

### RESEARCH ARTICLE

## Implementation of Brushing Teeth to Improve Brushing Skills in Children with Disabilities

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#### ABSTRACT

Visually impaired children are children who have different conditions in children in general with limitations in intellectual and cognitive abilities below average. One of the self-development skills can be improved through brushing skills to maintain healthy teeth and mouth. The purpose of implementing brushing teeth is to improve brushing skills in children with disabilities. The prevalence results obtained at SLB Negeri Slawi in the category of moderately disabled children show that in 2023/2024 there are 128 children with information about 44 boys and 25 girls in the elementary category, 25 boys and 13 girls in the junior high school category, and 10 boys and 11 girls in the high school category. This research is analytical descriptive research with a case study approach. The subjects of the study are two children with intellectual disabilities (children with disabilities) in the medium category: children with disabilities < 15 years old, children with disabilities who are accompanied by parents and willing to become regraduates, and children with disabilities who are willing to be researched. This research was conducted for three consecutive days that will be carried out from Monday, June 10, 2024, to Wednesday, June 12, 2024. The results of the study after the implementation of brushing teeth for 3 x 30 minutes were obtained in client A increased from a score of 42% (adequate) to 78% (good). Client B experienced an increase in the result of a score of 59% (adequate) to 84% (good). From the two results that have been carried out by client A and client B, the implementation of brushing teeth can improve toothbrushing skills in children with disabilities. Children with moderate disabilities are able to be trained in their skills by doing brushing activities that can improve their brushing skills.

### 1. Introduction

Children with special needs (ABK) are children who grow and develop with all their differences compared to normal children both psychologically and physically. Children with special needs do not always refer to children who have shortcomings but are included in the category of intelligent children with special talents (Amanullah, 2022). Children with special needs need educational services in a different or more specific way than children

in general in order to successfully carry out daily activities well in their lives. This special service is needed for the excess of children with special needs related to their growth and development. One of the children with special needs, namely the disabled, is said to be disabled because he has a disorder in intelligence or intellectual impairment below average with an IQ of less than 70 (Nisa et al., 2018).

In moderately disabled children, it is a group of children who are able to train where they can be trained according to certain skills (Mangunsong, 2014). Based on the results of a survey by the World Health Organization (2019), it is estimated that more than 450 million children experience mental retardation worldwide (WHO, 2019). The results of Rikesdas in 2018 suggested that 962,011 children in Indonesia experienced mental retardation with the criteria of mild mental retardation of 80%, moderate retardation of 12%, and very severe mental retardation of 8% (Rikesdas, 2018). Meanwhile, the results of the Information System for Persons with Disabilities on March 9, 2022 show that there are around 212,237 people with disabilities in Indonesia and 13,145 people with disabilities (Information System for Persons with Disabilities of the Ministry of Social Affairs of the Republic of Indonesia, 2022).

A summary of data on people with social health problems by BPS Central Java on March 22, 2022 stated that the population of people with disabilities in Central Java was 23,225 people with information about 13,064 male disabilities, 9,965 female disabilities, and 196 people with disabilities without gender input (BPS Central Java, 2022). Based on the data capture, the prevalence of moderately disabled children in SLB Negeri Slawi in 2023/2024 is 128 children, with information about 44 boys and 25 girls in the elementary school category, 25 boys and 13 girls in the junior high school category, and 10 boys and 11 girls in the high school category. The results of the observations found that children with moderate disabilities are children who are able to be trained; this is evidenced by their understanding when they are talked to, and when ordered to write and take the ball, they do it according to the command.

Nursing problems that arise in children with disabilities are developmental disorders. The development of children with disabilities needs to be known with special assistance or services, especially regarding the needs of educational programs and guidance (Abdullah, 2013). Delays in motor development in children with disabilities will affect all activities to meet basic needs and self-care (Priwibowo, 2018). According to Agustiningsih (2016), the Extraordinary School is a place to support the development of children with disabilities with education provided by teachers, both academic and non-academic education according to their needs.

Development to carry out activities in daily life by reducing dependence on others, namely by practicing self-development skills that aim to achieve independence so that

they can take care of themselves (Tias, 2014). One of the roles of nurses as educators by modifying non-academic education for children with disabilities is to teach self-development such as self-help, self-care, and self-hygiene. In terms of self-development skills in moderately disabled children, who experience and still depend on others, one of them can be improved through brushing skills to maintain dental and oral health.

Brushing teeth is one of the basic abilities that every human being should have, which aims to maintain the health of their oral cavity and get rid of dirt or food residue on the surface of the teeth (Destiya et al., 2014). Basically, brushing teeth can be done twice a day: the morning after eating aims to remove leftovers, and the night before bed aims to inhibit the development of bacteria (Astrid & Rachmat, 2016).

According to Safaruddin et al. (2019), in moderately impaired children, they are only able to brush their teeth in certain parts, such as the front teeth and molars. They still have difficulty rubbing the parts of the teeth that are located inside, such as the right and left teeth and the inner teeth. Meanwhile, Tias (2014) asserts that there are several obstacles when brushing teeth in moderately impaired children, including not being able to brush teeth correctly, children are still confused about the stages of brushing their teeth, children are only able to do gargling activities, brushing their teeth only on certain parts, concentration is easily distracted by suddenly being silent or disturbing their own friends when learning to brush their teeth, they have not had the initiative to clean the toothbrush after being used to brush teeth, and brushing activities still require help from teachers and researchers.

Limitations in children with disabilities cause them to be unable to maintain oral hygiene properly, so they tend to have poor oral hygiene and periodontal disease and have a higher risk of having caries than other children (Palupi et al., 2017). The impact of caries that is left untreated can affect the quality of life, such as pain, discomfort when eating, and sleep disturbances. Dental caries also affects nutrition, growth, and weight gain in children (Khasanah & Susanto, 2018). Prevention of unwanted negative impacts is the importance for children with disabilities to learn and carry out the habit of brushing their teeth properly and correctly. Support from parents, health workers, and educators is also very important in helping children with disabilities develop dental and oral care skills (Suyami et al., 2019). Toothbrushing skills in children with moderate disabilities are carried out gradually and slowly so that children can practice them themselves. Based on some of the things that have been described above, this research concerns researching and taking the title "Implementation of Brushing Teeth to Improve Brushing Skills in Visually Blind Children."

## 2. Method

This study uses a descriptive research method to explore phenomena and describe the results of nursing care, identifying problems as they arise. The research is based on a case study design, focusing on two students with intellectual disabilities. The goal is to explain the implementation of a toothbrushing routine to improve brushing skills in these children. The inclusion criteria include children under 15 years old with disabilities who are willing to participate and are accompanied by parents, while the exclusion criteria eliminate those who are sick or have other physical limitations that prevent participation.

Data collection involves interviews, observations, documentation, and research instruments, with an observation sheet used to assess toothbrushing skills. Thirteen steps are evaluated, and children receive scores based on the level of assistance needed, ranging from fully independent (score 4) to requiring both verbal and physical assistance (score 1). The study was conducted over three days at SLB Negeri Slawi to observe improvements in brushing skills in visually impaired children.

## 3. Results and Discussion

### Result

**Table 1.** Observation of Tooth Brushing Skills in Visually Impaired Children (Child A)

No	Activity Steps	Day 1	Day 2	Day 3
1.	The child mentions the name of the equipment for brushing teeth (toothbrush and toothpaste)	1	1	1
2.	The child is able to hold a toothbrush and toothpaste	4	4	4
3.	The child applies toothpaste to the bristles of the toothbrush	1	3	4
4.	The child takes water with a glass or a small container	1	3	3
5.	The child gargles and brushes his teeth with his right hand	4	4	4
6.	Children brushing their front teeth	4	4	4
7.	The child brushes the right tooth	1	1	3
8.	The child brushes the left tooth	1	1	3
9.	Children brushing inner teeth	1	1	3
10.	Children brushing their upper teeth	1	1	3
11.	Children brushes lower teeth & tongue	1	1	3
12.	Children rinsing and cleaning their mouths with water	1	1	3
13.	Children clean and tidy up equipment	1	3	3

**Table 2.** Observation of Tooth Brushing Skills in Visually Impaired Children (Child B)

No	Activity Steps	Day 1	Day 2	Day 3
1.	The child mentions the name of the equipment for brushing teeth (toothbrush and toothpaste)	1	1	1
2.	The child is able to hold a toothbrush and toothpaste	4	4	4
3.	The child applies toothpaste to the bristles of the toothbrush	3	4	4
4.	The child takes water with a glass or a small container	4	4	4
5.	The child gargles and brushes his teeth with his right hand	4	4	4
6.	Children brushing their front teeth	4	4	4
7.	The child brushes the right tooth	1	1	3
8.	The child brushes the left tooth	1	1	3
9.	Children brushing inner teeth	1	1	3
10.	Children brushing their upper teeth	1	1	3
11.	Children brushes lower teeth & tongue	1	3	3
12.	Children rinsing and cleaning their mouths with water	3	4	4
13.	Children clean and tidy up equipment	3	4	4

Instructions for filling in the observation number column:

- Score 4 if the child performs independently and smoothly
- Score 3 if the child performs with verbal assistance (communication that uses words)
- Score 2 if the child performs with physical assistance
- Score 1 if the child performs with verbal and physical assistance

Performance level setting:

>87.5% - 100% = Very Good

>62.5% - 87.5% = Good

>37.5% - 62.5% = Sufficient

>25% - 37.5% = Less

### **Discussion**

#### ***Implementation of Brushing Teeth to Improve Brushing Skills in Children with Disabilities***

The assessment obtained from the client A, who was 9 years and 5 months old, male, had complaints of problems in his growth and development so that it affected knowledge and development. The client's mother said that client A had a history of seizures at the age of 1 year, resulting in developmental disorders in his brain nerves. Theory (Marlina, 2015) says that disability is a condition of a person with intellectual weakness (intelligence, intellect, and mind) below average so that they experience various obstacles from several aspects as a result of developmental disorders in the central nervous system (brain), and this is difficult and even incurable and requires systematic educational services, multidisciplinary services, and individually designed.

Based on the information provided by his mother on the focus of research related to the application of brushing skills, client A is still difficult and must be helped to carry out brushing activities. This is in accordance with the opinion of Abdullah (2013), who said that the development of children with disabilities needs to be known with special assistance and services, especially regarding the needs of educational programs and guidance. Delays in motor development in children with disabilities will affect all activities to meet basic needs and self-care (Priwibowo, 2018).

The condition of client A's teeth at the time of the assessment was that the client's teeth seemed untidy; there were food residues and several holes. The theory (Palupi et al., 2017) states that limitations in children with disabilities cause them to be unable to maintain oral hygiene properly so that they tend to have poor oral hygiene and periodontal disease and have a higher risk of having caries than other children.

Meanwhile, the results of another assessment conducted on client B aged 8 years and 11 months show that male sex have almost the same complaints, which are related to problems in his growth and development. Based on the information provided by his mother, client B also has problems with his hearing system, so that it affects the way he communicates. According to the opinion (Irawan, 2020), one of the characteristics of children with disabilities is delay or difficulty in speaking.

In the focus of research related to the application of brushing teeth, client B wants to brush his teeth if ordered, not on the basis of his own will. The condition of client B's teeth at the time of the assessment was that the client's teeth looked neat, there were food residues, and there was a hole in the tooth.

In children with disabilities who experience problems with their growth and development, there is most likely to be a disturbance in the basic ability to carry out

activities in daily life, one of which is the ability to carry out teeth-brushing activities independently. Development to carry out activities in daily life by reducing dependence on others, namely by practicing self-development skills that aim to achieve independence so that they can take care of themselves (Tias, 2014).

This research provides the implementation of brushing teeth consecutively, which was carried out from Monday, June 10, 2024, to Wednesday, June 12, 2024. The purpose of this study is to improve toothbrushing skills in visually impaired children. In this study, the implementation given was to carry out teeth-brushing activities. When given tools and materials for brushing teeth (toothbrush and toothpaste), both clients seemed enthusiastic and curious.

Based on the implementation carried out for 3 x 30 minutes by doing the same implementation, namely brushing teeth to improve brushing skills in children with disabilities, which was carried out to two different clients, client A (An. A) is 9 years and 5 months old, with the skill of brushing teeth in the category quite seen from the results of the observation on the first day, which only got a score of 42%, while client B (An. U) is aged 8 years and 11 months, with a good category of brushing skills as seen from the observation results of the first day, which got a score of 52%.

There are results of skill improvement in both clients, which are very significant for children with moderate disabilities. The brushing skills on the first day of client A (An. A) need to be trained in order to improve fine motor skills and independence. The application of brushing teeth, which is carried out for 15-30 minutes, obtained the criteria for the result of brushing skills of 42% (sufficient); on the second day of the application of brushing teeth, which is carried out for 15-30 minutes, client A got the criteria for the results of brushing skills of 53% (enough); on the third day, the application of brushing teeth is carried out for 15-30 minutes, and client A got the criteria for the result of brushing skills of 78% (good).

Brushing skills on the first day of client B (An. U) still need to be trained related to how to brush teeth properly and correctly in order to improve fine motor skills and independence. The application of brushing teeth, which is carried out for 15-30 minutes, obtained the criteria for the result of brushing skills of 52% (enough); on the second day of the application of brushing teeth, which is carried out for 15-30 minutes, client B got the criteria for the results of brushing skills of 69% (good); and on the third day of the application of brushing teeth, which was carried out for 15-30 minutes, client B obtained the criteria for the result of brushing skills of 84% (good).

Based on the results of the implementation of brushing teeth carried out by client A and client B for 3 consecutive days, there was an increase every day to carry out teeth brushing skills.

Researchers assume that children with moderate disabilities are able to be trained in their skills, one of which is by doing brushing activities that can improve brushing skills (fine motor development) so that they are able to train their self-development skills so that children can take care of themselves.

This is in agreement with Mangunsong (2014) that children with moderate disabilities are a group of children who are able to train where they can be trained according to certain skills.

According to the opinion of Sembiring & Lisinus (2020) put forward by AAMD (American Association of Mental Deficiency), moderately disabled children (able to train) are still able to be trained, able to learn school skills for functional purposes, able to perform self-care skills, able to adapt to the environment, and able to do routine work carried out under the supervision of those closest to them.

The limitations experienced by this research at the time of conducting the research are communicating with client A and client B due to poor communication response and incomprehensible vocabulary pronunciation. Communicating slowly and using some gestures with hand gestures were the best ways to overcome the problems. In addition, the feelings and moods of both clients must be maintained so that they can carry out toothbrushing activities during the study.

#### 4. Conclusion

Based on the research conducted at SLB Negeri Slawi, brushing teeth is an effective activity to improve fine motor skills in children with disabilities by teaching them to clean their teeth properly. This activity not only helps maintain oral health but also promotes self-care and reduces dependence on others. Brushing teeth, when done correctly, is essential for meeting basic needs and enhancing self-sufficiency in children with disabilities.

The study involved implementing toothbrushing routines for two clients over three days, with sessions lasting 15–30 minutes. Client A's brushing skills improved from 42% (adequate) to 78% (good), while Client B's skills increased from 59% (adequate) to 84% (good). These results demonstrate that structured toothbrushing activities can significantly enhance brushing skills in children with disabilities.

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### Conflict of interest

There is no conflict of interest in conducting this research.

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