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The Effect Of The Use Of The Toothbrush Calendar On The Brushing Behavior On Students Of SDIT Insan Mulia Merangin Jambi

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Abstract

Dental and oral health is still a problem in society that needs to be considered. Based on The Global Burden of Diseases Study 2016, dental and oral health problems are diseases experienced by almost half of the world's population of 3.58 billion people. This study aimed to determine the effect of using a toothbrush calendar on the behavior of brushing teeth and mouth of students of SDIT Insan Mulia Merangin Jambi. This type of research is analytical in nature with a quasi-experimental design (Quasi Experiment) as a result of certain treatments, one group pretest, and posttest designs, this design does not have a comparison or control group. The approach taken was done three times, namely before the experiment, after the 7th day of the experiment, and after the 14th day of the experiment. This research was conducted at SD IT Insan Mulia Jl. Patimura RT.38 RW.01 km.03, Pematang Kandis Village, Kec. Bangko, Kab. Merangin Prov. Jambi. The time of research was carried out in June 2022 for 16 days. The results of research on the effect of toothbrush calendar on tooth brushing behavior in SD IT Insan Mulia Merangin Jambi students can be concluded that: (1) Toothbrush calendar significantly affects knowledge; (2) Toothbrush calendar significantly influences attitude; (3) Toothbrush calendar significantly influences action; (4) Toothbrush calendar significantly affects plaque.

Keywords : Mouth, Plaque, Toothbrush

Abstrak

Kesehatan gigi dan mulut masih menjadi masalah di masyarakat yang perlu diperhatikan. Berdasarkan The Global Burden of Diseases Study 2016, masalah kesehatan gigi dan mulut merupakan penyakit yang dialami oleh hampir setengah dari populasi dunia yang berjumlah 3,58 miliar orang. Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan kalender sikat gigi terhadap perilaku menggosok gigi dan mulut siswa SDIT Insan Mulia Merangin Jambi. Jenis penelitian ini bersifat analitik dengan desain eksperimen semu (Quasi Experiment) sebagai hasil dari perlakuan tertentu, one group pretest, and posttest design, desain ini tidak memiliki kelompok pembanding atau kontrol. Pendekatan yang dilakukan dilakukan sebanyak tiga kali yaitu sebelum percobaan, setelah percobaan hari ke-7, dan setelah percobaan hari ke-14. Penelitian ini dilakukan di SD IT Insan Mulia Jl. Patimura RT.38 RW.01 km.03, Desa Pematang Kandis, Kec. Bangko, Kab. Merangin Prov. Jambi. Waktu penelitian dilakukan pada bulan Juni 2022 selama 16 hari. Hasil penelitian pengaruh kalender sikat gigi terhadap perilaku menggosok gigi pada siswa SD IT Insan Mulia Merangin Jambi dapat disimpulkan bahwa: (1) Kalender sikat gigi berpengaruh signifikan terhadap pengetahuan; (2) Kalender sikat gigi berpengaruh signifikan terhadap sikap; (3) Kalender sikat gigi berpengaruh signifikan terhadap tindakan; (4) Kalender sikat gigi berpengaruh signifikan terhadap plak.

***Keywords** : Mulut, Sikat gigi, Plak*

INTRODUCTION

Dental and oral health is still a problem in society that needs to be considered. Based on The Global Burden of Diseases Study 2016, dental and oral health problems are diseases experienced by almost half of the world's population of 3.58 billion people. The results of the Basic Health Research (Riskesdas) in 2018 stated that Indonesia's largest proportion of dental problems is damaged/cavities/sick teeth (45.3%). Riskedas results also stated that only 2.8% of Indonesians aged three years and over brush their teeth twice a day, morning and night (Theresia et al., 2021). The province with the best results for the habit of brushing twice a day is South Sulawesi, with 8.8% of the population having brushed their teeth twice a day, morning and night. While the province with the worst results is Jambi, only 1% of its population brushes their teeth twice a day, morning and night (N. D. A. M. Sari et al., 2022).

Caries or tooth holes are dental and oral health problems that need to be considered. One of the causes of caries is plaque, the cause of caries is dental plaque, which is attached to the surface of the tooth and contains bacteria and acidic products that can result in demineralization of the surface of tooth enamel (Mawarni et al., 2022). Caries in children has many causes, one of the habits that favor the occurrence of caries is the lazy habit of brushing your teeth. Children still often have difficulty brushing their teeth for it, it needs patience and parental attention in responding to this (Widyastuti et al., 2022). The need for dental health education in children as early as possible to have a good understanding of dental health and as an effort to motivate and approach so that children are willing to clean their teeth effectively (Laela et al., 2022). Brushing behavior is associated with plaque score. The factors most related to plaque scores are knowledge of brushing, brushing practices, and attitudes about brushing teeth (Fatmasari et al., 2022).

Based on networking data conducted by health workers at the Pematang Kandis Health Center in 2018 from 21 elementary schools with a total of 827 students who were examined, 637 students, or 73%, experienced caries. Networking data in 2019 obtained data on 676 students examined from 18 elementary schools, the number of students who experienced caries was 517 or 71% (Noor et al., 2021).

SD IT Insan Mulia is one of the elementary schools located in the working area of the Pematang Kandis Health Center located in Pematang Kandis Village, Bangko District, Merangin Regency, the results of the 2018 netting were 79% and in 2019 its was 77% suffering from caries, this data can be caused by several things, one of which is the behavior of brushing teeth that is not correct, and the right brushing time. Based on the initial data collection of the study on January 12, 2022, was obtained from 22 students interviewed, 90% brushed their teeth at bath time, and only 10% brushed their teeth at the right time, namely the morning after breakfast and the night before going to bed. The American Dental Association (ADA) states that brushing should be done regularly, at least 2 times a day i.e. in the morning after breakfast and before going to bed at night (Zikri et al., 2019).

Knowledge of how to brush teeth properly and correctly is very influential when the child enters the age of 10-12 years where at this age the child already has 24 permanent teeth consisting of 12 teeth on the upper jaw and 12 teeth on the lower jaw (Nopriyanto et al., 2020) By brushing your teeth properly and correctly, it is hoped that plaque can be removed to inhibit bacteria so that the potential for dental caries can be adequately prevented (N. N. R. P. Sari et al., 2019). This condition is caused because students have not been able to be independent in acting so they still need the guidance of others, the role of parents and teachers is needed in educating and fostering children to maintain their dental health (Maghfira & Yenita, 2022)

Dental health counseling activities in schools in UKGS (School Dental Health Business) activities and joint toothbrush activities by health workers are only carried out once a year.

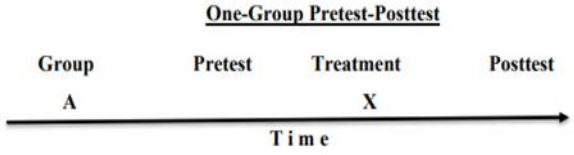
The UKGS stage carried out in Phase II or the UKGS Standard Package in the form of providing dental and oral health services for elementary and students has been reached by limited dental health workers and facilities, its activities (Wanti et al., 2021). Changes in behavior at home are expected to require the role of various parties such as teachers and parents to take part in eradicating dental caries so that the National Action Plan (RAN) for dental and oral health services toward a caries-free Indonesia 2030 which is a WHO recommendation is expected that at the age of 12 years old will no longer experience caries. The age of 12 years is the age at which in general permanent teeth have all grown (Pawarti & Abral, 2019).

Looking at the background of the existing problem, researchers are interested in changing students' brushing behavior, it is hoped that students can brush their teeth at the right time by giving a toothbrush calendar (Herlina et al., 2022). Calendar as a medium for students to brush their teeth regularly and become a habit, not a compulsion (Habibi et al., 2018).

METHOD

This type of research is analytical with a quasi-experimental design as a result of certain treatments, one group pretest, and posttest designs, this design has no comparison or control group.7 The approach taken was done three times, namely before the experiment, after the 7th day of the experiment, and after the 14th day of the experiment (Nurmalasari et al., 2021).

Students' brushing behavior is controlled for 14 days by being given counseling on how to brush their teeth properly and correctly and given a toothbrush calendar as a student guide before students independently act on toothbrushes,8 so that students are expected to brush their teeth at the right time, namely the morning after breakfast and the night before going to bed and the task of parents at home to observe the brushing activities (Adam et al., 2020). The form of this research in the form of a "pretest-posttest" design is described as follows:



Sumber. (Notoatmodjo, 2018)

Figure 1. Research Design

Information:

Group A = Sample

Pretest = Value before given toothbrush calendar

Treatment X = Intervention i.e. the administration of a toothbrush calendar.

Postest = Value after given toothbrush calendar.

In this design, there was no comparison group (control), but the first observation (pretest) and the second observation (posttest) were carried out, this posttest was carried out 2 times on the 7th day and the 14th day which allowed researchers to test the benefits that occurred after being given the intervention, namely by providing a toothbrush calendar.This research was conducted at SD IT Insan Mulia Jl. Patimura RT.38 RW.01 km.03, Pematang Kandis Village, Bangko District, Merangin Prov. Jambi. The research time was carried out in June 2022 for 16 days.The samples in this study were 30 students in grades IV and V taken using purposive sampling techniques, where sampling was based on a certain consideration made by themselves based on previously known characteristics and population traits.The questionnaire is used as a data collection tool, namely to obtain data for the study. The

examination status card is used to write down the data of the results of the dental health examination (Thioritz et al., 2022).

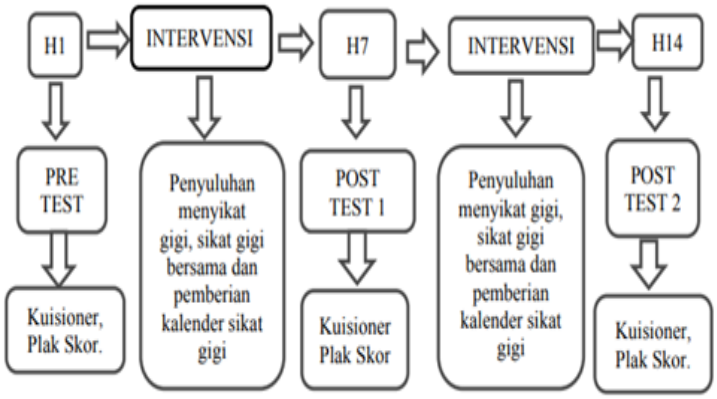


Figure 2. Flow of Research Implementation

Primary data were obtained through interviews using questionnaires and dental plaque checks for grade IV and V students of SDIT Insan Mulia. during the research and secondary data obtained from SDIT Insan Mulia, search for reference books and the internet. The research instrument in the form of a questionnaire sheet that will be used will first test the validity and reliability of students who have almost the same characteristics as respondents at SDIT Insan Mulia Merangin Jambi. The statistical test used in this study is if the data is normally distributed using Repeated Annova + Post hoc Bonferoni and if it is not normal then using Friedman + Post Hoc Wilcoxon. The limit of meaningfulness used in this study is the α value of 0.05. Statistical decision-making was carried out 51 by comparing the p-value (p-value) with the α value (0.05), provided that:

a. If p-value ≤ α value (0.05), then there is a relationship between the independent variable and the dependent variable;
b. If p-value > α value (0.05), there is no relationship between the independent and dependent variables.

RESULT

Research Data Analysis

Research on "The Effect of the Toothbrush Calendar on the brushing behavior of students of SD IT Insan Mulia Merangin Jambi" has been carried out from June 9, 2022, to June 24, 2022.

Validity Test

The questionnaire has been tested for validity and reliability in students of SD IT AlMunawarah, Merangin Regency, Jambi Province, who have almost the same characteristics. The validity test conducted in this study was to evaluate whether the question items used successfully measured what should have been measured (valid). conducted to determine the feasibility of the questionnaire questions of the research instrument in defining a variable. The instrument used in this validity test is SPSS version 26. This validity test is performed by calculating the Pearson Product Moment correlation coefficient (rcount) which means correlating each question item with the total score of each item. The r-table value was obtained based on the number of respondents (N), and its validity was determined by conducting a significant test of 5% or 0.05. In this study, 22 respondents filled out the

questionnaire. Based on the number of respondents, it is known that the r table refers to the formula (df = n22) 22-2: 20 Respondents, for this validity test, is 0.4427. Thus, every successful item has a calculated r value above that can be said to be valid. The following are the results of the validity test using the Pearson correlation coefficient on each indicator item:

1. Knowledge

The results of the validity test can be seen that in the Knowledge variable (P) there is 1 invalid item because it has a calculated r that is smaller than the table r, while the other 9 items are declared valid because it has a calculated r that is greater than the table r

2. Attitude

In the Attitude variable (S) there is 1 item that is invalid because it has a calculated r that is smaller than the table r, while the other 9 items are declared valid because it has a calculated r that is larger than the table r. on variables.

3. Act

Action (T) there are 2 invalid items because they have a count r that is smaller than the table r, while the other 8 items are declared valid because they have a calculated r that is larger than the table r.

Reliability Test

Reliability is the testing of instruments to determine reliability or be consistent, reliable, or stable. The reliability test in this study aims to find out whether the data obtained through the questionnaire can be trusted and able to reveal real information. The reliability test was carried out by looking at the Cronbach'ch Alpha value of each variable. A variable can be reliable if it gets a Cronbach'ch Alpha value of more than 0.60.11 The following are the reliability test results of each variable in the study. The results of the reliability test can be seen that each variable managed to get a Cronbach'ch Alpha value above 0.6 so it can be said that the questionnaire used in the study was reliable.

Univariate Analysis

This analysis is used to obtain an overview of all research variables' frequency and percentage distribution. An overview of the frequency distribution of each of the variables studied was obtained from the results of the univariate analysis as follows:

1. Knowledge Score before and after the intervention by giving a toothbrush calendar.

Table 1. Univariate Analysis Results of Knowledge Score

Variabel	Mean	SD	Min	Max
Pengetahuan				
Pre Test	6.8667	0.86037	5.00	8.00
Post Test 1	7.1000	0.66176	5.00	8.00
Post Test 2	8.3333	0.80230	6.00	9.00

Based on table 1, it is known that the knowledge score before giving the toothbrush calendar the lowest score of 5.00 is the highest, namely a score of 8.00, after the toothbrush calendar intervention for 7 days the lowest score is 5.00 and the highest score is 8.00 and after the toothbrush calendar intervention on day 14 the lowest score is 6.00 and the highest score is 9.00.

2. Score before and after the intervention in the form of giving a toothbrush calender.

Table 2. Results of Univariate Analysis of Attitude Scores.

Variabel	Mean	SD	Min	Max
Sikap				
Pre Test	29.4333	3.12590	21.00	36.00
Post Test 1	31.6667	3.76310	19.00	36.00
Post Test 2	33.6333	3.30604	26.00	36.00

Based on table 2, it is known that the attitude score before giving the toothbrush calendar the lowest score of 21.00 is the highest, namely a score of 36.00, after the toothbrush calendar intervention for 7 days, the lowest score is 19.00 and the highest score is 36.00, and after the toothbrush calendar intervention on day 14 the lowest score is 26.00 and the highest score is 36.00.

3. Follow up the score before and after the intervention in the form of giving a toothbrush calendar.

Table 3. Results of Univariate Analysis Score Act

Variabel	Mean	SD	Min	Max
Tindakkan				
Pre Test	28.3000	4.85763	20.00	37.00
Post Test 1	32.9333	5.57045	23.00	40.00
Post Test 2	33.7667	4.51575	24.00	40.00

Table 3 shows that the follow-up score before giving the toothbrush calendar the lowest score of 20.00 is the highest, namely a score of 37.00; after the toothbrush calendar intervention for 7 days, the lowest score is 23.00. The highest score is 40.00, and after the toothbrush calendar intervention on day 14, the lowest score is 24.00, and the highest score is 40.00.

4. Dental plaque scores before and after the intervention in the form of giving a toothbrush calendar

Table 4. Results of Univariate Analysis of Dental Plaque Scores

Variabel	Mean	SD	Min	Max
Tindakkan				
Pre Test	4.3967	0.50616	3.50	5.00
Post Test 1	2.7033	0.89152	0.80	4.60
Post Test 2	1.8333	0.65828	0.50	3.30

Based on table 4, it is known that the dental plaque score before giving the toothbrush calendar the lowest score of 3.50 is the highest, namely a score of 5.00; after the toothbrush calendar intervention for 7 days, the lowest score is 58 0.80, and the highest score is 4.60, and after the toothbrush calendar intervention on day 14 the lowest score is 0.50, and the highest score is 3.30.

Figure 3. Dental plaque measurement

5. Toothbrush calendar score

Table 5. Univariate Analysis Results Of Toothbrush Calendar Score

Variabel	Mean	DS	Min	Max
Kalender Sikat Gigi	22,6333	4,23030	14,00	28,00

Based on table 5. obtained a maximum score of 28 and a minimum score of 14 average score of 22.63.

Bivariate Analysis

1. Normality Test Results

Normality tests are carried out to determine normal or abnormally distributed data which are then used to determine statistical tests to answer from predetermined research hypotheses. If the data is normally distributed using a parametric test if it is not normally distributed, the test used is non-parametric. The normality test used is the Shapiro-Wilk test. Shapiro Wilk test results obtained a p-value of < 0.05 so the data is not distributed normally. Therefore, the Friedman+ Post Hoc Wilcoxon test was carried out. The statistical test used in this study is if the data is normally distributed using Repeated Annova + Post hoc Bonferroni and if it is not normal, then using Friedman + Post Hoc Wilcoxon.

2. Differences in knowledge scores, attitudes, actions, and dental plaque in students before and after the intervention was given in the form of a toothbrush calendar.

To find out the differences in knowledge scores, attitudes, actions, and dental plaque, pre-test, post-test 1, and post-test 2, the Friedman test is carried out, the Hole Holes Wilcoxon Test.

Friedman Test

Table 6. Friedman Test Bivariate Analysis Results.

Variabel		*p-value*	Interpretasi
Pengetahuan	Pre Test Post Test 1 Post Test 2	0.000	Ada perbedaan
Sikap	Pre Test Post Test 1 Post test 2	0.000	Ada perbedaan
Tindakkan	Pre Test Post Test 1 Post Test 2	0,000	Ada Perbedaan
Plak Gigi	Pre Test Post test 1 Post test 2	0,000	Ada Perbedaan

Table 6 shows a significant difference between the scores of knowledge, attitudes, actions, and dental plaque before and after being given intervention with the media in the form of a toothbrush calendar. The Friedman 60 statistical test results show a p-value = 0.000 p-value value < 0.05, so it can be concluded that Ha is accepted, which means that there are differences in knowledge scores, attitudes, actions, and dental plaque before and after the intervention.

Wilcoxon Test

Table 7. Wilcoxon Test Bivariate Analysis Results

	Variabel	*p-value*	Interpretasi
Pengetahuan	Pre test - Post test 1 Post test 1 - Post test 2	0,178 0.000	Tidak ada perbedaan Ada perbedaan
Sikap	Pre test – Post test 1 Post test1 - Post test 2	0.005 0.010	Ada perbedaan Tidak ada perbedaan
Tindakkan	Pre test – Post test 1 Post test 1 – Post test 2	0,000 0,089	Ada Perbedaan Tidak ada perbedaan
Plak Gigi	Pre Test – Post Test 1 Post test 1 – Post test 2	0,000 0,000	Ada Perbedaan Ada Perbedaan

Based on table 7. above the results of the Wilcoxon Test statistical test for pre-test knowledge – post-test 1 obtained p-value = 0.178 The p-value value of > 0.05 means that there is no difference, for post-test knowledge 1- post test 2 obtained p-value = 0.000 p-value value < 0.05 means there is a difference. Pre-test attitude – post-test 1 obtained p-value = 0.005 The p-value value ≤ 0.05 means that there is a difference, for post-test knowledge 1- post test 2 obtained p-value = 0.010 The p-value value >0.05 means that there is no difference. Act pre-test – post-test 1 obtained p-value value = 0.000 P-value value < 0.05 means there is a difference, for post-test 1- post test 2 obtained p-value = 0.0890 P-value value > 0.05 means no difference. Pre-test dental plaque - post test 1 obtained p-value = 0.000 P-value value < 0.05 means that there is a difference, for dental plaque post test 1- post test 2 obtained p-value = 0.000 P-value value < 0.05 means that there is a difference.

Multivariate Analysis

Multivariate analysis is carried out In this multivariate analysis, the MANOVA analysis method (Multivariate Analysis of Variance) is used, and the goal is to obtain the most dominant variable between independent variables against dependent variables. To find out whether or not the toothbrush calendar affects knowledge, attitudes, actions, and dental plaque scores, the steps taken are as follows:

Homogeneity Test

Table 8. Levene's Test Homogeneity Test Analysis Results

Variabel	F	df1	df2	Sig.
Pengetahuan	1,597	2	87	0,208
Sikap	,296	2	87	0,745
Tindakan	1,300	2	87	0,278
Plak_Gigi	3,921	2	87	0,023

Based on table 8, shows the results of the homogeneity test, namely the Levene test. obtained one sig value that < 0.05 so the post hoc test used was the Howell games.

Manova Test

Table 9. Multivariate Test Analysis Results

Multivariate Tests[a]				
Effect		**Value**	**F**	**Sig.**
Intercept	Pillai's Trace	0,995	4357.758[b]	0,000
	Wilks' Lambda	0,005	4357.758[b]	0,000
	Hotelling's Trace	207.512	4357.758[b]	0,000
	Roy's Largest Root	207.512	4357.758[b]	0,000
Kalender_Gigi	Pillai's Trace	0,907	17.629	0,000
	Wilks' Lambda	0,213	24,539[b]	0,000
	Hotelling's Trace	3.140	32.582	0,000
	Roy's Largest Root	2.950	62,686[c]	0,000

The results of the Multivariate Analyze of Variance (MANOVA) analysis with the help of spss 26.00 for windows where the hypothesis test in this study used the Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root test. From the results of the hypothesis test carried out, a significance level value of 0.000 was obtained, because this level of significance is smaller than 0.05, then Ha was accepted which stated that the toothbrush calendar is meaningful in influencing knowledge, attitudes, actions, and dental plaque.

Table 10. Multivariate Test Test of Between-Subject Effects Analysis Results.

Variabel		*p-value*	Interpretasi
Kalender Sikat gigi	Pengetahuan	0.000	Ada perbedaan
	Sikap	0.000	
	Tindakkan	0.000	
	Plak Gigi	0.000	

Based on table the sig value of all variables is obtained by 0.00 < 0.05, meaning that the toothbrush calendar affects the knowledge, attitude, action, and plaque of teeth.

Post Hoc Test

The Post Hoc test is used if Sig. >0.05 then the Post Hoc test uses the Benferroni Test, while if it is 0.05, one variable is Sig. < 0.05 so the Post Hoc test used is Games-Howell.

Table 11. Howel Games Multivariate Analysis Results

Dependent Variable	Kalender_Gigi	Independent Variable	p-Value
Pengetahuan	Pre	Post 1	**0,472**
		Post 2	0,000
	Post 1	Pre	**0,472**
		Post 2	0,000
	Post2	Pre	0,000
		Post 1	0,000
Sikap	Pre	Post 1	**0,040**
		Post 2	0,000
	Post 1	Pre	**0,040**
		Post 2	**0,089**
	Post 2	Pre	0,000
		Post 1	**0,089**
Tindakkan	Pre	Post 1	0,003
		Post 2	0,000
	Post 1	Pre	0,003
		Post 2	**0,801**
	Post 2	Pre	0,000
		Post 1	**0,801**
Plak Gigi	Pre	Post 1	0,000
		Post 2	0,000
	Post1	Pre	0,000
		Post 2	0,000
	Post 2	Pre	0,000
		Post 1	0,000

Based on table 11 there is dental calendar data, so if a sig value of > 0.05 is obtained, there is no effect, if < 0.05 there is an effect.

DISCUSSION

The influence of the use of the toothbrush calendar on the child's knowledge of brushing

The results of the MANOVA statistical test (Multivariate Analysis of Variance, showed that the toothbrush calendar had a significant influence on respondents' knowledge, namely with a p-value of 0.000 (p-value < 0.05). The Friedman Test statistical test shows that knowledge is obtained with sig values of 0.000 < 0.05, so that there are differences in the pre-test, post-test 1, and post-test 2 knowledge. Based on the results of the Wilcoxon Signed Ranks Test test for the pre-test knowledge score – post-test 1 knowledge obtained a sig value of 0.178 > 0.05 there is no difference in average, the knowledge score of post-test 1- post test 2 obtained a sig value of 0.000 < 0.05. So it can be concluded that there is an average difference.

Research conducted by Wiradona et al. (2016) from the Chi-Square test results with a p-value of 0.001 means that Ho was rejected, this result shows that there is a meaningful relationship between toothbrushing knowledge and dental plaque scores. The factor most associated with plaque scores was knowledge of brushing teeth with OR: 7.88 (CI 95%: 4.39 – 14.1) Respondents with good toothbrushing knowledge were 7.8 times more likely to plaque form than respondents with less knowledge.

This research is on the theory of Green LW and Kreuter MW 2000 that knowledge is a factor that makes it easier (predisposing factor) for behavior change to occur. So it is very necessary to increase students' knowledge about how to brush their teeth correctly to reduce the formation of dental plaque maximally (Erbe et al., 2018).

Knowledge results from a person's knowledge of a certain object through his senses. At the time of sensing produce knowledge is strongly influenced by the intensity of attention and perception of the object (Sharma et al., 2021). Most human knowledge is acquired through the ears and eyes.9 Knowledge is everything a person knows due to sensing the five senses and using reason to recognize objects or events further outlined in new behaviors.10 So it can be

concluded that the toothbrush calendar meaningfully influences knowledge with a P-Value of 0.000 which means that H0 is rejected or Ha is accepted.

The influence between the use of the toothbrush calendar and the child's attitude towards brushing activities.

The results of the MANOVA (Multivariate Analysis of Variance) statistical test The results showed that the toothbrush calendar had a significant influence on children's attitudes toward brushing teeth, namely with a p-value of 0.000 (p-value < 0.05). Friedman Test statistical test results obtained a sig value of 0.000 < 0.05 this means that there are differences in the attitude of pretest, postest 1, and posttest2 after the intervention. Wilcoxon Signed Ranks Test results for pre-test attitude score – post-test 1 attitude obtained sig value 0.005 < 0.05 there is an average difference, post-test attitude score 1- post test 2 obtained sig value 0.10 > 0.005. So it can be concluded that there is no average difference.

The results of a study conducted by Wiradona et al.,(2016) from the results of the Chi-Square test with a p-value of 0.001 mean that Ho was rejected, this shows that there is a meaningful relationship between attitudes about brushing teeth and plaque scores (p = 0.001). Respondents with an attitude about brushing their teeth were 2.6 times more likely to form plaque compared to a deficient attitude (Melo et al., 2021). A good attitude in brushing teeth does not automatically have an impact on dental plaque, because to continue in the expected behavior still requires the contribution of other factors and parties that are quite influential in a person's life, in terms of respondents, namely elementary school students, the parties who are quite influential are parents and teachers in schools (Melo et al., 2018).

The attitude about brushing teeth is related to the score of dental plaque. The attitude of students supports brushing their teeth after eating and the night before going to bed, brushing the teeth all surfaces of the teeth should be brushed, and buying a toothbrush whose bristles are soft (Riolina & Karyadi, 2022). Students also realized that brushing their teeth before bed can prevent cavities. Attitude is one of the components of predisposing factors that influence behavior.According to azwar in (Smutkeeree et al., 2020). Toothbrush calendar as a medium to shape students' attitudes in brushing their teeth. The toothbrush calendar meaningfully influences attitudes with a P-Value of 0.000 which means H0 is rejected or Ha is accepted.

The influence of the use of the toothbrush calendar on the child's brushing action.

Results from the MANOVA (Multivariate Analysis of Variance) statistical test. shows that the toothbrush calendar significantly influences students' actions in brushing their teeth, namely with a p-value of 0.000 (p-value < 0.05). Based on the Friedman Test, a sig value of 0.000 < 0.05 was obtained so that there were differences in the actions of the pre-test, post test1, and post-test 2. Test results. Wilcoxon Signed Ranks Test for pre-test action score – post-test 1 act obtained sig value 0.000 < 0.05 there is an average difference, post-test 1- post test 2 action score obtained sig value 0.089 > 0.05. So it can be concluded that there is no average difference. The results of the study conducted by (Wiradona et al., 2016) from the Chi-Square test showed a meaningful relationship between the practice of brushing teeth and plaque scores (p = 0.001). Respondents with good brushing practices were 4.5 times more likely to form plaque than less toothbrushing practices.

Dental hygiene can be done by brushing your teeth at least twice a day after every meal and before going to bed at night to inhibit the development of bacteria in the mouth. Some students said they brushed their teeth twice at the same time as taking a shower. Action is the realization of knowledge and attitude into a real deed. The practice of brushing teeth is strong-

ly influenced by the knowledge and attitude of students about the importance of brushing teeth to reduce the formation of dental plaque (Teste et al., 2021).

An action, according to Skinner in Notoatmodjo (2018) is a response (response) that is active and observable to a stimulus or stimulus. Attitudes have not been manifested in actions or practices because facilities or facilities and infrastructure are one of the factors for the realization of actions. The toothbrush calendar, toothpaste, toothbrush, and mouthwash water are the infrastructure that supports students to brush their teeth at the right time and way, the toothbrush calendar meaningfully affects the action with a P-Value of 0.000 which means H0 is rejected, or Ha is accepted.

The effect between the use of the toothbrush calendar on the plaque score of the tooth index.

The results of the MANOVA (Multivariate Analysis of Variance) statistical test, the results showed that the toothbrush calendar had a significant influence on student dental plaque, namely with a p-value of 0.000 (p-value < 0.05). Based on the Friedman test above, a sig value of 0.000 < 0.05 was obtained so there was a difference in the pre-test, post-test 1, and post-test2 ters dental plaque scores. By. Wilcoxon Signed Ranks Test for pre-test dental plaque score – post-test 1 dental plaque obtained sig value 0.00 < 0.05 there is an average difference, post-test dental plaque score 1- post test 2 obtained sig value 0.000 < 0.05. So it can be concluded that there is an average difference.

The toothbrush calendar meaningfully affects dental plaque with a P-Value of 0.000, which means H0 rejected or Ha accepted; based on research conducted by Pawarti and Abrar (2019) there is an influence of the toothbrush calendar on increasing the frequency of brushing and dental and oral hygiene (OHI. S) (Bashirian et al., 2021). The Paired T-test showed differences in the brushing behavior of students who were given a calendar with students who were given counselling without a toothbrush calendar with a p-value = 0.00 and an average brushing after treatment 1.8 times per day (good category) and an influence on dental and oral hygiene (OHI. S) with a value of p=0.00 and an average of OHI. S after treatment 0.78 after the use of the toothbrush calendar. This calendar will be used as a child's control in brushing their teeth for 21 days. there is an influence of Brushing Behavior on Dental Plaque (Deinzer et al., 2019). The application of the 5Days gosgi model effectively improves the formation of independence of early childhood brushing teeth in schools (Scheerman et al., 2018). And research conducted by Wiradona et al (in Horvath & Miller-Cushon, 2019) Brushing behavior is related to plaque score.

CONCLUSION

The results of research on the influence of the toothbrush calendar on brushing behavior on students of SD IT Insan Mulia Merangin Jambi can be concluded that:

1. Toothbrush calendar meaningfully influences knowledge
2. The toothbrush calendar meaningfully influences attitudes
3. Toothbrush calendar meaningfully influences the action
4. The toothbrush calendar meaningfully affects plaque.

REFERENCESS

Adam, R., Ram Goyal, C., Qaqish, J., & Grender, J. (2020). Evaluation of an oscillating-rotating toothbrush with micro-vibrations versus a sonic toothbrush for the reduction of plaque and gingivitis: results from a randomized controlled trial. *International Dental Journal*, *70*, S16–S21. https://doi.org/https://doi.org/10.1111/idj.12569

Bashirian, S., Seyedzadeh-Sabounchi, S., Shirahmadi, S., Karimi-Shahanjarini, A., Soltanian,

A. R., & Vahdatinia, F. (2021). Predictors of oral health promotion behaviors among elementary school children: Examination of an extended social cognitive theory. *International Journal of Paediatric Dentistry*, *31*(2), 191–203. https://doi.org/https://doi.org/10.1111/ipd.12659

Deinzer, R., Cordes, O., Weber, J., Hassebrauck, L., Weik, U., Krämer, N., Pieper, K., & Margraf-Stiksrud, J. (2019). Toothbrushing behavior in children–an observational study of toothbrushing performance in 12 year olds. *BMC Oral Health*, *19*(1), 1–9. https://doi.org/https://doi.org/10.1186/s12903-019-0755-z

Erbe, C., Klees, V., Ferrari-Peron, P., Ccahuana-Vasquez, R. A., Timm, H., Grender, J., Cunningham, P., Adam, R., Farrell, S., & Wehrbein, H. (2018). A comparative assessment of plaque removal and toothbrushing compliance between a manual and an interactive power toothbrush among adolescents: a single-center, single-blind randomized controlled trial. *BMC Oral Health*, *18*(1), 1–10. https://doi.org/https://doi.org/10.1186/s12903-018-0588-1

Fatmasari, D., Subekti, A., & Nugraheni, H. (2022). Pemberdayaan Pekerja Sosial "Sigi Bengi" sebagai Pendamping Masyarakat Menggosok Gigi Malam Hari. *Media Karya Kesehatan*, *5*(2). https://doi.org/https://doi.org/10.24198/mkk.v5i2.37609

Habibi, A. A., Gholami, M., & Shamshiri, A. R. (2018). Evaluation of tooth brushing behavior change by social marketing approach among primary students in Qom, Iran: A quasi-experimental controlled study. *PloS One*, *13*(10), e0206042. https://doi.org/https://doi.org/10.1371/journal.pone.0206042

Herlina, R., Cantika, P., Haryani, N., & Rezki, S. (2022). Perilaku Menyikat Gigi dan OHIS Anak Sekolah Dasar yang Tinggal di Daerah Terpencil. *Jurnal Vokasi Kesehatan*, *8*(1), 23–26. https://doi.org/https://doi.org/10.30602/jvk.v8i1.1004

Horvath, K. C., & Miller-Cushon, E. K. (2019). Characterizing grooming behavior patterns and the influence of brush access on the behavior of group-housed dairy calves. *Journal of Dairy Science*, *102*(4), 3421–3430. https://doi.org/https://doi.org/10.3168/jds.2018-15460

Klonowicz, D., Czerwinska, M., Sirvent, A., & Gatignol, J.-P. (2018). A new tooth brushing approach supported by an innovative hybrid toothbrush-compared reduction of dental plaque after a single use versus an oscillating-rotating powered toothbrush. *BMC Oral Health*, *18*(1), 1–9. https://doi.org/https://doi.org/10.1186/s12903-018-0647-7

Laela, D. S., Heriyanto, Y., & Mulyanti, S. (2022). Peningkatan Pengetahuan Dan Keterampilan Menyikat Gigi Dengan Menggunakan Media Poster Dan Kalender Interaktif Sehat Merawat Gigi. *Martabe: Jurnal Pengabdian Kepada Masyarakat*, *5*(10), 3683–3694. https://doi.org/http://dx.doi.org/10.31604/jpm.v5i10.3683-3694

Maghfira, J., & Yenita, Y. (2022). Penyuluhan Pentingnya Menjaga Kesehatan Gigi Dan Mulut Di Perguruan Al Jami'yatul Washliyah Kelurahan Sudirejo II. *Jurnal Implementa Husada*, *2*(4), 392–397. https://doi.org/http://dx.doi.org/10.30596%2Fjih.v2i4.11822

Mawarni, Q. S., Isnanto, I., & Larasati, R. (2022). Pengetahuan Orangtua Siswa Kelas 1 Dan 2 Sdn Tagangser Laok 2 Pamekasan Madura Dalam Menjaga Kesehatan Gigi Dan Mulut. *Jurnal Ilmiah Keperawatan Gigi*, *3*(2), 323–331. https://doi.org/https://doi.org/10.37160/jikg.v3i2.915

Melo, P., Fine, C., Malone, S., Frencken, J. E., & Horn, V. (2018). The effectiveness of the Brush Day and Night programme in improving children's toothbrushing knowledge and behaviour. *International Dental Journal*, *68*, 7–16. https://doi.org/https://doi.org/10.1111/idj.12410

Melo, P., Fine, C., Malone, S., & Taylor, S. (2021). Impact of the Brush Day & Night Programme on Well-Being, Plaque, and Dental Caries in Children. *International Dental*

Journal, *71*, S15–S30. https://doi.org/https://doi.org/10.1016/j.identj.2021.01.018

Noor, A. D. U., Hapsari, R., & Kusuma, I. A. (2021). Differences In Plaque Index And Number Of Bacterial Colonies Of Oral Cavity Before And After Being Educated With Model Study And Video. *Diponegoro Medical Journal (Jurnal Kedokteran Diponegoro)*, *10*(4). https://doi.org/https://doi.org/10.14710/dmj.v10i4.30116

Nopriyanto, D., Fatoni, M. I. D., & Aminuddin, M. (2020). Resiko Karies Gigi Pada Siswa Kelas 4 Dan 5 Sdn 016 Palaran Dilihat Dari Konsumsi Makanan Kariogenik Dan Kebiasaan Menyikat Gigi: Studi Deskriptif. *Jurnal Kesehatan Pasak Bumi Kalimantan*, *2*(1), 31–36. https://doi.org/http://dx.doi.org/10.30872/j.kes.pasmi.kal.v2i1.3470

Nurmalasari, A., Hidayati, S., & Prasetyowati, S. (2021). Pengaruh penyuluhan menggunakan media phantom gigi terhadap perilaku siswa tentang cara menggosok gigi. *Jurnal Ilmiah Keperawatan Gigi*, *2*(3), 416–424. https://doi.org/https://doi.org/10.37160/jikg.v2i3.763

Pawarti, P., & Abral, A. (2019). Penggunaan Kalender Sikat Gigi Dalam Meningkatkan Motivasi Siswa Terhadap Perilaku Menyikat Gigi. *Jurnal Vokasi Kesehatan*, *5*(2), 103–106.

Riolina, A., & Karyadi, E. (2022). Peningkatan Pengetahuan Kesehatan Gigi dan Mulut Siswa Mitra Melalui Program Pella. *Abdi Geomedisains*, 59–65. https://doi.org/https://doi.org/10.23917/abdigeomedisains.v3i1.435

Sari, N. D. A. M., Bernice, S. F., Anwaristi, A. Y., Cahyani, C., Sari, M. S., Hafizi, I., & Nugrahani, N. A. (2022). Penyuluhan di SDN 2 Krikilan sebagai Upaya Mewujudkan Kesehatan Gigi Anak di Masa Pandemi. *Poltekita: Jurnal Pengabdian Masyarakat*, *3*(4), 842–849. https://doi.org/https://doi.org/10.33860/pjpm.v3i4.1221

Sari, N. N. R. P., Purwanti, I. S., & Juanamasta, I. G. (2019). edukasi film terhadap perilaku menggosok gigi pada anak usia 6-8 tahun. *Promotif: Jurnal Kesehatan Masyarakat*, *9*(2), 152–158. https://doi.org/https://doi.org/10.56338/pjkm.v9i2.960

Scheerman, J. F. M., van Empelen, P., van Loveren, C., & van Meijel, B. (2018). A mobile app (WhiteTeeth) to promote good oral health behavior among Dutch adolescents with fixed orthodontic appliances: intervention mapping approach. *JMIR MHealth and UHealth*, *6*(8), e9626. https://doi.org/https://doi.org/10.2196/mhealth.9626

Sharma, H., Suprabha, B. S., & Rao, A. (2021). Teledentistry and its applications in paediatric dentistry: A literature review. *Pediatric Dental Journal*, *31*(3), 203–215. https://doi.org/https://doi.org/10.1016/j.pdj.2021.08.003

Smutkeeree, A., Khrautieo, T., Thamseupsilp, S., Srimaneekarn, N., Rirattanapong, P., & Wanpen, W. (2020). The effectiveness of visual pedagogy for toothbrushing in children with autism spectrum disorder. *Journal of International Society of Preventive & Community Dentistry*, *10*(4), 415. https://doi.org/https://doi.org/10.4103%2Fjispcd.JISPCD_248_20

Teste, M., Broutin, A., Marty, M., Valéra, M. C., Soares Cunha, F., & Noirrit-Esclassan, E. (2021). Toothbrushing in children with autism spectrum disorders: Qualitative analysis of parental difficulties and solutions in France. *European Archives of Paediatric Dentistry*, *22*(6), 1049–1056. https://doi.org/https://doi.org/10.1007/s40368-021-00640-3

Theresia, N., Rahmawaty, F., Sylvia, E. I., & Yusup, A. (2021). Kesehatan Gigi Sangat Penting untuk Anak Usia sekolah. *Jurnal Forum Kesehatan: Media Publikasi Kesehatan Ilmiah*, *11*(1), 31–37. https://doi.org/https://doi.org/10.52263/jfk.v11i1.225

Thioritz, E., Asridiana, A., & Safri, M. (2022). Motivasi dan Perilaku Siswa Sekolah Dasar Terhadap Frekuensi Menggosok Gigi. *Media Kesehatan Gigi: Politeknik Kesehatan Makassar*, *21*(2), 8–14. https://doi.org/https://doi.org/10.32382/mkg.v21i2.3040

Wanti, M., Mintjelungan, C. N., & Wowor, V. N. S. (2021). Pengaruh Motivasi Ekstrinsik terhadap Perilaku Menyikat Gigi pada Anak. *E-GiGi*, *9*(1).

https://doi.org/https://doi.org/10.35790/eg.9.1.2021.32365

Widyastuti, N., Hasfat, H., & Supriatna, A. (2022). Efektivitas Pillow Book dalam Promosi Kesehatan Gigi Anak Sekolah Dasar. *Media Kesehatan Gigi: Politeknik Kesehatan Makassar*, *21*(2), 26–31. https://doi.org/https://doi.org/10.32382/mkg.v21i2.3051

Zikri, Z., Yuliati, L. N., & Simanjuntak, M. (2019). Pengaruh agen sosialisasi dan iklan TV terhadap sikap dan perilaku menyikat gigi pada siswa sekolah dasar. *Jurnal Ilmu Keluarga & Konsumen*, *12*(2), 169–180. https://doi.org/https://doi.org/10.24156/jikk.2019.12.2.169