

## THE USAGE OF TOOTH PASTE IN DECREASING PLAQUE SCORE IN ELEMENTARY STUDENTS MASSAL TOOTH BRUSHING

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Elementary school students are the high risk community on caries. Their ages are the golden age on practicing their motoric skills in tooth brushing which is the primary prevention of caries. Toothpaste is paste or gel using for tooth brushing to clean food debris on teeth. This study wanted to know the effect of toothpaste in decreasing plaque score. This study was quasi experiment with cross sectional approach, pretest-posttest design with control group. The samples, taken from SD IT Salsabila 3 Banguntapan, Bantul, Yogyakarta on April 2014, were 30 samples with inclusion criteria : registered on class 3 and 4, no caries, willing to be respondents and cooperative, presented on the day of research. The measurement of plaque score was PHP-M (*Personal Higiene Performance-Modified*) technique. The data were analyzed with Wilcoxon test. The result showed that plaque score decreased from 2.63 to 1.00 after toothbrushing with toothpaste group and on the group of toothbrushing without tooth paste, it decreased from 2.60 to 1.20 (p value : 0.000). It concluded that there was significant effect on decreasing plaque score by using toothpaste on massal toothbrushing activity.

**Keyword** : tooth paste, tooth brushing, plaque score.

### INTRODUCTION

Dental health must be maintained since young ages due to the vulnerable condition of teeth. Process of the defect of teeth is started by formation of decay which is called caries. This caries happens due to the bacteria activity in plaque which is covered the teeth surface<sup>1</sup>. Toothbrushing is the effective mechanic method to cleaning tooth plaque<sup>2</sup>. Toothpaste used in toothbrushing has the effect of cleaning and smoothing the teeth surface and refreshing the mouth due to the aroma on it<sup>3</sup>. This process of toothbrushing must be followed with rinse the mouth.<sup>4</sup>

Preliminary research had been done on 20 students SD IT Salsabila 3 Banguntapan Bantul. It was found that 25% students didn't use tooth paste while brushing their teeth. According to this condition, we would like to know is there any effect of tooth paste in decreasing plaque score?

## METHOD

This study was quasi experiment with corss sectional approach which observed one occasion in the same period of time.<sup>5</sup> Research's design was pretest-posttest with control group. The samples were 30 students of class 3 & 4 in SDIT Salsabila 3 which taken randomized. On the first day, they brushed their teeth with tooth paste and on the second day they brushed without tooth paste. Dependent variable was plaque score and independent variable was toothbrushing with modification technique, using straight handle toothbrush with flat brushes in two minutes. Tooth paste contained of fluoride. The instruments used were diagnostic instruments, phantom, tooth brush, mask and handschoen, rinse glass, mirror and form of PHP-M scores. The material used were 70% alcohol, tooth paste, disclosing solution, cotton pellet and tissue paper. The data were analyzed statistically by Wilcoxon test.

## RESULT AND DISCUSSION

### 1. Respondents Criteria

Respondents frequency discribed as bellow:

Table1. Frequency Distribution of Respondents

Characteristic	Jumlah	Percentage (%)
<i>Based on Sex</i>		
Girls	20	66,7
Boys	10	33,3
Total	30	100
<i>Based on Age</i>		
9 years old	18	60
10 years old	12	40
Total	30	100

The biggest respondents were girls (66.7%). Most of the respondents were 9 years old (60%)

### 2. Plaque Score Criteria

Tabel 2. Frequency distribution of Plaque Score

Plaque Score Criteria	Before		After	
	N	%	N	%
<i>With tooth paste</i>				
Good (0-20)	0	0	30	100
Moderate (21-40)	11	36,7	0	0
Poor (41-60)	19	63,3	0	0
Total	30	100	30	100
<i>Without tooth paste</i>				
Good (0-20)	0	0	24	80
Moderate (21-40)	12	40	6	20
Poor (41-60)	18	60	0	0
Total	30	100	30	100

There were no students who had good plaque score. There were 63.3 % respondents who changed from poor and 36.7% from moderate to good criteria after brushing their teeth with tooth paste. All respondents (100%) became good criteria after brushing their teeth with tooth paste. The usage of tooth paste could clean the teeth surface and remove plaque and bacteria<sup>6</sup>. According to Panjaitan (1977), the usage of tooth paste could result foam, remove food debris on teeth surface, clean and give fresh effect<sup>7</sup>

There were only 60 % respondents who changed from poor to good after brushing their teeth without tooth paste. Not all respondents became good criteria after brushing their teeth without tooth paste. There were only 80% respondents who became good criteria.

### 3. Plaque Score Difference

Table 3. Plaque Score Difference On Brushing Teeth With And Without Tooth Paste

Variable	N	Mean (x)		Difference
		Before	After	
Brushing teeth with toothpaste	30	2,63	1,00	1,63
Brushing teeth without toothpaste	30	2,60	1,20	1,40

Table 3 showed that the plaque score difference using tooth paste 1.63 and 1.40 without tooth paste. Brushing teeth without toothpaste had the weakness which was it couldn't clean inter dental surface effectively and give fresh effect to the mouth.<sup>8</sup>

#### 4. Statistic Analysis

Table 4. The Result of Wilcoxon Test on Plaque Score Difference

Variable	N	Sig.	Z hitung
Brushing teeth with toothpaste	30	0,000	-4,964
Brushing teeth without toothpaste	30	0,000	-4,949

Statistical analysis with Wilcoxon showed that p value  $0.000 < 0.05$ . It meant that there was th significat effect between brushing teeth with and without toothpaste toward plaque score. The usage of tooth paste with fluoride.coutd decrease the acumulation of plaque and caries incidence<sup>9</sup>. Principally, plaque could be removed by brushing teeth without tooth paste if the technique of toothbrushing was good and correct.<sup>10</sup>

#### CONCLUSION

1. Plaque score criteria before brushing teeth with tooth paste was poor and it became good after.
2. Plaque score criteria before brushing teeth without tooth paste was poor and it became good and moderate after.
3. There was a signifficatn difference between brushing teeth with and without toothpaste toward plaque score ( $p=0,000<0,05$ , Wilcoxon test)

#### RECOMENDATION

1. It's better to brush teeth with toothpaste containde with fluoride for elementary school students because it helps remove food debris and plaque, smooth the teeth surface and give freshness impact
2. This study could be the refference for promotion activity in maintaining oral hygiene for society especially students.

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