

Comparison of the Effectiveness of Movie Media and Puppet Story toward Dental and Oral Hygiene in Elementary School Students in Semarang

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Abstract

Dental and oral disease will greatly affect the degree of health, the process of growth and development even the child's future. The success of maintaining dental and oral health is influenced by the method of brushing teeth, the frequency and time of proper brushing. The purpose of this study was to compare the effectiveness of movie media with puppet stories in elementary school students. This research design is quantitative with a quasi-experimental design consisting of a movie media intervention group, a puppet story intervention group and a control group. Each group sample was 56 students with a total population of 168 students. The sampling technique for the control group used purposive sampling while the intervention group used total sampling technique. Dental and oral hygiene education with puppet stories is more effective than movie media with a Mean Rank value of movie media 50.50, Mean Rank of puppet stories is 62.50 and a Significance value of 0.023 which means it is smaller than the level of significance $p < 0.05$. From this study it can be concluded that the average value of puppet stories is greater than the average value of movie media. So that this method can be a means of developing knowledge in the field of public health, especially about the promotion of dental and oral health in children.

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People in Indonesia tend not to consider dental and oral health, even though teeth and mouth are the initial gateways of the digestive system which indirectly affect one's general health level. Providing knowledge about the importance of maintaining oral health must be instilled from an early age (Ministry of Health, 2016). Generally the condition of children's oral hygiene is worse, children eat more food and drinks that cause caries than adults. Children generally like to consume foods that contain sugar, if children eat too much sugar and rarely clean it, many of their teeth have caries (Reca, 2018)

Caries is the most common dental disease in children. WHO (2000) shows that the average incidence of Decay Missing Filling Tooth (DMFT) caries in children aged 6 years is around 2.4. Indonesia caries index as one of the SEARO (South East Asia Regional Offices) countries is currently around 2.2, for the same age group of 60% -90%. This 6-12 year group is a critical indicator with a percentage of 76.97% (Revina et al, 2018).

Based on Riskesdas 2018, the percentage of population in Central Java Province who have dental and oral health problems is 25.9%. In the 10-14 age group 25.2% while the habit of brushing teeth properly by 2.3% in 2013 decreased to 2% in 2018. (Balitbangkes Ministry of Health Republic of Indonesia, 2018). According to the health profile of the city of Semarang in 2017 based on the results of dental health examinations for elementary / MI students in the city of Semarang shows the results of the UKGS (School Dental Health Efforts) of 219,450 elementary / MI students examined, SD / MI students who need dental health as many as 71,715 students , and those who received treatment were 51,901 students or 72.37%. (Semarang City Health Department, 2018)

Based on data obtained from the Semarang City Health Office as many as 57.6% over the past 12 months the population of Indonesia experienced dental and oral disease, but only 10.2% had received treatment by dental medical personnel.

INTRODUCTION

Based on age group, the largest proportion was in the 5-9 years age group (67.3%) with 14.6% having received treatment by medical personnel. While the lowest proportion at the age of 3-4 years (41.1%) with 4.3% had received treatment by medical personnel. Living conditions affect oral health. The urban population has a lower percentage of dental and oral problems (57.2%) compared to the rural population (58.2%) with the proportion receiving treatment from dental medical personnel a greater proportion of urban areas (12.9%) compared to rural areas (6, 9%) (Riskedas 2018).

The main cause of caries and periodontal disease is plaque. Plaque is very thin, only visible after staining, and plaque cannot be cleaned only by gargling, water spray or air, but plaque can be cleaned mechanically ie cleaning plaque by brushing teeth (Alse et al., 2015) Brushing teeth as incorrect one habit in the effort to maintain oral health should be done from an early age. Parents' participation is needed in guiding, understanding, reminding, and providing facilities so that children can maintain their oral health. The success of maintaining oral health is also influenced by factors such as the use of tools, the method of brushing teeth, the length of brushing and the frequency and time of proper brushing (Yogesh Kumar et al, 2015).

Poor oral and dental hygiene in children can be caused by, low knowledge about dental and oral health in children who are less educated on how to maintain oral and dental hygiene (Cooper et al., 2017). Sweet foods and drinks easily stick to and damage teeth such as chocolate if not brushed immediately / gargle will be left behind and cause tooth decay and also colored and sweet drinks like tea, coffee, soft drinks and tooth arrangement which cannot be adjusted according to predisposing factors of plaque retention want to complicate efforts to remove plaque which results in poor dental hygiene (Loveren, 2018). Dental health education in schools is the first step in overcoming serious dental problems. One of the efforts of health education is through educating efforts to increase

knowledge and assessment in an effort to improve dental health. Success in efforts to educate dental health in school children is inseparable from the educational methods and interests that support the media (Habbu and Krishnappa, 2015).

Media is everything that can convey and distribute messages from sources in a planned manner so as to create a conducive environment so that effective and efficient communication occurs (Arsyad, 2019). Good and effective media are media that pay attention to a variety of factors, one of which is the characteristic factors and tastes of educating targets, in this case are elementary school children. Educating about healthy and clean living is done using media that can be understood by children. Educating needs to use media that are attractive to children (Cooper et al., 2017)

In learning, in addition to learning methods also require media as a tool to facilitate the teaching and learning process in schools. According to Hamalik (in Arsyad, 2019: 15-16) argues that the use of instructional media in the teaching and learning process can arouse new desires and interests, generate motivation and stimulation of learning activities, even bring psychological influences on students. The use of instructional media at the learning orientation stage will greatly help the effectiveness of the teaching and learning process and the delivery of messages as well as the content of the lesson at that time. In addition to arousing student motivation and interest, learning media can also help students improve understanding. The purpose of this study was to compare the effectiveness of movie media with puppet stories on oral and dental hygiene in elementary school children aged 7-9 years in Semarang.

METHOD

The design of this study is quantitative using a quasi-experimental research design consisting of 2 intervention groups and 1 control group. Each group sample was 56 students with a total population of 168 students. The sampling technique for the control group uses purposive

sampling while the intervention group uses total sampling technique.

The independent variable in this study was the education of movie and puppet story media. While the dependent variable in this study is dental and oral hygiene. Data collection techniques for oral and dental hygiene use the OHI-S (Oral Hygiene Index Simplified) observation sheet. As for knowledge, attitudes and behavior using a questionnaire. In this study univariate, bivariate analyzes using the Wilcoxon test and comparative analysis using the Man Withney test.

RESULTS AND DISCUSSION

Table 1. Comparison Between Movie Media and Puppet Story

Media Intervention	N	Mean Rank	Sum of Ranks	Sig
Movie Media	56	50.50	2828.00	0.023
Puppet Story	56	62.50	3500.00	
Total	112			

Based on table 1, it is known that the effectiveness of the difference between movie media and puppet stories on oral and dental hygiene by using the Man Withney analysis test results shows that the Mean Rank value of the movie media is 50.50 and the Mean Rank of puppet stories is 62.50 with a significance value of 0.023 which means smaller than the significance level $p < 0.05$. So H1 is accepted, meaning that there is a difference in the effectiveness of storytelling with movie media and puppet stories on oral and dental hygiene in elementary school children in Semarang.

Movie Media Intervention Group

In the intervention group with this movie media, there were changes in the level of knowledge, attitudes, behavior and dental and oral hygiene after being given an intervention with movie media, but there was also a stagnation or no change in the level of knowledge of 26 respondents, the researchers argued that this could be influenced by inadequate methods, movie media portrays an inaccurate reality, the content of the same

monotonous and media movie story is played repeatedly so that the respondent feels bored.

The effectiveness of educating with movie media can also be influenced by the environment, noisy environment, slum and less clean, this can cause respondents to be less comfortable and less focused in attending educating. The environment in Kemijen 1 Elementary School is relatively slum in the coastal area so that it can influence the process of absorbing knowledge or information.

According to Notoatmojo (2012) in S.J. McNaughton and Larry L., Wolf (1983), Environment is everything that exists around individuals, both physical, biological, and social environments. The environment influences the process of entering one's knowledge. From the results of this study illustrate that changes in the level of knowledge, attitudes, behavior and oral and dental hygiene in the movie media respondent group can be influenced by several things, among others, the methods of extension delivered, the content or content of a monotonous story, the duration of the movie, the quality of the movie, the level education itself, social economy and environment. Researchers believe that a good oral hygiene can be influenced by the level of knowledge or information obtained by someone so that good patterns are formed and become a habit for elementary school children.

This is appropriate with a study entitled Effectiveness of Dental and Oral Health Educating with Video Media via WhatsApp in Improving Dental and Oral Health Degrees at Yos Sudarso Orphanage Jakarta, The results of the study showed that there were differences in the improvement of dental and oral hygiene between groups given the WhatsApp intervention and the group that was not given WhatsApp, where $p = 0.001 < 0.05$, the results of the study showed that educating with demonstrations accompanied by video brushing teeth proved to increase Oral Hygiene Index Simplified (OHIS) in foster children in Yos Sudarso, Cilandak, South Jakarta (Kristianto and Priharti, 2018)

Research with the title An Oral Health Education Video Games for High Caries Risk

Children shows that the use of video games for children to provide oral health education can be accepted or effective in increasing children's oral health knowledge and practice as verbal education delivered by trained health workers or health counselors (Aljafari et al, 2015).

Puppet Intervention Group

In the intervention group with puppet stories, the level of pretest-posttest knowledge in the experimental group with puppet stories shows that out of 56 respondents had a positive rank of 40 respondents, meaning that there was a change in the level of knowledge from before and after educating about dental and oral hygiene to respondents, while the number of ties which means the level of knowledge of respondents did not change as many as 16 respondents with a significant value $\rho = 0,000$ and Mean Rank 20.50.

In the intervention group with this puppet story, there was a change in the level of knowledge, attitudes, behavior and oral and dental hygiene after being given an intervention with the puppet story media. This is influenced by some novelty and modification of aspects of the story technique, duration and location at the time of storytelling. At the time the story was given using a small group of 3 groups and each group contained 12 students. The duration used in each group is only 6 minutes with a conducive environment or location, so that the delivery of information and the receipt of information is more focused, directed and more effective.

This is in line with research conducted by Asdiriana (2017) entitled The Effectiveness of Health Educating Using Hand Puppet Story Methods for Improving Tooth Brush Skills in Pre-School Children in Darmawanita Kindergarten, Wakusoponda Subdistrict, Sorowako City, the results showed that there was an increase in the knowledge of pre-brushing children's teeth. school after getting health education on brushing their teeth with the hand puppet method, through the story method using puppets the children are invited to communicate fantasize, fantasize, and develop their cognition, so that doll stories can be a fun

learning method. These results illustrate that changes in the level of knowledge, attitudes, behavior and oral and dental hygiene in the puppet story intervention group can be influenced by several things including levels of education, social economy and environment. Someone's socioeconomic level will influence a person to get appropriate and effective information, the socioeconomic level of children's parents at SD Kemijen 02 Semarang is still relatively low, the average livelihood of parents as fishermen so that children are quite difficult to get good information (Asridiana, 2017).

The advantages of using puppet stories as a learning medium are through fairy tales children can learn to see hear and mimic the storyline conveyed. Stories that are told through fairy tale dolls should be directly practiced by children so as to strengthen the behavior conveyed (Dita et al, 2018)

Early childhood is marked by a period of sensitivity to all the stimulus it receives through the five senses. Early childhood is at the stage of preoperational development (2-7 years) which has the characteristics of children begin to master symbolic functions and imitation behavior occurs, as a result children begin to can play to pretend (pretend play) and children like to imitate massively towards those around him (Razi, 2018). So it is easier for children to absorb and emulate. Other benefits of puppet stories include: Building closeness between educators and children, as a medium for delivering messages, helping the process of learning and as a means of entertainment and attention. The advantage of hand puppets is the efficiency of time, place and cost (Asridiana, 2017)

In addition to learning, methods also require media as a tool to facilitate teaching and learning in schools (Jorvand et al, 2016). According to Hamalik (in Arsyad, 2019) argues that the use of instructional media in the teaching and learning process can arouse new desires and interests, arouse motivation and stimulation of learning activities, even bring psychological influences on students. The use of instructional media at the learning orientation stage will greatly help the effectiveness

of the teaching and learning process and the delivery of messages as well as the content of the lesson at that time. In addition to arousing student motivation and interest, learning media can also help students improve understanding of students.

According to Notoatmojo 2012, one's economic status will also determine the availability of a facility that is needed so that economic status will affect one's level of knowledge. Low socioeconomic or income in general is closely related to various problems, namely education and health (Chi et al., 2014). From the results of observations and interviews from class teachers, information is obtained that the parents' livelihoods are mostly fishermen because the area is located near the sea or the beach, so that parenting, honing and compassion as well as the atmosphere in teaching and learning also greatly affect the ability of a child to catch information. This is supported by Gary S's research (2015), with the title Dental and Oral Hygiene Status of Fishermen in the Kelurahan Bahu District of Malalayang, Manado City, North Sulawesi. The results of the analysis state that educational factors affect the oral and dental health of someone who has low knowledge is likely to have knowledge which is less about oral health, it appears that education is very important in maintaining health (Nayoan, 2015).

This is also in line with research conducted by Luciwaty (2015) in Jakarta entitled Effectiveness of Dental Health Education Using the Lecture Method Accompanied by Brushing Teeth Training in Increasing Knowledge, Attitudes, Behavior and Oral Hygiene Status of Students Aged 7-8 Years. The results of the pre-test analysis of the level of knowledge, attitudes, behavior and oral and dental hygiene status in the two treatment groups showed no difference that is comparable ($p > 0.05$). After being given the intervention results of the pre-test to post-test 1, pre-test to post-test 2 showed a significant difference in the increase in knowledge, attitudes, behavior, and oral hygiene status between the two treatment groups namely treatment group 1 and treatment group 2 ($p < 0, 05$).

Dental health education usually contains knowledge about how to maintain oral health. In

principle, knowledge of how to maintain dental hygiene is to brush your teeth regularly. When brushing your teeth it must be remembered that the direction of brushing from the direction of the gums to the surface of the teeth so that the debris can be lifted all up, the time that can be used for brushing your teeth is after breakfast and at night before going to bed. Checking your teeth to the dentist every six months is a mandatory action to prevent cavities. One example is knowledge about tooth brushing (Prasai Dixit et al., 2013)

The results of this study indicate that of the two educating methods can increase knowledge to children who produce higher post test scores than pre test scores. However, from the results of these tests, it can be concluded that the average value of puppet story media is greater than the average value of movie media, which means educating about brushing teeth with puppet story media is more effective than educating using movie media. This is due to several factors including the level of knowledge or in this case parental education, socioeconomic level, occupation and the environment as well as the media used in educating. From the general data distribution of respondents it was found that the environment in SD Semarang Utara was quite alarming, but there were differences between the levels of parental education, socio-economics and occupation in each group.

The level of parental education as well as the socioeconomic level of respondents in the movie media intervention group were on average lower than the puppet story intervention group, the researchers argued that these factors could influence differences between the two groups, from the aspect of parental education level, as well as the level socioeconomic parents will have an impact on parenting, parenting and parenting patterns on children so that it can affect the growth and development of children.

Another thing that can affect the level of knowledge, attitudes, behavior and oral hygiene in children is the development of the brain and memory. The brain stores information by means of input received by sensors which are then passed on to the brain and stored in short-term memory, some

information will be passed on to long-term memory determined by attention to the input of information. Attention, motivation, and the association of information to pre-existing knowledge in the brain are the most influential factors in storing information in long-term memory. In the principle of making teaching aids and extension media states that the existing knowledge in each person is received or captured by the five senses. The more the five senses are used more and more clearly and also the understanding or knowledge gained. Puppet story media (visuals) and methods with movie media make children use more than one of the five senses, so that the knowledge provided in the educating method both demonstration and video can be well received (Razi, 2018).

This is in accordance with the research entitled Effectiveness of dental health education using lecture methods accompanied by teeth brushing exercises in improving knowledge, attitudes, behavior and oral hygiene status of students aged 7-8 years, The results of the pre-test analysis of the level of knowledge, attitudes, behavior and status of dental and oral hygiene in the two treatment groups showed no difference that is proportional ($p > 0.05$). After being given the intervention results of pre-test to post-test 1, pre-test to post-test 2 showed a significant difference in the increase in knowledge, attitudes, behavior, and oral hygiene status between the two treatment groups namely treatment group 1 and treatment group 2 ($p < 0, 05$) (Luciawati, 2015).

Media communication is an intermediary tool in the communication process or the process of delivering the contents of the statement (message) from the communicator to the communicant or the process of delivering feedback (feed-back) from the communicant to the communicator. Through communication media, there will be more deepening issues related to the use of communication media and their influence (Health Department Republic of Indonesia, 2002).

The results of this study can provide benefits to the community as a means of developing knowledge in the field of public health, especially about the promotion of dental and oral health in

children and to be additional information as an alternative intervention in educating about tooth brushing on dental and oral hygiene in children.

CONCLUSION

The results of this study indicate that of the two educating methods can increase knowledge about dental and oral health in elementary school children in Semarang. However, from the results of these tests, it can be concluded that the average value of the puppet story media is greater than the average value of the movie media, which means educating about brushing teeth with a puppet story is more effective than educating using movie media.

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