Implementing a new method of group toilet training in daycare centres : a cluster randomised controlled trial

Article Title

IMPLEMENTING A NEW METHOD OF GROUP TOILET TRAINING IN DAYCARE CENTERS: A CLUSTER RANDOMISED CONTROLLED TRIAL

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Abstract

Despite the existing methods, a trend towards a later initiation and completion of toilet training has been seen in Western society. This study is the first to investigate prospectively the efficacy of intensive group toilet training in daycare centers. The primary outcome of interest is the duration until the child is toilet trained.

A cluster randomised controlled trial was established in daycare centers, clusters of participants were randomly allocated to an intervention or control group. Intervention group was subjected to an intensive toilet training session. Innovative aspects of this toilet training method were a two-hour training on two consecutive days, carried out in small groups in daycare centers. Parents of children in the control group were encouraged to start TT in their own manner. Children were monitored until they were considered to be fully toilet trained during the day.

Median toilet training duration in the intervention group was 2 weeks compared to 5 weeks in controls (p-value log rank test = 0·007). The hazard of being clean during the follow up of 6 weeks was twice as high in the intervention compared to controls (p=0·018).

Conclusion: The intervention had a significant influence on the duration of toilet training in healthy children, with a median duration of 2 weeks. Our findings are clinically relevant for daycare educators, having a considerable responsability in the development of children.

Trial Registration Number: ClinicalTrials.gov NCT04221776

Key words

Child; toddler; potty training; method; daycare

List of abbreviations

AAP = American Academy of Pediatrics

CG = control group

CRCT = cluster randomized controlled trial

ES = elimination signals

HR = hazard ratio

IG = intervention group

IQR = interquartile range

OR = odds ratio

RS = readiness signs

SD = standard deviation

TT = toilet training

What is known

- Despite different existing methods, a later initiation of toilet training has been seen in Western society and coherent to this an increasing age of acquiring full bladder control.
- Child daycare centers have a growing role in the toilet training process.

What is new?

- This is the first prospective report describing the results of a new method of toilet training healthy children in small groups in daycare centers.
- The intervention had a significant influence on the duration of toilet training, with a median duration of 2 weeks.

Introduction

A child discovers and develops new skills during the toilet training (TT) process, which is a giant step in expanding independency. When a child shows readiness signs (RS), it is up to the parents and educators to initiate TT, instruct, guide and demonstrate the proper methods to encourage the child to act. But acquiring new milestones varies within each child and to date, there is no consensus about the appropriate moment or method of TT.[1-4]

Over the last century, TT programs described in literature varied between rigorous parient-orientedand more flexible child-oriented methods.[5-8] Despite the existing methods, a trend towards a later initiation of TT has been seen in Western society and coherent to this an increasing age of acquiring full bladder control.[9-13,3,14-16,8,17,18] Several reasons for the postponement of TT have been cited. Apart from aspects like a more liberal attitude towards the child[9,12,19], and comfortable and good quality nappies [9,10,12,19], in many families both parents have a job and there is an increasing trend in the use of daycare [14,15], which means that apart from the parents, child daycare centers also have a growing role in the TT process. Daycare providers are among the first to recognise RS; they teach the child the proper TT skills and communicate with parents about the TT methods used and how their child is acquiring these new skills.[14]

A child that is toilet trained at a later age has a number of consequences. Firstly a longer use of disposable diapers, which has financial and ecological disadvantages.[9-13,20,21] Secondly there could be a negative effect on the educational level in nursery schools.[22] Moreover delay in completing the TT process could also psychosocially reflect on the individual as well as on the family[1,11] and delayed training might put children at higher risk for developing bladder and bowel problems.[1,11,23]

Unfortunately, much of the available literature on this topic is either contradictory or of little practical use. Our research question was whether it is possible for healthy toddlers that are seen as ready for TT (Population), to be toilet trained in group (Intervention group (IG)); in association with the child daycare, in an efficient and effective manner to shorten the TT process (Primary Outcome). We

hypothesise that children having had an intensive TT are quicker toilet trained compared to children receiving standard care from their parents (Control), resulting in a higher proportion of children becoming toilet trained in the IG compared to the control group (Secondary Outcome). Most parents probably look for a method of TT that is child friendly, is not complicated, needs a limited time to apply, has a good success rate, and induces no conflicts while avoiding unnecessary and fruitless work. We present a child friendly and attractive method of TT in daycare centres, aimed at reaching these goals: short, safe, highly successful and in healthy children.

The primary outcome of interest in this study is the duration until the child is fully toilet trained. Secondary outcome is the number of children that acquire cleanliness at 6 weeks time.

Materials and methods

1. Subjects and datacollection

The protocol of the study was approved by the Ethical Comite of the Antwerp University Hospital (nr. B300201630079) and registered at ClinicalTrials.gov (NCT04221776). For the recruitment of the participants, a professional association for childcare in Flanders and Brussels (Unieko) was contacted.

The proposed inclusion criteria for the participants were attendance to daycare, knowledge of the Dutch language, aged between 18 and 30 months and not yet toilet trained during the day and night (diaper dependent). All potential participants were screened on their developmental skills by the daycare workers according to signs of readiness (RS) (see Appendix 1). Children were selected to participate in the study if they met at least two of the following three signs: the child expresses a need to evacuate and shows awareness of the need to void or to have a bowel movement; the child insists on completing tasks without help and is proud of new skills; or the child can pull clothes up and down in a TT related context.[24,25]

Children with urological, neurological, intestinal or behavioural problems were excluded from the study. Parents who were willing to participate in the study and willing to invest time and effort in continuing the TT at home signed an informed consent and were asked to fill out a structured questionnaire. The following aspects were questioned: demographical data, family situation, signs of readiness, if parents had already introduced the potty, at what age, which methods were used and the reasos to start TT.

2. Randomisation and masking

A cluster randomised controlled trial (CRCT) was established in daycare centers. Clusters of participants (per daycare center) were randomly allocated to either an IG or one of the two control groups (CG1 and CG2). A daycare center could not have participants in both intervention and control groups. Using an online randomisation tool the list of participating daycares were randomly divided into 3 these groups to preserve as much as possible equal number of clusters per group.

As the researchers were also the TT experts carrying out the training in the daycare centers, there was no blinding of the randomization, nor the experimental part of the study. Since study data were encoded, evaluation and analysisof data was blinded.

3. Study protocol

The IG was subjected to an intensive TT group session lasting 2-hours during 2 consecutive days (Thursday and Friday). These training groups were quite small and on average consisted of 3 children per group. A training day started with children being educated in a pleasant and creative way about potty training (books, pictures, a doll, etc). Than, to facilitate lowering the pants independently and to ease detection of accidents by the tutors, children were asked to take out their diaper and put on their own underpants. Children were encouraged to drink often and were asked regularly if they felt the need to void. The tutors looked for elimination signals (ES) (like facial expression, often combined with body movements and verbal expressions [26]) in the child and quickly responded by putting the child on the potty when he/she expressed the need to void or to defecate. Also scheduled sitting times every

30 minutes were applied. Each child had his/her own potty, marked with a photo, symbol or color. Children were rewarded after voiding on the potty by means of a stamp, sticker or clapping and cheering by the other children, but there was no overcorrection for accidents (meaning children being involved in cleaning up the accident; overcorrection is seen as a punishment [7]). Afterwards, parents received a leaflet containing practical tips concerning ES, RS, the TT methods that were being applied and their child's successes of the past two days. They were asked to continue TT at home during the following weekend and longer if necessary. The daycare workers were asked to pay more attention on the TT during the following days and weeks to ensure the effect of the intervention. The children participating in CG1 did not receive the intensive training, but parents got the same leaflet and were encouraged to start TT their child, because they were considered as being ready to initiate TT. Children in CG2 did not receive any intervention, nor the leaflet, but their parents were encouraged to start TT in their own manner. We considered these two groups as the 'standard of care' group.

Evolution of the TT process was monitored in the daycare center until the child was considered to be fully toilet trained (or 'clean') during the day (this means wearing undergarments, conscious of the need to void and initiating toilet behavior without a reminder of the parents with a maximum of one leakage a day).[17] Daycare workers evaluated the TT process of all participating children on a weekly basis and returned this information to the researchers. Parents were asked to fill in an online questionnaire at the end of the 6 week follow-up, to assess their child's progression in the TT process (according to the definition of TT).

3. Statistical analysis

The primary research question and thus the focus of our analyses was the comparison between the intensive TT group and the standard of care group. The effectiveness of the intervention was determined with the duration of the TT as specific primary outcome measure. Assuming a standard deviation of 2 weeks and a significance level of 0·05 an achieved sample size of 17 children per group

is required to detect an effect of 2 weeks difference with 80% power using an independent-samples t test.

As the control group with the folder turned out to be quite small we decided to look at the control group as a whole (CG=CG1+CG2) as it was clear none of these children got the intensive intervention. Analysis results for the 3 separate groups can be found in an appendix.

Descriptive statistics are reported as mean (Standard Deviation (SD)) or median (Interquartile Range (IQR)) as appropriate. Between group differences were assessed using Chi-square test for categorical variables and independent samples t-test for continuous variables. In case of non-normality the Mann-Whitney test was used for the continuous variables. The primary outcome was analysed on the one hand with a Mann-Whitney test (using 6 weeks as outcome for the children that were not toilet trained at the end of the study) and on the other hand with a log rank test censoring the children that were not toilet trained at the end of the study. All children for which primary outcome was observed are used in the analysis and as they all followed the protocol intention-to-treat and per protocol population are the same. Duration of toilet training is presented with a Kaplan-Meier curve. We also considered an adjusted analyses. Due to small sample size, only models were considered with Intervention and one covariate added at the time. For the TT duration a Cox proportional hazards model was used and for the TT effectiveness a logistic regression model was fitted.

Statistical analysis was performed using R 3·5·2. Level of significance was set at $\alpha = 0{\cdot}05$.

Results

Participants recruitment

36 daycare centers reacted positively on the call to participate in the study (call was sent out to 687 daycares by e-mail) and 2 were recruited on the researcher's own initiative, between November 2017 and October 2018. After randomisation, 16 daycare centers cancelled because of lack of time or participants. In total, we had a collaboration with 22 daycare centers (Figure 1A). 118 children (aged between 18 and 30 months) were screened and 69 of them met the inclusion criteria. Four out of 69 children were eventually not included in the study because parents were not willing to participate. During the training phase, 10 (of the remaining 65) children were considered as a drop out because of a medical condition (n=3), parents stopped the training early (n=6) or parents did not complete the follow up questionnaire (n=1). In total, the results of 55 children were analysed (see Figure 1B). On average 2·5 children per daycare center were included with a minimum of 1 and a maximum of 8 children.

Statistical analysis

1. Baseline characteristics per group

55 children in total (16 boys (29%) and 39 girls (71%)) were trained in both groups: 27 children in 11 different day cares in the IG and 28 in 11 different day cares in the CG. Table 1 reports the baseline characteristics for IG versus CG.

We found no significant differences in any of the baseline characteristics, the majority of the children were girls (74% in IG versus 68% in CG). The mean age of the children in the study was respectively 24·9 months and 24·9 months in the IG and CG.

2. Compare outcomes between groups

Table 2 reports on the unadjusted comparison of the primary outcome TT duration (expressed in weeks and using 6 weeks as outcome for those who were not toilet trained at the end of the study) and

secondary outcome TT effectiveness (proportion of children that were toilet trained at 6 weeks) between the IG and CG.

Because a number of children (n=16) were not yet toilet trained by the end of the follow up period of 6 weeks, a time-to-event-analysis was performed to censor these observations. Figure 2 shows the Kaplan Meier curves for IG and CG. An event was defined as being toilet trained, hence the proportion not being toilet trained at that time is represented. If we censor the children that were not toilet trained at 6 weeks, the median "survival" in IG was 2 weeks compared to 5 weeks in CG (p-value log rank test = 0·007). When considering all children in both groups, 39 out of 55 children (71%) had finished TT within the follow-up period of 6 weeks.

Table 3 gives the results of the Cox proportional hazards models on the duration of being toilet trained. For the unadjusted model the hazard of being clean after 6 weeks is twice as high in the IG compared to the control group (p=0·018). Adding covariates to the model gives a comparable hazard ratio (HR) and in all cases p<0·05. The hazard of being dry is three times higher in girls than in boys. We also see a significant effect of the RS and if they had already started with the training.

Table 4 gives the results of the logistic regression model on being toilet trained at 6 weeks (effectiveness of the training). For the unadjusted model the odds of being clean at 6 weeks is almost three times as high in IG compared to CG, however this is not significant (there is a trend towards significance p<0·10). Adding variables to the model only increases the odds ratio (OR), without reaching statistical significancy. Gender has a significant effect on the outcome, with girls having almost fourfold higher odds of being clean at 6 weeks compared to boys. We also see a significant effect of the readiness skills (one skill more increases the odds of being clean at 6 weeks with a factor 2) and if they had already started with the training (odds of being clean at 6 weeks is 7 times as high for these who had already started).

Discussion

The rationale used in the present study is that toileting is a complex operant and social learning process. There is a need to reform the current approach of TT in Western society to decrease the disadvantages of postponing it [9,1,10-13,20,22,21] We wanted to address the problem of the growing population of children in daycare centers that need to be toilet trained. The focus of this research was the duration of TT in children between 18 and 30 months old that were considered ready for TT. To our knowledge, this is the first CRCT that investigates the effect of intensive TT in small groups in daycare centers on the TT process. To analyse our primary research question, we found a significant positive effect of intensive group training on the duration to being toiled trained with an estimated doubling of the hazard on being toilet trained after 6 weeks. As the confidence interval for this ratio was quite wide, we need to reconfirm this in a larger study. It was also apparent that considering the same time frame, girls were more likely to be toilet trained than boys.[2,4] The mean age of the children was 24·9 months in both IG and CG when TT was initiated. We found no influence of age of initiation on the duration of the training. However, there is nothing sacred about the TT age-range.

Over the past 100 years, recommended TT methods have oscillated between rigid and permissive programs: a child-oriented TT method by Brazelton[5], a rapid TT method published byAzrin and Foxx [7], deVries and deVries' diaper free method [6] and a wetting alarm diaper training introduced by Vermandel et al..[17,8]Our study protocol combined different elements of these methods of TT. One of the main elements was to stimulate the imitation behaviour, which was reinforced by training in small groups. Also, a doll was used to illustrate drinking and urinating on a potty.[7,17] Like Azrin and Foxx and Vermandel et al., children were educated about normal toileting behaviour using illustrated books. As in all methods, we overloaded children with fluids to augment the amount of voiding attempts and, based on the principle of operant conditioning, succesful events and proper behaviour were positively reinforced.[17,7,5] Similar to the rapid TT of Azrin and Foxx, we included children that were considered ready for TT (assessed according to RS); prompted practice trials on the potty were

held and the necessary dressing skills were exercised, though in group. Apart from the timed voiding in group, children were also encouraged to go to the potty when the tutors observed elimination signals in the child.[16,27] Having dry pants was continuously praised.[7] The proposed studies focuses on TT in normal developing children, initiating TT for the first time. Different elements of the study protocol also have been evaluated in children with autism spectrum disorder or children who failed the 'low intensity training'.[27,28]

The study protocol was according to the newest American Academy of Pediatrics (AAP) guidelines for TT: to begin TT when the child shows RS, but typically not before 24 months; positively praising success but without punishment, shaming or force; in a positive, nonthreatening, and natural way of training.[29]

Innovative aspects of our method of TT were (1) a two-hour training on two consecutive days, (2) carried out in small groups (3) in daycare centers. We suspect that participation and commitment of the parents and daycare workers during the following days is crucial to corroborate the effects obtained during training sessions. This is just an assumption, since there was no training group without participation of the parents to compare with, nor did we assess whether parents actually conducted the procedures at home, but we can state that children who were subjected to our intervention were dry significantly quicker than controls. Also, the role of daycare professionals cannot be underestimated. Perhaps one of the most subtle, yet powerful, risk factors is the belief of the childcare professionals themselves. Preschool teachers, daycare workers, program coordinators, and developmental specialists are key players for today's young children, providing extensive time spent with the majority of children, as well as sources of comfort and counsel for parents and viable resources of parenting recommendations simply by the nature of their roles.

To tackle discrepancy in the training methods between parents and daycare centers, we established our TT intervention in daycare and provided the parents of the children in IG with a leaflet of the

applied TT methods and detailed information of their child's potty skills that were acquired during the two days of TT. Feedback from the parents tells us that such a leaflet provides them guidance and is helpful in continuing TT in a similar way at home. We believe daycare providers should be educated on this topic to guide children in a proper manner and to keep parents well informed.

One of the main reasons to carry out this research in daycare settings, is the advantage of being able to toilet train in group. Children around the age of 24 months often show imitating behaviour, they experience more learning possibilities and will be highly motivated and stimulated.[30] They are natural imitators and learn new skills through play, including pretend play.[31] Previous research has shown that a toilet school group therapy resulted in a significant improvement of toileting-skills when compared to individual treatment.[32] It must be emphasised that this research was outlined in children who failed conventional TT, aged between four and six years old and is therefore less comparable to our population of toddlers that were toilet trained for the first time. Children beginning to imitate their peers in TT could be the subject of future research.

We also found that children who already initiated TT at home before the start of the study were much more likely to be dry at 6 weeks, although in the past, early initiation of intensive TT (before 27 months) was correlated with a longer duration of TT.[2] Many parents worry that early training can be harmful, they've heard that early training might cause behavioural problems or personality disorders.[5] It's surprising to discover that these worries are misplaced. There is no association found between starting early and bladder dysfunctions[21] nor stool problems.[2] On the contrary, initiating TT after the age of 42 months was associated with a higher chance on functional constipation[11] and a difficult and late TT process can cause problems like bullying and child abuse.[11,3] Most parents are not aware of these possible negative consequences that can entail.[33]

To enhance the awareness of voiding and wet pants in the child and facilitate recognising elimination signals by the tutors, children wore underpants during the training sessions. Previous research has already suggested that wearing underwear might facilitate the development of toileting skills [34,27].

We presume this could have been a major contributor to the differences seen in the IG and CGs. A hyper-absorbing, disposable diaper will limit the tactile feedback and the child will not be as conscious of the unpleasant feeling of a wet diaper, they will express less elimination signals and for parents it will be more difficult to recognise an urge to void or defecate and to adequately respond to it or even estimate the RS. The use of reusable, cotton diapers has diminished, although they have financial and ecological benefits.[9,11-13,20]

Children will attend nursery school (at the age of 30 months in Belgium) and as a result of the postponement of TT, about 20% of the children is still not completely toilet trained by that time.[14,18] This trend might compromise the quality of the educational level.[22] Our results prove that a short two-day TT intervention already has a significant impact on the TT duration in children with a mean age of 24 months.

A few limitations of this study need to be addressed. Observing RS was performed by a daycare worker and thus different in each daycare center, which can bias the inclusion of participants. As the sample size is small we were not able to build a model with inclusion of all covariates at the same time and confidence intervals were quite wide, so we have to be cautious about the conclusions and the findings need to be reconfirmed in a larger trial.
As this is a cluster-randomised trial a correction for cluster (daycare) is recommended. In a sensitivity analysis models including day care as a random effect were fitted but this led to similar conclusions.

Conclusion: This CRCT describes a new method of TT: a two-day training in daycare, in small groups of children that show a certain level of TT readiness, with a mean age of 2 years old. After the follow-up period of 6 weeks, more than 80% of the children trained in daycare were fully toilet trained. Also, the experimental intervention of group TT had a significant, positive influence on the duration of TT in healthy children, with a median duration of 2 weeks. Our findings are clinically relevant for parents as

well as daycare educators and nursery school teachers. We believe raising and educating young children is no longer a task for the family and school only, with daycare becoming more and more accepted as a third educational environment. Future research is necessary to further implement this new method of TT in group in daycare settings.

Author Declarations

- **Funding:** This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

- **Conflicts of interest/Competing interests:** The authors declare that they have no conflict of interest.
- **Ethics approval:** 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. Approval was obtained from the ethics committee of the Antwerp University Hospital (nr. B300201630079)
- **Consent to participate:** Informed consent was obtained from all individual participants included in the study.
- **Consent for publication:** All authors consent on publishing the included data.
- **Availability of data and material:** registered at ClinicalTrials.gov
- **Code availability:** NCT04221776
- **Authors' contributions:**

Tinne Van Aggelpoel: Conceptualization and design of the study, methodology, investigation, data curation, data analysis and interpretation, formal analysis, resources, writing and drafting the manuscript.

Stefan De Wachter: Supervision, formal analysis, reviewing and editing the manuscript.

Hedwig Neels: Reviewing and editing of the manuscript.

Guido Van Hal: Conceptualization and design of the study, methodology, reviewing and editing the manuscript.

Ella Roelant: Data analysis and interpretation, formal analysis, writing and editing the manuscript.

Alexandra Vermandel: Conceptualization and design of the study, methodology, supervision, formal analysis, writing and drafting the manuscript.

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Appendix 1

List of readiness signs which was used during the screening of children for allocation to the study.[25]

1. Child expresses a need to evacuate and shows awareness of the need to void or to have a bowel movement.
2. Child insists on completing tasks without help and is proud of new skills.
3. Child can pull clothes up and down in a toilet training-related context.
4. Child wants to be clean and is distressed by wet or soiled diapers and indicates most of the time by himself/herself that he/she has wet/dirty pants.
5. Child begins to put things where they belong.
6. Child can imitate behavior.
7. Child can say NO as sign of independence.
8. Child wants to participate in and cooperate with toilet training, and shows interest in toilet training.
9. Child can walk and is capable of sitting stably without help.
10. Child wants to wear grown-up clothes.

Tables

Variable	Intervention (n=27)	Control (n=28)	p-value
Gender (% female)	20/27 (74%)	19/28 (68%)	0.612
Age (in months)	24.9 (3.0)	24.9 (2.7)	0.995
Days in daycare	4 (3-4.5)	3 (3-4)	0.218
RS	8 (7-9)	8 (7-9)	0.433
Already started TT	19/27 (70%)	17/25 (68%)	0.853

Table 1. Baseline characteristics per group. RS is total number of RS present of the list of 10 questioned skills (see Appendix 1). Data are mean (SD), median (interquartile range) or n (%).

Variable	Intervention (n=27)	Control (n=28)	p-value
TT duration with limit median (IQR)	2 (1.0-3.5)	5 (3-6)	0.001
TT effectiveness	22/27 (81%)	17/28 (61%)	0.09

Table 2. Outcome measures. The outcome "TT duration" is assessed by the number of weeks until the child is clean. The outcome "TT effectiveness" is determined by the number of children that was clean after the follow-up period of 6 weeks.

	HR Intervention	95% CI	p-value	Covariate	HR Co-variate	95% CI	p-value
Unadjusted model	2.17	[1.14;4.15]	0.018				
Adjusted models	2.73	[1.36,5.49]	0.004	Gender	2.87	[1.25,6.56]	0.007
	2.29	[1.19,4.40]	0.013	Age	1.08	[0.97,1.20]	0.179
	2.22	[1.13,4.36]	0.019	Days in daycare	0.95	[0.67,1.33]	0.746
	3.09	[1.49,6.39]	0.002	RS	1.52	[1.17,1.99]	0.001
	2.28	[1.16,4.47]	0.015	Already started TT	2.81	[1.22,6.44]	0.008

*Table 3. Unadjusted and adjusted Cox proportional hazards models, with **time to being clean** as outcome. A corresponding 95% CI was used. For the unadjusted Cox proportional hazards model only*

Intervention was included and for the adjusted models Intervention was included with one covariate added at the time.

	OR Intervention	95% CI	p-value	Covariate	OR Co-variate	95% CI	p-value
Unadjusted model	2.85	[0.86;10.52]	0.087				
Adjusted models	2.84	[0.82,11.14]	0.102	Gender	3.87	[1.08,14.71]	0.038
	2.91	[0.87,10.93]	0.083	Age	1.11	[0.90,1.39]	0.344
	2.99	[0.86,11.60]	0.085	Days in daycare	0.94	[0.46,1.87]	0.858
	4.06	[0.98,20.84]	0.054	RS	2.16	[1.32,3.95]	0.001
	3.48	[0.90,16.00]	0.071	Already started TT	7.24	[1.88,32.74]	0.004

*Table 4. Unadjusted and adjusted logistic regression with **TT effectiveness** at 6 weeks as outcome. A corresponding 95% CI was used for the unadjusted logistic regression model and for the adjusted logistic regression model (one covariate added at the time).*

Figure legends

Figure 1A: *Flowchart of recruitment and selection of daycare (N).*

Figure 1B: *Flowchart of recruitment and selection of participants (n).*

Figure 2: *Survival analysis for the duration of toilet training in intervention and control group. An event was defined as being toilet trained, hence 'survival' is to be interpreted here as not being toilet trained at that time. At the bottom of the figure, the number of children that were toiled trained per week is given.*