



Animation cartoon media as an increase in dental health knowledge in elementary school children

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ABSTRACT

Background: Dental and oral health education is a primary prevention measure before the occurrence of disease. One of the interesting media that combines sound and moving images in conveying information is animated cartoon media. **Purpose:** the research aims to analyze the effectiveness of Cartoon Animation Media on dental health knowledge in elementary school children. **Methods:** The type of research used in this study was a quasy experiment with a pretest and posttest design with one group design. This research was conducted at SDN Sawangan 07 Depok class IVA. The sampling technique used total sampling, which amounted to 32 students. The instruments used were dental health knowledge questionnaires and cartoon animation media. Data analysis was tested using paired sample t test. **Results:** The results of this study show that the mean of dental health knowledge before being educated using animated cartoon media is 8.9 and after being educated using animated cartoon media is 11.0, with the results of paired sample t-test $p < 0.001$. **Conclusion:** cartoon animation media as an increase in dental health knowledge in elementary school children.

INTRODUCTION

Body health including dental and oral health is important for every individual. Likewise with dental and oral health because teeth and gums that are damaged and not cared for will cause pain, mastication disorders, aesthetic disturbances and overall health. If dental and oral health is disturbed, it can cause various diseases in the oral cavity (Fadjeri et al., 2021). The oral cavity is a vulnerable place and often experiences inflammatory infections in the body because it is the entry point for microorganisms (Tandilangi et al., 2016).

According to the 2018 Riskesdas data it states that the largest proportion of dental health problems are damaged/cavities/sick teeth (45.3%). Meanwhile, the majority of oral health problems experienced by the Indonesian population are swollen gums or abscess discharge by 14%. The prevalence of dental health problems in West Java is 45.7%. The age group of 5-12 years (39.9%) . Childhood, especially elementary school age, is the time most vulnerable to the possibility of dental caries, so it is necessary to provide knowledge about the importance of maintaining healthy teeth in children (Kementerian Kesehatan Republik Indonesia, 2018).

Based on a survey by the World Health Organization (WHO), Indonesian children at the age of 6 years have experienced dental caries by 20%, an increase of 60% in children aged 8 years, 85% at the age of 10 years. This data shows that the condition of dental health in Indonesia tends to be not good (Noreba et al., 2015).

One of the problems with dental and oral health is caused by a lack of dental and oral health maintenance (Purnama, 2022). Maintenance of dental and oral health from leftover food and other debris in the mouth with the aim of keeping teeth healthy. Maintaining oral hygiene is one of the efforts to improve health (Pudentiana et al., 2021). The mouth is not just for the entry of food and drink, but the function of the mouth is more than that and not many people realize the big role the mouth plays in one's health and well-being (Kilian et al., 2016). Therefore dental and oral health plays a very important role in supporting one's health (Ngatemi et al., 2022).

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The high number of dental and oral health problems in school-age children must be watched out for. The period of 7-12 years is the period of elementary school age, where the age of 10-12 years is the period of mixed teeth. School-age children are more susceptible to dental and oral health problems (Maryam et al., 2021; RE et al., 2021). Dental and oral health problems such as caries, gingivitis, inflammation and stomatitis in the school-age group are an important concern in health development, one of which is caused by the vulnerability of the school-age group to dental and oral health problems (Yohanes I et al., 2013).

The emergence of dental and oral diseases in society stems from the attitude of neglecting dental and oral hygiene in maintaining dental and oral health. This is based on a lack of knowledge about maintaining oral health and its treatment. A person's awareness of the importance of dental health can be seen from the knowledge they have. When a person has a high level of knowledge, the assessment for the treatment of his teeth and mouth is also high (Nurfalah et al., 2014). Good knowledge will encourage behavior to pay more attention to the state of the teeth because knowledge is very important in weighing whether the information obtained is good or not. This shows that awareness in terms of maintaining oral health is very important, especially in terms of knowledge (Pagunanto & Alfiyanti, 2014).

Efforts to increase knowledge are by conducting early dental health counseling to school children (Purnama et al., 2020). Dental and oral health education is a process that arises on the basis of dental and oral health needs that aim to produce good dental and oral health and improve living standards. Children as targets have certain characteristics according to their age and cognitive development, so that media is needed to assist the health promotion process in children which must be adjusted so that what is conveyed can be received effectively. The use of media for health promotion is called counseling (Kantohe et al., 2016).

Dental health education is a primary prevention measure before the occurrence of a disease (Tinanoff et al., 2019). Dental health education plays an important role in schools, especially to increase students' awareness of maintaining healthy teeth so that they last a long time. Counseling can be regarded as a precursor to other dental health programs. Dental health education through counseling which is realized on an ongoing basis aims to change behavior from unhealthy aspects of knowledge, attitudes and actions towards healthy behavior. This shows that dental health education for school-age children really needs to create success in terms of behavior change (Arsyad, 2018).

The success of education in terms of behavior change is influenced by the educational methods used. Educational methods using educational aids that involve as many senses as possible will influence the success of understanding educational goals. Many methods are used in counseling on dental and oral health practices, including the audiovisual method. The educational method using cartoon animation is a form of audio-visual media which is known as an interesting method of dental health education. Audio-visual media can convey understanding or information in a more real way through moving images and sound. This media utilizes the senses of hearing and sight. The use of cartoon animation has more appeal compared to other media, because it has certain symbols that cause humor. The more senses used to record information, the more likely it is to understand the intent of the information conveyed (Tandilangi et al., 2016).

Research that was conducted by (Andriany et al., 2016), showed that before being given counseling media with animated cartoons, the presentation of students' knowledge regarding dental and oral health was 47.6%, after being given counseling with animated cartoon media the percentage of students' knowledge became 81%. . This shows that there is an increase in dental and oral health knowledge of the respondents after being given counseling media with animated cartoons.

Dental health education is very important to increase awareness in maintaining healthy teeth. School-age children are vulnerable to dental and oral health problems, therefore school-age children need to be given dental health education in an effort to maintain oral health. Cartoon animation media is a very interesting medium because it combines sound and moving images in conveying information.

METHOD

The research design used in this study was a quasi-experimental design with a pretest and posttest with one group design. This research was conducted on class IVA students at SDN Sawangan 07 Depok. The research was conducted from 5 to 7 April 2022. The sampling technique used the total sampling method, so the total sampling in this study was 32 students.

The research instrument used was a questionnaire to measure dental health knowledge with 12 questions. The data collection process was carried out by giving pre-test questionnaire sheets before counseling and explaining how to fill out the questionnaire, followed by providing counseling with cartoon animation media about dental health, then the researcher gave post-test questionnaires to students after counseling. Analysis of the data used in this study using SPSS with paired sample t test.

RESULT

Table 1. Frequency distribution of dental health knowledge before education with cartoon animation media

Knowledge	Frequency	Percent (%)
Good	12	37.5
Sufficient	15	46.9
Less	5	15.6
Total	32	100

Table 1 shows that before counseling with animated cartoon media most of them had knowledge with sufficient knowledge criteria as many as 15 students (46.9%), good knowledge criteria as many as 12 students (37.5%), and less knowledge criteria as many as 5 students (15.6 %).

Table 2. Frequency distribution of dental health knowledge after education with cartoon animation media

Knowledge	Frequency	Percent (%)
Good	28	87.5
Sufficient	4	12.5
Less	0	0
Total	32	100

Table 2 shows that after counseling with animated cartoon media most of them have good knowledge criteria as many as 28 students (87.5%), sufficient knowledge criteria are 4 students (12.5%) and there are no students with less knowledge criteria

Table 3. Different test of dental and oral health knowledge before and after education with cartoon animation media

Knowledge	Mean	Difference	p-value
Pre-test	8.9	2.1	0.001
Pos-test	11.0		

Table 3 shows that the results of the paired sample test analysis obtained a p-value of 0.001, meaning that education with cartoon animation media is effective in increasing dental and oral health knowledge.

DISCUSSION

Research conducted on class IVA students at SDN Sawangan 07 Depok in April 2022 was intended to analyze dental and oral health knowledge before and after counseling using cartoon animation media. Respondents will be divided into 3 knowledge criteria, namely good knowledge criteria if 76-100% of the answers are correct, sufficient knowledge criteria if 56-75% of the answers are correct, and less knowledge criteria if $\leq 55\%$ of the answers are correct. Dental and oral health education is all efforts or activities of a person in maintaining and increasing awareness of dental and oral health in class IV children who have also entered the concrete operational stage, namely being able to think logically (Rahmat et al., 2018).

The results showed that the respondents' knowledge about dental and oral health before counseling using cartoon animation media, most of them had knowledge with sufficient knowledge criteria as many as 15 students (46.9%), good knowledge criteria as many as 12 students (37.5%), knowledge criteria less than 5 students (15.6%). The average knowledge before counseling using cartoon animation media is 8.9 with sufficient knowledge criteria. This shows the lack of knowledge of class IVA students at SDN Sawangan 07 Depok due to the lack of information obtained by students and the lack of dental health education activities.

The results of the study after conducting dental health counseling with cartoon animation media, most of them had knowledge with the criteria of good knowledge increasing, namely as many as 28 students (87.5%), sufficient knowledge criteria as many as 4 students (12.5%), and no one had the criteria less knowledge. The average knowledge after being given dental health maintenance counseling with cartoon animation media is 11 with good knowledge criteria.

The results of the paired sample test analysis obtained a p-value of 0.001, meaning that education with cartoon animation media is effective in increasing dental and oral health knowledge. There is a change in knowledge from not knowing to knowing, it is known because of an increase in knowledge entitled maintenance of dental and oral health with animated cartoon media. At the time of the research, most of the students were very interested in paying attention to the cartoon animation, as evidenced by the 32 students who paid close attention to the cartoon animation. This indicates that this media can develop students' interest and motivation, and attract students' attention.

This research is in line with research conducted by (Andriany et al., 2016) entitled "Comparison of the Effectiveness of Poster and Cartoon Animation Extension Media on Dental and Oral Health Knowledge" the study was conducted in the city of Banda Aceh, Syiah Kuala District in March 2016, the results were obtained after counseling using poster media and animated cartoons from 21 respondents it was found that before being given the poster counseling media most of them had knowledge with sufficient knowledge criteria as many as 12 students (57.1%) and after being given counseling media most of them had good knowledge criteria as many as 11 students (52,4%). This means that there was an increase in the knowledge of dental and oral health among the respondents after being given the media counseling posters, but not all respondents who had sufficient knowledge before being given the media counseling became good after being given the media counseling and there were still respondents who had less knowledge. Whereas before being given counseling media with animated cartoons it was shown that the majority had sufficient knowledge of 10 students (47.6%) and after being given counseling media most had good knowledge of 17 students (81%). There was an increase in dental and oral health knowledge among respondents after being given cartoon animation counseling media. Increasing knowledge of oral health with cartoon animation media can be seen from all respondents who had sufficient knowledge before being given counseling media to be good after being given counseling media and there were no respondents who had less knowledge after being given cartoon animation counseling media. From this counseling it can be concluded that counseling with cartoon animation media is more effective than counseling with poster media, because cartoon animation counseling media is able to stimulate children's curiosity and a sense of interest in what they are learning, thus the purpose of counseling media can achieve optimal results.

This is also in line with research conducted by (Saragih, 2019) "The Effect of counseling with Cartoon Animation Media on the Level of Knowledge About Tooth Brushing in Class IV-B Students at SD Negeri 104219 Tanjung Anom Kec. Pancur Batu" research was conducted in Tanjung Anon, Medan in July 2019 with a total of 30 students, showing the result that the level of knowledge of students before being given counseling with animated cartoon media, namely there were no students with good knowledge criteria (0%), 25 students with moderate knowledge criteria (83.33%) and 5 students with poor knowledge criteria (16.67%). The level of knowledge of students after being given counseling was 27 students with good knowledge criteria (90%), 3 students with moderate knowledge criteria (10%) and no students with bad knowledge criteria (0%). This shows an increase in students' knowledge after counseling. This study supports research that has been conducted on class IVA students at SDN Sawangan 07 Depok that there is an increase in knowledge criteria after being given counseling using cartoon animation media.

This research is also in line with research conducted by (Tandilangi et al., 2016) entitled "Effectiveness of dental health education with cartoon animation media on changes in dental and oral health behavior of Adventist 02 Sario Manado Elementary School students" the study was conducted in the city of Manado in December 2016 with a total Respondents of 105 students consisting of grades 4 - 5 elementary schools aged 10-12 years showed that there was an increase in the total score of the results of measuring children's behavior from the first pre-test (35.23%) to the first post-test (46.12). %) and from the first post-test to the second post-test (59.58) in both the treatment and control group respondents. This situation indicates that providing dental health education with animated media has the ability to change the behavior of respondents in maintaining dental and oral health.

Of the three studies which are in line with research on class IVA students at SDN Sawangan 07 Depok, it shows that this research is better than other studies, it can be seen from the number of students who have good criteria more after being given cartoon animation media, namely from 32 students in class IVA in SDN Sawangan 07 Depok, there were 28 students who had good criteria after showing the cartoon animation for dental and oral health care, the cartoon animation media used was also more interesting because it included a conclusion at the end of the show, so that it was easier for students to understand the meaning of the animated cartoon.

CONCLUSION

Based on the results of the research that has been done, it can be concluded that there is the cartoon animation media as an increase in dental health knowledge in elementary school children.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest

ETHICAL CLEARANCE

All participants were signed the informed consent prior to the data collection

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