

# The Implementation of Toilet Training on Autistic Child: Scoping Review

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## Abstract

*The individual learning implementation on toilet training for children is to have optimal and maximal of children's development. Moreover, we often see that many parents are less aware of what happened on their children, so they tend to focus and demanding their children to take lessons that related to their academic abilities, but unfortunately, parents sometimes ignoring simple and fundamental things to be taught and trained for children, such as the ability of toilet training. Introducing and teaching toilet training successfully to children who have symptoms of autism can only be realized by the existence of mutually supportive collaboration between programs implemented by schools and programs implemented at home. This review has the objective to map the literature and review the evidence related to the implementation of toilet training in children with autism. The method of this review was adopted from Arskey and O'malley such as identifying research questions, identifying relevant studies, selecting articles, charting data, and compiling to continue reporting results. Results: Based on the selected article, the article obtained an A grade of six articles and obtained a B grade contained an article, came from developed and developing countries also used qualitative research methods, Case-Control, Quasi Experiments, and Guidelines. Two themes were obtained based on this review, such as the implementation of toilet training (Toilet training intensively, no diaper, bathroom schedule, communicate visually, gaming and modeling video) and Program Characteristics of toilet training implementation.*

**Keywords:** implementation, toilet training, autism

## 1. Introduction

The problems of children's growth and development are problems that need to be known or understood from conception to adulthood until reaching the age of 18 years. One form of growth and development disorders in children that must be considered is enuresis (bedwetting), which is an unconscious urinary discharge that is often found in children over four years. Toilet training is an important task during child development [1]. United Nations Educational, Scientific and Cultural Organization estimates that there are 35 million children with autism in the world. This means that on average there are six children with autism per 1000 births. According to 2017 data from the United States Government, 1.5% of children in the country or one out of 68 children is autism. This figure improved by 30% from 2015, which has ratio of one in 88 children. In South Korea, the comparison is one in 48. Yet, the ratio of boys to girls with autism is more in boys that is four to one [2].

Education is the right of every individual as stipulated in article 28C of the 1945 Constitution of the Republic of Indonesia stated that "Everyone has the right to develop themselves through meeting their basic needs, the right to have education and benefits from science and technology, arts and culture, to improve their quality of life and for the sake of the welfare". Based on this law, every child with special needs has the same right to access education according to the needs of the child because the ultimate goal of the education process is the formation of human beings into human beings, envious and

useful to their environment [3]. Toilet training is something that needs attention because it is not only to train children in defecating, it can also be beneficial for children's education. Children are trained to take off their outer clothes, underwear, clean themselves, and flush their bowels. These activities are part of the self-skills that cannot be expected to be done directly [4]. Toilets training for children who has inappropriate age can cause several problems experienced by children, such as constipation, refuse toileting, urinary dysfunction, and enuresis. Problems experienced from the effects of toilet training have a major influence on children's responsibilities, especially in the ability to care for themselves will be brought to adulthood, where the ability to care for themselves affects the health level of children [5].

## 2. Methodology

This review uses the Scoping Review technique, this scoping review technique was adopted from Arskey and O'Malley with steps that were initiated by identifying research questions, identifying relevant studies, selecting articles, charting data, and finally compiling to continue reporting the results [6].

### 2.1. Step 1: Identifying the Question of Scoping Review

In developing the focus of review and search strategies, researchers used the Population, Exposure, Outcome, Study Design (PEOS) format. The use of PEOS will help in identifying key concepts in the focus of the review, developing appropriate search terms to describe the problem, and finding inclusion and exclusion criteria [7]. It is in Table 1.

### 2.2. Step 2: Identifying Relevant Articles

In this review process, the researchers used relevant articles from the EBSCO, Willey, and Science Direct databases. Criteria for articles used 1) published from 2009 to 2019, 2) the article discusses how to implement and or evaluate toilet training learning in children with autism, 3) peer-reviewed articles, including primary research, review articles (systematic review or literature review) and reports (e.g. WHO reports). The third step is to search for articles through keyword articles related to the topic.

**Table 1. PEOS Framework**

Population	Exposure	Outcome	Study Design
Autistic Child OR developmental delays, OR spectrum disorder	Toilet Training OR Potty Training, OR Toilet Learning	Implementation toilet training OR Learning Toilet Training	Qualitative study, Case Control, Quasi Experiment

### 2.3. Step 3: Article Selection

Based on 3 databases, the number of articles was 1068. Out of 1069 articles, there are 817 selected articles after eliminating the same articles, based on the title/abstract relating to the implementation of toilet training in children with autism, 48 articles were obtained. Re-filtered to get articles that match the inclusion and exclusion criteria. A full -text search of 10 identified articles was carried out to filter the contents of the article. The tool chosen to assess the quality of articles is a checklist by Joana Brigs from the Joana Brigs Institute. From the results of filtering the contents of the article, the suitability of the population, methods, and results obtained 7 articles that will be used for the Scoping Review. Prisma describes the information data of the systematic review stage. It describes

the series of article identification process included and excluded in the articles used in this literature review [8]. Prisma Flow Chart can be seen in Figure 1.

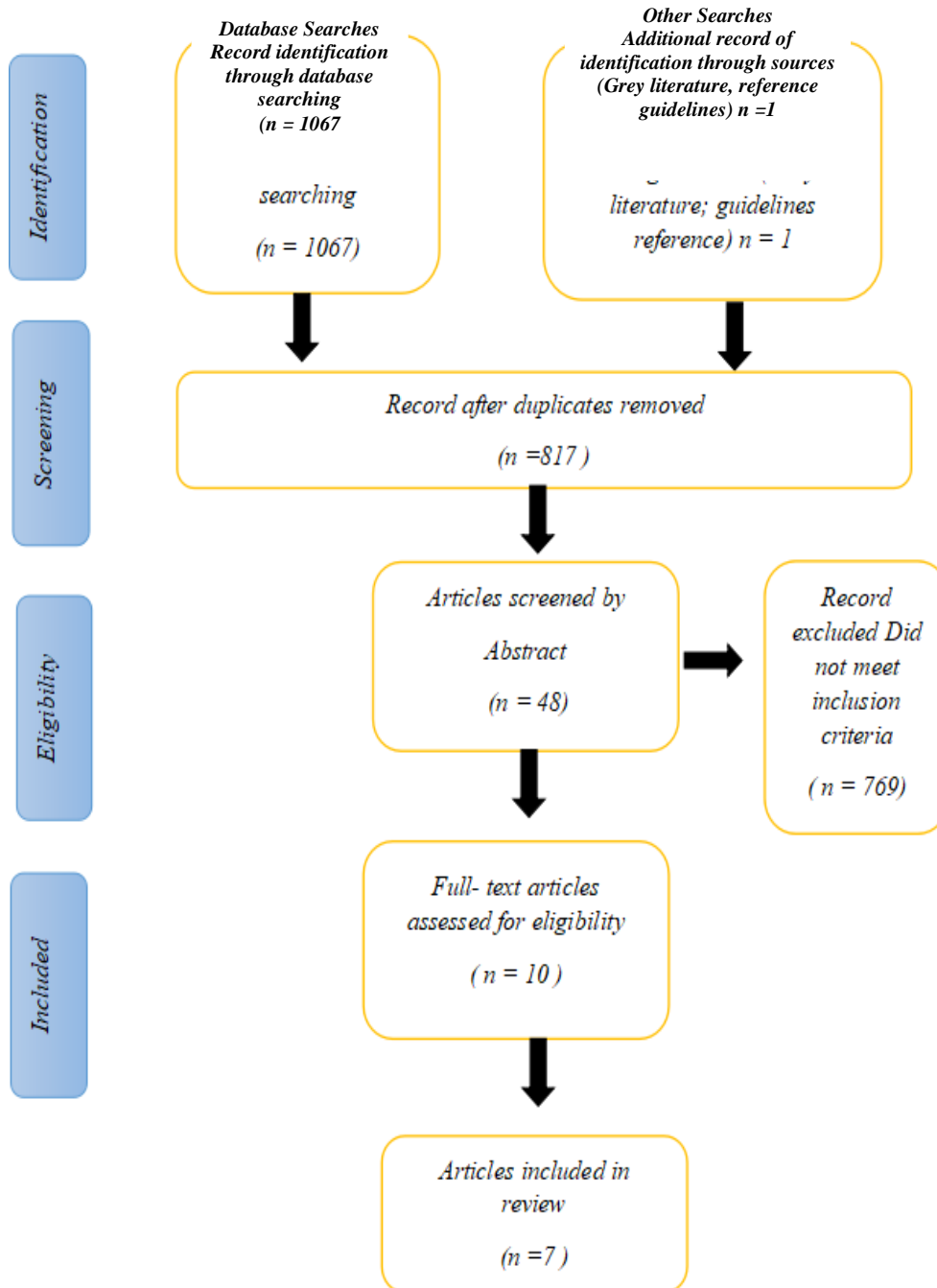


Figure 1. PRISMA Flow Chart

#### 2.4. Step 4: Data Charting

Based on 7 articles that are appropriate after critically appraise and data extraction are carried out to find out in detail and classify some of the points of the article such as the title of the study, research country, research year, objectives, methods, data collection,

population, sample, and the findings. The articles obtained are from Indonesia, the United States, Orange City, Iowa, and Belgium and based on 7 articles used, namely one guideline, four qualitative research designs, one case-control research design, and one Quasi Experiment research design. After being analyzed and evaluated from several points above, the results of the collection of data extraction are following the title Scoping Review.

**Table 2. Data Charting**

No.	Author/Year /Country	Study Design / Sample / Study Objective	Results
1.	A Parent's Guide to Toileting for Children with Autism. Autisme Treatment Network/ United States	Guidelines/The guideline for the training process and assist the autistic kids in the toilet training without the parents' guidance and participation in assisting the schedule of kids' toileting.	Toilet training is certain learning which challenges autistic kids because it can take a long time for the autistic kids. Autistic kids do the toilet training as early as possible to give good result compared to doing training to older kids.
2.	Cocchiola Jr, Martino, Dwyer, & Demezzo / 2012/ United States	Qualitative/ 5 boys/To know the success of toilet training program on autistic kids who have development lateness in the school environment.	Intervention program on autistic child with development lateness at school environment can be conducted through learning by eliminating the rule of wearing diaper during at school, giving time at bathroom for pee for 3 minutes then based on the development given the schedule to the bathroom becomes more frequent with short time. After the learning, this program is effective to implement toilet training with the supervision by the teacher at school on the autistic child.
3.	Richardson/ 2016/Guisborough	Qualitative/10 Autistic children and babysitters/ To give description on the parenting pattern on autistic kids in giving toilet training at the initial stage.	The right parenting pattern in toilet training learning can overcome the tendency on overcoming the process of solving the problem on the process toileting training for kids, professional workers can give support to the family or the nanny of autistic kid to be consistent in the learning.
4.	Kroeger & Sorensen/ 2010/ United States	Quasi Experiment/2 boys diagnosed with autism/ To implement intensive training in the toilet training for autistic kids conducted by parents at home without giving punishment to kids.	Both autistic kids can implement toilet training with different time in the training process intensively. Thus, time cannot be made as the measurement of toilet training success.
5.	Queck/ 2018 / Orange City, Iowa	Qualitative/18 Students, from 3-5 years old/ To know the effectiveness of toilet training	The implementation of toilet training through various intervention by giving effective result in the repair of Autism Spectrum Disorder (ASD) kids toileting.

		implementation on autism spectrum disorder (ASD) kids.	During the learning process of toilet training, it is found out that giving the schedule to sit in the toilet can assist the kid having willingness to go to the toilet.
6.	Peeters, Noens, & Benninga/ 2016/ Belgia	Case-Control/96 control group children and 70 children with symptoms of autism/To know the correlation between the symptoms of Autism Spectrum Disorder (ASD) and the success time in toilet training.	Kids with ASD symptoms have lateness in finishing toilet training on kids at teenage age. The percentage of kids trained to pee in the day is significantly lower than FDD group with ASD symptoms compared to kids with FDD.
7.	Kurniawan, Purnamasari, & Rakhmawati/ 2018/ Indonesia	Qualitative/6 children with autism/ To describe the development of video game in giving the material of toilet training as the learning media.	Video game can be developed as the learning media which has the right and effective design in the needs of autistic kids in the learning process of toilet training.

### 3. Results and Discussion

Based on the seven articles used in this scoping review, there are three articles from the United States, one article from Guisborough, one article from Iowa, one article from Indonesia, and one article from Belgium (see Figure 2). Seven articles have been selected and they have good quality. Furthermore, data extraction is carried out to find out in detail and classify several points from the article, one of which is research design. Four articles use a qualitative research design, one article in the form of Guidelines, one article uses a Quasi Experiment research design, and one article uses a Case-Control research design (see Figure 3).

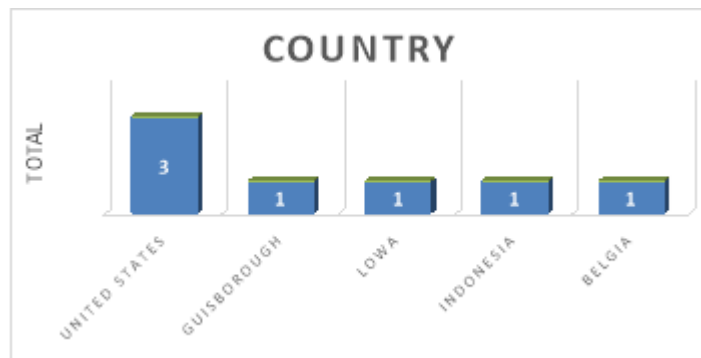
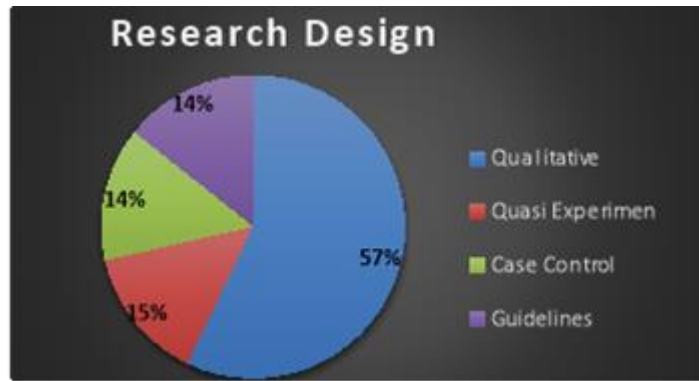


Figure 2. Country Characteristics



**Figure 3. Research Design**

### **3.1. Intensive Toilet Training**

Autistic kids have some problems which can cause difficulty in the learning of toilet training. These problems can be overcome through intensive toilet training [15]. The protocol of intensive toilet training for autistic kids who live and nurtured by their parents in the same environment can use Rapid Toilet Training (RTT) protocol, some who has replicated it has been successful in toilet training. This RTT protocol prioritizes the nurture which sustainably and intensively educate autistic kids and obtain the result that the kids pee in the bathroom [11]. Besides that, intensive training can maintain the component such as consistent in conducting the learning and step done during the toilet training [16].

### **3.2. Elimination of Diapers Usage**

Shifting from disposable diaper or pull up to the cloth underwear usage can become a stronger factor in the success of toilet training of the toilet training schedule and differential enforcement [17]. Enforcement-based training is the component which uses one of the component in the protocol to train the toilet on autistic kids, giving them enforcement which depends on their success in using the toilet [18]. The procedure of toilet training with various components is conducted by professional labor and can give effect in eliminating the use of diaper usage which can be done by time keeper in the shoes to support the legs, preparing three sets of clean cloth, done consistently when doing the program of diaper elimination [12].

### **3.3. Bathroom Schedule**

The implementation of toilet training, one of which, is by using Training Schedule that assists autistic kids learn toileting skill. The learning which regulates the schedule without requiring the kids must finish in line with the time to the bathroom, however guiding them in accordance with the bathroom schedule [19]. The schedule management done by the parents or nanny helps train the kids' body to sit in the toilet everyday. They can do the sit until 10 minutes in the toilet [20]. Giving the time keeper can become a useful way to remind the kids to go to the toilet and when they must get out of the toilet. Kids are also allowed to go out of the toilet if they feel they had done the pub or pee [15]. Bathroom schedule can be used as the part of daily life on kids. Parents or nanny can plan the trip to the toilet around the common routine, but with the same time in a day or the same daily activities [21]. The bathroom visit schedule, when the kids really want to pee or pub, they can sit in the toilet for three minutes maximally, parents or nanny can give instruction as the reminder to the bathroom and direct the kids to the bathroom with the guidance and give compliment to those who can do good bathroom schedule [9].

### **3.4. Visual Communication**

The toilet training communication on autistic kids can be done by using the same words, signs, or simple pictures during the process of toilet training. This can assist the kids to learn toileting language [9]. When getting the kids used to bathroom communication can be done at least for three weeks. Parents or nanny can elaborate the routine and method by using visual communication with the same purpose for three weeks. Visual communication can help the kids to know what is expected during the toilet training. Parents or nanny can use picture during the trip to the toilet, placing sequential pictures to show kids each step to the toilet [22]. In the communication for implementing toilet training on autistic kids, parents or nanny can do a) supportive attitude in using positive language in the communication process, b) giving compliment towards the cooperation and effort of kids in following the toilet training process, c) using same words about toileting, giving explanation to people in the kids environment towards the communication by using the same language [5].

### **3.5. Games and Video Modeling**

The learning through game and video in toilet training is a visual media which attracts the autistic kids' willingness towards toilet training. Toilet training is certain thing that must be understood and done well by the kids [23]. Frequently the learning given by parents cannot be understood used as habit by autistic kids because they kids are not educated interestingly. The uncomfotability appears because the teaching method is not in line with kids' condition. It makes some difficulties for parents or nanny to give training to autistic kids [4]. Kids with autism are easier to imitate something based on audiovisual media. One of media loved by kids are video and games. The fact shows that the usage of game and video is still little in toileting learning on kids [24].

### **3.6. Characteristics of the Toilet Training Implementation Program**

The study and program characteristics are also important actors in the review, measures of social validity, studies using the original training program, or the first time of the shortest duration for training time [13]. Meanwhile, the protocol that involves the manipulation of control stimulation after toileting previous failed attempts is the time training the longest [10]. Time training has been completed in Indonesia for one month or less, two to three months, and four to ten months using video and games [14]. Moreover, the maintenance of toilet acquisition is automatic behavior with many factor influenced such as uncontaminated dry and cleanliness, awake, inhabits began to change [9]. An additional study of this issue is needed to ascertain whether the individual cannot sustain the initiation of toilet implementation or the babysitter involved earlier to avoid an accident in the bathroom [17]. The long-term of further information should available and reported to convince that toilet training still implement in the future [11].

## **4. Conclusion**

For autistic children, toilet training can be done with variety of implementations including intensive toilet training, eliminate the diaper usage, bathroom schedule, visual communication, also games and video modeling. Moreover, every step and process has different time characteristics in the success of toilet training. The research gap obtained is that most of this research is carried out in developed countries, even though the birth rate of children with autism occurs throughout the world so that research is needed in developing countries. The research on the implementation of toilet training in children with autism mostly adopts or replicates the guidelines in 1971 so that no novelty for its implementation protocol, and in the implementation more conducted in the school

environment conducted by teachers so that there is need for further research for the implementation of parents in providing training toilet in children with autism at home.

## Acknowledgments

The writer would like to thank Ms. Mufdlilah and Ms. Nurul Kurniati for their suggestions, feedback during the discussion, and support for completing this scoping review report well.

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