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Effectiveness of the use of types of music on behavior brushing and decreaseindex in plakeon state elementary school students 067952 Medan Johor

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ABSTRACT The prevalence of dental caries in Indonesia is still high, the prevalence of caries in the age group 10-14 years is 73.4% (Riskesdas 2018). Plaque that attaches to the teeth provides nutrients for bacteria to grow, causes bacterial colonization, and provides an acidic atmosphere that will come in contact with the tooth surface, causing the enamel to dissolve and cause caries. Efforts to overcome this include good and correct tooth brushing behavior, in this age group 96.5% of everyday brushing, but only 2.1% brush their teeth with the right time to brush their teeth, children often do so short and rush (less than 2 minutes). Music can motivate the listener, reduce boredom and can be used as instructions for learning. This study aims to determine the effectiveness of the use of this type of music on tooth brushing behavior and plaque index reduction in students at SD Negeri 067952 Medan Johor. Samples were taken by purposive sampling. The sample of this study was 99 people, divided into 3 groups, namely groups not given music, groups that were given MP3 music and groups that were given MP4 music. The research conducted was a method research survey and design Quasi Experiment. Bivariate analysis was performed to analyze the relationship that occurred in the whole group which was associated with motivation and the length of time to brush teeth with the test Chi-Square. Bivariate analysis was also carried out to see the significance between the dental hygiene index (plaque index) before and after in the three groups. The results of the study stated that music effectively influences the reduction in plaque index and tooth brushing behavior related to motivation and the length of time to brush teeth. Keywords: Music, Behavior, Brushing teeth, Plaque

INTRODUCTION Health is a healthy condition, physically, mentally, spiritually, and socially that allows everyone to live productively socially and economically (Law No. 36 of 2009). According to (Petersen, 2003; Peterson & Ogawa, 2005; Watt, 2005; Richmond et al., 2007, Pintauli, S et al, 2016), explains that a healthy body is inseparable from having a healthy oral cavity. Oral health is an integral part of general health. A healthy oral cavity allows one to communicate effectively, enjoy various

types of food, improve the quality of life, be confident and have a good social life. Conversely, an unhealthy oral cavity can affect a person's life, limited speech function, pain and disruption at work or school. The biggest problem currently faced in the field of dental and oral ISSN:2347-6567 International Journal of Allied Medical Sciences and Clinical Research (IJAMSCR) health is dental caries tissue (caries dentist). According to the World Health Organization (WHO, 2013), active caries sufferers increased in prevalence from 2007 to 2013, with the greatest increase at the age of 12 years (13.7%), and over 65 years (14.3%) [1-5]. Based on the 2018 Riskesdas data, in the age group of 10-14 years, the prevalence of caries was 73.4%, caries-free was 37.3%. Data on broken / cavity / sick teeth in North Sumatra is 43.1% [610]. According to Pintauli et al (2016), one of the components in caries formation is plaque. The incidence of caries can be reduced by mechanical removal of plaque. Brushing your teeth using a toothbrush is a form of mechanical plaque removal. The purpose of brushing teeth is to get rid of plaque or prevent plaque formation, clean up food debris, debris or stain, stimulate gingival tissue, coat the surface of teeth with fluorine. However, people's behavior to brush teeth properly is still lacking, this is evidenced from the data processed by the Indonesian Ministry of Health's Data and Information Center (PUSDATIN), showing that of the population aged 10 years and over who brush their teeth every day, only 2.3 % brushed teeth properly (after breakfast and before going to bed) in 2013 and 7.3% in 2007 [11-15]. According to the Ministry of Health's Basic Health Research (RISKESDAS, 2018), in the 1014 year age group, data for the province North Sumatra as much as 96.5% of people brush their teeth every day, but only 2.1% did it the right time [16-20]. The initial survey through a questionnaire administered to the population of students of SD Negeri 067952 Medan Johor, approximately 88% of children brush their teeth for one minute or less. Whereas the duration of good tooth brushing is 2-3 minutes (Permatasari, R 2014). This is caused by the lack of motivation for children to brush their teeth [21-25]. According to (John P Elder et al. 1994 in Notoatmodjo, S 2013), explained that motivation is one that is needed for healthy behavior. According to Santrock, J (2011), Motivation is a process that gives enthusiasm, direction and persistence in behavior. That is, motivated behavior is behavior that is full of energy, directed and enduring The rapid advancement of technology at this time is something that we cannot avoid because technological progress will go according to scientific progress. Every innovation was created to provide positive

benefits for human life and provide many conveniences and as a new way of doing human activities. Specifically in the field of technology, the public has enjoyed many benefits brought about by the innovations that have been produced in the last decade. One of the current technological developments is the Moving Picture Expert Group-1 Audio Layer III (Mp3). Mp3 continues to grow from era to era until now Mp3 is widely used as a music storage medium. Because of the need for music and to popularize music, players Mp3 have always experienced rapid development, so that today Mp3s can be played in various types of media, such as mobile phones, computers, iPods, laptops and various other types of media that provide facilities Mp3 Player. According to Daryanto (2016), the material that is programmed in audio should be able to motivate students to be interested in listening to the end. Hearing is capturing sound (sound) or audio with the sense of hearing (ears). Sound has two functions, namely technique as a sign and as a symbol. In everyday life the sound functions as a supporter of meaning so that what is captured by an individual is the meaning not the sound (Notoatmodjo, S 2010). One of the material in the audio program is music. According to Djohan (2016), music can motivate and encourage listeners to become better. Unwittingly, music often makes our feet sway, our hands knock, causing us to drift into a song we hear, bringing us in a daydream, remembering certain experiences, and arousing emotions. Listening to music can develop cognitive abilities, such as memory and concentration. According to Natalina (2013), Music shapes a person's attitude improves mood. The character of living things can be formed through music, a beautiful set of tones will evoke feelings of happiness / positive enthusiasm. Researchers from The Neuro, music provides a feeling of pleasure and reinforcement to motivate someone to proactively carry out certain activities. Therefore, researchers are interested in researching the Utilization of Moving Picture Expert Group 1 Audio Layer III (Mp3) as a medium to motivate the good and correct length of time to brush teeth on students of SD Negeri 067952 Medan Johor. METHODS Type of research used in this study is analytical research with a survey method and the design of the quasi Experiment, where this study aims to determine the Effectiveness of the Use of Music Types on Tooth Brushing Behavior and Decrease in Plaque Index for Elementary School Students 067952 Medan Johor in 2019. Population in research these are all students of SD Negeri 067 952 Medan Johor totaling 571 people. The sample needed for this study was obtained using a purposive sampling technique, size based on the formula

from Taro Yamane, a minimum sample size of 82 people was obtained, for the fulfillment of 3 groups of respondents, the researchers took 99 people as samples. RESULTS Univariate Analysis Table 4.1. Frequency Distribution of Dental Hygiene Index (Plaque Index) before the music group was not given music to students of SD Negeri 067952 Medan Johor Plaque Criteria Index f % Bad 9 27,3 Medium Good 14 10 42,4 30,3 Total 33 100 Based on the table above shows that the most percentage, namely those with medium index plaques, 14 people (42.4%). Table 4.2. Frequency Distribution of Dental Hygiene Index (Plaque Index) after music groups were not given music to students of SD Negeri 067952 Medan Johor Plaque Criteria Index f % bad Medium good 10 13 10 30,3 39,4 30,3 Total 33 100 Based on the table above shows that the most percentage, namely those with medium index plaques, 22 people (66.7%). Table 4. 3. Frequency Distribution of Dental Hygiene Index (Plaque Index) before being given MP3 music to elementary school students 067952 Medan Johor Plaque Criteria Index f % bad Medium good 6 22 5 18,2 66,7 15,2 Total 33 100 Based on the table above shows that the most percentage, namely those with medium index plaques, 22 people (66.7%). Table 4.4. Frequency Distribution of Dental Hygiene Index (Index Plaque) after being given MP3 music to elementary school students 067952 Medan Johor Plaque Index Criteria f % is good 7 26 21,2 78,8 Total 33 100 Based on the table above shows that the most percentage is those who have Plaque Index Good category 26 people (78.8%). Table 4.5. Frequency Distribution of Dental Hygiene Index (Index Plaque) before being given MP4 music to students of SD Negeri 067952 Medan Johor Plaque Index Criteria f % Moderate good 25 8 75,8 24,2 Total 33 100 Based on the table above shows that the most percentage, namely those with medium index plaques, 25 people (75.8%). Table 4.6 Frequency Distribution of Dental Hygiene Index (Index Plaque) after being given MP4 music to students of SD Negeri 067952 Medan Johor Plaque Index Criteria f % is good 7 26 21,2 78,8 Total 33 100 Based on the table above shows that the most percentage, namely those with the Plaque Index of Good category, 26 people (78.8%). Table 4.7 Frequency Distribution of Tooth Brushing Motivation in Elementary Students 067952 Medan Johor Motivation Criteria f % low high 28 71 28,3 71,7 Total 99 100 Based on the table above shows that the highest percentage of tooth brushing motivation is in the high category of 71 people (71.7%) Table 4.8. Frequency of Tooth Brushing Frequency Distribution for Elementary School Students 067952 Medan Johor Time Criteria f % Not exactly right 63 36 63,6

36,4 Total 99 100 Based on the table above shows that the percentage of toothbrush time with the most is in the inappropriate category of 63 people (63.6%). Bivariate Analysis Table 4.9. Effectiveness of the use of a type of music in groups not given music, given MP3 music and groups given MP4 music with Dental Hygiene Index (Plaque Index) for elementary school students 067952 Medan Johor Group Plaque Index Average π Rank Z Score p Before After Without music 1,03 1,00 4,0 -3,78 0,703 MP3 MP4 0,97 1,24 1,79 1,73 12,0 11,50 -4,508 -3,411 0,000 0,001 Based on the test results Wilcoxon, the Significance figures show the numbers 0,000 and 0.001. Because the value of p <0.05, it can be concluded that the Index Plaque before and after being given MP3 and MP4 music both have a significant relationship, meaning that both are effective in affecting the dental hygiene index (Plaque Index), but more effective is by using MP3. As for the group not given music, Wilcoxon test results obtained a p-value of 0.703. Because the p value> 0.05, it can be concluded that the index plaque before and after did not have a significant relationship, meaning that the group that was not given music was not effective in influencing the plaque index. Table 4.10. Relationship between the Use of Music and the Motivation of Brushing Teeth Children of Elementary School Students 067952 Medan Johor Variabel Motivational Low High df Low Group Not given music 22 11 1 0,000 Given MP3 music 2 31 Given MP4 music 4 29 The test results using the test Chi-Square with 95% CI obtained p= 0,000 (p <0.05) means that there is a significant relationship between the use of music with the motivation to brush children in primary school students 067952 Medan Johor. Table 4.11. Relationship between Music Type Usage and Time of Brushing Children in Elementary School Students 067952 Medan Johor Variable Length of brushing time df p Low High Group No music given 33 0 1 0,000 Given MP3 music 23 10 Given music MP4 7 26 The test results using test Chi-Square with 95% CI obtained p= 0,000 (p <0.05) mean that there is a significant relationship between the use of music with the length of time to brush children's teeth in elementary school students 067952 Medan Johor. DISCUSSION Based on the results of the univariate analysis shows that the percentage of Dental Hygiene Index (Plaque Index) before the group did not utilize music from 33 students, who had a bad category Plaque of 9 people (27.3%), 14 people (42.4%) and Good category 10 people (30.3%). after the intervention, there were 10 people (30.3%) bad plaque index index, 13 people (39.4%) and 10 people (30.3%) good category. The value does not change much, instead of one child

changes from moderate to poor criteria. The percentage of Dental Hygiene Index (Plaque Index) before the group utilizing MP3 music from 33 students, who had a bad category Plaque of 6 people (18.2%), 22 people (66.7%) and the Good category of 5 people (15, 2%). after the intervention, there were 7 people (21.2%) moderate category Plaque Index and 26 people (78.8%) Good category. Its value changes a lot, the percentage that is categorized as good increases, there are no more children with poor criteria. The percentage of the Dental Hygiene Index (Plaque Index) before the group utilizing MP4 music from 33 students, who had a medium category Plaque of 25 people (75.8%) and a Good category of 8 people (24.2%). after the intervention, there were 9 people (27.3%) in the moderate category Plaque Index and 24 people in the Good category (72.7%). Its value changes a lot, the percentage that is categorized as good increases. Music is experienced as a consonant / dissonant score, rhythm, a certain color of sound because by the human ear not only is heard but also assessed as a qualitative sound that contains a meaning, music also contains a meaning but not as clear as language and symbols (Prier, K Edmund, 2014) Some of the benefits of music include music increasing productivity, creativity, and imagination, music causes the body to produce beta-endorphins. When you hear your beautiful voice, the hormone "happiness" (beta-endorphins) will produce, music also shapes a person's attitude, improves mood. The character of living things can be formed through music, a beautiful set of tones will evoke feelings of happiness / positive enthusiasm. (Natalina, 2013) Following this study based on the results of analysis bivariate that Plaque Index before and after utilizing the use of MP3 (p; 0,000) and MP4 (p; 0,001) both have a significant relationship, meaning both of them effectively affect the hygiene index teeth (Plaque Index), but more effective is to use MP3. Based on the results of the univariate analysis showed the percentage of Brushing Teeth Motivation in 067952 Medan Johor Elementary School students, out of 99 students, those who had low motivation were 28 people (28.3%) and high categories were 71 people (71.7%). the percentage of tooth brushing time in 067952 Medan Johor Public Elementary School students, out of 99 students, who had the right time to brush their teeth 63 categories (63.6%) and 36 categories (36.4%). Based on the results of the bivariate analysis using the test Chi-Square with 95% IK, the value of p= 0,000 (p <0.05) means that there is a significant relationship between the use of music type with motivation to brush teeth and time to brush children in elementary school students 067952 Medan

Johor. From the results of the analysis that music can affect motivation and length of time to brush your child's teeth. This happens because music can give enthusiasm or motivation to these students. By Santrock's opinion, J (2011), Motivation is a process that gives enthusiasm, direction and persistence in behavior. That is, motivated behavior is behavior that is full of energy, directed and enduring. This is also in line with the results of researchers from The Neuro stated by Natalina, D (2013) [9] that music provides feelings of pleasure and reinforcement to motivate someone to proactively carry out certain activities. Give instructions on how to learn meaningfully for students to do tooth-brushing activities by the length of time to brush teeth that are 2-3 minutes. This is in line with the theory (Djohan, 2016) that in addition to motivating music also reduces boredom and can function as instructions for learning [5]. The tooth brushing song contains educational material for brushing teeth with solicitation sentences and the benefits of brushing teeth. Also, the length of time playing this song for 3, 21 minutes. So that the spinning time of the song is used as a guide to brush your child's teeth by a good time to brush teeth. Where according to Permatasari R, (2014), the good time to brush teeth is 2-3 minutes. CONCLUSION Based on the results of research and discussion has been done on this kind of music on the Effectiveness of Using Behavior Brushing and Decrease Plaque Index at 067 952 Elementary School Students can put forward some conclusions: a. Teeth Brushing Motivation in 067952 Medan Johor State Elementary School students, which have a low motivation category of 28 people (28.3%) and a high category of 71 people (71.7%). b. When brushing their teeth at 067952 Medan Johor State Elementary School students, which had an incorrect tooth brushing time category of 63 people (63.6%) and an appropriate category of 36 people (36.4%). c. Dental Hygiene Index (Plaque Index) before the group did not use music that had a bad category Plaque index of 9 people (27.3%), 14 people (42.4%) and the Good category 10 people (30.3%). after the intervention, there were 10 people (30.3%) bad plaque index, 13 people (39.4%) and 10 people (30.3%) good category. d. Percentage of Dental Hygiene Index (Plaque Index) before the group utilizing MP3 music, which had 6 people (18.2%) bad category Plaque, 22 people (66.7%) and 5 people (15.2%) Good category. After the intervention, there were 7 people (21.2%) moderate category Plaque Index and 26 people (78.8%) Good category. e. The percentage of the Dental Hygiene Index (Plaque Index) before the group using MP4 music, which had a medium category Plaque Index of 25

people (75.8%) and a Good category of 8 people (24.2%). after the intervention, there were 9 people (27.3%) in the moderate category Plaque Index and 24 people in the Good category (72.7%). f. MP3 and MP4 music are equally effective in affecting Dental Hygiene. But MP3 music is more effective than MP4 ... g. Musik effectively influences motivation and length of time to brush teeth with value p; 0,000.

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