

Infant Toilet Training in Thailand: Starting and Completion Age and Factors Determining Them

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Objective: To study the age at which Thai infants start and achieve toilet training and its associated factors.

Material and Method: The parents of fifty infants in a research entitled "Bowel movements of normal Thai infants" were interviewed about age at which toilet training started, the process of toilet training and age at which infant successfully completed toilet training.

Results: Forty-seven infants from the 50 infants registered had data of the date of beginning toilet training. Five of them (10.6%) started toilet training at 4 months and 38 (80.9%) by 12 months. Most of the infants (73.7%) were initially trained when they showed urging signs. Only 45 infants had complete data of successful toilet training. Twenty-two cases (48.9%) were trained successfully by 12 months and most of them (16/22) succeeded within one month. The infants, who were not the first child and were taken care of by a well-educated mother; were found to start toilet training late.

Conclusion: The youngest age at which normal Thai infants start to be toilet trained was 4 months. About 50% of the infants aged 12 months had successful toilet training. Being raised by a well-educated mother and a having a later birth order in a family were factors associated with late toilet training.

Keywords: Infant, Toilet training, Associated factors, Start, Achieve

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Toilet training is an important task during child development. In Western countries, especially in North America, parents require independent toileting, which means that children have to eliminate in socially acceptable sites and take care of toileting by themselves. Two major acceptable toilet training methods are the Brazelton gradual child-oriented approach⁽¹⁾ and the Azrin and Foxx intensive training method⁽²⁾. American Academy of Pediatrics⁽³⁾ and the Canadian Paediatric Society⁽⁴⁾ recommend starting toilet training at approximately 18 months old. The process begins when each child shows signs of physiological and psychological readiness based on child-oriented approach. In addition, there are other methods less commonly used in western countries such as assisted infant toilet training⁽⁵⁻⁷⁾.

Assisted infant toilet training begins with caregiver senses of infant's elimination signals then gently holds the infant over a specific place in an in-arms position with the infant's legs flexed. In the meantime, the caregiver gives signals to prompt the infant to eliminate and hold the infant in position for a short time until elimination is completed. This practice is believed to be used in China, India, Africa, Central, and South America and in some European countries. It is also believed that many Thai caregivers use the assisted infant toilet training method in their practice particularly in the rural area. There are several factors affecting toilet training practices, including maternal education^(8,9), economic^(8,10) and cultural factors^(7,9-12). Based on the assisted infant toilet training method, bowel movements pattern reportedly may affect the age of starting toilet training.

Thailand is a developing country in Southeast Asia where culture, beliefs and child-rearing practices differ from that of the Western countries. Regarding toilet training of Thai children, there is no information about age of initiation, age of completion, influencing factors, or training methods. Therefore, the objectives

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of the present study are (1) to provide information of the age at start and completion of toilet training, (2) to identify the methods of toilet training and (3) to identify the associated factors that determine the starting time of training.

Material and Method

Subjects

The details of design and sample of this longitudinal study have been published previously⁽¹³⁾. Fifty infants, who were born at Princess Maha Chakri Sirindhorn Medical Center, Srinakharinwirot University, Nakorn Nayok, Thailand were recruited from a well baby clinic. All were healthy infants with normal growth and development. The infants were followed 6 times at 1, 2, 4, 6, 9 and 12 months.

Methods

The present study was approved by the Research Ethics Committees of the Srinakharinwirot University and an informed consent was obtained from each parent. Parents or caregivers were interviewed and asked about (1) whether infants were started and succeeded toilet training and (2) the methods of toilet training. Two options of the training were presented: Caretaker helped the infant to defecate after observing infant's elimination signals, or brought the infant to defecate at specific places at a regular time. Thai parents define initiation of toilet training as the first time they put infants on a potty or specific sites and completed toilet training was the child's ability to avoid bowel accidents most of the time.

Statistical Analyses

Statistical analyses were performed by using of the Statistical Package for the Social Sciences (SPSS). A multivariate logistic regression analysis with odds ratio (OR) and 95% confidence interval (95% IC) was used for analyzing of independent contribution factors of initiation toilet training before the age of 6 months. For this analysis, a p-value < 0.05 was considered statistically significant.

Results

Of the 50 infants, 28 were males and 22 females. Fifty-five percents of infants were the first child of a family. Sixty percents of all infants were taken care by mothers and 34% by grandmothers. About maternal education level, 10.2% of mothers graduated from grade 6 school level, 51% from grade 12 and 38.8% higher than grade 12. Details of

the studied population, dietary history and bowel movement patterns have been published previously⁽¹³⁾.

Toilet training

Of the 50 parents, 47 provided the age of starting toilet training, but only 45 had information of completion toilet training process. Five infants (10.6%) started their first toilet training very early at 4 months old, and most of the children (38/47) had started between the age of 4 months and 12 months. Twenty-two from 45 infants (48.9%) succeeded in toilet training by 12 months. From the 38 respondents, the main method of toilet training included training when infants showed the urging signs (73.68%) and 26.32% were trained on a regular routine schedule without considering infants' signals.

From 38 infants who had started toilet training between the ages of 4 and 12 months, 22 infants succeeded in toilet training by 12 months of age, 14 succeeded after 12 months and two were lost to follow up. Interestingly, from 22 infants who succeeded in toilet training by 12 months, 16 infants were trained successfully within one month period of time.

The association between methods of toilet training and training success by 12 months

As many Thai caregivers started toilet training their children since at very young age. Data collected in the present study provided the association between the methods and the success of toilet training within the age of 12 months. Twenty-six from 36 infants had toilet training when they showed urging signals. From 26 infants, 15 infants (57.69%) succeeded by 12 months compared to seven from 10 infants (70%) who succeeded toilet training by 12 months by toileting regularly as shown in Table 1.

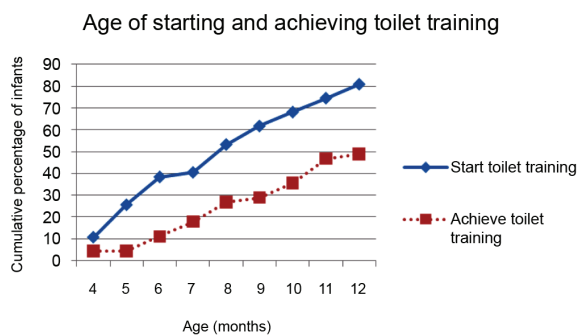


Fig. 1 The age of starting (n = 47) and achieving toilet training (n = 45)

From 22 infants who achieved toilet training by 12 months, the mean duration time of toilet training process was 1.6 months (SD-1.26). Infants who were trained by parents observing infant elimination signals had the mean duration time of 1.33 months (SD-0.62) to achieve toilet training. Whereas, infants who were toilet trained regularly had a mean duration time of 2.14 months (SD-2.04).

Factors associated with the age of starting toilet training

The finding showed that infants who were not the first child of a family and were taken care of by the mother with an educational level higher than grade 12 tended to start toilet training after 6 months as shown in Table 2.

The association between the ages of starting toilet training and having regular bowel movements

The information of bowel movements in these infants is presented elsewhere⁽¹³⁾. The meaning of regular bowel movements was that infants had bowel movements at the same time everyday and mothers could predict when their infants had a bowel movement. There is no statistical significance of the association

between the ages of having regular bowel movement and of starting toilet training ($p = 0.15$). However, most infants (35 out of 38 infants, 92.11%) were started toilet training during or after they had regular bowel movement as shown in Table 3.

Discussion

The recommendation from American Academy of Pediatrics⁽³⁾ and the Canadian Paediatric Society⁽⁴⁾ to start toilet training after 18 months old depending on child toilet readiness is widely accepted⁽¹⁴⁾. Previous studies in the USA found that an average age of toilet training initiation ranged from 18 to 27 months^(10,11,15-17) and had a trend toward an older age of initiation. However, toilet training during the first year of life has been practiced in other parts of the world^(5,7,12,18). The study from an African tribe by deVries and deVries found that toilet training could begin as early as 2 to 3 weeks of age and completed by 5 to 6 months⁽⁷⁾. Another study from Italy also reported assisted infant toilet training method in a 1-month old, Chino-Italian infant with completion of toilet training at 5 months⁽⁵⁾. In the present study, the infants started the training later than studies of deVries and deVries or Sun and Rugolotto.

Table 1. Age of achieving toilet training classified by methods of the training (n = 36)*

Methods of toilet training	Age of achieving toilet training		Total
	By 12 months	After 12 months	
With elimination signals	15 (57.69)	11 (42.31)	26
At regular time	7 (70)	3 (30)	10
Total	22	14	36

* Follow-up for information of success of toilet training of two infants is not available

Table 2. Factors associated with toilet training in infants before and after 6 months of age**

Variables	Categories	Starting age		Adjusted OR	95% CI	p-value
		≤ 6 months, No. (%)	> 6 months, No. (%)			
Order of infants	First	11 (64.7)	15 (51.7)	1.00		
	Second and later	6 (35.3)	14 (48.3)	1.69	0.47-6.07	0.42
Caregivers	Mother	9 (52.9)	18 (62.1)	1.62	0.44-5.99	0.47
	Others	8 (47.1)	11 (37.9)	1.00		
Mother's education	≤ grade 12	12 (70.6)	16 (55.2)	1.00		
	higher than grade 12	5 (29.4)	13 (44.8)	2.33	0.60-8.96	0.22

** There was one missing data

Table 3. The relationship between age infants were started toilet training and had regular bowel movement (n = 38)

Relationship	Age started toilet training (months)									Total
	4	5	6	7	8	9	10	11	12	
Infants were started toilet training before having regular bowel movement	1	2	0	0	0	0	0	0	0	3
Infants were started toilet training while or after having regular bowel movement	4	5	6	1	6	4	3	3	3	35
Total	5	7	6	1	6	4	3	3	3	38

The present study found that the youngest age at which children initiated toilet training was 4 months at 10.6% and around 40% and 80% by 6 and 12 months old, respectively. The finding was comparable to the longitudinal study of Swiss children by Largo and Stutzle⁽¹²⁾, which reported that 13%, 32%, and 96% of infants started toilet training by 3, 6 and 12 months, respectively. By age of 12 months, infants in the present study completed toilet training at around 50% and most of them (16/22) achieved complete bowel control within one month. Compared to Swiss children in the finding of Largo and Stutzle⁽¹²⁾, about 60% of infants showed partial bowel control and 35% infants had complete bowel control. As most infants started toilet training after 4 months old and nearly 80% of them had regular bowel movements with a frequency of 1 to 2 times per day by this age (published elsewhere)⁽¹³⁾. It would be easier for caregivers to start toilet training after infants had regular and non frequent bowel movements. Therefore, the authors hypothesized that regular bowel movement might play an important role in the age of toilet training initiation. However, there was no statistically significant association found. The small number of studied population could be one of the main reasons.

Previous studies reporting assisted toilet training emphasized on infant elimination signals, which lead caregivers to assist infants having bowel movements. At the same time, they mentioned about observing infant elimination schedule for helping the process to complete^(5,18). In the present study, caregivers toilet trained their infants by observing infant urging signs at 73.68% with the mean duration time of achievement at 1.33 months (SD-0.62). Moreover, 26.32% of infants were toilet trained regularly without considering infants' signals with a mean duration time of achievement of 2.14 months (SD-2.04). The findings show that infants can be assisted in toilet training

regularly even without infants' motivation. However, it took a longer time than toilet trained when infants had toilet motivation.

Factors associated with initiation of toilet training later than six months were a later order of birth in a family and maternal education higher than grade 12. Most studies showed the same result that highly educated mothers usually toilet trained their children late^(8,9). However, there was no report of a role of caregivers other than mother and order of a child in family to determine the age that initiated toilet training. The authors hypothesize that grandparents, especially grandmothers who lived together in the family in Thai culture might have an important role in early toilet training of their grandchildren. In addition, there was no relationship of economic factor to toilet training in the present study as shown in previous studies^(8,10).

The present study was done as a longitudinal study for providing an actual age of initiation and completion of toilet training. However, the study did not follow children after the age of 12 months. Therefore, there is no information of toilet training completion in all children after 12 months and adverse effects of infant toilet training. However, previous findings^(5,18) reported no adverse effect of the training method. There are limitations influencing the results of the present study; such as, the limited number of participants and the variation of definitions used in Thai and western culture.

Conclusion

Infant toilet training is one of the toilet training methods that have been practiced in some countries in different cultures. Findings of the present study provide information to support the practice in Thailand. However, the present study did not represent all Thai practices. The studied populations lived in suburban and rural areas. More information of

toilet training is needed for understanding child-rearing practice in Thailand.

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Potential conflicts of interest

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การฝึกขับถ่ายของทารกในประเทศไทย: อายุที่เริ่มต้น อายุที่ฝึกขับถ่ายสำเร็จและปัจจัยที่กำหนด

บานชื่น เบญจสุวรรณเทพ, นิชรา เรืองดารกานนท์

วัตถุประสงค์: เพื่อศึกษาอายุซึ่งทารกไทยเริ่มฝึกขับถ่าย ฝึกขับถ่ายสำเร็จและปัจจัยที่มีผลต่อการฝึกขับถ่าย

วัสดุและวิธีการ: บิดามารดาของทารกจำนวน 50 คน ในการศึกษาเรื่อง "ลักษณะการขับถ่ายของทารกไทยปกติ" ได้รับการชักประวัติเกี่ยวกับอายุซึ่งทารกเริ่มฝึกขับถ่าย ขบวนการฝึกขับถ่ายและอายุซึ่งฝึกขับถ่ายสำเร็จ

ผลการศึกษา: ทารกไทยจำนวน 47 จาก 50 คน มีข้อมูลเกี่ยวกับวันที่เริ่มต้นฝึกขับถ่าย ในจำนวนดังกล่าวทารก 5 คน (10.6%) เริ่มต้นฝึกขับถ่ายที่อายุ 4 เดือนและ 38 คน (80.9%) ภายในอายุ 12 เดือน ทารกส่วนใหญ่ (73.7%) เริ่มต้นฝึกขับถ่ายเมื่อมีอาการปวดเบ่ง มีเพียงทารก 45 คน ที่มีข้อมูลเกี่ยวกับการฝึกขับถ่ายสำเร็จ โดยทารก 22 คน (48.9%) ฝึกขับถ่ายสำเร็จภายในอายุ 12 เดือน และทารกส่วนใหญ่ (16/22) ฝึกสำเร็จภายในระยะเวลา 1 เดือน ทารกที่ไม่ใช่บุตรคนแรกของครอบครัว และได้รับการเลี้ยงดูโดยมารดาที่มีการศึกษาสูงพบว่าเริ่มต้นฝึกขับถ่ายช้า

สรุป: ทารกไทยอายุน้อยที่สุดที่เริ่มต้นฝึกขับถ่ายคือ 4 เดือน โดยประมาณ 50% ของทารกอายุ 12 เดือน สามารถฝึกขับถ่ายสำเร็จ ปัจจัยที่มีความสัมพันธ์ต่อการเริ่มฝึกขับถ่ายช้าคือ ได้รับการเลี้ยงดูโดยมารดาซึ่งมีการศึกษาสูง และเป็นทารกคนหลัง ๆ ของครอบครัว
