



# Snakes and Ladders Game Media on the Behavior of Brushing Teeth in Elementary School Children

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## ABSTRACT

**Background:** One way to keep your teeth and mouth clean is by brushing your teeth regularly and regularly. Good habits and discipline in caring for and cleaning teeth by brushing teeth regularly and regularly must be started early so that future generations are accustomed to a healthy lifestyle. Brushing your teeth is cleaning your teeth from dirt or food residue using a toothbrush. **Purposes:** to determine the effectiveness of the snake and ladder game media on tooth brushing behavior in Grade 5 children at Susukan 06 Elementary School. **Methods:** This study uses a survey method with an approach pre-post design. The sample in this study were 30 grade 5 students at Susukan 06 Elementary School, East Jakarta total sampling. **Result:** The results of the study show that if the significance value of knowledge, attitudes and actions is 0.000, this value is less than 0.05 which can then be said if  $H_a$  is accepted and  $H_0$  is rejected, which means there is a difference between the results pre test and post test knowledge, attitudes and actions of respondents so that it can also be concluded that there is an effective effect of education through snakes and ladders games on tooth brushing behavior. **Conclusion:** There is an increase in knowledge, attitudes and actions, this is evidenced by the variable value using the wilcoxon test is at a p-value of 0.000.

## INTRODUCTION

According to the results of Basic Health Research in 2018, it shows that Indonesian people tend to have poor dental health. It found that 57.6% of Indonesians have dental and oral problems, only 10.2% get dental treatment, and only 2.8% of Indonesians brush their teeth properly. While 93% of dental caries disease data were found in early childhood aged 5-6 years (Kemenkes, 2018).

One way to maintain dental and oral hygiene is by brushing your teeth regularly and regularly. Good habits and discipline in maintaining and cleaning teeth by brushing teeth regularly and regularly must be started early so that the next generation is accustomed to a healthy lifestyle. Brushing your teeth is cleaning teeth from dirt or food debris using a toothbrush (Sinaga et al., 2020).

In order to facilitate the delivery of messages and help the effectiveness of the learning process, health education media can be used. There are various kinds of health education media, namely print media (booklets, leaflets, posters, flipcharts), electronic media (TV, radio, video, slides), and board or whiteboard media (Sulistiani et al., 2022). One of the health promotion media used for school-age children is the snakes and ladders board game media. Can be used as a fun learning medium for students. Students will tend to be interested in participating in an active learning process and having a pleasant learning experience (Sabila et al., 2021).

Efforts to maintain healthy teeth and mouth must start from the beginning. Primary school age is the age is optimal to prepare children to perform coordinated movements, including brushing teeth (Hidayat, 2016).

## METHOD

The study uses a survey method with an approach pre-post design. In this study, researchers used a population of 30 respondents at SDN Susukan 06 Class 5. The sample in this study were used a total sampling of 30 students who met the criteria for inclusion and exclusion in the population.

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Data collection carried out in this study, ie. Primary data and secondary data. Primary data is research conducted directly by researchers. To obtain basic data, researchers will distribute questionnaires to grade 5 children at SDN Susukan 06 East Jakarta. Secondary data is information obtained indirectly. Secondary data in this study were obtained from journals.

The implementation stage of this research begins with introducing themselves and explaining the details and objectives to respondents, Researchers provide informed consent to respondents as a sign of approval that they are ready to become respondents, Researchers explain how to play and the rules of the snake and ladder game, Researchers provide pretest questionnaire sheets. Then the snake and ladder game was carried out to the respondents, After completion, the researcher gave a posttest questionnaire sheet to the respondent.

## RESULT

The sample or respondents in this study amounted to 30 people who had been approved on the informed consent sheet.

**Table 1.** Frequency Distribution of Pretest Knowledge

Value Interval	Frequency	Percent (%)	Criterion
75-100	5	17	Good
60-74	14	47	Keep
<59	11	36	Bad

Based on the pre-test value frequency table above, good criteria are shown (values 75-100) with 5 respondents or 17% of the total sample of 30 people. For medium criteria (value 60-74) with the number of respondents 14 people or 47%. For bad criteria (score <59) with the number of respondents 11 people or 36%.

**Table 2.** Frequency Distribution of Posttest Knowledge

Value Interval	Frequency	Percent (%)	Criterion
75-100	21	70	Good
60-74	9	30	Keep
<59	0	0	Bad

Based on the table of frequency of post test values above, good criteria are shown (values 75-100) with the number of respondents 21 people or 70% of the total sample of 30 people. For medium criteria (value 60-74) with the number of respondents 9 people or 30%. For bad criteria (grades <59) with 0 respondents or 0%.

**Table 3.** Frequency Distribution of Pretest Attitudes

Value Interval	Frequency	Percent (%)	Criterion
75-100	5	17	Good
60-74	20	66	Keep
<59	5	17	Bad

Based on the pre-test value frequency table above, good criteria are shown (values 75-100) with 5 respondents or 17% of the total sample of 30 people. For medium criteria (scores 60-74) with the number of respondents 20 people or 66%. For bad criteria (score <59) with 5 respondents or 17%.

**Table 4.** Frequency Distribution of Posttest Attitudes

Value Interval	Frequency	Percent (%)	Criterion
75-100	17	57	Good
60-74	13	43	Keep
<59	0	0	Bad

Based on the table of frequency of post test values above, good criteria are shown (values 75-100) with the number of respondents 17 people or 57% of the total sample of 30 people. To medium criteria (scores 60-74) with 13 respondents or 43%. For bad criteria (score <59) with the number of respondents 0 people or 0%.

**Table 5.** Frequency Distribution of Pretest Actions

Value Interval	Frequency	Percent (%)	Criterion
75-100	2	6	Good
60-74	14	47	Keep
<59	14	47	Bad

Based on the frequency table of pre-test scores above, good criteria are shown (values 75-100) with 2 respondents or 6% of the total sample of 30 people. For medium criteria (value 60-74) with the number of respondents 14 people or 47%. For bad criteria (score <59) with the number of respondents 14 people or 47%.

**Table 6.** Frequency Distribution of Posttest Actions

Value Interval	Frequency	Percent (%)	Criterion
75-100	25	83	Good
60-74	5	17	Keep
<59	0	0	Bad

Based on the table of frequency of post test values above, good criteria are shown (values 75-100) with the number of respondents 25 people or 83% of the total sample of 30 people. For medium criteria (value 60-74) with the number of respondents 5 people or 17%. For bad criteria (score <59) with the number of respondents 0 people or 0%.

**Table 7.** Shapiro-Wilk Normality Test

Variable	Frequency	p-value
Pre Test Knowledge	30	0.067
Post Test Knowledge	30	0.008
Pre Test Attitude	30	0.023
Post Test Attitude	30	0.000
Pre Test Action	30	0.113
Post Test Action	30	0.000

\*Shapiro-Wilk

The results of the data analysis above using the shapiro-wilk test, where pre-test knowledge has value significant 0.067, post test knowledge has a significant value of 0.008, pre test attitude has a significant value of 0.023, post test attitude has a significant value of 0.000, pre test action has a significant value of 0.113, post test action has a significant value of 0.000. Data is said to be normally distributed if the significant value is greater than 0.05 and the data is said to be abnormally distributed if the significant value is less than 0.05. The table above shows that almost all variables have a significant value smaller than 0.05,

which means that the data from these variables are abnormally distributed. The next step is to test abnormal paired data using the wilcoxon test.

**Table 8.** Increased Pre-Post of Knowledge, Attitudes and Actions

Variable		Frequency	Mean	Std. Deviation	p-value
Knowledge	Pre test	30	58.67	17.760	0.000
	Post test	30	83.00	11.788	
Attitude	Pre test	30	65.53	9.832	0.000
	Post test	30	80.67	11.427	
Action	Pre test	30	55.33	15.477	0.000
	Post test	30	89.67	13.515	

\*Wilcoxon

In the results of the data analysis above, it can be seen that frequency shows the number of respondents as many as 30 people. The mean indicates the average score of each test. The average pre-test knowledge was 58.67 with a standard deviation of 17.760. Average post-test knowledge scores of 83.00 with a standard deviation of 11.788. The average pre-test attitude score was 65.53 with a standard deviation of 9.832. The average post-test attitude score was 80.67 with a standard deviation of 11.427. The average pre-test value of the action was 55.33 with a standard deviation of 15.477. The average action post test value was 89.67 with a standard deviation of 13.515.

The results of the analysis above also show that if the significance value of knowledge, attitudes and actions is 0.000, the value is smaller than 0.05 which can then be said if  $H_a$  is accepted and  $H_0$  is rejected, which means there is a difference between the results of pre test and post test knowledge, attitudes and actions of respondents so that it can also be concluded that there is an influence of education through effective snake and ladder games on toothbrushing behavior. The results of the analysis above also show that the significance value of knowledge, attitudes and actions is 0.000, The value is smaller than 0.05 which can then be said if  $H_a$  is accepted and  $H_0$  is rejected, which means that there is a difference between the results of the pre test and post test knowledge, attitudes and actions of respondents so that it can also be concluded that there is an educational influence through the game of snakes and ladders that is effective on brushing teeth.

## DISCUSSION

Knowledge of brushing teeth before being educated through snakes and ladders game showed that the frequency of pre-test scores was 17% for good, 47% for medium criteria, 36% for bad criteria. This score shows that the knowledge of grade 5 students of SDN Susukan 06 East Jakarta is still not good enough. After respondents were given education through the snake and ladder game, the value of knowledge in the post test increased significantly, namely good criteria by 70% for 21 respondents, medium criteria by 30% for 9 respondents at most compared to bad criteria which had a percentage of 0%. Snakes and ladders media can increase the knowledge of grade 5 students of SDN Susukan 06 East Jakarta, this is in line with (Labibah, 2015) research shows that modified snakes and ladders games affect the increase in knowledge of dental and oral health in children.

The attitude of brushing teeth before being educated through the snake and ladder game showed that the frequency of pre-test scores was 17% for good, 66% for moderate criteria, and 17% for bad criteria. This score shows that the knowledge of grade 5 students of SDN Susukan 06 East Jakarta is still not good enough. After respondents were given education through snakes and ladders, the attitude score on the post test increased significantly, namely good criteria by 57% for 17 respondents, medium criteria by 43% for 13 respondents the most compared to bad criteria which had a percentage of 0%. This is due to the influence

of snakes and ladders media given in order to improve the attitude of brushing teeth. Good learning media can stimulate the will, mind and ability (Nurwanti, 2019).

The act of brushing teeth before being educated through the snake and ladder game showed that the frequency of pre-test scores was 6% for good, 47% for moderate criteria, and 47% for bad criteria. This score shows that the actions of grade 5 students of SDN Susukan 06 East Jakarta are still not good enough. After respondents were given education through the snake and ladder game, the value of action on the post test increased significantly, namely good criteria by 83% for 25 respondents, medium criteria by 17% for 5 respondents at most compared to bad criteria which had a percentage of 0%. This is due to the influence of snakes and ladders media given in order to increase the action of brushing teeth. Snakes and ladders media can be said to be interactive media in an effort to improve toothbrushing behavior, this is supported by (Marludia et al., 2023) research shows that interactive media can improve toothbrushing skills.

The results of this research data analysis are in line with and supported by previous research by (Suryaningsih et al., 2017). which proved that education through snakes and ladders games can improve respondents' toothbrushing behavior which is characterized by increased knowledge, attitudes and actions of brushing respondents' teeth. Elementary school children's media can help understand, maintain, and prevent dental and oral diseases. The media was created in an exciting form so that the child was able to learn while playing (Putri et al., 2020).

## CONCLUSION

Snakes and ladders game media is effective in improving respondents' toothbrushing behavior before and after being educated through snakes and ladders games in a positive or better direction. This is evidenced by the variable value of knowledge, attitudes and actions using the *Wilcoxon* test is at a p-value of 0.000.

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