



Education Using Video and E-Booklets Media on the Level of Knowledge about Dental and Mouth Emergency During the Covid-19 Pandemic in High School Students

Quroti A'yun¹, Mercure Hilda Baliasti², Siti Hidayati³

^{1,2,3} Department of Dental Health, Health Polytechnic of Yogyakarta, Indonesia

Abstract

Background: In 2020, the CDC released a recommendation to suspend all non-emergency elective procedures. Therefore, the community must have sufficient knowledge about which dental and oral diseases are dental emergencies. Knowledge improvement is required to assist the government and health workers in breaking the chain of COVID-19. One way to enhance this knowledge is through health counseling methods. Purpose: To determine the effectiveness of counseling using video and e-booklets media on the level of knowledge of dental and oral emergencies during the COVID-19 pandemic in high school students. Method: Using quasi-experimental research type with a Non-Equivalent Control Group design. The research was conducted in June 2022. The population of this study was students of class X SMA Negeri 9 Yogyakarta using samples of 36 students for each group taken by purposive sampling technique. Data were analyzed using the Wilcoxon and Mann-Whitney tests. Result: The Wilcoxon test showed that there were 36 students in the experimental group and 24 students in the control group with better knowledge results than before with a significant effect with a p-value of 0,000 ($p < 0.05$). While the Mann-Whitney test indicate that the average score in the experimental group was bigger than the control group, there was no significant difference regarding the effectiveness between the use of video and e-booklet media with a significance of 0,121 ($p > 0.005$). Conclusion: There is no significant difference regarding the effectiveness between the usage of video and e-booklet media in the improvement of knowledge about dental and oral emergencies during the COVID-19 pandemic in high school students.

Keywords – *Videos, e-booklets, knowledge, dental and oral emergencies, pandemic covid-19*

I. INTRODUCTION

On March 12 2020, the Centers for Disease Control and Prevention (CDC) released a recommendation to postpone all non-emergency elective procedures as an effort to break the chain of transmission of the COVID-19 virus [1]. The emergency in question is a situation or condition in the oral cavity when the patient's life is in danger or at risk and requires immediate treatment [2].

It becomes a problem for ordinary people to understand the meaning and conditions that are included in dental and oral emergencies, whereas in everyday life they never get theory and see directly cases of dental and mouth emergencies. Therefore, the community must have adequate knowledge about dental and oral diseases which are dental emergencies such as uncontrolled oral bleeding, oral trauma, and inflammation of the pulp.

This increase in knowledge is carried out to assist the government and health workers in breaking the chain of transmission of COVID-19. One way to change this knowledge is through health education methods.

Health education is an effort to increase knowledge and skills aimed at changing healthy lifestyle behaviors in individuals, groups and communities that are given through learning or instruction [3]. Media and props have an important role in conveying messages in the process of providing information [4]. One of the health education media is video media and print media.

Video media is a display of moving images accompanied by sound. While one example of print media is a booklet which is a small book, to convey information in writing in the form of sentences, as well as pictures or combinations set forth in sheets, in simple language. The booklet form can be modified into an e-booklet (electronic booklet) which can be read using the appropriate software on a computer, laptop, tablet or smartphone [5,6].

Based on a preliminary study that was conducted by researchers on September 20, 2021 with 25 class X students of SMA Negeri 9 Yogyakarta regarding knowledge of dental and oral emergencies through the Google form, data was obtained that 72% of students knew that during the COVID-19 pandemic the clinic and the dental clinic imposes action restrictions, namely only accepting patients with emergencies but 84% of students do not know what cases and actions are included in dental and mouth emergencies.

II. METHODOLOGY

The type of research used in this study is Quasi Experimental with a Non-Equivalent Control Group design. The researcher divided the subjects into two groups: the experimental group which was given counseling using video media and the control group who was given counseling using e-booklets. The two groups will do a pretest before being given counseling and then after that a posttest will be carried out.

The population in this study were all students of class X SMA Negeri 9 Yogyakarta using purposive sampling technique. The sample used in this study amounted to 36 students in each group (experimental and control) or 72 students in class X SMA Negeri 9 Yogyakarta who fit the researcher's inclusion criteria, namely willing to be respondents, students who are physically and mentally healthy, as well as students in class X MIPA 1 and X MIPA 2 with consideration of the teacher's recommendation which states that the two classes have a tendency to be the same in abilities in science and Physical Education subjects.

The level of knowledge of the respondents was measured using a questionnaire that was compiled by the researchers themselves containing 14 statements with alternative correct and wrong answers consisting of 7 favorable statements and 7 unfavorable statements. For statements that are favorable, correct answers are given a score of 1 and wrong answers are given a score of 0, while unfavorable statements, correct answers are given a score of 0 and wrong answers are given a score of 1.

The instruments used in this study were video media which can be accessed via the link <https://bit.ly/videoKGDgilut> and e-booklet media accessed via the link <https://bit.ly/KGDgilut> as well as a knowledge questionnaire about dental and oral emergencies. The research questionnaire was tested for validity and reliability then the data was processed with SPSS. The data were normalized first with the Shapiro Wilk test then continued with the Wilcoxon and Mann-Whitney tests. This research was approved by the Health Research Ethics Committee of the Yogyakarta Ministry of Health in accordance with the Certificate of Ethical Properness No. e-KEPK/POLKESYO/0506/VI/2022.

III. RESULT

The research was conducted on June 3, 2022 at SMA Negeri 9 Yogyakarta Class X, with a sample of 72 respondents who were divided into 36 respondents in the experimental group (counseling group with video media) and 36 respondents in the control group (counseling group with e-booklet media). Research data were collected using a questionnaire on the level of knowledge about dental and oral emergencies. The research data obtained are as follows:

Table 1: Frequency Distribution of Respondents by Gender and Age

Variables	Group				Total	
	Video		E-Booklet		N	%
	N	%	N	%		
Gender						
Male	16	44,4	11	30,6	27	37,5
Female	20	55,6	25	69,4	45	62,5
Total	36	100	36	100	72	100
Age						
15 years	10	27,8	14	38,9	24	33,3
16 years	24	66,7	22	61,1	46	63,9
17 years	2	5,6	0	0	2	2,8
Total	36	100	36	100	72	100

Table 1 shows that both groups had more female respondents than male respondents, namely 20 respondents (55.6%) in the video media group and 25 respondents (69.4%) in the e-booklet media group. Table 1 also shows that respondents in the video media and e-booklet groups were dominated by respondents aged 16 years with a total of 46 out of 72 respondents (63.9%).

Table 2: Frequency Distribution of Respondents by Level Knowledge

Group	Knowledge level	Frequency		
		N	%	
Video	Pre-test	Good	1	2.8
		Enough	15	41.7
		Less	20	55.6
	Post-test	Good	33	91.7
		Enough	3	8.3
		Less	0	0
E-Booklet	Pre-test	Good	25	69.4
		Enough	11	30.6
		Less	0	0
	Post-test	Good	35	97.2
		Enough	1	2.8
		Less	0	0

Based on Table 2, it is known that the frequency of the level of knowledge in the video media group before being given counseling has the most criteria, namely the less criteria with a total of 20 respondents with a percentage of 55.6% and the most criteria after being given counseling, namely good criteria with a total of 33 respondents with a percentage of 91.7%. The highest frequency of knowledge level in the e-booklet media group before being given counseling was good criteria with a total of 25 respondents with a percentage of 69.4% which then increased to 35 respondents with a percentage of 97.2% after counseling.

Table 3: Data Normality Test Results

Group		N	p-value
Video	Pre-test	36	0.000
	Post-test	36	0.000
<i>E-Booklet</i>	Pre-test	36	0.037
	Post-test	36	0.002

Based on table 3, the pretest-posttest in the video media and e-booklet groups has a p-value less than 0.05 ($p < 0.05$), which means that the distribution of the data obtained is not normally distributed, so that the analysis of the research data was carried out non-parametrically using Wilcoxon and Mann-Whitney.

Table 4: Wilcoxon test results and mean scores before and after counseling in the video group and the e-booklet group

Group	Mean	SD	Positive Rank	Ties	Negative Rank	p-value
Video	Pre-test	53.961	105.826	36	0	0
	Post-test	91.683	91.189			
E-booklet	Pre-test	81.156	101.315	24	9	3
	Post-test	88.900	84.418			

In table 4 it is known that in both groups there was an increase in the average value before and after counseling. Statistically there was a significant difference in increasing the knowledge of the video media and e-booklet media groups with a p-value of 0.000 (< 0.05). There were 36 people in the video group and 24 people in the e-booklet group with better knowledge results than before.

Table 5: Mann Whitney test results in the video group and the group e-booklet

Group	N	Mean Rank	Δ Mean	p-value
Video	36	40.19	7.38	0.121
E-Booklet	36	32.81		

Based on table 5 it is known that the average increase in knowledge in the video media group was 40.19 and 7.38 higher than the average in the e-booklet group, which was 32.81, but statistically the significance value was obtained $p = 0.121$, so $p > 0.05$ which means that H_a is rejected and H_0 is accepted, so there is no significant difference in increasing the knowledge of the video group compared to the e-booklet group with a p-value of 0.121 (> 0.05)

IV. DISCUSSION

The results of the frequency distribution of research respondents based on gender in Table 1 show that respondents in this study were dominated by women because the population was also dominated by women. According to the Central Statistics Agency (2020) based on the population according to age group and sex in the City of Yogyakarta in 2020, the 15-19 year old age group is dominated by the female population, namely 16,929 people [7].

From the data presented in Table 2, it is known that there are differences in the level of knowledge before and after the health education is carried out in the form of an increase in the number of respondents with good knowledge criteria, which means that dental and oral health education can increase a person's knowledge

from not knowing to knowing, this is due to the use of media that contains interesting information and pictures that have a positive influence on learning outcomes [8].

Data from the research results in each group were analyzed to determine differences in increasing knowledge before and after counseling. The results of the Wilcoxon differential test (table 4) showed differences before and after counseling, and there were significant differences in increasing knowledge about dental and oral emergencies during the COVID-19 pandemic before and after counseling in both the video and e-booklet groups.

To find out the effectiveness of using video media and e-booklets in increasing knowledge about dental and oral emergencies during the COVID-19 pandemic, an analysis was carried out by comparing the average difference in scores between the video group and the e-booklet group. The results of the non-parametric analysis of the Mann Whitney test (Table 5) on the comparison of the average difference between the two groups show that the average increase in knowledge in the video media group is higher than the average in the e-booklet media group. However, statistically there was no significant or significant difference in increasing knowledge in the video group compared to the e-booklet group.

The results of this study indicate that the provision of education both with e-booklets and videos can increase respondents' knowledge, but does not show a significant difference in knowledge between groups after the intervention [9,10]. There is no difference in effectiveness between video media and e-booklets in dental health education because the two media have the same advantages, namely being able to display animated letters and images that are able to attract students' interest and attention in participating in counseling [11].

The advantages of using video as an educational medium include being easy to understand, more interesting, involving all the five senses, the presentation can be controlled and repeated and the loudness and weakness of the sound can be adjusted. While the advantages of e-booklet media as educational media are that they can be stored for a long time, easy to carry and can provide more complete information content that may not have been conveyed orally [12].

Table 5 shows that the difference in pre-test and post-test scores for the video media group is higher than the e-booklet media, although not significantly. This result is in line with the theory which states that the target of counseling will absorb more information when the target sees and hears the material rather than just listening to the speaker's presentation or just seeing the material. [4].

There are differences in the results with several other research results, which show that there is a significant influence between video educational media and print media. Video or audiovisual is very effective in changing the dental and oral health knowledge of school children compared to print media [13,14]. This difference can occur due to several factors, one of which is the effectiveness of e-booklets as print media which is influenced by the accuracy of the selection of colors, fonts, suitability of images and words, as well as the substance of the material provided [15].

V. CONCLUSION

Based on the results of the study it can be concluded that there is no significant difference regarding the effectiveness between the use of video media and e-booklet media in increasing knowledge about dental and oral emergencies during the COVID-19 pandemic in high school students.

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