hands before going to the toilet. Genital hygiene practices after urination or defecation can be listed as follows: using toilet paper (32.2%), using water/cleansing (use of bidet) (30.3%), and paying attention to washing the vulva first and then the anus (27.4%). 59.7% reported that they change their underwear every day, and the most important thing considered when buying underwear is the type of fabric (50.9%) (Table 1).

**Table 1.** Distribution of young adults' toilet habits. (n=263)

Characteristics	$\bar{x} \pm SD$ (min – max)	
Number of daily defecations	1.70 ± .92 (0 - 8)	
Number of daily urinations	5.38 ± 2.48 (2 - 15)	
	n	%
<b>History of urinary tract infection</b>		
Yes	228	86.7
No	35	13.3
<b>Frequency of constipation</b>		
Often	27	10.3
Sometimes	70	26.6
Rarely	119	45.2
Never	47	17.9
<b>Trouble going to the toilet outside home</b>		
Yes	133	50.9
No	130	49.4
<b>The effect of whether the toilet is a squat toilet or a water closet on going to the toilet outside home</b>		
Yes	166	63.1
No	97	36.9
<b>Frequency of washing hands before going to toilet</b>		
Always	82	31.2
Often	82	31.2
Sometimes	56	21.3
Rarely	25	9.5
Never	18	6.8
<b>Genital hygiene after using the toilet *</b>		
Using toilet paper	221	32.2
Using water (bidet)	208	30.3
Paying attention to wash vulva first and then the anus	188	27.4
Using wet wipes	45	6.6
Using such products as soap etc.	25	3.6
<b>Frequency of changing underwear</b>		
Everyday	157	59.7
Once in two days	97	36.9
Once in 3-4 days	9	3.4
<b>Things considered when buying underwear*</b>		
Type of Fabric	244	50.9
Color	98	20.5
Brand	81	16.9
Price	56	11.7

\*Circled more than one option.

The data from the mothers revealed that the age of starting toilet training was 18 months or less (37.6%), the age of completion of toilet training was between 24-35 months (31.9%), and the duration of toilet training was one month (34%). 62.7% of the mothers started giving toilet training day and night at the same time. It was determined that during toilet training, the percentage of those comparing their child with other children was 14.8%, those using assistive equipment was 81.4% (mostly baby toilet 30.8%), those resorting to a punishment method was 15.6% and the most frequently used punishment method was yelling or scolding (71%), those using rewards was 31.9% (mostly applause 57.5%), those considering the child's readiness for training was 96.2% (often presence of the ability to express their wishes speaking), those experiencing problems was 32.7% (the child asking to wear a diaper to go to the toilet 21.3%), those pausing to give training was 13.7% (mostly due to the child not getting used to it 40.4%), those receiving help was 38% (mostly getting help from their spouse 54.7%), and those asking for information was 75.3% (mostly the personal experiences of the other side 44.7%) (Table 2).

**Table 2.** Mothers' toilet training experience. (n=263)

<b>Characteristics</b>	<b>n</b>	<b>%</b>
<b>Toilet training starting age</b>		
18 months and under	85	37.6
19-23 months	82	36.3
24-35 months	47	20.8
36 months and over	12	5.3
<b>Toilet training completion age</b>		
18 months and under	39	19.1
19-23 months	59	28.9
24-35 months	65	31.9
36 months and over	41	20.1
<b>Starting toilet training day and night, at the same time</b>		
Yes	165	62.7
No	98	37.3
<b>Comparing the child with other children during toilet training</b>		
Yes	39	14.8
No	224	85.2
<b>Use of assistive equipment during toilet training</b>		
Yes	214	81.4
No	49	18.6
<b>Tools used during toilet training*</b>		
Baby potty	121	30.8
Adults' toilet at home	116	29.5
Training pants and diapers	87	22.1
Adapter seat to adult's toilet	50	12.7
Toilet training books and toys	19	4.8
<b>Use of punishment as a way of toilet training</b>		
Yes	46	17.5
No	217	82.5
<b>The means of punishment used during toilet training*</b>		
Yelling and scolding	35	76.1
Not doing something the child wants (toys, clothes, etc.)	14	30.4
Restricting phone, computer, TV, etc.	4	1.5
Showing physical violence against the child	3	1.1
<b>Use of rewards in toilet training</b>		
Yes	177	67.3
No	86	32.7
<b>Means of rewarding during toilet training*</b>		
An applause	134	57.5
Snacks (candy, chocolate etc.)	50	21.5
Small gifts	51	21.0
<b>Assessed the readiness of the child for toilet training</b>		
Yes	253	96.2
No	10	3.8
<b>Parameters for assessing readiness for toilet training*</b>		
Expressing their wishes by speaking	149	19.8
Expressing the need for emptying verbally or non-verbally	134	17.8
Feeling uncomfortable with the dirty diaper and asking it to be changed	113	15.0
Starting to walk	105	14.0
Dryness for a certain period of time during the day	86	11.5
Carrying out simple orders	78	10.4
Ability to take off clothes on their own	57	7.6
Imitating parents or someone close to them	29	3.9
<b>Experiencing problems with toilet training</b>		
Yes	86	32.7
No	177	67.3

<b>Problems in the toilet training process*</b>		
Requesting to put on a diaper before sitting on the toilet	30	21.3
Long time of training	29	20.6
Child's getting stubborn	24	17.0
Being scared of the poop	19	13.5
Peeing or pooing anywhere in the living space	19	13.5
Being constipated because of holding urine/poop	14	9.9
Having hiccups or crying spells	6	4.3
<b>Delaying toilet training</b>		
Yes	36	13.7
No	227	86.3
<b>Reasons for delaying toilet training*</b>		
Child's inability to get used to the process	19	40.4
Thinking the child is not ready	14	29.8
Illness or death	7	14.9
Moving/changing home	5	10.6
Divorce	2	4.3
<b>Asking for help during toilet training</b>		
Yes	100	38.0
No	163	62.0
<b>Those asked for help during toilet training*</b>		
Spouse	64	54.7
Mother	48	41.0
Friend	5	4.3
<b>Requested information about toilet training</b>		
Yes	198	75.3
No	65	24.7
<b>Information resources on toilet training*</b>		
Personal experiences	134	44.7
People in one's circle and relatives	111	37.0
Books/magazines/newspapers/internet/television	30	10.0
Health care professionals	25	8.3

Note: The responses of the mothers who remembered the process were obtained.

\*Circled more than one option

The mean scores of the young adults and their mothers were found to be  $13.12 \pm 5.64$  and  $12.82 \pm 5.85$  respectively in the dimension of extraversion/introversion, while their mean scores were  $18.58 \pm 7.02$  and  $15.53 \pm 7.34$  respectively in the dimension of emotional stability/neuroticism, and  $18.73 \pm 5.13$  and  $21.50 \pm 5.34$  in the dimension of consistency/inconsistency. The relationship between the mean CPS sub-dimension scores of young adults and their mothers who gave toilet training was found to be statistically significant. It was found that there was a weak positive correlation in the extraversion/introversion dimension ( $r = .243$ ), while a moderate positive correlation in the emotional stability/neuroticism dimension ( $r = .574$ ) and in the consistency/inconsistency dimension ( $r = .440$ ) ( $p < .001$ ) (Table 3).

**Table 3.** The relationship between the distribution of the Cervantes Personality Scale sub-dimension mean scores of the young adults and their mothers and the scale scores.

Cervantes Personality Scale	Young Adults			Mothers			Young Adults /Mothers*	
	$\bar{x} \pm SD$	Med.	min-max	$\bar{x} \pm SD$	Med.	min-max	r	p
Extroversion/Introversion	13.12±5.64	13.00	0-29	12.82±5.85	13.00	0-25	.243	.000
Emotional Stability/Neuroticism	18.58±7.02	19.00	0-35	15.53±7.34	15.00	0-34	.574	.000
Consistency/Inconsistency	18.73±5.13	19.00	4-30	21.50±5.34	22.00	3-30	.440	.000

\*Spearman correlation test,  $p < 0.01$

In the study, the toilet habits of the young adults and their mothers' toilet training experiences were compared with the personality traits of the young adults and a statistically significant correlation was found between the young adults' history of urinary tract infection and the frequency of constipation, and the CPS sub-dimensions of emotional balance/neuroticism and consistency/inconsistency ( $p < 0.05$ ). It was revealed that individuals without a history of an urinary tract infection possessed more emotionally steady and reliable personalities. Additionally, it was noted that those who were constipation-free had more stable emotional states and an inconsistent personality. The young adults' personal characteristics, their difficulty using the restroom away from home, and their mothers' use of assistive equipment during toilet training did not statistically correlate with one another ( $p > .05$ ). (Table 4).

The young adults' personalities were compared to how their mothers trained them to use the restroom by using rewards and punishments. It was discovered that the young adults who were rewarded for successful toilet training had better emotional control than the others. The young adults who were disciplined, on the other hand, exhibited more consistent behaviour despite having unstable emotional states ( $p < .05$ ). It was found that young adults who struggled with toilet training as children exhibited more consistency in personality than those who did not ( $p < .05$ ) (Table 4).

**Table 4.** Comparison of young adults' toilet habits and mothers' toilet training experiences with Cervantes Personality Scale mean scores.

Characteristics	Extroversion/ Introversion		Emotional Stability/ Neuroticism		Consistence/ Inconsistence	
	Median (min-max)	Statistics	Median (min-max)	Statistics	Median (min-max)	Statistics
<b>History of urinary tract infection*</b>						
Yes	14(3-25)	U=7536.00	20(4-35)	U=6416.50	18(5-30)	U=7101.00
No	12(0-29)	p=.139	18(0-35)	<b>p=.001</b>	20(4-30)	<b>p=.028</b>
<b>Frequency of constipation*</b>						
Often	12 (4-26)		21 (5-35) <sup>a</sup>		16 (4-24) <sup>a</sup>	
Sometimes	14.5 (3-29)	X <sup>2</sup> =8.629	20 (6-30) <sup>a</sup>	X <sup>2</sup> =22.504	18 (6-30) <sup>a</sup>	X <sup>2</sup> =17.460
Rarely	12 (1-25)	p=.05	18 (5-35) <sup>a</sup>	<b>p=.000</b>	19 (7-30) <sup>a</sup>	<b>p=.001</b>
Never	12 (0-24)		14 (0-31) <sup>b</sup>		22 (6-30) <sup>b</sup>	
<b>Experiencing problems about going to toilet outside of home*</b>						
Yes	14(1-26)	U=7906.50	19(4-35)	U=7768.50	19(4-30)	U=8028.00
No	12(0-29)	p=.230	18(0-30)	p=.155	20(6-30)	p=.316
<b>Use of any equipment during toilet training**</b>						
Yes	13 (0-26)	U=5078.00	18 (0-35)	U=5207.00	19 (4-30)	U=5194.50
No	12 (1-29)	p=.731	19 (5-35)	p=.940	19 (5-29)	p=.919
<b>Use of rewards during toilet training**</b>						
Yes	12 (0-26)	U=6622.50	18 (0-33)	U=6304.50	20 (4-30)	U=6711.00
No	14 (1-29)	p=.119	19.5 (4-35)	<b>p=.035</b>	18.5 (5-30)	p=.160
<b>Use of punishment during toilet training**</b>						
Yes	14 (3-24)	U=3750.00	20 (6-34)	U=3550.50	17 (4-28)	U=3624.00
No	12 (0-29)	p=.073	18 (0-35)	<b>p=.022</b>	20 (6-30)	<b>p=.038</b>
<b>Having problem during toilet training**</b>						
Yes	13 (1-25)	U=7248.50	19 (6-32)	U=7132.50	18 84-29)	U=6192.00
No	12 (0-29)	p=.530	18 (0-35)	p=.408	20 (6-30)	<b>p=.014</b>

Note: a-b: There is no difference between groups with the same letter. U: Mann Whitney U Test, X<sup>2</sup>: Kruskal Wallis, Young adults' responses \*\*Mothers' responses

## Discussion

It has been reported that the foundation of healthy toilet habits is based on toilet training given in childhood and early childhood experiences constitute an important part of personality development.<sup>3,14,15</sup> It has been found that bladder emptying problems, urinary tract infections, constipation and hemorrhoids are closely related to irregular toilet habits.<sup>6,8-10</sup> In this study, it was determined that 86.7% of the young adults have a history of urinary tract infection, while 45.2% have rare constipation problems. The fact that many of the participants had a history of urinary tract infection may be related to the low rate of hand washing before using toilet and less attention paid to the cleansing of the genital area after using toilet. Whether the toilet is a squat toilet or a water closet (63.1%) has an impact on those who have issues using the restroom outside of their home (50.9%). Constipation may result from postponing restroom trips when away from the house (45.2% rarely, 36.9% occasionally/frequently). According to the data pertaining to Turkey on handwashing, the frequency of handwashing after using the toilet is 91.1% and 25.7% before using the toilet.<sup>23</sup> When the hand washing habits of the young adults are examined, it is seen that the rate of those who always or frequently wash their hands before going to the toilet is 31.2%, which is not at the desired level. After using the restroom, it was found that using toilet paper (32.2%) and using water (using a bidet) (30.3%) were the two most popular genital hygiene practises among young adults. Soft soap can be used for genital hygiene, but it should be thoroughly rinsed after use. Odorless toilet paper is recommended instead.<sup>24</sup> A

positive finding from this study is that young adults use water and toilet paper after using the restroom. After using the restroom, 27.4% of young adults pay attention to washing their vulva first and then their anus. In order to prevent contamination from the anal region, it is crucial to clean the anterior region of the genital area before moving on to the posterior region after bladder and bowel emptying.<sup>24</sup> It is a negative finding that a small part of the young adults pay attention to this. One of the most effective ways people can protect themselves and others from disease is good personal hygiene. Clothing such as underwear can cause body odor as well as some diseases. To prevent this, tight and synthetic underwear should be avoided, and the ones manufactured from cotton should be preferred and changed regularly.<sup>24</sup> In the study, 59.7% of the young adults stated that they change their underwear every day, and 50.9% stated they paid attention to the type of underwear fabric. Only half of the young adults can be seen to be following personal hygiene practices related to the use of underwear, while the other half of the young adults need to be informed in this regard. It is stated that toilet training influences the future independence and personality of the child. The mother has an important place in the personality formation and education/training of the child. If toilet training is given early, such feelings as anger, stress, and incompleteness may be experienced by the child, and if given late, difficult habituation and adaptation may be observed in the child.<sup>12</sup> It would be a reasonable approach for parents to consider toilet training when their child indicates the need to urinate and in a time interval when they are dry for two hours during the day or when they are sleeping.<sup>2,4</sup> Van Aggelpoel et al.<sup>18</sup> revealed that only 27% of the mothers observed the signs of their child's readiness for toilet training. When the mothers who remembered the process when they gave toilet training to their children were analyzed, a significant portion of the mothers -as much as 96.2% - stated that they paid attention to whether their child was ready for toilet training. The mothers considered the child's ability to express his/her wishes mostly by speaking (19.8) as the main criterion to initiate the training. It is a positive finding that most of the mothers paid attention to the readiness of the child as it includes a child-centered approach.

The timing of toilet training varies. Some experts report that children are not physiologically and psychologically ready between 24-30 months; however, it is seen that parents start toilet training before the child is 30 months old. Culture is an important factor affecting the time and method of toilet training.<sup>4</sup> Van Aggelpoel et al.<sup>18</sup> revealed that parents start and complete toilet training at a later age compared to previous years. In our study, many mothers (73.9%) started to give toilet training to their children before the age of two. The success of toilet training methods is directly proportional to the knowledge of the parents about the method. Our study revealed that the mothers mostly received help from their spouses (54.7%) and benefitted from their previous experience (44.7%) during toilet training. In general, help is requested from health personnel only when an issue cannot be overcome.<sup>25</sup> The mothers conducted toilet training mostly through social support and previous experience, which has revealed that the primary source of information they refer to is not a health professional.

It is stated that negative attitudes and punishment should be avoided during toilet training.<sup>2</sup> In this study, the mothers' reward and punishment methods during toilet training and the young adults' personality traits were compared and it was found that the young adults rewarded during toilet training were more emotionally balanced than the others, while the young adults punished were found to be more consistent in their behavior and emotionally unstable. The dimension of neuroticism in the Cervantes Personality Scale is characterized by anxiety, depression, low self-esteem, and emotional instability.<sup>26</sup> Based on this finding, it is thought that rewarding the child will contribute to reducing anxiety and depression and improving self-esteem in individuals.

It was observed that the young adults who experienced problems in their childhood during toilet training had more consistent personalities than young adults who did not, implying that solving potential problems experienced during toilet training with an appropriate approach could cause individuals to have a more consistent personality in their future lives.

In this study, the toilet habits of the young adults and their mothers' toilet training experiences were compared with the personality traits of the young adults, and it was determined that those with no history of urinary tract infection had more emotionally stable and consistent personalities, while those with no constipation problems had an inconsistent personality, despite being more emotionally balanced. The literature maintains that toilet training received in early childhood can affect personality traits, which is supported in this study with the finding showing a significant relationship between young adults' toilet habits and personality traits.<sup>14,15</sup> Our findings suggest that positive personality traits play a role in eliminating health problems related to toilet habits.

Dirty appearance and bad smell are the reasons why children do not prefer school toilets, which may be

causing bladder and bowel problems in children.<sup>9</sup> Our study revealed that half of the young adults have problems with going to the toilet outside of their home and the type of toilet (whether a squat toilet or a water closet) influences this habit. It is thought that individuals prefer not to use water closet type toilets for fear of contamination with microorganisms; however, this may cause new problems due to delaying the urine and defecation.

It was further revealed that the relationship between the CPS sub-dimension mean scores of the young adults and their mothers who gave toilet training is statistically significant. It was found that there is a weak positive correlation in the extraversion/introversion dimension and a moderate positive relationship in the emotional stability/neuroticism dimension ( $r = .574$ ) as well as the consistency/inconsistency dimension ( $r = .440$ ), which suggests that the positive and negative personality traits of mothers may play a decisive role in both the toilet training experience and the personality traits of their children.

### **Limitations**

Because it has been years since they gave the training, there is a possibility that mothers might have forgotten some details about toilet training and might have confused their toilet training experiences if they have more than one child. In addition, this may have affected the results of the study, as mothers who had a difficult toilet training experience may be more likely to remember. The results of this study represent only the sample included in the study, and the results cannot be generalized to the whole population.

### **Clinical Contribution of the Study**

No studies in the literature have so far retrospectively examined the relationship between the toilet training experience, toilet habits, and personality traits. In this context, it is believed that the results of the study may guide the experts working in the field of maternal and child health in their practices, contribute to the development of toilet training experience associated with the toilet habits and personality traits of individuals, and help go through this process in a healthy way.

### **Conclusions**

In line with the findings of the study, it can be stated that including toilet training in the protective services for mothers and child health in primary health care institutions, supporting health professionals to contribute to the awareness of parents about toilet training, and helping the personnel working in nurseries and day care homes to adopt the correct scientific approach may make positive contributions to the toilet training process and to the future of children. It is recommended to examine the personality traits of mothers as well as their information needs and to increase their awareness that their positive and negative attitudes affect the toilet training process and leave permanent traces on children's personality traits. It is recommended that children are followed prospectively from toilet training and their personality traits should be examined.

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