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RESEARCH ARTICLE

Children's Knowledge Level About Oral Health Before and After Watching Dental Health Education (DHE) Videos

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ABSTRACT

Background: *The Ministry of Health's Basic Health Research (Riskesdas) in 2018 showed that the largest proportion of dental and oral problem is among the age group of 5-9 years (67.3%) where only 14.6% have received treatment by dental professionals. This is due to a lack of knowledge about maintaining oral health in children, and one of the health efforts to reduce dental and oral problems is to provide Dental Health Education (DHE). Generally, DHE activities are carried out face to face and practiced together in the field. The implementation during the Covid-19 pandemic requires a strategy that considers health and security aspects to prevent the transmission of the virus.* ***Objectives:*** *This research aims to determine the difference in children's knowledge level about dental and oral health before and after DHE with educational video media.* ***Methods:*** *This is an experimental analytic research with a cross-sectional study design. It was conducted at the Alamy Integrated Islamic Elementary School in Subang, where third-grade students completed the pre-test before watching the educational video, and post-test after watching video.* ***Results:*** *The average value of children's dental and oral health knowledge before and after being treated was 40.0 and 42.1, respectively. Furthermore, the Wilcoxon test showed a significant effect on the provision of DHE to children's knowledge about oral health.* ***Conclusion:*** *The provision of DHE significantly affects children's knowledge conveyed through educational videos.*

Keywords: *Children's Knowledge, Dental Health Education (DHE), Educational Video*

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INTRODUCTION

Oral health is an essential integral part of general health. Poor oral health can have far-reaching consequences for overall wellness. The diseases in children can cause 1) infection, 2) disruption of daily activities, 3) the onset of pain, and 4) growth and development disturbances. According to FDI (*Fédération Dentaire Internationale*) World Dental Federation, problems that commonly occur are tooth decay, gingival desease, and cancer.[1,2]

The Riskesdas 2018 data showed that 57.6% of Indonesians have dental and oral problems, and only 10.2% received services from dental professional.[3] According to the Riskesdas 2018, 67.3% of dental and oral issues occurred between the ages of 5 and 9. Only 14.6% have received treatment by a dental professional due to a lack of knowledge about maintaining oral health in children. Furthermore, 92.6% of children aged 5-9 years have caries, and 28.5% have root caries.[4] The low knowledge about oral health may cause the high prevalence of caries. Proper tooth brushing is an efficient mechanical means of maintaining oral health.[5-7] The Riskesdas 2018 data showed that 93.2% of aged 5-9 years already have good tooth brushing behavior. However, only 1.4% brush their teeth at the right time, namely at least twice, after breakfast and before bed.[2]

Based on this information, it is necessary to make more efforts to improve dental and oral health in children. Efforts to improve include promotive, preventive, curative, and rehabilitative with active community participation.[8,9] One way to increase children's positive behavior is to provide good and correct dental health education. These activities can be carried out with appropriate tools or media.

During the Covid-19 pandemic, there are limitations to reaching health facilities, with government policy in the form of social distancing. Therefore, the most appropriate media for education is video, which requires children's modalities, including auditory and visual. Based on the description above, the researcher is interested in knowing the effectiveness of Dental Health Education (DHE) by using educational video media for Elementary School children to support the discourse on distance education policy plans in the public health sector.

RESEARCH METHODS

This type of research was an experimental analytic with a cross-sectional design using primary data obtained from a questionnaire as an instrument. The questionnaire used has been tested for validity and reliability. It consists of 15 questions with multiple choices in the form of A, B, and C with a value of 1, 2, and 3, respectively. Furthermore, the population was third-grade students at the Alamy Integrated Islamic Elementary School in Subang, with a total of 111 people. Samples are taken by purposive sampling using the Slovin formula, and the number obtained is 53 respondents.

This research was conducted online in November 2021, where students filled out a questionnaire as an oral health pre-test. In addition, the parents gave informed consent, and after students filled out the pre-test, the DHE video media was played for 5 minutes. The questionnaire was then refilled as a post-test with the same questions.

After the data was collected, the Kolmogorov Smirnov normality test was carried out to determine the data value distribution. The data will be analyzed using paired t-tests for differences in children's knowledge levels before and after DHE when the value distribution is normal. However, the Wilcoxon test is performed when the distribution is abnormal. This research has received approval from the Ethics Commission of the Faculty of Dentistry, Trisakti University, with ethics pass certificate Number: 415/S1/KEPK/FKG/10/2020.

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RESULTS

Table 1 and 2 showed the characteristics of 52 respondents by age and gender with a minimum 8 years, maximum 9 years and mean 8.62 years, 57.7% are male and 42.3% are female.

Table 1. Characteristics by Age

Age	
Minimum	8
Maximum	9
Mean	8,62

Table 2. Characteristics by Gender

Gender	Frequency	(%)
Male	30	57,7
Female	22	42,3
Total	**52**	**100**

Children's oral and dental health knowledge before and after treatment are provided in Figure 1. They have a mean score of pre test 40.0 and post test 42.1. Descriptively, there is an increase in the mean score before and after DHE through the educational video.

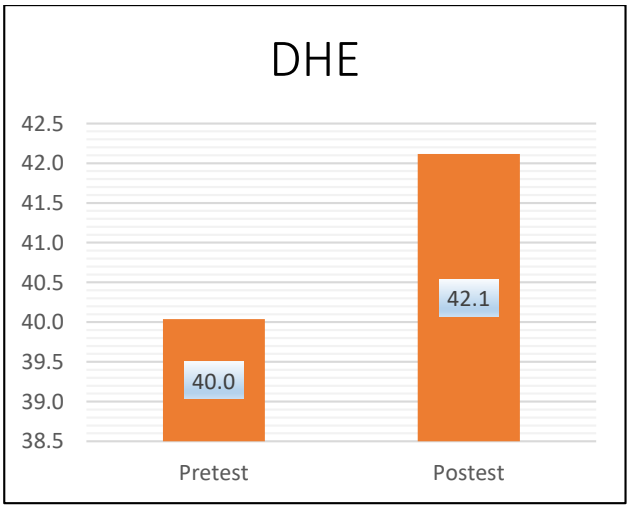

Figure 1. Mean Score of Students' Knowledge Before and After DHE

The normality test results were shown in Table 3. The data in the pre-test and post-test groups are not normally distributed due to a significance value of less than 0.05. Therefore, the hypothesis will be tested using non-parametric statistics and the Wilcoxon test because the sample in this research is paired.

Table 3. Normality Test

Group	Treatment (DHE)		Conclusion
	Sig.	a-value	
Pre-test	0,004	<0,05	Abnormal
Post-test	0,043	<0,05	Abnormal

Based on the hypothesis test using the Wilcoxon test, the significance value in the pre-test and post-test is less than 0.05. Therefore, "the provision of DHE has a significant effect on children's knowledge about dental and oral health" (Table 4).

Table 4. Hypothesis Test

Group	Mean	*P-Value*	α-value	Decision	Description
Pre-test	40,0	0.000	<0,05	H_0 is rejected	Significant
Post-test	42,1				

DISCUSSION

This research aims to analyze the difference between the children's oral health knowledge level before and after DHE using educational video media. Health policy should be integrated and sustainable to maintain and improve the health status of the community, consisting of prevention, health promotion, treatment, and restoration.[10] These efforts can be carried out by providing health education to the community, including children.

The growth in social media use and the increase in children's dental health information on social media may facilitate behavior change and improve children's dental health outcomes. Health promotion media is one of the means used to display messages or information to increase knowledge which is ultimately expected to change behavior towards positive or support health. This research uses video media to attract children's attention. The selection of videos

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presented can be adjusted to the material, age, and psychological development of children so that it makes it easier to understand the material. According to literature, video media is the most popular audiovisual media for children and teenagers. Attractive appearance and easy access make videos much liked by children. It will be easier for children to understand and recall the presented material. This matter was in line with Aeni & Yuhandini (2018) that after being given an intervention, students experience a high increase in knowledge.[11,12]

During the Covid-19 pandemic, direct face-to-face counseling is not possible to prevent the transmission of the virus. Moreover, a distance learning policy inhibits schools from conducting research. Based on these situations and conditions, it is necessary to carry out another approach strategy for children. One alternative is to use tools through the media in the form of educational videos to improve student learning. Compared to other educational media, video is more effective in changing people's behavior about health.[13,14]

According to the Riskesdas 2018, children aged 8 and 9 years are included in the proportion of the 5-9 year age group, which is the largest with dental and oral problems. This is in accordance with the average age of the respondents, which is 8.62 years. Children aged 8 and 9 years are included in the group of 7-11 years and have acquired cognitive control to understand material effectively. According to Rinintha Adistia et al. (2020), preschoolers have understood the material presented regarding the effectiveness of educational videos in improving the oral hygiene of preschool children aged 4-6 years.[15]

The results showed an increase in the value of children's knowledge before (40) and after being given DHE through video media (42.1). Exposure to health education videos can improve people's knowledge, and better mental health related behaviors.[16] The provision of DHE online through educational videos effectively increases children's knowledge about dental and oral health. DHE is the application of educational concepts to change behavior from unhealthy to healthy and achieve the highest degree of dental health.[17] Furthermore, children aged 8 and 9 can absorb information better because video media suits them. The extensions require children's modalities, including auditory and visual. These media can develop children's learning activities and imagination in a fun atmosphere and stimulate their interest in learning. They are presented in an appealing and simple-to-understand animation for children.[18-20] The limitations of the research are due to the pandemic situation, online examination, researchers less able to control the implementation of the pre and post tests. The participant doing the exam at home. Based on the above explanation, online health education media is the best choice during the pandemic to improve Indonesian children's oral health.

CONCLUSION

The children's knowledge about dental and oral health increases significantly after performing DHE through educational video media.

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