

RESEARCH ARTICLE

Effectiveness of dental and oral health counseling using traditional folklore video media on knowledge in 8-9-year-old children

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ABSTRACT

Oral health problems among elementary school children are still very common. One of the contributing factors is behavior in maintaining oral hygiene. Behavior is established from knowledge which will then stimulate changes in attitudes and practice. Efforts to enhance knowledge in children can be achieved through counseling. This study aimed to determine the effectiveness of oral health counseling using traditional folklore video media on knowledge in children aged 8-9 years. This was quasi-experimental research with a two group pre-test and post-test design. Sampling was conducted using multistage cluster random sampling with a total sample of 112 children aged 8-9 years in elementary schools. The sample was divided into 2 groups: 56 children using traditional folklore video as the intervention group and 56 children using conventional video as the control group. Knowledge variables were measured using a questionnaire; most of the data were not normally distributed so data analysis was carried out using the Mann-Whitney U Test. The results of the difference analysis using the Mann-Whitney U Test at pre-post 2 showed a significant increase in knowledge in both groups. The median knowledge score of the traditional folklore video group showed a greater increase compared to the conventional video group by 13 (6.6 - 20) ($p < 0.001$). This study concluded that oral health counseling using traditional folklore video is more effective in increasing oral health knowledge in children aged 8-9 years compared to conventional video media.

Keywords: conventional video; knowledge; traditional folklore video

INTRODUCTION

Oral health issues are a major concern for population health worldwide.¹ Dental caries is one of the most common oral health problems in all age groups and is most prevalent in elementary school which is around 60-90% of cases.² One of the causes of caries in children is behavioral factors, which is evidenced by the fact that children often neglect their oral hygiene. Three important domains that can change a person behavior are knowledge, attitudes, and practice. Knowledge is a very important domain for the formation of attitudes and practice, so it will affect a person daily habits or behavior.³

Efforts are made to increase knowledge, especially about oral health in children, namely by providing counseling.⁴ Oral health counseling in elementary school children can increase children's knowledge, which will then stimulate changes in attitudes and practice. These changes will affect their behavior in maintaining oral health, which will improve oral hygiene status and prevent oral health problems in children.⁵ Children aged 8-9 years are at the concrete operational stage of development, who can already use reasoning, solve problems, as well as understand cause and effect, so the media used to assist the educational process in children must be adjusted to ensuring that the

information conveyed is effectively received and that the recipient understands the educational material.⁶

Video is one of the audiovisual media that displays images or moving objects and sounds that can stimulate the senses of sight and hearing, making it easier for children to remember the information provided.⁷ Video has advantages that can be combined with learning methods such as conventional methods and folklore methods. Conventional videos are a combination of conventional learning methods such as PowerPoint slides containing images and sounds presented as a video form, while traditional folklore videos are a combination of storytelling methods taken from folklore from their respective regions presented as a video form. Traditional folklores are often used as a learning method because they have entertaining characteristics and can help the character building in children from the moral values contained in the folklore. Research on learning using traditional folklore has shown that it improves knowledge and attitudes compared to conventional methods in elementary school children due to the presence of funny characters and interesting storyline, thus attracting students' attention.^{8,9} This study aimed to determine the effectiveness of oral health counseling using traditional folklore containing messages about how to maintain oral health presented in the form of video on knowledge about oral health in children aged 8-9 years.

MATERIALS AND METHODS

This study was conducted in January-February 2024 and Ethical Clearance was obtained from the Ethics Commission of the Faculty of Dentistry, Universitas Gadjah Mada Number 14/UN1/KEP/FGK-RSGM/EC/2024. This was a quasi-experimental study with a two-group pre-test and post-test design. Sampling in this study used multistage cluster random sampling with total subjects of 112 children aged 8-9 years in elementary school.

South Kuta Subdistrict was selected as the research location due to its high prevalence of

oral health issues in Badung Regency. South Kuta Subdistrict has six villages with the same population characteristics. From the six villages, two villages were randomly selected. The selected villages were Jimbaran Village and Ungasan Village; each of the selected villages was then represented by one elementary school also selected randomly. The selected elementary schools were SD No. 10 Jimbaran and SD No. 4 Ungasan.

The research subjects were divided into two different treatment groups. The first group was the intervention group which consisted of 56 students aged 8-9 years at SD No. 10 Jimbaran given oral health counseling using traditional folklore video media. The second group was the control group which consisted of 56 students aged 8-9 years at SD No. 4 Ungasan who received oral health counseling using conventional video media. Inclusion criteria in this study were children who were cooperative and willing to become respondents by giving the informed consent to their parents to sign. Exclusion criteria in this study were children of dentists.

Oral health counseling using traditional folklore video media was counseling using audiovisual media containing a series of images with moving illusions taken from traditional Balinese folklore entitled "*I Cupak Teken I Gerantang*". The folklore story was modified with key messages on oral health including the number of teeth, tooth functions, causes of tooth decay, food diet, frequency of brushing teeth, how to brush teeth, and visit to the dentist delivered in Balinese language with a duration of 13 minutes. Oral health counseling using conventional videos was oral health counseling using audio-visual media that shows only text or images and sounds containing the same material as traditional folklore and presented in the form a video delivered using Balinese language with a duration of 7 minutes.

The research instrument used to measure the level of knowledge about oral health in this study was a questionnaire adapted from the research of Saffan et al and Darwish and then modified by the researcher by adding several question items.^{10,11} The oral health knowledge questionnaire in this

study includes questions about the number of teeth, tooth functions, causes of tooth decay, food diet, frequency of brushing teeth, how to brush teeth, and visit to the dentist. The subjects' correct responses were given a score of 1, while incorrect answers were given a score of 0. The score obtained ranged between 0-100. The scores were then divided into three categories, namely low, moderate, and high. The knowledge category is low if the score is between 0-33, the category is moderate if the score is between 34-67, the category is high if the score is between 68-100.

The validity and reliability tests of the questionnaire were carried out on 30 students aged 8-9 years at SD No. 4 Jimbaran, Badung Regency, Bali Province. The results of the validity and reliability tests showed that 15 question items were valid ($r > 0.361$) and reliable (Cronbach $\alpha = 0.850$).

The questionnaire on oral health knowledge was self-administered by the subjects before the intervention was given as a pre-test score. Post-test 1 was carried out immediately after the intervention was given to each group and post-test 2 was carried out 15 days after post-test 1.¹²

The data analyses used non-parametric statistics (Mann-Whitney U test) because the data were not normally distributed. The Mann-Whitney U test was used to determine differences

in knowledge between the two groups and to determine the increase in knowledge by looking at the difference or delta score from pre-test to post-test 1, pre-test to post-test 2, and post-test 1 to post-test 2 in both groups.

RESULTS

Research has been conducted on the effectiveness of oral health counseling using traditional folklore video media on knowledge about oral health in students aged 8-9 years at SD No. 10 Jimbaran and SD No. 4 Ungasan, Badung Regency, Bali Province. The characteristics of the respondents in the intervention group can be seen in Table 1.

Table 1 shows the age distribution of the respondents who participated in this study. Most of them were 9 years old (58.9%); in the traditional folklore video group (26.8%) and the conventional video group (32.1%). The majority of the respondents were male students (52.7%); in the traditional folklore video group (26.8%) and the conventional video group (25.9%). The mean score of the respondents' knowledge from pre-test to post-test 2 increased in both groups. The results of the analysis of differences in oral health knowledge between the traditional folklore video media and conventional video media using the Mann-Whitney U Test are presented in Table 2.

Table 1. Characteristics of respondents by intervention group

Characteristics of respondents	Folklore video	Conventional video	Total
	n (%)	n (%)	n (%)
Age			
8 years	26 (23.2)	20 (17.9)	46 (41.1)
9 years	30 (26.8)	36 (32.1)	66 (58.9)
Gender			
Male	30 (26.8)	29 (25.9)	59 (52.7)
Female	26 (23.2)	27 (24.1)	53 (47.3)
Knowledge	Mean \pm SD	Mean \pm SD	
Pre-test	60.77 \pm 14.51	59.99 \pm 11.93	
Post-test 1	72.14 \pm 10.79	67.62 \pm 12.81	
Post-test 2	73.15 \pm 11.75	66.20 \pm 11.58	

SD, Standard Deviation

Table 2. Differences in knowledge of oral health before and after intervention

Observation period	Knowledge variable		Sig.*
	Folklore video Median (25% - 75%)	Conventional video Median (25% - 75%)	
Pre-test	55.0 (53.3 – 73.3)	60.0 (53.3 – 66.7)	0.913
Post-test 1	73.3 (66.7 – 80.0)	66.7 (60.0 – 78.3)	0.045
Post-test 2	73.3 (66.7 – 80.0)	66.7 (60.0 – 78.3)	0.002

Mann Whitney U Test

Table 3. Difference test results of knowledge about oral health

Observation period	Knowledge variable		Sig.*
	Folklore video Median (25% - 75%)	Conventional video Median (25% - 75%)	
Pre-test to post-test 1	13.3 (6.6 – 18.3)	6.7 (6.6 – 11.6)	0.029
Pre-test to post-test 2	13 (6.6 - 20)	6.7 (0 – 6.7)	< 0.001
Post-test 1 to post-test 2	0 (0 - 0)	0 (-6.6 - 0)	< 0.001

Mann Whitney U Test

Table 2 shows that there was no significant difference in the respondents' knowledge before treatment (pre-test) between the intervention group and the conventional group ($p > 0.05$), meaning that initially, the respondents in both groups had the same level of knowledge. However, there was a significant difference in the respondents' knowledge after treatment (post-test 1 and 2) between the two groups as shown in Table 3.

Table 3 shows significant differences ($p < 0.05$) in knowledge about oral health from pre-test to post-test 1, pre-test to post-test 2, and post-test 1 to post-test 2 in both groups. The median score in the traditional folklore video group was higher than that in the conventional video group.

DISCUSSION

The descriptive data indicated an increase in the mean score of dental and oral health knowledge before the intervention (pre-test) and after the intervention in both groups (post-test 2). These results showed that dental and oral health counseling, using both traditional folklore video media or conventional video media, can improve knowledge about dental and oral health

in 8-9-year-old children. These findings are supported by previous research, which found that dental and oral health counseling has been proven to increase knowledge, attitudes, and oral hygiene status.^{4,13,14} Oral health counseling is an effort to deliver messages about oral health to individuals, groups, or communities with the aim of increasing knowledge about oral health, hopefully leading to attitudes and actions that affect community behavior either individually or in groups towards healthy behavior in their daily lives.^{3,15}

The fact that the the intervention group using traditional folklore video media experienced a higher increase in knowledge might be attributed to the interesting storyline of traditional folklore taken from Balinese folklore entitled "*I Cupak Teken I Gerantang*" and the animated funny characters, thus motivating children to participate in counseling compared to conventional videos that only display PowerPoint slides presented in a video form. Besides, traditional folklores have distinctive voices and interesting intonations that can help children get more involved in the story and help them remember the contents of the story.^{16,17}

Learning using videos that have interesting storylines such as movies or folklore can explain something abstract to be concrete, so children can understand the information provided more easily. In addition, learning through movies or folklore can create a more convenient and fun learning atmosphere, and the animated funny characters will attract the students' attention, helping them maintain their concentration in listening to the materials compared to conventional learning such as lectures, pamphlets, and PowerPoint slides.^{18,19}

The results of this study are also supported by previous research conducted by Shruti (2021) which found that traditional folklore given using hand puppets whose storyline contained dental health messages such as how to brush teeth, frequency of brushing teeth, foods that are good for teeth, and visit to the dentist has been proven to increase knowledge, attitudes, and practice in maintaining oral health because children become more interested in listening to the messages given in the folklore.²⁰

The study has some limitations. First, this study failed to evaluate the long-term retention of knowledge in elementary school-aged children because it only used a single-time intervention. Besides, the interval between post-test 1 and post-test 2 was relatively short, i.e., only 15 days. Future research is expected to provide repeated interventions with a longer research period.

CONCLUSION

Based on the results of the research, it can be concluded that oral health counseling using traditional folklore video media is effective in increasing knowledge about oral health in children aged 8-9 years.

CONFLICT OF INTEREST

There is no Conflict of Interest in this study.

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