

Parents' views on toilet training: a cross-sectional study in Flanders

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Abstract

Aims The goals of this research were to investigate parents' perceptions of toilet training and their beliefs and views on how to toilet train children.

Methods Questionnaires were provided to parents of healthy children, aged 18-72 months, who were or had just finished toilet training. There were 928 questionnaires returned (38% response rate). After correcting for age compliance with the range stated in the study, 832 parents remained.

Results The data confirm a postponement of the age at which children start to potty train and the age at which they are toilet training. Fifty per cent (n=401) of the parents start because the child will soon be attending nursery school and only 27% (n=226) start toilet training because their child shows certain readiness signs. The latter group will significantly end toilet training sooner. Constipation is common and varies considerably in its severity, the complaint should not be ignored. No significant relationship between toilet training and the general family situation – parental status, working status or educational level – was found, suggesting that these factors do not have a significant impact.

Conclusion Proper education of parents in toilet training and readiness signs could reduce the uncertainties that exist. In that way, toilet training could be carried out more efficiently and at the right time for the child.

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Keywords

child health, continence, toddlers, toilet training

Introduction

Different studies from past decades report a tendency towards a later age of starting toilet training as well as a later age of completion of toilet training in the western world (Rugolotto et al 2008a, Vermandel et al 2008, Kaerts et al 2012a). In 1940 people began toilet training at a mean age of 18 months, whereas nowadays the mean age has increased to 21-36 months (Schum et al 2002, Blum et al 2003). In the 1950s 97% of children had completed toilet training by the age of 36 months (Berk and Friman 1990). More recent data show that 40-60% of children are toilet

trained by 36 months (Blum et al 2004, Rugolotto et al 2008a, 2008b).

Several factors could be addressed to explain the delay. First, it is unlikely that during the past 30-50 years a significant change occurred in the biological development of children but the social and professional life of parents and relatives of children, as well as the methods of toilet training have changed, which might explain the delay in completion of toilet training (Blum et al 2004). It is unclear from scientific studies or from self-declared 'expert opinions' what the best starting age or method is for toilet training (Schuster et al 2000).

This may lead to confusion and uncertainty among parents even before they have started toilet training (Blum et al 2003, Vermandel et al 2008).

The use of disposable nappies and a more liberal, child-oriented approach could explain the postponement of toilet training (Koc et al 2008, Vermandel et al 2008). Moreover, the dual-earner model, where both parents contribute to the financial support of their household, causes time constrictions for parents to attempt toilet training, which could lead to pressure on parents and toilet training is often left to nurseries (Kaerts et al 2012b). Thirty nine per cent of parents are not aware of toilet training methods used in nurseries (Kaerts et al 2012b). The toilet training expectations of parents are not always aligned with those of the nurseries' and could lead to confusion and stress in the child (Kaerts et al 2014).

The motivation of parents to start toilet training seems to have changed. Nowadays, parents appear to start when they have time, because their child has reached a certain age or their child needs to be toilet trained in time for nursery school (Jansson et al 2005). But these are all extrinsic factors that do not take into account the physical and psychological maturity of children.

Previous research has shown that the uncertainties in parents and postponement of toilet training could have negative consequences for the child, the parents and society (Simon and Thompson 2006, Kaerts et al 2012a). These include, stress and frustrations among parents, abuse of the child by a parent (Schmitt 1987, Jessee and Reiger 1996), a higher prevalence of children in nursery classes who are not yet toilet trained, which limits the nursery teachers' time for pedagogic tasks, impact on the environment and economy including increased use of disposable nappies (Kaerts et al 2012b). Also, a later age of initiation of toilet training, stool toileting refusal and constipation are three factors that could explain the later age of completion of toilet training (Blum et al 2004). For the purpose of this study the authors hypothesise that the current generation of western parents of toddlers seems to have developed different views and a different perception on how to toilet train their child when comparing to previous generations or other cultures.

Aims

The main goals of this study were to investigate the parents' perceptions of toilet training and their beliefs and views on how to

toilet train their child. The method used, the age of onset and completion of toilet training were focused on, but other contributing factors were included. The intention was to answer the following questions:

- » At what age do parents start to toilet train their child?
- » What are the main reasons to start and what method do they use?
- » What is the influence of intrinsic and environmental factors, such as the use of disposable nappies, day care, family situation, and stool problems?
- » Do the perceptions and beliefs of parents match what is known about toilet training in the scientific literature?

The authors consider a child to be fully toilet trained during daytime if he or she wears undergarments, is aware of the need to void, initiates toileting without prompts or reminders from the parents, and has a maximum of one leakage accident per day. Being dry during the night was not included in this study, instead it was decided to focus only on daytime toilet training, because becoming dry during the day is a process that is influenced by the training that parents and caregivers initiate in the child. The authors believe that becoming dry during the night is the result of the maturation of the bladder. To avoid excluding participants, no distinction was made between parents who had used direct toilet training or who used a potty seat to initiate toilet training.

Methods

Design

A questionnaire was developed by a group of experts, based on their experience, scientific literature and previous questionnaires used by the research group (Kaerts et al 2014). It contained 70 multiple choice and open questions. It was divided into seven parts concerning: the child; the environment of the child; toilet training; stool problems; toilet culture – for example, how parents handle leakage or loss of urine or stool; data of the interrogated person; and general remarks. In this way, aspects of toilet training methods were obtained and different environmental factors that could attribute to start and completion of toilet training and to the existence of stool problems were evaluated.

Setting

Participants were recruited from kindergartens, school care and nurseries in Belgium, based on demographic data, from January to June 2013, to investigate methods of toilet training.

Implications for practice

- Parents initiate toilet training at a later age than previously
- Children finish the toilet training process at a later age
- Parents need to search for signs in their child that reflect the child's readiness to start toilet training
- Parents and caregivers need to communicate about the method they use when toilet training children
- Parents need to be informed about the signs of functional constipation

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Permission to participate in the study was asked at the managing board of these centres, who distributed the questionnaires to the parents.

Sample

Parents of children, aged 18 to 72 months, who were at or just finished toilet training were considered eligible for the study. A letter was given to all participating parents to inform them about the aim of the study and to request their consent on the use of the anonymous data. A total of 2,419 parents received a self-administered questionnaire to be completed. Teachers and nurses were asked to remind the parents to hand in the questionnaires after one week. Questionnaires were returned in a closed envelope to ensure anonymity.

Data

All data collected were encoded using a codebook that was based on the questionnaire. Data-cleansing was performed after input to correct for possible errors. Statistical analyses (frequencies, descriptive statistics, logistic regression and Kaplan Meier) were made in the software Statistical Package for the Social Sciences (SPSS) version 20. Because not all children were already toilet trained, statistical analysis was performed on that part of the study population who had already finished toilet training ($n=634$, 74%).

Ethical considerations

Approval of the ethical committee of the University Hospital Antwerp was obtained (registration number: B300201317927). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Results

A total of 928 completed questionnaires were sent back which is a response rate of 38%. Not all parents answered all the questions so totals differ between different questions.

General data of the participants

Ninety six per cent ($n=832$) had a Belgian nationality. Ninety two per cent ($n=802$) of the parents were married or cohabiting, 8% ($n=71$) were single parents. Most families had one child (62%, $n=541$), 26% ($n=228$) had two children and 12% ($n=91$) had three children or more.

The majority of the participants were mothers (93%, $n=805$) with a mean age of 33 years. Seventy one per cent ($n=631$) had a higher education diploma, 26% ($n=216$) a grade school diploma. Almost half of the mothers had a full-time job (47%, $n=404$) and 40% ($n=332$) worked part time. Only a small proportion were fathers (6%, $n=55$) with a mean age of 35 years. A total of 56% ($n=473$) had a higher education diploma, 39% ($n=336$) had a grade school diploma and 81% ($n=686$) had a full-time job.

The parents reported that 74% ($n=634$) of the children were already toilet trained, of them 50% ($n=318$) were male and 50% ($n=310$) female toddlers. Eleven per cent ($n=103$) had not yet started toilet training, 14% ($n=125$) had initiated toilet training but were not completely toilet trained and 1% ($n=7$) had started but stopped.

Toilet training: age, methods and reason to start

The start of toilet training is marked as the moment where parents introduce the toilet or a smaller potty for the first time. The average age was 23.1 months. Twenty five per cent ($n=110$) of parents started before their child was 20 months old, and by the age of two 64% ($n=270$) still needed to begin. Thirtyfour per cent ($n=145$) of the parents started at 24 months and 2% ($n=20$) had not yet started by the age of 30 months.

The mean age at which toilet training was completed was 27.8 months (95% confidence interval (CI) 22.6-32.9 months). Although most children went to kindergarten for the first time at the age of 30 months, 17% ($n=109$) of this study's population was not toilet trained at that time (Figure 1). Strikingly, 63% ($n=404$) were toilet trained at 29 months and this total increased to 83% ($n=531$) at 30 months.

Girls finished toilet training at a mean age of 26.6 months (CI: 21.9-31.3 months), which is significantly earlier compared to boys who finished at a mean age of 28.6 months (CI: 23.8-33.4 months) ($P=0.000$).

The mean duration of the toilet training was 4.9 months. After seven months of training, 80% were toilet trained.

The methods used most often when toilet trained were to leave the nappy off (71%, $n=588$), to seat the child onto the potty on a regular basis (69%, $n=563$), to ask the child whether he or she has an urge to urinate (63%, $n=516$) and to give a reward (57%, $n=470$).

Almost half of the respondents (49%, $n=430$) started toilet training because their child needed to be ready for nursery school.

In 39% ($n=338$) of the cases the reason to start toilet training was the age of the child. Twenty eight per cent ($n=189$) of the parents started training at the request of the child, which we categorised as the child showing interest in the potty, being proud after he or she went to the toilet or talking about urine and stool. The mean age at which these children were dry was 25.9 months, which differs significantly from 28.5 months if parents did not indicate it ($P=0.000$). The reasons to start toilet trained are outlined in Table 1.

Toilet training: influencing factors

Family situation

Family status (married or divorced), working status (full-time, part-time, unemployed), education or degree of the parents had no significant influence on the age at which a child was toilet trained ($P>0.05$).

Introducing the potty

The age at which the potty was introduced for the first time was significantly related to the age at which the child finished toilet training ($P<0.000$): the sooner the potty is introduced, the sooner the child will be dry. But, the duration of toilet training is significantly shorter when the potty is introduced after the child is 24 months ($P=0.003$).

Stool problems

Eighty five per cent ($n=696$) of the parents did not report that their child had problems with defecation. If problems were present, the most common were hard stool (55%, $n=113$) and abdominal pain before or during defecation

(43%, $n=85$). Also crying during defecation (27%, $n=53$) and a large mass of stool (25%, $n=48$) were indicated frequently.

Using the Bristol Stool Chart (Lewis and Heaton 1997), parents were asked to indicate the type of stool that was seen most common in the defecation pattern of their child. In general, 91% ($n=616$) indicated normal types of stools (Bristol 3 and 4). In 28% ($n=190$) of the cases, the children had frequent harder stools (Bristol 1 and 2) and 18% ($n=124$) of the children had often very soft stools (Bristol 5, 6 and 7); multiple answers were allowed.

Of the children who had stool problems, parents indicated most common stool forms as Bristol type 3 (56%, $n=228$) and Bristol type 2 (47%, $n=189$).

Logic regression analysis showed that the age at which a child finished toilet training has no significant association with stool problems, nor does the age of onset ($P=0.357$ and $P=0.998$ respectively). Neither did the duration of toilet training significantly differ depending on whether the child had stool problems or not ($P=0.771$).

Children showing stool withholding manoeuvres are not significantly later toilet trained compared to those who do not ($P=0.794$). Occasionally wearing a nappy after the age of 2.5 years, when already toilet trained, does not have a significant relation with the presence of stool problems ($P=0.154$), nor does the presence of older siblings in the family situation ($P=0.566$).

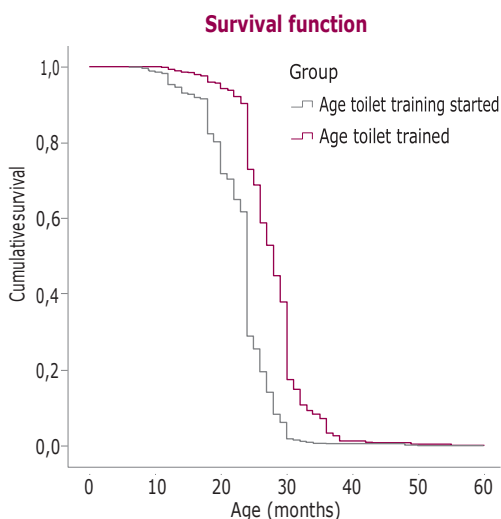
A small, but significant correlation between stress in the family situation and the presence of stool problems ($P=0.014$) was found.

A significant negative effect between speaking freely about stools and having problems with stools ($P=0.004$) ($\Phi=-0.104$) was also found. Parents pay more attention to the child's diet when stool problems are present (39%, $n=50$) compared to children who do not have stool problems (4%, $n=33$). In 61% ($n=77$) of the children experiencing stool problems, parents do not take the diet into account during toilet training.

Discussion

The child's readiness to be toilet trained depends on physical and psychological development, and therefore may be highly variable. Results of our survey show that almost 50% ($n=430$) of parents start toilet training because their child needs to be ready for nursery school and in almost 40% ($n=338$) of the cases, age seems to be the main reason to start toilet training. Parents start toilet training when they feel that the time has come

Figure 1. Distribution of the ages at which parents start toilet training and the ages at which children are toilet trained



or when they have the time during summer holidays (Jansson et al 2008), which was also shown in this study.

Therefore focus is on external factors rather than on the child's readiness. This may lead to a suboptimal start of toilet training, which may be too soon but also too late. It has been proposed that readiness signs are the best guidance to decide the time to start toilet training, even though there is no consensus on which signs or how many signs need to be present (Kaerts et al 2012a). The data confirm that parents who begin to toilet train their child at the request of the child, and in that way are guided by the child's readiness instead of external reasons, finish toilet training significantly sooner. Unfortunately, the majority do not seem aware of what signals they need to observe when they commit to toilet training. Also, one out of three parents started toilet training at the age of 24 months, which is the minimal age that is advised by the Flemish government institution Kind en Gezin to start toilet training. Parents need to be informed correctly about readiness signs, how to use them and about the problems that could occur if toilet training is initiated too late or too soon.

Seventy years ago 88% of parents started to toilet train their children before 18 months and 50% before one year (Bakker and Wyndaele 2000). The data in this research show a delay in age at which toilet trained

is started and completed, which confirm previously published results (Bakker and Wyndaele 2000). Children are five months older at the time parents initiate training and also the age at which toilet training is completed is later. Seventy years ago, 71% of the children reached urinary continence before 18 months, whereas the mean age for bladder and bowel control is now 28 months.

Cultural differences may also have an impact on the age at which toilet training is started and on the methods used. For example, Duong et al (2013) described how Vietnamese mothers tried to detect signs of need by observing the child, beginning shortly after birth. By the age of nine months, all of these children used the potty and at 24 months, the majority of the children independently managed their toilet training process. Although such a regimen is probably not feasible in western society, it does point out that children are probably ready to be toilet training at a younger age and end toilet training at a younger age. Being toilet trained at a younger age would reduce the growing number of used nappies, which will be good for the environment, and give nursery school teachers more time to spend on educational tasks instead of time-consuming toilet training (Kaerts et al 2012b).

The prevalence of constipation in the 0 to 18-year age group has been reported between 0.7% and 29.6% (Tabbers et al 2010), which is concordant with the 15% reported in this study. A higher prevalence of constipation was seen in two year olds compared to one and three year olds (Tabbers et al 2010). Two is the same age at which children will initiate toilet training.

The changes, frustrations or anxieties that toilet training brings to the child might be a reason to develop stool toileting refusal, which could lead to harder and larger masses of faeces and, finally, constipation. Also in four year olds, constipation occurred significantly more (Roma-Giannikou 1999). Further research is necessary to investigate a possible relationship between the occurrence of stool problems and the age at which toilet training is initiated.

Since there is a link between constipation and bladder function, parents should be informed or instructed on how to recognise signs of constipation and prevent or treat it appropriately. In the study, 11% ($n=83$) of the parents who indicated that their child had no defecation problems pointed to aberrant forms of stool, and almost 80% ($n=275$) of the parents who indicated normal types also pointed aberrant forms of stool as most common in their child's defecation pattern.

TABLE 1. What was the reason to start toilet training during the day?
Multiple answers possible ($n=873$)

Reason	<i>n</i>	%
Because the child needs to be ready for nursery school	430	49.3
The age of the child	338	38.8
At the request of the child	189	27.8
At the request of the day care centre	115	16.9
Other	96	11.0
Tired of using disposable nappies	57	6.5
Advice of child and family ¹	32	4.7
Comments by family/others	36	4.1
The financial cost of disposable nappies	23	2.6
I do not remember	19	2.2
None of the above	17	2.0

¹ Child and family is an agency of the Flemish government which contributes to the welfare of young children and their families by providing services in family support and child care

Although variation in stool is common in children, parents should be aware of possible underlying stool problems when their child has frequently softer and/or harder stool. Although Rome III criteria to diagnose functional constipation was not used in this study (Drossman and Dumitrascu 2006), the results suggest that parents are not aware of the signs of possible underlying constipation. Better information or education on constipation during toilet training is necessary. Constipation may link defecation with an unhappy experience for the child, therefore avoiding and postponing defecation which, in turn, could lead to behaviours that further promote constipation.

It was hypothesised that a child will have fewer problems with stool when parents talk freely about stool and toilet habits. A significant negative effect between speaking freely about stools and having problems with stools was found. A similar result was found when comparing the presence of stool problems and diet. A fibre-rich diet and sufficient drinking can soften the stool and in that way facilitate bowel movements. Parents pay more attention to the child's diet when stool problems are present compared to children who do not have stool problems.

Limitations

This study revealed a small, but significant relation between stress in the family situation and the presence of stool problems ($P=0.014$).

However, because of the design of our study it is impossible to determine if stool problems may lead to stress or stress to stool problems.

Because of the methodology used, recall bias cannot be excluded, which can be considered a limitation of the study. Furthermore, selection bias cannot be excluded based on the response rate of 38%, and the fact that only parents of children attending nurseries were explored limits the assumptions about children not attending nurseries.

Conclusion

The data in this study confirm a postponement of the age at which children start to toilet train and the age at which they are toilet trained. Fifty per cent of the parents start because the child will soon attend nursery school and only 27% start because their child shows certain signs of readiness. The latter group will end toilet training significantly sooner. Constipation is common and varies considerably in its severity, the complaints should not be ignored.

No significant relationship between toilet training and the general family situation - for example parental status, working status or educational level - was found, suggesting that these factors do not have a significant impact. Evidence-based education of parents concerning toilet training and readiness signs could reduce the uncertainties that exist. In that way, toilet training could be carried out more efficiently and at the right time for the child.

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