Effectiveness of The Total Task Presentation Technique in Improving the Change Sanitary Napkins Skills in a Girl with Intellectual Disabilities

Amanda Putri Nugrahanti¹, Suparmi²
{amandapu3nugrahanti@gmail.com¹, minuk@unika.ac.id²}
Soegiapiarana Catholic University Semarang²

Abstract. Menstrual care is one of daily living skills that girls must master, including intellectually disabled girls and adolescents. The study aimed to see the effectiveness of the total task presentation intervention in improving the ability to use sanitary napkins in girls with intellectual disability (ID). The hypothesis of this research: the total task presentation technique can increase the task achievement score of changing sanitary napkins in a girl with ID. An experimental research with a single subject A-B-A design was conducted on a 10 years old girl with an IQ score of 43 that was unable to use sanitary napkins independently. Measurement using task analysis consists of 14 items, checked by the researchers and mother and scored by the number of tasks completed independently. The intervention performed 11 simulation sessions at school using a mannequin and 6 observations at home. The data analyzed by graphical analysis of the performance that emerged during baseline, intervention at school, observation at home and final baseline. The task achievement improved from average 0% at baseline to 70.9% at simulation sessions, 87.33% in observation at home, and 94.67% at the final baseline. Extra steps were added to teach the girl to patch the sanitary napkin correctly. The hypothesis of this research is accepted, that the total task presentation technique is effective in improving the changing sanitary napkins skills in a girl with ID.

Keywords: intellectually disabled girl, sanitary napkin replacement, sex education, sexual/reproductive health, chaining, total task presentation technique

1 Introduction

A meta-analysis study by Liverpool University and WHO show that disabled children have 3.6 times greater risk of experiencing physical violence and 2.9 times experiencing sexual violence. More specifically, children with intellectual disabilities (ID) are 4.6 times more likely to be victims of sexual violence [1]. Intellectually disabled children are vulnerable to be a victim because of their dependency to adults in almost everything, they are taught to be compliant, isolated and have minimal knowledge about sexuality.

One of risky behaviors in intellectually disabled children is personal hygiene, including changing sanitary napkins, that can cause reproductive health problems [2]. However, girls with ID who get menstruation often show resistance and tend to be uncooperative in menstrual care due to a lack of understanding [3]

Research in Malaysia involving 123 parents/caregivers of ID children aged 9-17 years, showed that from 111 girls who had menstruated, 47 (42.3%) of them could take care of themselves independently, 46 (41, 4%) needed help from parents/caregivers and 18 (16.2%) could not take care of themselves at

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all. There are many problems related to menstruation experienced by children with ID, such as discomfort, fear, and even depression when experiencing menstruation. However, the majority (75.7%) were not disturbed their daily activities, while the rest could not go to school during menstruation. As many as 9.9% of parents/caregivers felt distressed by their daughters’ menstruation and 6.3% said it messed up family activities [4].

Another problem, when girls with ID get their period, parents/caregivers feel frustrated because they find it difficult to understand the girl, and how the girl finds it difficult to understand when she has to change the sanitary napkins and does not understand what to do when a leak occurs, and does not understand what happens to her when negative emotions arise during menstruation, she is also unable to communicate the discomfort she is experiencing. This then causes some girls to miss school, parents/caregivers doing the menstrual care for their daughters, and even choose hysterotomy [5].

Nurkhairulnisa (2018) further explained that the level of difficulty in children doing their daily living skills, including menstrual care, is closely related to the strong willingness of parents/caregivers to seek help regarding menstrual management. This also depends on the severity of menstruation of the girl. Therefore, menstrual management is an important skill that girls, including girls with ID, must master. It is important for girls to have sufficient knowledge about their bodies, doing personal hygiene, keep their privacy, as well as have menstrual management skills [6]. This is important due to the potential harm in individuals with developmental disabilities who depend on others to provide care for their intimate organs. Teaching these skills will improve independence, health and quality of life.

Teaching menstrual care to girls with ID does take longer, and the process must be divided into many steps and the program can differ from one individual to another according to the needs and characteristics of each girl [7]. Richman et al (1984) whose research is widely referred for teaching menstrual care skills for women with ID [8] [9] [10] [11]; [12] [13], [14] divides three areas of menstrual care skills: (1) changing soiled underwear, (2) changing soiled sanitary napkins, (3) changing soiled underwear and sanitary napkins. These three consist of a task analysis that breaks complex skills into simpler steps sequentially.

Some studies used simulation methods using dolls for ethical reasons, and to minimize the delayed time of the menstrual period. Simulations proved effective in teaching new skills to individuals with ID, by adapting conditions as naturally as the real conditions (Richman et al). Although it was found that individuals taught with dolls required more additional sessions than individuals who applied it directly to themselves, the use of dolls helps girls with ID who have not experienced menstruation to recognize the stages of menstruation and learn menstrual care.

Menstrual skills can be also applied to the individual as Veazey et al (2015) did on a girl with ID and an autistic girl. Wulandari et al (2023) also implemented direct training for girls with ID, done by the mother. Oshinski et al (2022), reviewed 18 studies on teaching menstrual skills (using pads and tampons) [15] caring for and cleaning the intimate organs (vagina and penis) and anus, as well as changing stained underwear in a total of 416 participants with autism spectrum disorder (ASD) and other developmental disorders. In general, the studies show an increase in intimate organ care skills in the participants. Only three studies showed that subjects were completely independent after interventions. Of the 18 studies, 13 studies taught menstrual care skills with the target of removing and changing stained sanitary napkins, changing stained underwear, changing stained underwear and sanitary napkins and not changing clean sanitary napkins. A total of 9 studies used the chaining method (forward chaining and total task presentation) as the main intervention. Other methods used social stories, video modeling, lessons and time-out procedures.

Chaining is a consistent sequence of stimuli and responses that appear sequentially and are usually ended by providing reinforcement at the final stage. In a behavioral chain, each response produces a stimulus that encourages the emergence of the next behavior. There are three main methods in
chaining techniques: total task presentation, forward chaining and backward chaining. In the total task presentation, individuals are given the opportunity to carry out each step of the task from start to finish. Prompts are given at each required step and reinforcement is given after all steps have been completed correctly. Forward chaining teaches each stage one by one from the beginning, then teaches and connects the first and second and third steps and so on until the entire chain is fulfilled. Meanwhile, in backward chaining, the last step is taught first, then followed by the previous step, and so on until the initial step of the behavior chain is taught last [16].

Previous studies using the chaining technique have proven effective in teaching skills to ID and ASD children such as taking a bath [17], brushing teeth [18], washing clothes [19], wearing a button-up shirt [20][21], wearing clothes [22], toilet training, drinking [23] and using sanitary napkins. The chaining method which is also followed by prompts and reinforcement has proven to be effective in training girls with ID to use/change sanitary napkins. Veazey uses total task presentation and forward chaining, while Wulandari uses forward chaining.

Veazey et al (2016) applied the total task presentation and forward chaining method in menstrual care training directly on girls with ASD and ID, according to the subject's abilities. The training takes place at home, during the period, accompanied by parents/caregivers. As a result, the ability to manage menstruation, including changing sanitary napkins, changing stained clothes and cleaning intimate organs are increased, both in one girl who applied forward chaining and total task techniques, as well as the other girl who only applied total task techniques. The forward chaining is applied when the subject cannot do any step of the task analysis. Meanwhile, the total task is given to subjects who can do some of the steps.

The total task presentation technique was also carried out by Gonenç (2019) on 25 ID girls who had menstruated, could stick an object and remove it, had the ability to put on and take off clothes, could follow verbal instructions and could understand the materials used. The girls are taught through simulations using dolls, and previously watching video of task analysis steps. The study find, folding and wrapping sanitary napkins was the most successful step (100%) and the most difficult skill to master was cleaning dolls with toilet paper (64%).

The effectiveness of the chaining method is supported by the breakdown of a task into smaller task components, which are right for the subject. The process of breaking down component tasks into smaller components is called task analysis. To be effective, the selected task components must be simple enough to understand. Special strategies are also needed, for example using pictures sequentially so that girls can do it themselves. Chaining, like other behavior modification methods such as shaping and fading, are referred to as gradual change procedures because each involves progress gradually through a series of steps to produce a new behavior.

The chaining method is also an ABA (Applied Behavior Analysis) based procedure. The ABA procedure has the basic principles of behavior analysis, which began with the development of respondent operant conditioning. In respondent conditioning, behavior occurs through conditioned or unconditioned stimuli. Meanwhile, in operant conditioning, behavior changes are carried out through manipulation of antecedents and consequences (before and after the behavior occurs), in the form of reinforcement or punishment. In the behavioral chain, task analysis of the important stages in the chain should appear first. To be effective, the task analysis stage must be validated by checking the completeness of the task. Reinforcement is then given after the individual completes the final step. This is to encourage individuals to complete all chains independently.

After reviewing that the chaining technique, especially total task presentation is applicable, there has not been much research in Indonesia that uses this technique to teach the skill of changing sanitary napkins to girls with ID, and the importance of this skill for girls with ID, the researchers want to examine whether the total task technique presentation can improve the skills of changing sanitary
napkins in a girl with ID. Researchers conduct two procedures at once, simulation and observation at home as generalization, to maximize the result. The hypothesis of this research is that the total task presentation technique can increase the sanitary napkin changing skill score in a girl with ID.

2. Research Method

The participant in this study was FA, a girl diagnosed with ID, 10 years old with an IQ score 43. Parents and teachers were concerned that the subject had been menstruating since the age of 8 but had not been able to change her own sanitary napkins. When at school and daycare, teachers complained about FA’s behavior during menstruation. She always just threw away the dirty sanitary napkins, and couldn’t wash and dispose properly. Her mother has tried to teach FA to be able to change sanitary napkins correctly, but FA has not been able to do it independently. As a result, her mother has to do it for her.

The researchers conduct an experimental study with a single subject A-B-A design, which aims to see cause and effect relationships using comparisons within participants. This study compares the effect of an intervention with conditions during baseline, with conditions during and after the intervention.

Variables in this study were the ability to change sanitary napkins in a girl with ID as the dependent variable and the total task presentation technique as the independent variable. In the total task presentation technique, individuals are given the opportunity to carry out each stage of the task from start to finish. Prompts are given at each required step and reinforcement is given after all stages have been completed correctly.

The sampling technique used purposive sampling technique, and the data analyzed using graphic analysis, which involved interpreting levels, trends and variations in performance that emerged during the initial baseline, intervention and final baseline. Internal validity is carried out by showing a minimum of three experimental effects at three different times [8]. In this study, measurements were taken before the intervention, during the intervention at school, during the child’s menstrual period, and after the intervention.

Procedure starts from preparing training modules, measuring tools, selecting participants, providing informed consent, making videos containing task analysis steps [9], preparing mannequins (belly to thighs) and other equipment such as sanitary napkins, clean underwear, red dye, tissue or towel, soap, and plastic to wrap dirty sanitary napkins.

The intervention begins with a baseline to see the participant’s abilities. The researcher first put underwear along with a sanitary napkin that had been laced with colored liquid as a sign of dirty sanitary napkins on the mannequin. Then nearby are provided clean underwear, sanitary napkins, tissue/towels, plastic and soap. The researcher gave the instruction “Go check the sanitary napkin,” and then saw what the subject would do and recorded it, without giving any form of prompt.

A simulation session using a mannequin was held at school, located in the bathroom. Participants previously asked to watch a video, and then the researcher asked participants to change the sanitary napkin with the same instructions. Task analysis is given using the total task presentation technique, that is, participants are given the opportunity to carry out each stage themselves sequentially in each task that has been prepared. If during implementation the participant does not show a response within 5 seconds, the researcher gives a prompt, in the form of a physical+verbal, gesture+verbal, and only verbal prompt. Reinforcement is given after the subject successfully completes all tasks.

Each session consists of 1 attempt by doing it sequentially from start to finish. The success criteria when the subject can do the task independently. Intervention is carried out until the subject shows a relatively consistent improvement at the skills[12]. If the subject succeeds in a task then the
score given is 1 and if it fails/requires help the score is 0. Scoring is done by adding up how many tasks can be completed.

Observations were held at home as generalization and to maintain skills in a natural environment (Richman et al., 1984). This step session took place at home when the participant had her menstrual period, accompanied by the mother that previously had been provided with a module and task analysis checklist.

Final baseline measured 2 weeks after the intervention (coinciding with the participant's menstrual period), the researcher gave the same instructions, then waited for the participant to do all the steps that had been taught previously, without giving prompts.

The task analysis list was created based on the task analysis from Richman et al. (1984) which has become a reference for various subsequent studies [12], [13], [14] with modifications. Researchers used the changing dirty sanitary napkins task analysis. Modifications were made by adding steps to wash dirty sanitary napkins, this was in accordance with the habits taught by the participant’s mother at home. The task analysis contains the following 14 steps:

1. Walk to the bathroom
2. Lower your panty
3. Remove the dirty sanitary napkin from your panty
4. Wash dirty sanitary napkins with running water
5. Wrap dirty sanitary napkins in plastic
6. Throw away dirty sanitary napkins in the trash
7. Clean the vagina with clean water, dry with tissue/towel
8. Take a clean sanitary napkin
9. Remove the adhesive on the sanitary napkin and attach the sanitary napkin to the underwear properly
10. Throw away the sanitary napkin wrapper in the trash near the toilet
11. Put on panty and get dressed
12. Flush the toilet until it is clean
13. Washing hands
14. Get out of the bathroom

3. Result and Discussions

Our findings, the total task presentation technique applied to participant showed positive results, that the participant’s ability to change and wash sanitary napkins continued to increase from baseline (0%), simulation session (70.9%), observation at home (87.33%) and at final baseline (94.67%). Thus, the research hypothesis that the total task presentation technique is effective in improving score of changing and washing sanitary napkins skills is accepted. This is similar to the research results of Veazey et al. (2015), which applied total task presentation to one of its subjects, it was proven that the subject’s ability increased (task analysis achievement was more than 90%) after attending 19 training sessions, and the results remained consistent in the follow-up session. one month later (with 90% achievement).
When simulating changing and washing sanitary napkins with a mannequin, in almost all initial sessions, participant took a very long time to start removing the underwear on the mannequin. She just looked at the mannequin, touched it, until finally after some time she started to lower the panties and remove the dirty sanitary napkins. When putting back on clean underwear that had been fitted with sanitary napkins, the subject also found it difficult to put it on the mannequin, because the size of the mannequin was large and required quite a lot of strength to put on the underwear, so when putting on the underwear, the researcher helped to hold the position of the mannequin.

As seen in the graph, the participant reached 92% score, which means that only 1 stage could not be done correctly, the step of patch on the sanitary napkin. The subject was able to unwrap the sanitary napkin, remove the adhesive, and patch the sanitary napkin with the adhesive at the bottom, but the position of the sanitary napkin was still not right in the middle of the underwear or was still tilted. The subject had difficulty putting it on in the correct position even though the design of the underwear used for the simulation was quite helpful (not wrinkled, and had a different color in the middle of the underwear), because the subject's visual-motor coordination abilities were still lacking. This lack of visual-motor coordination abilities also causes subjects to experience difficulties when carrying out various other activities such as buttoning clothes and writing (holding a pencil correctly). Therefore, in the last few sessions, the researcher added one stage in the task analysis, wearing a sanitary napkin, to specifically train how to wear a sanitary napkin correctly.

Difficulty in setting sanitary napkins correctly was also experienced by subjects in previous research [12] who also had poor gross and fine motor skills. Therefore, the subject needs to be given additional sessions out of the task analysis. The chaining technique, especially the total task presentation method in this study, was proven to be effective in improving the subject's ability to change sanitary napkins. This is due to the breakdown of a task into smaller task components, the steps gradually produce new behavior [16]. This technique also worked because the girl already had the ability and basic knowledge to change sanitary napkins, although she cannot do it completely without help. For the case of subjects who do not have any abilities at all, it is recommended to use forward chaining [12]. The use of videos containing the steps has also helped. This can be seen from the increasing score from 0% at baseline to 50% in session 1. Watching the video at the beginning of the intervention helped the girl remember what to do [9].
Researchers didn’t conduct the follow up session, because the subject has gotten menstruated when intervention (simulation) sessions are still ongoing, and the next menstruation occurs at the same time as the baseline sessions. But the observation at home was very helpful for the subject in generalizing from the simulation to actual conditions, which can be seen from the higher average score (87.33%). According to Richman et al (1984), this effectiveness is because the simulation procedure requires the same response as when a child experiences menstruation. Then the simulation was also held under similar conditions that the subject experiences menstruation: located in the bathroom, using dye on sanitary napkins to indicate that they are dirty and need to be changed.

To maintain abilities after intervention, parents/teachers can prepare visual media in the form of pictures or photos that are displayed in the child's room or near the bathroom, to help the child remember each task that must be done. Parents and teachers need to receive education and training on how to teach girls with intellectual disabilities the skills to use sanitary napkins during menstruation. Considering that children are currently getting younger when they get their first menstruation, parents and teachers need to prepare themselves and teach them when girls reach the age of 8-10 years, to reduce fear and anxiety when they get their first menstruation [11].

Practice for feminine hygiene can be started with other daily routines like toileting, dressing skills, fine motor abilities, that will support girls to master the feminine hygiene skills [12]. This is proven by the lack of the subject’s fine motor abilities in this study making it difficult to patch the pads correctly on the underwear.

This study did not hold follow-up sessions because home observations and generalizations had been carried out at home when the intervention sessions are still ongoing. This is one of the limitations of the study. Without follow-up sessions, it cannot be known whether the subject's ability to change sanitary pads still be consistent in a certain period of time[12].

Another limitation is the number of subjects. Future research should involve more subjects with different age and skills to investigate the effects of chaining methods, whether the skills are influenced also by the age, type of disability and level of ability[12].

4. Conclusions

The total task presentation technique has proven to be effective in improving sanitary napkin changing skills in girls with ID. The simulation sessions with a mannequin at school help the participant to learn the skills of changing sanitary napkins correctly, while the observation step helps the subject generalize what she has learned to herself. This helps the participant remember and retain the skills. This also means the total task presentation can be implemented to teach intellectually disabled girls using sanitary napkins independently and correctly.

Researchers also suggest follow-up sessions that are held minimal one month after the intervention sessions (when the subjects have the menstruation cycle) to see the consistency of the skill. Bigger number of subjects with different age and ability also will enrich the result and analysis for study.

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References


