The Influence of Animation Videos on Knowledge about Dental and Oral Health in School-Age Children Grades 4-5 at SDN Cipageran Mandiri 1

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Abstract

Introduction: *According to Adam 2022 in Tomohon City, the level of knowledge about oral health of elementary school children was categorized as poor with an average score of <20. One of the factors that affects oral health is knowledge. Lack of knowledge about oral health causes a person to not know the causes and prevention of dental and oral problems. Animated videos can be used to improve oral health knowledge. The purpose of the study was to determine the effect of animated videos on knowledge about oral health in school-aged children in grades 4-5 at SDN Cipageran Mandiri 1.* ***Methodology:*** *The research used quasi-experimental with non-equivalent control group design. The sampling technique used proportionate stratified random sampling, as many as 66 respondents for each group. Univariate analysis using mean and bivariate using dependent T test and independent T test.* ***Findings Research:*** *The results of the intervention group mean pre test 23.06 and post test 31.17. Control group mean pre test 21.76 and post test 25.58.* ***Result:*** *The results of the dependent T test of the intervention group with a value of p:0.0001 and control group with p value: 0.0001. The results of the independent t test, obtained a value of p : 0.000. The conclusion seen from the p value of 0.0001 < α (0.05) shows that there is an effect of animated videos on knowledge about oral health in school-age children in grades 4-5 at SDN Cipageran Mandiri 1.*

Keywords: *Teeth and Mouth, Knowledge, School Age, Animated Video*

1. Introduction

Health is the result of the interaction of various factors, internal factors (from within humans) and external factors (outside humans). Internal factors include physical and psychological, while external factors include social, cultural, physical environment, economics, education[1]. According to Law no. 36 of 2009 "Health is a healthy condition, both physically, mentally, spiritually and socially, which enables everyone to live a socially and economically productive life"[2]. Health is a very important aspect in human life, including children[3].

Children are unique individuals and have needs according to their stage of

growth and development, in their growth and development children have the right to receive high quality health care, and children have the right to receive health services3. Children go through a range of developmental changes from infancy to adolescence[4].

One of them is that school-aged children (6-12 years) are an important age group for children's physical growth and development, because children are more vulnerable to health problems. School-aged children are not only vulnerable to health problems, but are also very sensitive to stimuli, making it easier to introduce, teach and instill good habits, including maintaining healthy teeth and mouth[5].

According to Potter & Perry (2005) Elementary school age children have a high risk of tooth decay[6]. The oral health of school children is vulnerable because there is a transition from milk teeth to permanent teeth at school age[7]. Grade 4 and 5 students are between 10-12 years old. At this age, children enter the beginning of the permanent dentition phase, although the change from milk teeth to permanent teeth is still ongoing[8].

Permanent dental hygiene in elementary school-aged children must be considered because changing milk teeth to permanent teeth carries a high risk of developing caries. Dental and oral hygiene that is not maintained properly will cause various dental and oral diseases such as cavities, gingivitis, canker sores, bad breath[7]. Therefore, dental and oral health has an important role, it seems normal, but sick teeth make it difficult for children to eat, disrupt nutritional intake, interfere with daily learning activities, reduce academic achievement, eliminate joy, ultimately destroy life, and can affect a child's quality of life[9].

According to the World Health Organization (WHO), the global average prevalence of permanent dental caries is 29%, reaching more than 2 billion cases[10]. According to The Global Burden of Disease Study 2016, dental and oral health problems, especially tooth decay, affect almost half of the world's population (3.58 billion people)[11].

According to the results of the 2018 Basic Health Research (Riskesdas), the prevalence of caries in children is still very high, around 93%. Riskesdas states that the largest proportion of dental problems in Indonesia is damaged/caved/sick teeth at 45.3%, showing that the prevalence of damaged/caved/sick teeth in the 5-9 year age group is 54.0% and in the 10-14 year age group is 41. .4% and in the

10-14year age group who experienced canker sores was 8.3%[12].

The results of Basic Health Research (Riskesdas) in 2018 showed that dental and oral health problems had doubled from 2013, namely 25.9% to 57.6%, with only 10.2% receiving services from medical personnel. As many as 20 provinces have a prevalence of dental and oral problems higher than the national figure. The 10-14year age group with dental and mouth problems is 55.6% and those receiving treatment from medical personnel are 9.4%. 96.5% of the 10-14year old age group brush their teeth every day, but only 2.1% brush their teeth properly[12].

In the 2018 Basic Health Research (Riskesdas) results for West Java Province, 58% had dental and oral health problems which exceeded the national figure and only 11.9% received treatment by medical dental personnel[12]. Factors that influence children's dental and oral health are caused by various factors such as children's knowledge, attitudes and behavior to maintain healthy teeth and mouth[13]. One of them is the knowledge factor, knowledge is the result of human perception or knowing someone about an object through the five senses such as the eyes, nose and ears[14]. Insufficient knowledge about dental and oral health causes people not to know the causes and prevention of dental and oral problems. Knowledge determines someone to act[15].

According to research conducted by Adam.,*et.al.* in his journal with the title Level of Knowledge about Dental and Oral Health of Elementary School Students in Tomohon City said that the level of knowledge about dental and oral health of elementary school children is in the poor category[16].

Shows that the respondents are between 10-11 years old with an average age of 10.67. The lowest level of knowledge was 14 points and the highest was 25 points with a mean of 19.4. Based on this, it can be seen that the average level of knowledge of respondents is in the poor category (score < 20). Lack of knowledge about dental and oral health causes dental and oral hygiene to be often neglected. Knowledge about good dental and oral health can increase a person's motivation to care for their teeth and mouth so they can avoid dental and oral health problems[15].

The above theory is supported by Green's theory Notoatmodjo (2018) supports the above idea, which states that higher levels of knowledge lead to increased attention to dental health,

and conversely, lower levels of knowledge lead to decreased attention and dental care. Dental and oral health in children is also influenced by parents, parents generally have good knowledge and attitudes, but are not accompanied by behavior to maintain children's dental and oral health. Behavior that is aware of knowledge will be more lasting than behavior that is not aware of knowledge. Therefore, efforts need to be made to increase knowledge about dental and oral health[13].

Promotive and preventive efforts are carried out to overcome the problem of dental and oral health knowledge of school children and are effective for elementary school children[17,18]. School Health Efforts (UKS) are health efforts for school children that provide opportunities to learn and grow in harmony to achieve the highest level of health[19].

Promotive and preventive efforts that can be carried out for school children are based on research conducted by Fione., *et.al.* namely providing education using animation media on knowledge of dental and oral hygiene in the city of Manado, research results show that there is a significant influence, the level of children's knowledge before being given education is 64.7% poor, and only 35.3% is good and after watching the animation video the level of dental and oral hygiene knowledge is 100% good[20]. Based on research the influence of health education on knowledge about dental health in children in Kediri City found that knowledge before being given health education was 45.9%, after being given health education it increased to 94.6%. This shows that health education is really needed to increase knowledge[21].

Health education is a combination of learning experiences designed to influence, improve and change behavior that is beneficial to health in individuals, groups or communities, to learn about health, so that they are able to recognize health problems and the aim of health education is to change inappropriate health behavior. with health standards is good behavior or in accordance with health standards[22]. Health education can be carried out using the lecture method, and can be done through print media or electronic media. Health education about dental and oral health certainly requires outreach media[23]. The choice of media in providing education is very important, especially for children because it can support the success of the education

that has been provided. Good and effective educational media has a positive impact on children in the form of positive changes in their knowledge, attitudes and behavior[24]. One way to increase knowledge is through animated video media and leaflets which are suitable for students. Animated video is audiovisual media that displays images with movement effects or more realistic shape effects[25].

Playing animated videos has the benefit of increasing interest in learning, reducing boredom in class, making the teaching and learning process more fun and interesting, providing a more realistic picture, and improving memory because it can be accessed repeatedly by students[26]. A leaflet is a folded sheet containing a message, pictures or writing or both, and has the advantage of making it easier to understand because the explanation is shorter and increases enthusiasm for learning[22].

The use of animated videos can have an impact on knowledge of dental and oral health because this method makes children interested in paying more attention to dental and oral health. As stated by Jelita., *et.al with* the title The Effect of Counseling Using the Virtual Animation Video Screening Method on the Level of Toothbrushing Knowledge of Grade 5 Elementary School Children. The level of knowledge before counseling was low at 38% correct answers but after counseling the level of knowledge became good at 78% correct answers[27].

The research above is different from research conducted by researchers, namely, the number of research samples, researchers looked at knowledge about dental and oral health as a whole, animated videos were shown directly to school children, the method used by Jelita., *et.al* namely Quasy Experimental One Group Pretest Posttest while the one used by researchers is Quasy Experimental Non-equivalent Control Group, researchers took school children in grades 4 and 5, because school children in grades 4 and 5 aged between 10-12 years at that age can already grasp a understanding and being able to explain something realistically, students who have entered high class will have high concentration power, strong memory to understand the material given, be able to work together well, at this age children have the ability to concentrate attention, the ability to think more, logical, and respond quickly[8].

The role of the nurse in this case is as an educator, namely to educate, provide information and to increase individual knowledge about dental and oral health by providing health education, so that it can increase knowledge in certain individuals or groups[28]. The nurse's role as an educator focuses on knowledge of dental and oral health including understanding dental and oral health, parts of the oral cavity and types of teeth, causes of tooth decay, dental and oral health problems, and how to care for dental and oral health.

Based on data from the Cimahi City Health Service (Dinkes) in 2019, the number of dental cases was 50,447 cases, the Cipageran health center area was in third place with the highest number of dental cases in Cimahi City with 4,721 cases. The number of school students in North Cimahi District who have been examined by the Cipageran Community Health Center is around 1,366 out of 4,295 students. The results of this examination showed that 1,072 students needed treatment[29].

Based on initial survey data conducted on March 6 2023 from the Cipageran Community Health Center regarding dental and oral health in 2022, there were 10 SD/MI. The Puskesmas said that once a year it always conducts screening of all SD/MI in its coverage area, one of which is regarding dental and oral health, namely caries. Data obtained from the Cipageran Community Health Center had the highest number of caries at SDN Cipageran Mandiri 1 with 842 students out of 1,604 students. Based on a preliminary study on March 20 2023 using an interview method conducted with teachers, it was found that grades 4 and 5 still experienced dental and oral health problems. The teacher said that there had never been any counseling regarding dental and oral health, only brushing teeth together but only in class 1 and class 2 only twice a week. The teacher also stated that there was no program to improve dental and oral health and that the School Dental Health Business (UKGS) did not exist at the school.

Based on data obtained in a preliminary study on March 20 2023 at SDN Cipageran Mandiri 1 using interview techniques with students in grades 4-5 taken randomly, the results were obtained from 10 children, including 5 children in grade 4 and 5 children in grade 5, as many as 9 children did not know the correct time to brush their teeth, as many as 6 children do not know which foods cause toothache. A total of 9 children did not

know how to brush their teeth properly and correctly. The data obtained was that 8 children had cavities due to their liking for snacking on sweet foods such as candy, chocolate and sweet drinks. There were 3 children who liked to gargle after eating sweet foods and 7 other children did not rinse their mouths after eating sweet foods. A total of 9 children had experienced toothache and as many as 5 children said that the child's toothache was caused by eating sweets and cavities. A total of 3 children brushed their teeth 3 times a day in the morning, afternoon or afternoon and evening. A total of 5 children brushed their teeth twice a day, including 2 children in the morning and evening, 2 children in the morning and evening, and 1 child after breakfast and at night. A total of 2 children brushed their teeth once a day only in the morning. A total of 10 children said that they brushed their teeth of their own accord.

Based on the background above, researchers are interested in conducting research on the influence of animated videos on knowledge about dental and oral health in school-aged children in grades 4-5. Researchers chose SDN Cipageran Mandiri 1, because the initial survey showed that there were still many children who had cavities and lacked knowledge about dental and oral health. Apart from that, this elementary school has never received material regarding dental and oral health knowledge using animated videos.

2. Methods

2.1 Design Research

This type of quasi-experimental research with design *non-equivalent control group design.* The population in this study were all school age children in grades 4-5 at SDN Cipageran Mandiri 1 with a total of 249 grade 4 students and 222 grade 5 students, a total of 471 students.The sampling technique used proportionate stratified random sampling, with 66 respondents for each group.

2.2 Design Analysis

Univariate analysis uses the mean and bivariate uses the dependent T test and independent T test.

3. Result

3.1 Univariate Analysis

Table 1: Knowledge about dental and oral health in school age children in grades 4-5 before and after being given animated videos in the intervention group at SDN Cipageran Mandiri 1

Variable	Measurement	Mean	Elementary school	n
Knowledge	Before	23.06	3,441	66
	After	31.17	2,250	66

Table 2: Knowledge about dental and oral health in school age children in grades 4-5 before and after being given leaflets to the control group at SDN Cipageran Mandiri 1

Variable	Measurement	Mean	Elementary school	n
Knowledge	Before	21.76	4,023	66
	After	25.58	3,411	66

3.2 Bivariate Analysis

Table 3: Differences in knowledge about dental and oral health before and after being given the animated video in the intervention group at SDN Cipageran Mandiri 1

Variable	Measurement	Mean	Elementary school	n	*p-value*
Knowledge	Before	23.06	3,441	66	0.0001
	After	31.17	2,250	66	

Table 4: Differences in knowledge about dental and oral health before and after being given leaflets in the control group at SDN Cipageran Mandiri 1

Variable	Measurement	Mean	Elementary school	n	*p-value*
Knowledge	Before	21,76	4,023	66	0.0001
	After	25.58	3,411	66	

Table 5: Differences in knowledge about dental and oral health after being given health education in the intervention group and control group at SDN Cipageran Mandiri 1.

Variable	Group	Mean	elementary school	n	*P Value*
After Knowledge	Intervention	31.17	2,250	66	0.0001
	Control	25.58	3,411	66	

4. Discussion

Knowledge about dental and oral health in school age children in grades 4-5 before and after being given an animated video in the intervention group at SDN Cipageran Mandiri 1. The results of the research before being given the animated video, the average knowledge value was23.06 is in the sufficient category. After being given the animated video, the average knowledge value increased 31.17 is in the good category. This is in line with research conducted by[30]in his journal with the title the influence of video media on knowledge of hand washing with soap in grade 4 children in Bantul, shows that before being given health education knowledge was 36.364% in the sufficient category and after being given health education knowledge increased by 100% to the good category. Knowledge is the result of remembering something, including remembering events that have been experienced either intentionally or unintentionally and this occurs after people make contact or observe a particular object [28].

The connection with this research is the knowledge of school age children in

grades 4-5, before being given the animated video the children were asked to fill out a questionnaire. When filling out the questionnaire the children looked confused, the children also seemed not confident in their answers and tended to have sufficient knowledge about dental and oral health. This can be seen in the answers of the intervention group respondents to the questionnaire (pretest), where many still answered incorrectly, namely about what good toothpaste (toothpaste) contains; enough toothpaste (toothpaste) to brush teeth; good toothbrush bristles; function of incisors, canines and molars; brushing teeth on the molars and incisors with what movements; Every few months we have our teeth and mouth checked by a doctor; chewing food should be double-sided because it can prevent; food that is not cleaned builds up into plaque which can cause; canker sores are caused by a lack of what; and gums that are dark red and often bleed are a problem.

The low value of knowledge before being given an animated video to respondents can be caused by several factors, namely the level of education, experience, age and information obtained by the child. The results of observations obtained during research at SDN Cipageran Mandiri 1 did not contain posters regarding dental and oral health, school age children in grades 4-5 had never previously received health education regarding dental and oral health and the school did not have electronic health education media, so When researchers provided health education using animated videos, students were immediately enthusiastic about paying attention to the animated videos.

This is in line with Kustin (2020) that there are several factors that can influence a person's knowledge, namely internal factors such as level of education, employment, experience, age, information and external factors such as the environment and socio-culture. If ignorance is allowed, children will not know how to maintain healthy teeth and mouths and will not be able to take preventive measures to keep their teeth and mouths healthy. Therefore, health education about dental and oral health in children needs to be given so that children can maintain healthy teeth and mouth.

This is in line with what was said by Pakpahan et al., (2021) that health education is able to provide benefits to influence, increase knowledge about health, so that they are able to recognize health problems. According

to research conducted by Adriani (2020) Regarding the influence of video media on school age children's knowledge about dengue fever, there was an increase in the average knowledge score before being given video media by 13.53 and after being given video media by 14.43, there was an increase of 0.91, in this study the results obtained were for children aged schools have accurate knowledge about dengue fever. Increased knowledge can help children know the causes of dengue fever[31].

The material provided in this research is in the form of health education about dental and oral health using animated videos. Researchers want to see whether there is an increase in knowledge in school age children in grades 4-5, after being given health education using animated videos. The results of this study show that there is an increase in aspects parts of the oral cavity and types of teeth; dental and oral health problems; how to care for teeth and mouth.

This increase in knowledge was due to the fact that previously children had obtained information through animated videos. So that when asked questions(posttest),existing information is recalled, it can be seen that when children fill out the posttest questionnaire they can fill in quickly and confidently. After the animated video was given, it was seen that many respondents answered correctly on the questionnaire (posttest). Based on these results, it can be concluded that there was an increase in knowledge about dental and oral health before and after being given the animated video by[8,11].

Knowledge about dental and oral health in school age children in grades 4-5 before and after being given leaflets to the control group at SDN Cipageran Mandiri 1. The results of the research before being given the leaflet, the average value of knowledge was 21.76 is in the sufficient category. After being given the leaflet there was a slight increase, namely the average value of knowledge was 25.58 remains in the sufficient category.

This is in line with research conducted by Prawesthi et al (2021) in his journal entitled comparison of animated videos and leaflets as educational media in increasing knowledge of the importance of using dentures in Jakarta, he said that the leaflet group's average knowledge before being given the leaflet was 7.44 and after being given the leaflet 8.25. The researcher said that there was a

slight increase in knowledge before and after in the leaflet group.

Control group respondents before being given the leaflet, they tended to have sufficient knowledge, which was seen when children filled out a questionnaire (pretest) about dental and oral health. The children looked confused, not confident in their answers and there were several children who could not read and write in the control group so they could not follow the questions that were read. by the researcher, the child was assisted by a research assistant to read it again slowly. It can be seen from the answers of the control group respondents in the questionnaire that many of them answered incorrectly, namely about what good toothpaste (toothpaste) contains; enough toothpaste (toothpaste) to brush teeth; good toothbrush bristles; function of incisors, canines and molars; brushing teeth on the molars and incisors with what movements; Every few months we have our teeth and mouth checked by a doctor; chewing food should be double-sided because it can prevent; food that is not cleaned builds up into plaque which can cause; canker sores are caused by a lack of what; and gums that are dark red and often bleed are a problem.

This is because children have not received information about dental and oral health. According to Budiman & Agus (2013) Factors that can influence knowledge are information or mass media, education, environment, experience and age. However, in the posttest there was a slight increase in the average of 3.81 because the children had previously been given leaflets to read.

The results of this research show that there is an increase in knowledge in school age children in grades 4-5, after being given health education using leaflets, in aspects dental and oral health problems and how to care for teeth and mouth. This increase in knowledge was due to the fact that previously the child had received information through leaflets. It was seen that when the child filled out the posttest questionnaire the child was able to fill out the questionnaire but still looked a little confused because the child had forgotten what he had read.

Based on the results of research that has been carried out, it shows that in the control group who were given the leaflet, there were 2 respondents who experienced a decrease in knowledge scores and there were scores before and after being given the leaflet that were the same. According to research

conducted by Ayu & Widyani (2022) the decrease in knowledge scores after the intervention could be caused by respondents being in a hurry to fill out the questionnaire, and respondents not reading the leaflet first, just looking at it. Based on these results, it can be concluded that there was a slight increase in knowledge about dental and oral health before and after being given the leaflet by[3,82].

Differences in knowledge about dental and oral health before and after being given an animated video in the intervention group at SDN Cipageran Mandiri 1. The results of statistical tests show that knowledge about dental and oral health in school-aged children in grades 4-5 before and after being given the animated video obtained a value of *p = 0.0001*, meaning (*p value* <α*0.05*) there is a significant difference between respondents' knowledge before and after being given the animated video in the intervention group. This is in line with research conducted by Tiara et al (2019) entitled the effect of using videos on public knowledge about flood preparedness in Palembang showing a *p value = 0.000*, meaning there is an influence before and after being given health education via video.

According to Budiman & Agus (2013) Knowledge is something that is known related to the learning process. Knowledge is the result of human perception or a person's information about an object through the five senses such as the eyes, nose and ears, most knowledge is obtained through the senses of sight (eyes) and hearing (ears)[1]. To be able to carry out learning effectively and efficiently, good media is needed that is appropriate to the characteristics of student learning, this is very important because the level of knowledge and thinking of students is different[35].

In school-age children, cognitive development occurs according to Piaget. At this stage, children are at the stage of concrete behavior, thinking is logical and children can think rationally, so that school-age children can understand information well, assisted by educational media that attract students' interest in learning and which is suitable for school age children is through animated videos[24].

According to[26] playing animated videos has the benefit of increasing interest in learning, providing more realistic images, and improving memory. If using animated videos, it is included in the characteristics of visual and auditory learners, where visual learners are individuals who absorb information and learn from what the

eyes see and auditory learners are individuals who can gather information better through the sounds they hear[36].

The animated video in this research involves more than one sense, namely sight and hearing. Based on research conducted by Mutiarasari et al (2022) with the title the effect of animated videos on patient knowledge about the registration flow in Malang, it states that the *p value = 0.000* (*p value* <α*0.05*) means that there is an influence of animated videos on patient knowledge about the registration flow. This is in line with research conducted byHammond et al (2021) conducted with children aged 11-15 years through an online survey stated that animated videos were proven to have an effect on increasing knowledge and satisfaction with explanations given in animated form based on research conducted by Sihsinarmiyati (2019) entitled the effect of animated videos on children's knowledge and attitudes about obesity, there is a difference before and after education through animated videos, namely *p value = 0.0001* (*p value* <α*0.05*).

Based on these results, it can be concluded that there is an influence of animated videos on knowledge about dental and oral health in school-aged children in grades 4-5. The use of animated videos in providing health education is not only as a tool, but also as a carrier of information or messages to be conveyed which can increase children's interest in learning[38].

Animated video media is able to have an influence on increasing knowledge because this video media conveys messages not only in written language but can also display images with movement effects or animated videos so that this media can be used as an effective and fun media as a health education medium for children aged school (Sandya et al., 2019).

Videos animation has a disadvantage, namely that during the learning process using video, the image experiences fast movement, making students less focused on the information being conveyed[39]. Differences in knowledge about dental and oral health before and after being given leaflets in the control group at SDN Cipageran Mandiri 1. The results of statistical tests show that knowledge about dental and oral health in school-aged children in grades 4-5 before and after being given the leaflet obtained a value of *p = 0.0001*, meaning (*p value* <α*0.05*) there was a significant difference between respondents' knowledge before and after being given the leaflet in the control group. This is in

line with research conducted by Enindelasti (2021) entitled the influence of leaflet education on high school students' knowledge and attitudes about Covid 19 showing a *p value = 0.007* (*p value <α0.05*) means there is a significant influence between knowledge before and after being given the leaflet.

The more information someone gets will affect a person's level of knowledge. One way to get information and knowledge is through learning media[24]. According to Pakpahan et al (2021) Leaflets are folded sheets containing messages in the form of pictures and writing or a combination with the aim of giving leaflets, namely to convey health information and messages. Using leaflets is included in the characteristics of visual learners, where visual learners are individuals who absorb information and learn from what their eyes see, prefer to read rather than be read to and understand pictures and charts better than words[36].

This is in line with research conducted by Usman (2019) with the title the influence of leaflet media on mothers' knowledge about ISPA management in Jambi states that the *p value = 0.000* (*p value <α0.05*) means there is an influence of knowledge before and after being given the leaflet. This research shows that leaflet media can increase mothers' knowledge about ISPA. Based on these results, it can be concluded that there is an influence of leaflets on knowledge about dental and oral health in school-aged children in grades 4-5.

According to Pakpahan et al (2021) The advantages of using leaflets include that they can be carried everywhere, make it easier to understand because the explanation is shorter and increase enthusiasm for learning, but the weakness of this media is that it has no sound effects or motion effects so it can only be read and is easily folded.

According to research[41] argue that the weakness of the leaflet itself is that it cannot be used by people who cannot read. Differences in knowledge about dental and oral health after being given health education in the intervention group and control group at SDN Cipageran Mandiri 1.

The results of statistical tests on differences in knowledge after being given health education between the intervention group and the control group showed *p value = 0.000* (*p value <α0.05*) means there is a significant difference between the intervention group and the control group. Changes

in knowledge were greater in the intervention group who were given animated videos with a mean value of 31.17 compared to the control group who were given leaflets with a mean of 25.58, so that the intervention group was more effective in knowledge about dental and oral health than the control group. The results of this study show that the average knowledge of the intervention group is better than the control group. So based on these results it means "There is an influence of animated videos on knowledge about dental and oral health in school-aged children in grades 4-5 at SDN Cipageran Mandiri 1".

According to[35] This is because animated video media has the advantage that it can stimulate the effects of movement so that it looks more attractive and also in this animated video media there are sounds that can be seen and heard and easily stimulate students' understanding cognitively, affectively and psychomotorically. The increase in knowledge scores in this study occurred because material had previously been provided using animated videos, in the intervention group which used animated videos about dental and oral health. When the researcher gave the animated video, the students looked more enthusiastic.

The advantage of animated videos is that they can provide a more realistic picture with sound that is attractive because the attractive appearance motivates children in the learning process[38].

According to Notoatmodjo (2018) And Pakpahan et al (2020) The media used in the teaching and learning process are created with the principle that the knowledge that each person has is received or captured through the five senses. The more five senses are used, the clearer the knowledge obtained. According to researchEsa & Wahyu (2021)said that the health education material displayed, such as educational videos, is prepared as attractively as possible, with language or words that are easy for children to understand so that during intervention it is easier for children to understand both from the child's eyesight when reading the video and also when listening to the video. So that at the posttest there was an increase in knowledge after being given video media intervention of 9.65.Research conducted by Fadhillah Ardie & Sunarti (2019) in Samarinda showed that after being given health education treatment using video media, children's knowledge of balanced

nutrition in the intervention group increased significantly compared to the control group, $p = 0.028$ ($p < 0.05$). Animated videos are successful in increasing knowledge because they can be seen and heard by students.

This is reinforced by Edgar Dale's core of experience theory that a person's ability to capture learning through visual or visual processes is only 40%, while capturing learning through auditory or auditory processes is 20%. This means that someone will more easily capture learning through combining visual and auditory processes, video media can be learned through visual and auditory processes. The explanation above concludes that animated videos influence knowledge about dental and oral health in school-aged children in grades 4-5.

Therefore, researchers are of the opinion that animated videos are necessary and effective for conveying material and increasing knowledge, especially regarding dental and oral health because by using animated videos children will understand more easily. This is in line with research[44] believes that video media is suitable for school-aged children because it can develop children's imagination and learning activities in a fun atmosphere so that it can clarify the ideas or messages conveyed and stimulate children's interest in learning because it is displayed in the form of animation that is interesting and easy to understand. The material provided in the form of animated videos attracts children's attention because it is in the form of moving animation.

Health education with animated videos about dental and oral health is more effective for school-age children because it contains elements of moving images and sounds that children like and is supported by the suitability of the media to the characteristics of the recipient of the message in each school-age child[35].

So this has benefits in increasing knowledge about dental and oral health in the short term, namely so that children know the importance of maintaining healthy teeth and mouth and in the long term so that school age children can be maintained and avoid dental and oral health problems. Efforts are being made to increase the knowledge of school age children which is still low by motivating children to seek more information outside of the learning provided by the teacher and it is hoped that teachers will improve the teaching and learning process such as being able to provide learning materials using media and teachers needing to analyze

the characteristics and learning styles student.

According to[24] The choice of media in providing education is very important, especially for children because it can support the success of the education provided. This also requires the involvement of health services to be able to provide health education to school age children evenly and routinely, because the results of interviews conducted by researchers with the Community Health Center program already exist but are carried out only once a year for examination, not by providing education. health. The role of the nurse in this case is as an educator, namely to provide information and to increase knowledge about dental and oral health [28].

5. Conclusion

1. The average knowledge of school age children in grades 4-5 in the intervention group before being given the animated video was 23.06 and there was an increase in the average knowledge value after being given the animated video to 31.17.
2. The average knowledge of school age children in grades 4-5 in the control group before being given the leaflet was 21.76 and there was an increase in the average knowledge value after being given the leaflet to 25.58.
3. There is a significant difference in the average knowledge about dental and oral health in school age children in grades 4-5 before being given the animated video and after being given the animated video with a *p value = 0.0001*.
4. There is a significant difference in the average knowledge about dental and oral health in school age children in grades 4-5 before being given the leaflet and after being given the leaflet with a *p value = 0.0001.*
5. There is a significant difference in the average knowledge about dental and oral health between the intervention group and the control group, where the average knowledge score in the intervention group is higher (31.71) than the control group (25.60) with a *p value = 0.0001.*

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