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Research Paper

## Simulation method of brushing teeth with bass technique in elementary school children: Is it effective?

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### Article Info:



#### Article History:

Received 12 November 2021  
Reviewed 19 December 2021  
Accepted 28 December 2021  
Published 15 January 2022

#### Cite this article as:

Nubationis OM, Wali A, Pay NM, Eluama SM, Simulation method of brushing skills teeth with bass technique in elementary school children: Is it effective?, Journal of Drug Delivery and Therapeutics. 2022; 12(1):30-32

DOI: <http://dx.doi.org/10.22270/jddt.v12i1.5272>

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### Abstract

**Background:** Dental and oral disease is the highest disease that people complain about in the province of East Nusa Tenggara where the prevalence of dental caries is 54.9%. Specifically for children aged 4-9 it was 50.0% and children aged 10-14 were 41.4%. This is related to the data on the behavior of brushing teeth properly after breakfast and before going to bed at night which is only 3.7%. **Objective:** This study was to analyze the effect of the simulation method of brushing teeth using the bass technique on the improvement of tooth brushing skills in elementary school children. **Method:** This study used a pre-experimental design with a pretest and posttest with a one group design. The research was conducted at SDN 2 Baumata Timur, Taebenu District, Kupang Regency. The research sample was taken by purposive sampling technique, as many as 100 students. The instrument for collecting data on brushing teeth skills used an observation sheet. Analysis of the research data using the Wilcoxon test. **Result:** simulation method of brushing teeth with bass technique is effective in improving brushing skills ( $p<0.001$ ). **Conclusion:** The simulation method of brushing teeth with the bass technique is effective in improving the brushing skills of elementary school children.

**Keywords:** Simulation method, bass technique, brushing skills

## INTRODUCTION

Dental and oral health is a very important part of overall health, dental and oral health in Indonesia needs to be considered because dental and oral disease is the highest disease that people complain about.<sup>1,2</sup> Dental health problems such as dental caries, bad breath, and periodontitis are often suffered by children. Dental caries if allowed to continue will experience an infection in the mouth and cause pain.<sup>3,4</sup> Some children only know several methods of brushing their teeth, such as vertical and horizontal methods, while other techniques such as the bass technique or other modification techniques are not known so that dental hygiene is lacking, while brushing teeth with the bass technique is more effective in cleaning teeth and mouth.<sup>5,6</sup>

Basic health research in 2018 showed that the population of Indonesia who suffered from dental and oral problems was 57.6% while dental and oral health problems in the province of East Nusa Tenggara were 54.9%. Specifically on dental health problems in children, the prevalence of dental and oral caries was 50.0% in children aged 4-9 while the prevalence of caries in children aged 10-14 was 41.4%.<sup>7</sup>

High dental health problems, this is related to data on brushing teeth behavior which every day, it was found that most of the Indonesian population brushed their teeth properly after breakfast and before going to bed at 2.8% while the people of East Nusa Tenggara brushed their teeth properly

after eating breakfast and before going to bed at night only 3.7%.<sup>7,8</sup>

The main factor that can cause dental caries is the presence of bacteria that can cause dental caries, namely streptococcus and lactobacilli types, foods that we often consume sweet and sticky foods such as candy and chocolate greatly facilitate the occurrence of dental caries, and irregular tooth shape. In addition to several other factors also contribute to dental caries, namely the level of dental and oral hygiene, frequency of food, gender and age.<sup>9-11</sup>

Efforts are made to clean teeth from dental caries and plaque by brushing their teeth. Brushing teeth properly can improve the dental hygiene status of children as an effort to prevent dental disease.<sup>12,13</sup> Brushing teeth can be done by several methods using the bass method. Bass technique is a technique for brushing teeth which is done by placing a 45° toothbrush on the root of the tooth and then pressing it slowly while making small rotating movements.<sup>14</sup>

## MATERIALS AND METHODS

The research design used was pre-experimental with one-group pre-post test design. This research was conducted to determine the causal relationship by involving a group of subjects. The subject group was observed before the intervention, then observed after the intervention.<sup>15</sup>

The independent variable in this study was the simulation method of brushing teeth using the bass technique, while the dependent variable was brushing skills. The instrument in this study for the variable method of brushing teeth using the bass technique by making checklist observations on children's brushing skills, while the tools used for simulation are phantom teeth, toothbrush, toothpaste. Analysis of research data used to test the influence of two variables, namely the Wilcoxon test.

## RESULT

**Table 1. Frequency distribution of respondent characteristics by Gender**

Variable	N	Percentage (%)
Male	50	50.0
Female	50	50.0
Total	100	100

Table 1 shows that characteristics based on gender, the percentage is the same between male 50% and female 50%.

**Table 2. Frequency distribution of respondent characteristics by grade in elementary school**

Grade	N	Percentage (%)
Grade 2	19	19
Grade 3	18	18
Grade 4	17	17
Grade 5	25	25
Grade 6	21	21
Total	100	100

Table 2 shows that the largest percentage is grade 5 by 25% and the least percentage is grade 4 at 17%.

**Table 3. The results of the effectiveness test of brushing teeth before and after the intervention**

Brushing teeth	N	p-value
Pretest	100	
Posttest	100	0.001

\*Wilcoxon test

Table 3 shows that the results of the test of the effectiveness of the simulation method of brushing teeth using the bass technique on children's brushing skills obtained a p-value of 0.001 which means that the simulation method of brushing teeth using the bass technique is effective in improving brushing skills.

## DISCUSSION

The research was conducted at SDN 2 Baumata Timur, Taebenu District, Kupang Regency, to determine the effect of the simulation method of brushing teeth using the bass technique on brushing skills. Table 1 shows the distribution of the frequency of elementary school children by gender, the percentage is the same between 50% male and 50% female. This is because the motivation for parents to send their children to school is very high and the characteristics of the children around the SDN 2 Baumata Timur area have almost the same number of male as female.

Based on table 2, it shows the frequency distribution of elementary school children by gender, the largest percentage is grade 5 at 25% and the least percentage is grade 4 at 17%, this is because the number of registrations for elementary school children every year often changes and cannot be determined how many new students enroll each year.

Based on table 2, showing the results of the simulation method of brushing teeth using the bass technique on brushing skills,  $p = 0.000$  ( $p < 0.05$ ) so that it can be interpreted that the simulation method of brushing teeth using the bass technique is effective in improving the brushing skills of elementary school children. This is because previously children brushed their teeth but did not use the right and correct method of brushing their teeth so that it could lead to dental and oral health problems, including dental caries, abrasion and tartar, so counseling and simulation of brushing teeth using the bass method was needed. This simulation of brushing teeth can encourage children to find out which parts are not clean and what steps are wrong, so that children can be encouraged to clean the parts that are still dirty more thoroughly and can correct the wrong steps.<sup>16,17</sup> The Simulation method is a form of giving method that is arranged in such a way that the learning process is carried out by a group or community.<sup>18</sup>

The results of research on the effect of the simulation method of brushing teeth using the bass technique on children's brushing skills before and after this counseling, are in line with research conducted by Sari et al. which stated that tooth brushing skills and oral hygiene were good for most children. after conducting health education and simulation of brushing teeth with bass modification techniques.<sup>17</sup> As for another study, according to Rizkika et al. said that it was very effective to brush teeth using the Bass method to reduce index debris.<sup>19</sup>

## CONCLUSION

Based on the results of the study, it can be concluded that there is simulation method of brushing teeth with the bass technique is effective in improving the brushing skills of elementary school children.

## ACKNOWLEDGEMENTS

The authors thank to Poltekkes Kemenkes Kupang for funding this research, all participants and research assistants.

## CONFLICT OF INTEREST

The authors declare that they have no conflict interests.

## ETHICAL CLEARANCE

All participants were signed the informed consent prior to the data collection.

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