International Journal of Health, Economics, and Social Sciences (IJHESS)
Vol. XXXXX
DOI:
Website: https://jurnal.unismuhpalu.ac.id/index.php/IJHESS

The Effectiveness of Health Education Using Video Media on Tooth Brushing Skills of Preschool Children at Nur Handayani Kindergarten, Telaga Biru District

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Article Info

Article history:

Received XX, 2024
Revised XX, 2024
Accepted XX, 2025

Keywords:

Health Education, Video, Tooth Brushing Skills

ABSTRACT

Dental and oral health issues, particularly dental caries, remain a significant health problem in preschool-aged children. Poor independent and correct tooth-brushing skills increase the risk of tooth decay. One effective way to improve tooth-brushing skills is through health education using interactive video media. This study aimed to determine the effect of health education using video media on improving tooth-brushing skills in preschool-aged children at Nur Handayani Kindergarten, Telaga Biru District. The study design used a quantitative approach with a pre-experimental one-group pretest-posttest method. The subjects were 41 children aged 5-6 years. Health education was provided through interactive video media for 30-60 minutes. Data collection was conducted through observations before and after the intervention. Data analysis used the non-parametric Wilcoxon statistical test due to the non-normal distribution of the data. Before the intervention, the majority of respondents (78%) had poor tooth-brushing skills. After the provision of health education using video media, there was a significant increase, with the proportion of good categories reaching 46.3% and sufficient categories reaching 48.8%. The Wilcoxon test showed a p-value of 0.000 (<0.05), proving that the intervention had a statistically significant effect on improving tooth-brushing skills. Health education using video media effectively improved tooth-brushing skills in preschool-aged children. Interactive video media captured children's attention and facilitated their understanding of proper tooth-brushing techniques.

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INTRODUCTION

Brushing your teeth regularly and routinely is one of the efforts that can be made. effective for maintaining oral hygiene in pre-school children. However, There are still many pre-school age children based on the results of observations at Handayani Kindergarten Telaga Biru sub-district, Gorontalo district, has not been able to carry out activities brushing your teeth independently. This can lead to the risk of tooth decay in children. children aged 5-6 years in kindergarten is a problem that needs attention. For Therefore, efforts are needed to develop independence in brushing teeth in pre-aged children school. Apart from that, the use of interesting and interactive learning media proven effective in improving tooth brushing knowledge and skills in preschool children.

The role of parents and teachers is also very important in forming habits. good tooth brushing in pre-school children. Parents and teachers need it provide education, motivation, and assistance in the process of brushing teeth so that children can do it correctly. In addition, early detection efforts and Prevention of tooth decay also needs to be done from an early age, such as through dental and oral health education. This is important to prevent negative impacts dental caries in children, such as impaired activity, concentration, and body resistance. Maintaining dental and oral hygiene is one of the most important efforts important in improving overall health.

Maintaining dental and oral hygiene not only helps prevent the occurrence of various oral cavity diseases, but also contributes to health body in general (Adam et al., 2022). However, the case is different if the parents are less attention in teaching children to brush their teeth. This can be dental health problems in children that can have quite an impact dangerous if not treated immediately. When a child's teeth become decayed, perforated, or even broken, they not only experience discomfort significant but also face more serious functional problems.

Tooth decay can cause tooth enamel to become thin and susceptible to damage. further (Apro et al., 2020). In childhood, the role of teeth and mouth is the initial part of the body that... receive food, fluids, and is also one of the organs involved in the process digestion. A wet, dark, and moist mouth condition is very supportive growth and reproduction of bacteria. The acid formed by bacteria in enamel surface causes cavities, cavities will damage teeth nerves and blood vessels, causing a tooth abscess or even to the point of attacking certain organs that are attacked by germs from the teeth and mouth (Ministry of Health of the Republic of Indonesia, 2024).

Teaching children to brush their teeth regularly is an important step. in forming good oral health habits from an early age. These habits, if taught consistently and with a positive approach, it will help children understand the importance of maintaining dental and oral hygiene as part of from their daily routine. By getting into the habit of brushing their teeth twice a day, children learn about discipline and responsibility for their health

This habit not only impacts current oral health, but can also affect their health in the future (Makarim, 2020) A cavity or broken tooth can cause intense pain, which can hinder a child's ability to chew food properly.

As a result, children may experience loss of chewing ability, which has an impact directly on their ability to digest food effectively. This disturbance in the digestive process not only affects nutritional intake which is important for a child's growth and development, but can also affect his overall health (Putri Abadi & Suparno, 2019).

The WHO Global Oral Health Status Report 2022 estimates that oral diseases affect nearly 3.5 billion people worldwide, with three out of four people affected live in middle-income countries. Globally, an estimated 2 billion people suffer from permanent dental caries and 514 million children suffer from primary dental caries (WHO, 2023).

In Indonesia, Basic Health Research (Riskesdas) data also shows that the prevalence of dental caries in children aged 3-4 years is 81.1%, in children aged 5-9 years it is 92.6%, and in children aged 10-14 years it is 73.4%. Half of the 75 million children in Indonesia experience dental caries.

dental caries and the number is increasing from year to year (Riskesdas, 2018). Gorontalo Province has a prevalence of tooth decay of 51.7%, higher than the national average of 43.6%. Missing or extracted teeth reached 21.8%, and sensitive teeth reached 9.4%, placing Gorontalo in ninth place nationally for tooth decay, reflecting a significant risk to dental and oral health (Ministry of Health, 2023).

Various factors that influence children's dental and oral health varying degrees of influence. These include the dental health care system and mouth, cultural factors and the correct way of brushing teeth by mothers on children have quite a strong influence (Hermawan et al., 2019). Program that walking to overcome tooth decay in children in Indonesia, including Gorontalo, focuses on preventive and educational approaches. One of the main programs is Indonesia Free of Caries 2030, which aims to make children aged 12 years free from caries dental caries (IDGAI, 2018).

In general, preschool-aged children often experience difficulties in brushing their teeth properly. They tend to only make movements sideways on almost the entire tooth surface, which is not effective for clean your teeth thoroughly. This movement can cause the parts certain parts of the teeth, especially in the areas between the teeth and the back surface, not getting adequate cleaning (Yustianti & Yusiana, 2018).

The correct way to brush children's teeth greatly affects their health. their teeth. Proper brushing technique ensures that plaque and other debris are removed. food stuck to teeth and gums can be cleaned effectively, prevent the formation of caries and gum disease. Children are taught to brush your teeth with a circular motion and gently on all surfaces of the teeth, including the inside and gums, will be more successful in maintaining cleanliness mouth. In addition, using toothpaste containing fluoride helps strengthen tooth enamel and protect teeth from decay. If children do not taught how to brush their teeth properly, they are at risk of developing plaque buildup. plaque, which can lead to cavities, gingivitis, and other health problems other mouths (Santi & Khamimah, 2019).

To train children to brush their teeth, let them choose their own toothbrush from a variety of options to foster ownership and enthusiasm. Encourage them to brush together in front of a mirror. Additionally, establish a routine of brushing with your child and make this activity engaging with songs or games. Avoid over-brushing and praise their efforts to motivate them (Siloam, 2024).

One way to increase children's interest in brushing their teeth and avoiding tooth decay that occurs, namely by carrying out preventive efforts by promoting health from an early age (Mahirawatie et al.,2021). Health education for preschool children is very effective in maintaining their oral health. At preschool age, children are in the process of developmental stage where they easily absorb information and form new habits. By providing health education from an early age, children can learn the importance of maintaining dental and oral hygiene through activities that interesting and interactive (Anggina et al., 2020).

This health promotion is carried out by providing health education. what is meant is providing knowledge and providing skills good information about dental health problems such as tooth decay and how to treat them how to brush your teeth properly (Hasanuddin, 2018). However In fact, health education for preschool children is a challenge. significant for various reasons, one of which is the attention of children at this age tends to be short and easily distracted, so teaching methods must be interactive and interesting to maintain their interest (Sri Tatminingsih, 2016)

Health education using videos is one way the best delivery of education because it is able to attract attention and increase understanding the audience effectively. Visual media such as video can convey complex information in an easy-to-understand, interesting, and entertaining way (Siti et al., 2021) (Saleh et al., 2021).

Compared to other methods such as textbooks or lectures, videos provide a more engaging and interactive context, enabling children to learn in a more fun and meaningful way. A combination of Both media provide a comprehensive, enriching approach learning experiences in ways that cannot be achieved with just one type media (Nurfadhillah et al., 2021).

Based on a preliminary study conducted at Handayani Kindergarten, there were significant problems related to dental and oral health in children. Of the total 70 Of the students observed, 40 students experienced tooth decay. Interviews with teachers on October 13, 2024, revealed that the children often consume snacks and sweet drinks during working hours break. In addition, parents of students reported that their children had

Incorrect tooth brushing habits, namely only once a day with the correct technique carelessly. According to the Indonesian Ministry of Health (2024), the influence of tooth brushing habits children will have an impact on their dental and oral health, where bad habits can increases the risk of cavities which will result in the formation of abscesses. This issue shows the urgency to further research the effectiveness of education health using video media for children's tooth brushing skills preschool age.

RESEARCH METHODS

This research is quantitative, with a research design using pre-experimental research method designs one group pretest-posttest. Pre-design experimental with one pretest-posttest group involves administering a pretest by researchers to the group that will receive the treatment. Then, the treatment given by the researcher. After the treatment was completed, a post-test was given to the group the same. By comparing the results of the pretest and posttest, the effect of the treatment can be evaluated more accurately. This study aims to determine

Does health education using video media improve skills? brushing teeth of preschool children. The location of this research was carried out at Nur Handayani Telaga Biru Kindergarten. This research was conducted on February 15, 2025. The following are the results The sample in this study used purposive sampling, where in sample determination using certain criteria.

Data Analysis Techniques

Univariate Analysis

Univariate analysis uses descriptive statistical methods to describes the parameters of each variable. These parameters include other middle values (mean, median, mode), and dispersion values (variance, standard deviation, range) (Baba, 2017).

Normality Test

The normality test is one of the methods in statistics that is used to determine whether data is normally distributed or not. Normal distribution important in many statistical analyses, such as t-tests and regression, because many assumptions in statistics based on normally distributed data. Normality test on respondents using Kolmogorov-Smirnov , namely 0.000, which means it is distributed not normal. For this reason, the statistical test uses the nonparametric Wilcoxon

Bivariate Analysis

Bivariate analysis is carried out if the variables being analyzed consist of two types. namely dependent and independent. Usually used in pre-test research designs. Experimental, 2 groups. This analysis aims to test the research hypothesis proposed by the researcher (Baba, 2017). Bivariate analysis in this study was used to analyze the skills of preschool-aged children in brushing their teeth. Statistics in this study used a difference test of 2 means with a significance level of 0.05 or a confidence level of 95%. Guidelines in the hypothesis: If the p value > 0.05, it can be concluded that Ho is accepted, and if the p value < 0.05, it can be concluded that Ha accepted.

Statistical Hypothesis

The working hypothesis or temporary conclusion that action research has been carried out and the relationship between the variables that have been studied
from theories related to the problem. (Nuryadi et al., 2017):

Ha: is said to be significant if it has a p value <0.05, then Ha is accepted and H0 is rejected, which means there is an influence of health education using video media in improving the tooth brushing skills of preschool children.

H0: is said to be insignificant if it has a p value >0.05, then Ha is rejected and H0 is accepted, which means there is no influence of health education using video media in improving the tooth brushing skills of preschool children.

RESULTS

Respondent Characteristics

Variables	Frequency	Percentage
Age		
5 years	16	39%
6 Years	25	61%
Gender		
Man	21	51.2%
Woman	20	48.8%
Total	**41**	**100%**

Source: Primary Data 2025

Based on the table with the number of respondents 41 preschool children who is at Nurhandayani Kindergarten, Telaga Biru District, the age category of respondents who The most respondents were 6 years old, with 25 respondents (61%). Gender category the most were men with 21 respondents (51.2%).

Univariate Analysis of Tooth Brushing Skills Pre-Test

Table 2 Univariate Analysis of Tooth Brushing Skills Pre-Test

Tooth Brushing Skills	Frequency	Presentation
Enough		22%
Not enough	9 32	78%
Total	**41**	**100%**

Source: Primary Data 2025

Based on the research results from 41 respondents who were analyzed the univariate pre-test of tooth brushing skills in preschool children showed that 32 respondents (78%) were in the less category and 9 respondents (22%) were in the sufficient category.

Univariate Analysis of Tooth Brushing Skills Post-Test

Table 3 Univariate Analysis of Tooth Brushing Skills Post-Test

Tooth Brushing Skills	Frequency	Presentation
Good	19	46.3%
Enough	20	48.8%
Not enough	2	4.9%
Total	**41**	**100%**

Source: Primary Data 2025

Based on the research results from 41 respondents who were analyzed univariate post test of tooth brushing skills in preschool children, namely 20 respondents (48.8%) were in the sufficient category, and 20 respondents (48.8%) were in the good category 19 respondents (48.3%), and 2 respondents (4.9%) in the less than category.

Bivariate Analysis of Tooth Brushing Skills Pre-Post Test

Table 4 Cross Tabulation of Pre-Post Test

Skills Rubbing Tooth	Post Test						Total
	Good		Enough		Not enough		
	N	%	N	%	N	%	
Pre-Test							
Enough	5	12.2	4	9.8	14	34.1	9 22.0
Not enough	16	39.0	19	46.3	20	48.8	32 78.0
Total					**2**	**4.9**	**41 100**

The cross-tabulation results showed that 9 people's tooth-brushing skills in the pre-test had a score of sufficient, but in the post-test the results improved, with 5 people achieving good results and 4 people remaining at sufficient levels. Meanwhile, 32 people's tooth-brushing skills in the pre- test that had a score of less than 100% improved in the post-test to good (14 people), sufficient (16 people), and 2 people still had poor skills.

Before conducting the statistical test, the results of the normality test on 41 respondents using Kolmogorov-Smirnov were 0.000, which means that it is distributed not normal. For this reason, the statistical test uses the nonparametric Wilcoxon.

Table 5 Bivariate Analysis of Pre-Post Test of Tooth Brushing Skills

Tooth Brushing Skills					
Statistics	N		Median (min-max)	N	P-Value
Negative Rank	0	Pre-Intervention	50% (25-62%)	41	0,000
Positive Rank	41	post-intervention	75% (50-100%)	41	
Ties	0				

Source: Primary Data 2025

Based on the bivariate analysis of the Wilcoxon test, a positive rank result was obtained . as many as 41 respondents, which means there was an increase in value of 41 respondents, there is no negative rank, and there are no ties in pre and post. Besides the pre-intervention median (min-max) value is 50% (25-62%) and post-intervention median(min-max) is 75%(50-100%).

The results of non-parametric statistics showed that the tooth brushing skills with a p-value of 0.000 were <0.05, which means that the educational intervention

Health education using video media is effective in improving tooth brushing skills in preschool children at Handayani Kindergarten, Telaga Biru District.

DISCUSSION

Respondent Characteristics Based on Age and Gender

Age

Based on Table 1, the age of the respondents with the highest number of children was 6 years old, with 25 respondents (61%). At this age, children show significant progress in various aspects of development, including cognitive, social, and emotional development. At age 6, after the intervention, there was a significant increase in skills, from 8 adequate and 19 deficient to 18 good and 9 adequate. Meanwhile, for children aged 5 years, also experienced an increase where the skills of initially 3 people were sufficient and 13 people are less than 3 good people, 11 people are enough and only 2 are less people. According to his research, it was found that children aged 5 to 6 years begin to understand cause and effect relationships and are able to express ideas and reasons. They also show a high level of curiosity, which drives them to explore their surroundings and learn from experience. (Renteng, 2021).

In a social context, preschool children begin to develop the ability to communicate and interact with peers. Research shows that children who engage in role-playing activities can improve their social and emotional abilities. In addition, parenting patterns that implemented by parents also plays an important role in the social development of children. Democratic parenting can support social emotional development positive, while authoritarian parenting can inhibit it (Mayasari et al., 2021).

Children's emotions at this age also develop rapidly. They begin to learn recognize and manage their own emotions, as well as understand the emotions of others. Research shows that positive interactions with parents and the surrounding environment can improve children's emotional development (Hikmah et al., 2023). Therefore, it is important for parents and educators to provide adequate support so that children can develop optimally in receive and process information.

Overall, the characteristics of preschool children aged 5 and 6 years in receiving information is greatly influenced by various factors, including stimulation provided, parenting patterns, and social interactions. With an approach that appropriately, children at this age can develop cognitive, social, 11 abilities and emotional which will be an important foundation for their development in future.

Gender

Gender is grouped into 2 categories, namely female and male. Male- there were 21 male respondents (51.2%) and 20 female respondents (48.8%). Based on table 3, the most common gender is male, which is 21 respondents (51.25%). In this study, it showed that boys were more many experienced an increase in skills to become good as many as 12 respondents and 7 female respondents. This cannot be the main parameter between comparison of cognitive abilities of male and female students, due to possibly stemming from limitations of the research process so that attention and the focus of female students is still often diverted. Research shows that

Children at this age begin to enter the pre-operational stage of development, in where they begin to combine and transform information, and develop more complex thinking skills, although they are still egocentric (Setianingsih et al., 2022).

Researchers assume that based on the results of the observations obtained, the average on average, boys practice how to brush their teeth properly and correctly. compared to female child respondents. Boys better understand the importance of how to brush your teeth properly.

Univariate Analysis

Univariate Analysis of Tooth Brushing Skills Pre-Test

Based on the research results of 41 respondents who underwent univariate analysis pre-test of tooth brushing skills in preschool children, namely the category obtained 32 respondents (78%) were lacking and 9 respondents in the sufficient category (22%).

Lack of tooth brushing skills in most children, namely 32 children, can be seen from several technical errors they make when brushing your teeth. One of the main problems is how to apply the toothpaste properly. Inappropriate toothpaste, where many children use too much toothpaste or put it on their toothbrush carelessly, making it less effective at cleaning their teeth. Furthermore, children also do not brush their teeth with the correct technique correctly, such as brushing from the gums to the teeth. This technique is important for cleaning plaque and food debris at the gum line, but many children only brush the surface teeth randomly without paying attention to the area. Not only that, they also don't understand how to brush in a circular motion on the right and left sides of the teeth, which is very necessary for optimal cleaning between teeth.

Meanwhile, there are 9 preschool children who have sufficient skills because they are already able to do some things well, such as gargling properly after brushing your teeth and choosing a soft-bristled toothbrush according to your needs recommendation.

Tooth brushing skills in preschool children are an important aspect in maintaining their dental and oral health. Before the intervention was carried out education, many preschool children show deficient skills in brushing your teeth. This is caused by several factors, including a lack of knowledge about the importance of maintaining dental health, inability to implementing the correct techniques, as well as a lack of support from parents and the surrounding environment. One of the main problems faced by preschool children is their low level of knowledge regarding dental and oral health.

Research shows that many preschool children do not understand the importance of brushing their teeth regularly and correctly (Hawijayanti, 2022). Parental knowledge also plays an important role in shaping children's behavior. Parents who do not have sufficient knowledge about dental health tend not to be able to provide proper guidance to their children (Worang et al., 2014).

This contributes to children's low skills in brushing their teeth, because they don't get the right example or instructions from the adults around them. Additionally, preschoolers often lack the motivation to brush their teeth. Research shows that children at this age are more interested in brushing their teeth.

They are often drawn to fun games and activities, which can lead to neglecting their tooth-brushing routine. A lack of understanding of the consequences of not brushing, such as the risk of caries and other oral health problems, also influences their behavior (Lestari et al., 2023). Without a clear understanding, children tend to disregard the importance of this activity.

Appropriate educational interventions are essential to improve tooth-brushing skills in preschool children. Before intervention, it is important to understand 13 to conduct an initial assessment of children's knowledge and skills in brushing teeth. By understanding these initial conditions, educational programs can designed to meet the specific needs of children. For example, using Fun methods such as games or storytelling can improve children's interest in learning how to brush their teeth properly (Widiani et al., 2023). The importance of support from parents and teachers also cannot be ignored.

Research shows that parental involvement in the educational process Children's dental health greatly influences the success of intervention. Parents Actively providing examples and guidance will help children develop good habits in maintaining their dental health. In addition, teachers also have an important role in providing education and creating an environment that supports healthy behavior in schools (Purnama et al., 2019).

Preschoolers' fine motor skills also play a role in their ability them to brush their teeth properly. At this age, many children are still in the stage of motor skill development necessary to perform effective tooth brushing movements. Research shows that children often

Children are often unable to coordinate their hand and mouth movements properly, resulting in less effective brushing techniques (Sofian et al., 2023). This can lead to children not cleaning their teeth properly, which in turn increases the risk of dental health problems later in life.

Overall, the picture of preschoolers' tooth-brushing skills before educational interventions indicates many challenges that need to be addressed. Lack of knowledge, motivation, motor skills, and

Support from adults is a contributing factor to these poor skills. Therefore, planned interventions involving all stakeholders are crucial to improving preschoolers' tooth- brushing skills and preventing future dental health problems.

Univariate analysis of post-test tooth brushing skills

Based on the research results of 41 respondents who underwent univariate analysis post test of tooth brushing skills in preschool children, namely in the fair category were 20 respondents (48.8%), in the good category there were 19 respondents (48.3%), as well as the category of less than 2 respondents (4.9%).

Health education interventions using educational videos have been 14 showed significant changes in tooth brushing skills in children. From the evaluation results, there were 19 children who fell into the good category because they are able to brush the top and bottom of their teeth properly and cleaning the tongue, which is an important part of maintaining good oral hygiene. mouth as a whole. In addition, there were 20 respondents who were included in the category enough because they already understand some basic techniques such as how to apply toothpaste, brush from the gums to the teeth, and use a bristle motion rotate on the right and left side of the teeth.

However, there are still as many children in the disadvantaged category 2 children, who although experienced improvement from only knowing two skills into four skills, they have not fully mastered them important techniques such as applying toothpaste correctly, brushing from the gums to the teeth, using a circular technique, and understanding the frequency of brushing.

The recommended number of times a child brushes their teeth daily. This situation is likely influenced by several factors, such as the child's developing understanding, non- compliance with the techniques taught,

and easily distracted attention during instruction. Therefore, a more interactive and repetitive learning approach may be necessary to ensure all children master optimal brushing skills.

Research shows that preschool children often struggle with independent activities like tooth brushing, which can contribute to more serious dental health problems later in life. Therefore, effective health education interventions are essential improve these skills. One method that has proven effective is the use of video media in dental health education, which can attract children's attention and make it easier for them to understand the correct techniques in brushing teeth (Elsa et al., 2023)

One relevant study showed that after being given dental health education via video, preschool children showed an increase significant in their tooth brushing skills. In this study, children not only learn about the importance of maintaining dental health, but also taught practical steps in brushing teeth properly (Bongga Linggi & Madu, 2022). Video as an educational medium allows children to 15 see a live demonstration, which can help them understand and remember the techniques taught better. Other research also supports this. these findings, by showing that the use of video in education

Dental health can improve children's knowledge and skills in maintaining oral hygiene (Theresia et al., 2023). Health education interventions through videos not only increase children's physical skills in brushing teeth, but can also influence attitudes and their behavior towards overall dental health. Children who exposed to interesting and interactive educational materials tend to be more motivated to apply the knowledge they gain in everyday life.

For example, in a study conducted by Purnama et al., it was found that children who participated in a dental health education program involving videos experienced an increase in the frequency and adherence to their habits brushing teeth (Purnama et al., 2019). This shows that a fun and informative approach can change children's behavior towards good habits.

Furthermore, the use of video in dental health education can tailored to the needs and characteristics of preschool children. Well-designed videos, which include engaging visual elements and easy-to-understand narratives, can increase the appeal of educational materials to children.

Research by Kantohe et al. showed that video media was more effective than traditional methods such as flip charts in improving children's dental health knowledge (Kantohe et al., 2016). Therefore, developing video content that is age- and developmentally appropriate is crucial for achieving optimal results. Overall, changes in preschool children's skills in tooth brushing after a video-based health education intervention has shown great potential in improving children's dental health. With this approach, appropriate, including the use of engaging media and support from parents and teachers, children can learn how to maintain good dental health. This will not only reduce the risk of dental health problems in the future future, but also form healthy living habits that will be beneficial throughout their lives.

Bivariate Analysis of Tooth Brushing Skills Pre-Post Test

Based on the bivariate analysis before the statistical test was carried out, the test results were obtained. normality using Kolmogorov-Smirnov is 0.000 which means it is distributed not normal. For this reason, the statistical test uses the nonparametric Wilcoxon with the results obtained were positive results with a rank of 41 respondents, which means there were the value increased by 41 respondents, there were no negative ranks, and none ties at pre and post. In addition, the median (min-max) pre-intervention value was 50% (25- 62%) and post intervention median(min-max) was 75(50-100%).

The results of non-parametric statistics showed that tooth brushing skills with a p-value of 0.000 where <0.05 which means the educational intervention health using video media is effective in improving skills brushing teeth in preschool children at Handayani Kindergarten, Telaga Biru District.

The effectiveness of health education using video media in Improving children's tooth brushing skills shows positive results quite significant, although there are still some challenges that need to be considered. Overall, this intervention was successful in increasing understanding and children's skills in several important aspects, such as brushing the top of the mouth and under the teeth, cleaning the tongue, and understanding basic techniques such as apply toothpaste, brush from the gums to the teeth, and use a bristle motion rotating on the right and left side of the teeth. From the evaluation results, as many as 19 children entered 20 children were in the good category because they were able to apply toothbrushing skills more comprehensively, while the other 20 children were in the adequate category because they understood the basic techniques but had not yet fully mastered all aspects. In fact, children in the poor category also showed improvement, going from only knowing two skills to four, although they still experienced difficulties with some specific techniques.

During six days of observation, an assessment was conducted on the development of tooth brushing skills in 41 preschool children before and after a health education intervention using educational videos. On the first day (pre-test), most children (78%) were in the less category with an average brushing frequency of only 1.2 times a day and the technique was not yet correct. After given education through videos and live simulations (day 2), there was an increase early even though it was still experimental. On the 3rd and 4th days, the children practiced independent and receive direct guidance, so that the frequency of brushing increases by 17 to 2 times a day and technical skills are getting better. On the 5th day, enthusiasm children

improve through group simulations and interactive learning. On the day sixth (post test), the results showed significant changes: 48.8% of children entered good category, 48.3% sufficient, and only 2 children (4.9%) are still in the category less, with almost all aspects of tooth brushing technique improving substantially meaningful.

However, the effectiveness of this intervention cannot be separated from several causal factors. has the potential to disrupt the learning process. The child's level of understanding is still developing into one of the main obstacles. Children tend to have cognitive abilities vary, so not all children can absorb material at the same speed. Children's non-compliance in applying the technique what is taught can also be an inhibiting factor. Some children may understand material in theory but not consistent in applying it in daily practice day. The child's attention level is easily distracted when the material is given through Videos can also impact learning outcomes. While video media is engaging for children, if it's too long or the material isn't interactive enough, their attention can quickly lapse, making the information difficult to grasp fully absorbed.

The influence of health education using video educational media in improving tooth brushing skills in preschool children is important and relevant topics in the context of public health. Research shows that the use of video media as an educational tool can significantly improve children's knowledge and skills in various subjects aspects of health, including dental hygiene. Educational videos combine elements audio and visuals that can attract children's attention, so that they can more easily understand and remember the information conveyed (Maswal & Suryana, 2023).

One relevant study showed that educational videos can improving children's understanding of healthy behaviors, including tooth-brushing habits. Research by Maswal and Suryana emphasized that educational videos based on the guided inquiry learning model are highly effective in conveying information to young children, with a high level of validity from material and media experts (Maswal & Suryana, 2023). By utilizing two senses, hearing and sight, children can more easily 18 capture the information conveyed, which in turn can improve their skills in brushing their teeth properly.

Furthermore, research by Febriani shows that the animated video method more effective than other methods in improving children's abilities children to wash their hands properly, which is a basic health behavior which is also relevant for oral hygiene (Febriani, 2022). Animated videos not only presenting information in an interesting way, but also stimulating active participation of children, so that they are more involved in the process learning. This suggests that a similar approach can be applied to teaching tooth brushing skills to preschoolers.

In the context of health education, the use of educational videos has also been proven effective in improving health knowledge and behavior among teenagers. For example, research by Suwanti et al. showed an increase significant in the knowledge and behavior of adolescents after receiving education through video media (Suwanti et al., 2022). Although the focus of this study was not on preschool children, the results indicate that video media can be an effective tool to increase understanding of healthy behaviors across age groups.

Additionally, research by Razi et al., who developed an interactive video to improve handwashing behavior, also provides important insights into how video can be used to teach health skills (Razi et al., 2022). Adapting the same approach, an educational video about

Toothbrushing lessons can be designed to capture children's attention and provide clear, easy-to-understand instructions. This is important, given that preschoolers often have short attention spans and are more responsive to interactive, engaging media.

Overall, health education using educational videos has great potential to improve tooth-brushing skills in preschool-aged children. With the right approach, educational videos can be a powerful tool.

an effective tool for conveying important health information, increase knowledge, and encourage positive behavioral changes.

CONCLUSIONS

Characteristics of respondents: 41 preschool children at Nurhandayani Kindergarten Telaga Biru District, the age category with the largest number of respondents was 6 years old, with 19 respondents. 25 respondents (61%). The largest gender category was male with 21 respondents. (51.2%).

Tooth brushing skills in preschool children in the pre-test were obtained in the poor category there were 32 respondents (78%) and in the sufficient category there were 9 respondents (22%).

Tooth brushing skills in preschool children post test were obtained 20 respondents (48.8%) were in the sufficient category, 19 were in the good category respondents (48.3%), as well as less than 2 respondents (4.9%).

The results of non-parametric statistics showed that tooth brushing skills with a p-value of 0.000 where <0.05 which means the educational intervention health using video media is effective in disguising improving tooth brushing skills in preschool children Handayani, Telaga Biru District.

SUGGESTIONS

For Children. To maintain and develop this habit, children need to be more disciplined in brushing their teeth at least twice a day: in the morning after breakfast and at night before bed. Parents or caregivers are expected to actively participate in reminding and supervising the brushing process to ensure children use the correct technique.

For Schools: Teachers are expected to be role models in maintaining oral and dental health and actively teach students the importance of dental care through daily habits and creative and fun learning activities.

For Future Researchers: Future researchers are advised to conduct long-term monitoring to evaluate whether the changes in toothbrushing behavior that have been taught can be maintained by children over a longer period of time, so that the impact of the intervention can be assessed more comprehensively.

REFERENCES

Adam, Zavera, D'Arc, J., Ratuela, Ellen, & Jeineke. (2022). Level of Knowledge About Dental and Oral Hygiene of Elementary School Students. Indonesian Journal of Public Health and Community Medicine, 3(1), 6.

Agung, Anak Agung Putu, & Yuesti, A. (2017). QUANTITATIVE AND QUALITATIVE RESEARCH METHODOLOGY.

Anggina, DN, Tanzila, R., & Salim, NK (2020). Dental and Oral Health Improvement Counseling as an Effort to Prevent Cavities in Preschool Children at Chiqa Smart Kindergarten, Palembang. JOURNAL OF COMMUNITY SERVICE CREATIVITY (PKM), 15(2), 167–174.

Apro, V., Susi, S., & Sari, DP (2020). The Impact of Dental Caries on Children's Quality of Life. Andalas Dental Journal, 8(2), 89–97. https://doi.org/10.25077/adj.v8i2.204

Baba, MA (2017). Quantitative Research Data Analysis. Erlangga Publisher, Jakarta, June, 1–188. https://doi.org/10.13140/RG.2.2.31268.91529

Bongga Linggi, E., & Madu, YG (2022). Dental and Oral Health Education in Preschool Children During the Covid 19 Pandemic. Abdimas Polsaka, 1(1), 30–34. https://doi.org/10.35816/abdimaspolsaka.v1i1.12

Dewi Liana Kadek. (2019). The Effectiveness of Health Education Using Illustrated Video Media on Increasing Knowledge About Dental and Oral Health at Saraswati 1 Elementary School, Denpasar. Itekes Bali Repository.

Elsa, SA, Roslita, R., & Wisanti, E. (2023). Improving Knowledge of Correct Tooth Brushing in School-Age Children Through Dental and Oral Health Education Using Video Media. BIMIKI (Indonesian Nursing Student Scientific Periodical), 11(1), 46–55. https://doi.org/10.53345/bimiki.v11i1.392

Gunarto, BH, Hartawan, IM, & Maria, I. (2023). DEVELOPMENT OF EARLY CHILDHOOD EDUCATION MULTIPERSPECTIFY. In PT. Literasi Nusantara Abadi Group (First Edition).

Hariyanti, H., Nurlila, RU, & Kamalia, LO (2022). The Effect of Dental Health Education Using Dental Phantom Media on Tooth Brushing Behavior of Students at SDN 1 Wanci. Jurnal Healthy Mandala Waluya, 1(2), 61–69. https://doi.org/10.54883/jhmw.v1i2.8

Lestari, R., Novita Nirmalasari, & Ngatoiatu Rohmani. (2023). Dental Caries Education as an Effort to Prevent Dental Caries in Kindergarten Children. Jurnal Abdi Mercusuar, 3(2), 016–022. https://doi.org/10.36984/jam.v3i2.429

Mahirawatie, IC, Rahayu, RFP, & Suharnowo, H. (2021). Health Promotion Using Video Media About Dental Caries in Adolescents in the Jati Community Health Center Work Area (Study in Probolinggo City). Journal of Dental and Oral Health (JKGM), 3(1), 10–14. https://doi.org/10.36086/jkgm.v3i1.740

Makarim, FR (2020). The Importance of Teaching Children to Maintain Oral and Dental Health. Halodoc. https://www.halodoc.com/artikel/pentingnya-mengajarkan-anak- menjaga-kesehatan-mulut-dan-gigi

Mansur, AR (2019). Arif Rohman Mansur. (2019). Growth and development of preschool children.

Aprilaz-FKIK.pdf Hasanah, U. (2020). The Influence of Parental Divorce on Children's Education. In

Andalas University Press 1, 1). http://repository.uinjkt.ac.id(/Vdsopl.ace/bitstream/1234567Is8s9/u3e3035/1/Istiqomah Aprilaz-FKIK.pdf

Maswal, A., & Suryana, D. (2023). Development of Educational Videos Based on the Guided Inquiry Learning Model for Science Skills in Kindergarten. Jurnal Obsesi: Journal of Childhood Education 7(5), 5707– 5718. https://doi.org/10.31004/obsesi.v7i5.5255

Nuryadi, Astuti, TD, Utami, ES, & Budiantara, M. (2017). Basic Textbook Research Statistics.

Pagarra H & Syawaludin, et al. (2022). Learning Media. In UNM Publishing Agency.

Papotot, GS, Rompies, R., & Salendu, PM (2021). The Effect of Nutritional Deficiencies on the Development of the Child's Nervous System. Biomedical Journal: JBM, 13(3), 266. https://doi.org/10.35790/jbm.13.3.2021.31830

Purnama, T., Rasipin, R., & Santoso, B. (2019). The Effect of Tedi's Behavior Change Model Training for Teachers and Parents on Preschool Children's Toothbrushing

Putri Abadi, NYW, & Suparno, S. (2019). Parental Perspectives on Early Childhood Dental Health. Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini, 3(1), 161. https://doi.org/10.31004/obsesi.v3i1.161

Raisah, P., & Fatimah, S. (2017). The Effectiveness of Children's Toothbrushing Education Using Interactive Video Media to Improve Student Knowledge at MIN 25 Aceh Besar. Nusantara PGRI University Kediri, 01, 1–7.

Ratih, IADK, & Yudita, WH (2019). The Relationship between Knowledge Level on How to Maintain Dental and Oral Health and the Availability of Toothbrushing Equipment among Class IIb Inmates at Gianyar Detention Center in 2018. Dental Health Journal, 6(2), 23–26.

Razi, P., & Rosmawati. (2018). Comparison of the Effectiveness of Dental Health Education Using Play, Video, and Doll Methods in Improving Toothbrushing Skills in Early Childhood. Journal of Public Health Materials, 2(2), 101–106.

Razi, P., Veriza, E., & Linda. (2022). Journal of Health Vocational Studies. Journal of Health Vocational Studies, 2(2), 126–131. pontianak.ac.id/index.php/JVK/article/view/ 67/59http://ejournal.poltekkes-

Renteng, S. (2021). Developmental Stimulation in Preschool Children. Syntax Literate; Indonesian Scientific Journal, 6(3), 1442. https://doi.org/10.36418/syntax-literate.v6i3.2334

Riskesdas. (2018). National Report of Riskesdas 2018. In Health Research and Development Agency. Health Research and Development Agency. https://doi.org/978-602-373-118-3

Saleh, IA, Andi Asrina, & Idris, FP (2021). The Effect of Education Through Picture Storybooks on COVID-19 Prevention Behavior Among Elementary School Students in Maros Regency in 2020. Journal of Aafiyah Health Research (JAHR), 2(1), 84–90. https://doi.org/10.52103/jahr.v2i1.528

Salmiati, Nurbaity, & Sari, DM (2016). Teachers' Efforts in Guiding Early Childhood Cognitive Development. Jurnal Buah Hati, III, 43–52. https://ejournal.bbg.ac.id/buahhati/article/view/543

Santi, AUP, & Khamimah, S. (2019). The Effect of Tooth Brushing Methods on Dental Caries in Fourth Grade Children at SDN Satria Jaya 03 Bekasi. National Seminar on Education, 47–51.

Setianingsih, Endang Sawitri, & Apriani T. (2022). The Relationship Between Gadget Use and the Personal and Social Development of Preschool Children in Pogung Cawas Village. MOTORIK Journal of Health Sciences, 17(2), 85–94. https://doi.org/10.61902/motorik.v17i2.376

Siloam. (2024). Teaching Children to Brush Their Teeth Correctly. Siloam Hospitals. https://www.siloamhospitals.com/informasi-siloam/artikel/cara-mengajarkan-anak-sikat-gigi