



The effect of tooth brushing demonstration method towards oral hygiene level on children with special needs

Ida Chairanna

Department of Dental Nursing, Poltekkes Kemenkes Surabaya, Indonesia

Abstract

Introduction: Most children with special needs have dental caries and are unable to maintain their oral hygiene by themselves due to limited physical developmental conditions, behavior, or emotions.

Objective: To analyze the effect of tooth brushing demonstration method towards oral hygiene level on children with special needs.

Methods: This type of research was used Quasi-Experimental Research to determine the condition before and after treatment. The instrument used was a checklist for brushing teeth, with observations of the OHI-S examination. Samples were 30 children with special needs in Galuh Handayani Inclusion Elementary School, Surabaya. Data analysis used the Wilcoxon and Mann Whitney statistical tests.

Result and Discussion: With the Wilcoxon test, there were significant changes in skills and OHI-S in the treatment group with $p = 0,001 < 0,005$ (skills) and $p = 0,001 < 0,005$ (OHI-S). In the control group for skills there was no significant change and for OHI-S there was a change, but it was not significant. The results of the next analysis, the Mann Whitney test obtained $p = 0.001 < 0.05$ means that there was a significant difference in practice and OHI-S values between the treatment and control groups. Interventions were had given to the treatment group had an influence on changes in the value of practice and OHI-S compared to the control group without intervention.

Conclusion: There is a change in the ability to brush the teeth of children with special needs in the treatment group due to the demonstration method.

Keywords: demonstration method, level of dental and oral hygiene, and children with special needs

Introduction

Children with special needs are children with limited physical developmental conditions, behavior, or emotions. This causes disruption on physiological and psychological functions and anatomical structure is reduced or lost so that it cannot carry out normal daily life activities that result in changes in thoughts, feelings, and actions. According to data from the Central Statistics Agency in 2017, the number of children with special needs in Indonesia reaches 1.6 million. The problem of disability in children is a problem that is quite complex both in quantity and quality, considering that various types of disabilities have their own problems. If the problem of children with disabilities is well-handled on early stage and their skills are improved according to interests lead to lowering the burden of family, community, and country. Conversely, if not handled properly, the impact will add to the burden on the family and country [2]. Dental health is one of the most important things for the growth of the children. However, the concern of parents in Indonesia for the dental health of children, especially in children with special needs, is still low. In this case, children with special needs are children who experience mental disorders such as autism, down syndrome, and cerebral palsy.

Dental problems that usually occur in children with special needs include dental caries, bleeding gums, and crammed teeth (malocclusion). Children with special needs require special

attention in comparison to other normal children due to various limitations that they have, including the lack of ability to clean their own oral cavity. Thus, this increases the risk factor for damage to the teeth and the surrounding soft tissues (Chamidah, AN. 2010; Jain, M *et al.* 2009) in. [1]

Material and Methods

This research was used Quasi-Experimental research. Data collection used questionnaire form related to knowledge about tooth brushing and a checklist of brushing teeth practices. Samples were students of Galuh Handayani Inclusive Elementary School from first grade to fifth grade. The group were divided into two groups and selected randomly from the samples 15 students as treatment group and the rest 15 students as control group. The OHI-S measurements were carried out by dental nurses and dentists while classroom management by the teachers involved.

In the treatment group the intervention was carried out with a demonstration of brushing teeth for 10 days continuously. In the control group counseling was given with the lecture method. And the implementing a posttest (knowledge about dental health, practices on how to brush teeth and OHI-S) on both treatment group and control group.

Then, was conducting data analysis to determine the effect of

tooth brushing demonstrations on the changes (knowledge, practice and OHI-S). The statistical analysis used Wilcoxon and Mann Whitney statistical test data analysis.

Result and Discussion

The population in this study were all elementary schools in Galuh

Handayani Inclusive Elementary School Surabaya, with an average age of students 8-12 years. The sample size is the number of students sitting in third, fourth, and fifth grades as many as 30 children. From the sample above randomly selected as many as 15 people for the treatment group and 15 people for the control group.

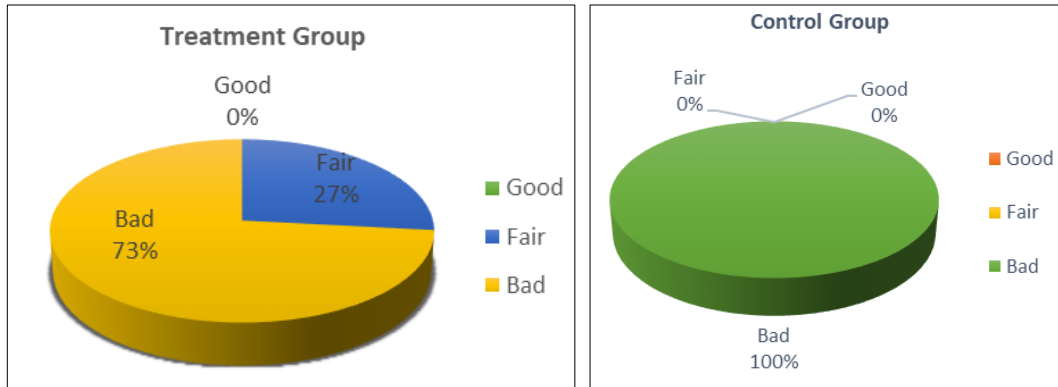


Fig 1: The skills of children with special needs *Before exposure*.

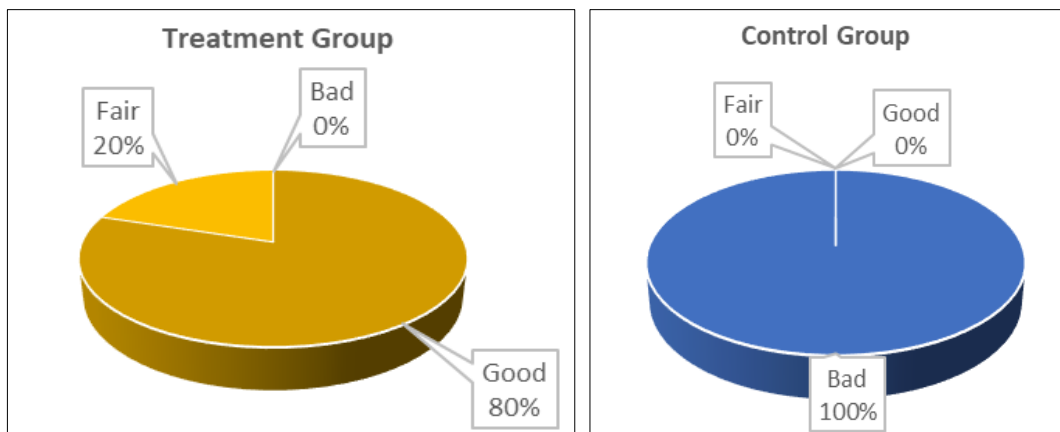


Fig 2: The skills of children with special needs *After exposure*.

Based on figure 1 and 2, the results of the skills of children with special needs in the treatment group experienced a significant increase. The treatment group was given a demonstration of brushing together and then a student was appointed to practice independently in front of the class and followed by his friends. In accordance with research [9], that learning strategies of independent practicing in front of the class attracted the attention and interests of other students, in addition to adding enthusiasm to learning to develop self-brushing teeth. This learning strategy brought more varieties because it is not only focused on students who practice it but also on other students who are able to practice tooth brushing activities, so students do not get bored quickly. Based on the results of following the brushing demonstration method, the skills of students with special needs in the control group did not increase. This is due to the lack of promotive and preventive efforts in the field of dental and oral health in children with special needs. Coupled with the lack of dental health

maintenance measures such as doing teeth brushing properly and correctly at home and at school. Accuracy in brushing teeth requires the ability or good individual hand skills when brushing teeth. This is a problem in groups of children with special needs (Intellectual disabilities) because most of these groups have problems with hand motor skills. Physical limitations experienced by children with intellectual disabilities will affect the hampered efforts in doing tooth brushing activities. The group of children with special needs includes a group of children who have a high risk of dental and oral diseases [10].

According to researchers, individual oral hygiene depends on how a person is routinely brushing teeth properly and correctly twice a day. Good time to brush your teeth is after breakfast and before going to bed at night. Therefore, children with special needs with physical disabilities who have limitations to do this need to be given counseling how to brush teeth properly and correctly (Sofwan, 2018) [2].

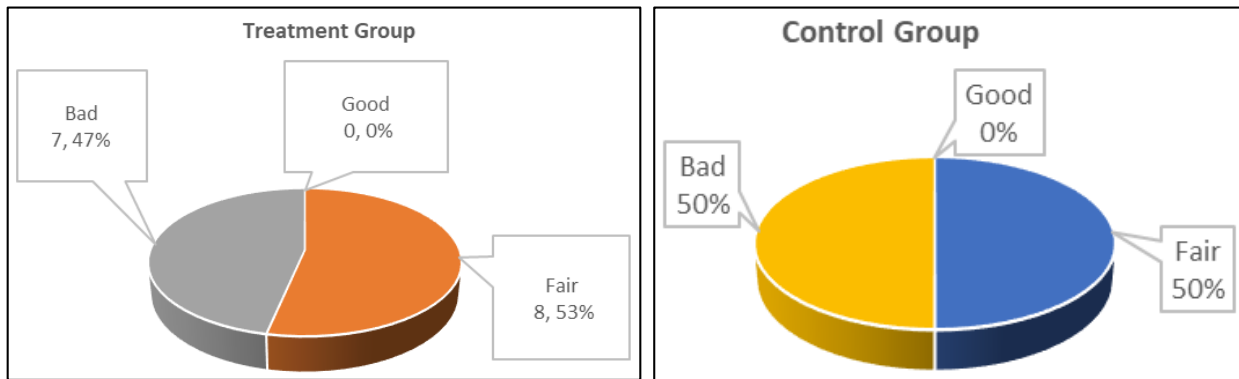


Fig 3: Dental and oral hygiene of children with special needs Before exposure

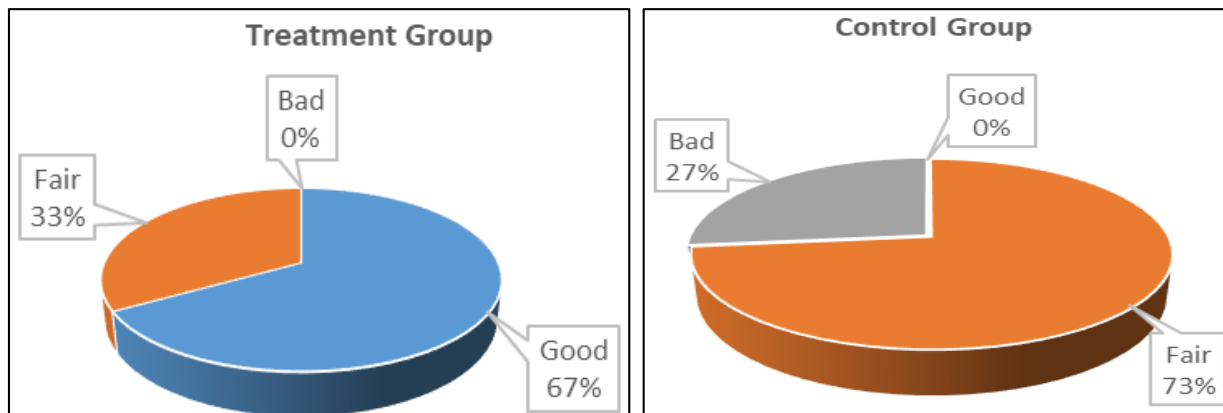


Fig 4: Dental and oral hygiene of children with special needs After exposure.

In accordance with the results of dental and oral hygiene (OHI-S) tests that have been carried out on children with special needs in figure 3 and 4, the treatment group showed a significant improvement after children with special needs followed the tooth brushing demonstration method followed by brushing their teeth independently every day for 10 (ten) days in a row. From the results of the study [6], a demonstration of the method of brushing teeth to elementary school students is an effective effort to reduce the plaque index on teeth. In addition, differences in the effectiveness of dental and oral health education were obtained by demonstration of the method of brushing against decreasing

plaque indices. Whereas in the control group there were changes but not significant. The dental and oral hygiene inspection activities (OHI-S) of students were carried out before and after the treatment, so that in the end the dental and oral hygiene (OHI-S) of all students increased. Based on researchers' observations, the increase occurred because students often get information from television media. The results of the study [8], showed that television had both positive and negative impacts on children. The positive impact is in the form of improving all aspects of early childhood development so that children become more communicative, imaginative, and active.

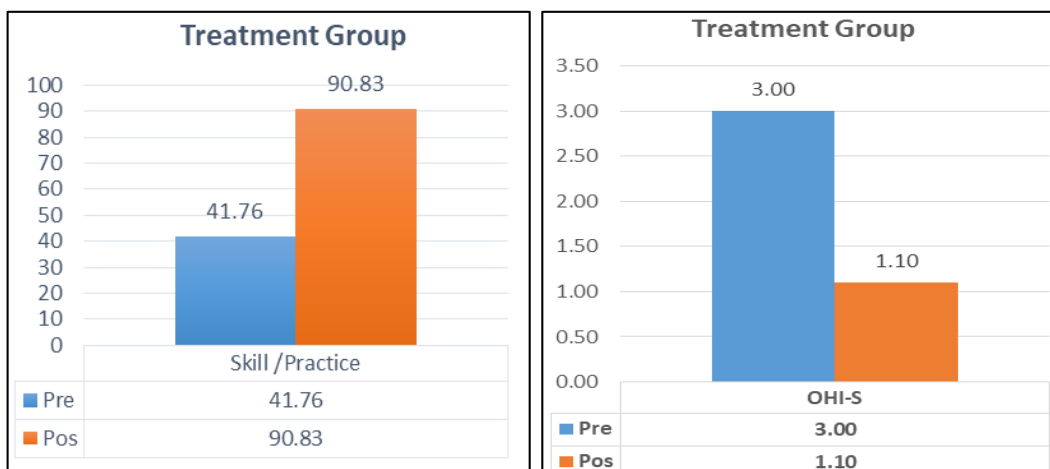


Fig 5: Differences in Skills (Practices) and OHI-S the Treatment Group.

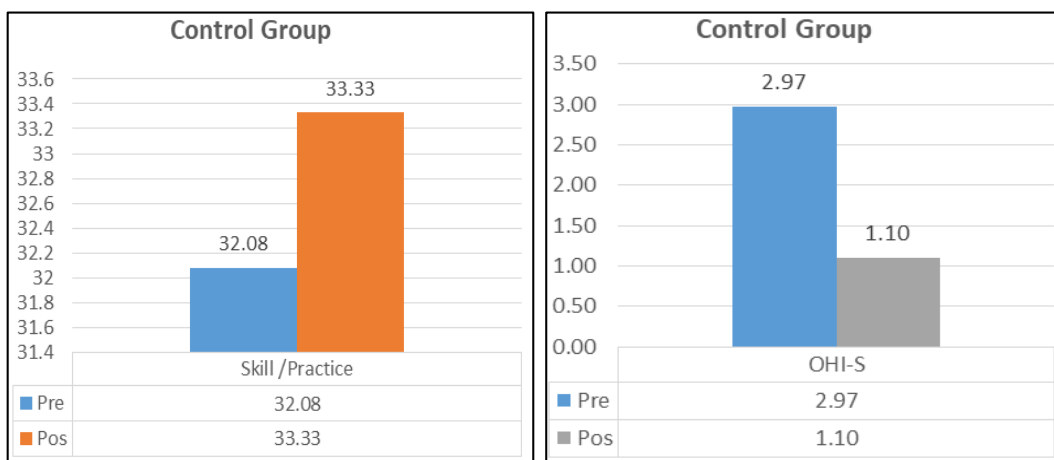


Fig 6: Differences in Skills (Practices) and OHI-S the Control group.

There are differences in the interventions given to the treatment group for changes in the value of practice. The effect of this intervention is due to the demonstration method of brushing teeth which is a learning activity that is quite effective to improve the ability to brush their teeth. Delivery of dental and oral health education to children must be made as attractive as possible, including through attractive counseling without reducing educational content such as live demonstrations, audiovisual programs, or through controlled mass toothbrushes. According to Hariyanti (2008) in [3] the selection of demonstration methods on oral health counseling was effective in supporting increased understanding of children, by practicing directly how to brush their teeth properly.

There are differences in the interventions given to the treatment group for changes in the value of dental and oral hygiene (OHI-S). The effect of this intervention was due to the students getting guidance and training to brush their teeth independently for 10 consecutive days. It is expected that skilled students can brush their teeth properly, so they can clean teeth from plaque and soft deposits on the surface of the teeth. Thus, the dental hygiene of students improved. This is in line with research [7] which an increase in the knowledge, attitudes and skills of teachers in the maintenance of dental and oral hygiene of mentally disabled children has not shown a decrease in the value of the index debris in mentally disabled children.

Table 1: Effect of changes in tooth brushing skills on the level of dental and oral hygiene.

Variable	Treatment Group			Control Group			
	Δ	P	Description	Δ	P	Description	
Skill	Mean	49,17	0,001*	S	3,33	0,08*	NS
	SD	17,34			5,72		
OHI-S	Mean	-1,90	0,001*	S	-0,14	0,33*	NS
	SD	0,56			0,93		

From the results of the study in Table 1 shows that there are significant differences in Skills and OHI-S in the treatment group and the control group, meaning that there is an influence of treatment on Practice and OHI-S. It happens because when students are taught how to brush their teeth correctly using the demonstration method then followed by the practice of brushing their teeth independently, the impact will be to improve students'

skills in brushing their teeth in the right way. Moreover, to help students get used to brushing their teeth twice a day, students are provided with calendars and stickers that will be affixed to the calendar each time students finish brushing their teeth in the morning and evening. The results of this study are also in line with the study from Pantow tahun 2014 that counseling on how to brush teeth and training on how to brush teeth at the Lpangan Inpres Elementary School stated that counseling on how to brush teeth and training on how to brush their teeth had an influence in reducing the dental plaque index (Maureen, 2015) in [4].

Dental and oral health maintenance behaviors are actions to maintain oral health, namely the number of times to brush teeth a day, when and when to consume foods that can make teeth and mouth healthy, reduce foods that damage teeth, and routine dental examinations. From interviews with informants, most autistic children brush their teeth with the right frequency, which is at least 2 times a day, but there is something more, it's just that there are still many times when brushing their teeth, which is not right when bathing in the morning and taking a shower in the afternoon.

This is in the behavior analysis that brushing teeth is often associated with bathing, that every person showering will definitely brush their teeth.

Behavior booster depends on the impact of the behavior, for example if someone does an action and the effect is felt beneficial that person will definitely repeat the action (Kent and Blinkhorn, 2005) in [5].

School teachers are suitable personnel to provide dental health education to school children on a regular basis. Moreover, age-appropriate dental health education materials to provide oral health education to children must be integrated into the academic curriculum in schools and dental health education in schools must be made compulsory Jaya Naidu (2017).

Conclusion

There is a change in the ability to brush the teeth of children with special needs in the treatment group. There is a difference in the demonstration of brushing teeth against the skills (practice) of children with special needs. The practice change shows that the way to brush the teeth of students with special needs is correct in accordance with the instructions given and has a direct influence on the level of dental and oral hygiene (OHI-S). The influence of

changes in skills (practice) to brush teeth on the level of oral hygiene in children with special needs. Guidance and supervision of toothbrushing conducted by the teacher to students and parents to their children will give better results.

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