



Differences in the Effect of Health Promotion Media Using Booklets and Audio Visuals on the Level of Caries Knowledge 6th Grade Student 09 Aie Pacah

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Abstract: Background: Dental and oral health problems generally occur due to the low level of public knowledge about good oral and dental care. Objective: The purpose of this study was to determine the difference in the effect of health promotion media using booklets and audiovisuals on the level of dental caries knowledge of 6th grade students of SDN 09 Aie Pacah. Method: This type of research is quantitative, using a quasi-experimental method with a two group pretest-posttest research design. The research sample amounted to 58 respondents who were divided into 2 groups, namely 29 respondents for each group, using total sampling technique. Data analysis includes paired t-test and independent t-test. Results: The results showed that the difference in knowledge before and after dental caries health education in respondents with booklet media (p-value = 0.000) and audiovisual media (p-value = 0.000). There was no difference between the groups who had been given health education using booklets and audiovisual media on the dental caries knowledge of 6th graders at SDN 09 Aie Pacah (p-value = 0.863). Conclusion: Based on data from research and discussion of the title of the difference in the influence of health promotion media using booklets and audio visuals to the level of dental caries knowledge of 6th grader Aie Pacah, it can be concluded as follows: a) There is the influence of health promotion media using booklets on the level of dental caries knowledge of 6th grader Aie Pacah, b) There is the influence of health promotion media using audio visuals against the dental caries knowledge level of 6th grader Aie Pacah c) There is no average difference between the group that has been given health education using booklet and audio visual media against dental caries knowledge of 6th grader Aie Pacah.

Keywords: Dental Caries, Health Education, Knowledge, Booklet, Audio Visual

1. Introduction

Dental and oral health is considered very important for a satisfactory quality of life. The World Health Organization (WHO) explains that dental and oral health is a state of being free from oral and facial pain, infections and mouth sores, and other oral diseases that limit a person's ability to bite, chew, smile, speak, and psychosocial well-being (WHO, 2012). However, due to the lack of human attention to dental and oral health, it can cause oral diseases. Oral disease can produce serious functional limitations, discomfort, and pain that can lead to disability [1].

The number of dental and oral problems in Indonesia is still quite high. This is because there are still many people who do not pay attention to the health of their teeth and mouth [2]. Bad habits that are carried out such as thumb sucking in children which if left until the age of 5 years can cause crooked teeth. In addition, breathing through the mouth when the nose is blocked can cause dryness of the oral cavity which results in food sticking to the teeth so that microorganisms easily form holes in the teeth [3].

According to data from the periodic health center in 2020 in the work area of the Cold Water Health Center that houses SDN 09 Aie Pacah, the number of students at SDN 09 Aie

Pacah who experienced caries was 202 out of 351 students (57.54%). This shows the high incidence of dental caries at SDN 09 Aie Pacah.

The use of media is very influential on the ongoing process of education. In addition to facilitating the delivery of information to students, the use of media is also considered to be able to increase students' motivation to learn more actively and interactively [4]. There are 7 types of media, namely motion audiovisual media, silent audiovisual media, semi-motion audio, moving visual media, silent visual media, audio media, and print media [5].

Booklet is one type of printed media which consists of several pages containing informative matters. The contents of the booklet should have clear and firm language and will be more interesting if accompanied by pictures. The relatively small booklet size makes this media very easy to carry anywhere [6].

Audiovisual media has advantages when compared to other media. This media can overcome the difficulties of students in understanding a process. Objects that are abstract and complicated can be explained in such a way. Audiovisual media can also be played repeatedly and stopped as needed. This will encourage students' learning motivation in understanding a complex explanation to be simpler so that it can be more easily understood [7, 8].

Conventional counseling received less attention from respondents. This happens due to the unattractiveness of the extension method used. The use of health promotion media will certainly increase the attractiveness of respondents in understanding the content of health promotion itself. Based on the description of the background above, the researcher is interested in examining the comparison of the effect of health promotion media using booklets and audiovisuals on the level of dental caries knowledge of 6th grade students of SDN 09 Aie Pacah.

2. Research Methodology

This type of research is a quantitative study using a quasi-experimental research design with a Two Group Pre-Posttest research design, namely an experimental design in two different groups using different media. The sample size used in this study was 58 6th grade students at SDN 09 Aie Pacah.

2.1. How Research Works

- 1) Making booklets and videos about Dental Caries.
- 2) Designing a questionnaire based on booklets and videos about Dental Caries.
- 3) Conduct validity and reliability tests.
- 4) Divide the respondents into 2 groups, namely the booklet group and the video group.
- 5) Pre-test:
- 6) Distribute questionnaires to respondents.
- 7) Respondents will be faced with 15 questions and asked to choose one answer to measure knowledge before being given an intervention.
- 8) After filling out the pre-test, the respondent will be

immediately given an intervention. In the booklet group, each respondent will be given a media booklet and given 15 minutes to read. In the video group, respondents will be shown a video with a duration of 7 minutes which will be displayed through a projector and played 2 times.

- 9) Posttest:
 - a. Respondents will again be faced with the same questionnaire to measure knowledge after being given the intervention.
 - b. The duration for filling out the questions is 20 minutes.
- 10) Data processing will be carried out after the data is collected.
- 11) Draw a conclusion.

2.2. Data Analysis

2.2.1. Univariate Analysis

Univariate analysis was conducted to determine the characteristics of each variable studied. Analysis of the data presented is descriptive statistical value including the average knowledge before and after being given treatment.

2.2.2. Bivariate Analysis

Bivariate analysis was conducted to compare the knowledge scores of respondents before and after being given education about dental caries using booklets and audiovisuals. The data processing uses the Statistical Program for Social Science (SPSS) software. Analysis of the data used in this study is the paired T-test, Wilcoxon test and Mann Whitney test.

3. Research Result and Discussion

3.1. Research Result

3.1.1. Characteristics of Respondents

The results of the study obtained the distribution of sex and age frequencies of 6th graders at SDN 09 Aie Pacah which can be described as follows:

Characteristics	Booklet Group		Audiovisual Group	
	Amount	%	Amount	%
Gender				
Man	14	48.3	14	48.3
Woman	15	51.7	15	51.7
Age (years)				
11	2	6.9	9	31.0
12	25	86.2	19	65.5
13	2	6.9	1	3.4
Total	29	100.0	29	100.0

Figure 1. Characteristics of Respondents by Gender and Age.

Based on figure 1, it is known that in the group with health promotion using booklets and audiovisuals, most of the sexes are female, namely 15 people (51.7%) and the most age is 12 years, namely 25 people (86.2%) in the booklet group. and 19 people (65.5%) in the audiovisual group.

3.1.2. Univariate Analysis

(i). Dental Caries Knowledge Pretest

Knowledge	Booklet Group		Audiovisual Group	
	Frequency	%	Frequency	%
Not Enough	20	69.0	21	72.4
Enough	6	20.7	7	24.1
Well	3	10.3	1	3.4
Total	29	100.0	29	100.0

Figure 2. Dental Caries Knowledge Pretest.

Based on figure 2, it shows that at the pretest, the two groups of respondents had knowledge in the poor category, namely 20 people (69%) in the booklet group and 21 people (72.4%) in the audiovisual group.

(ii). Dental Caries Knowledge Posttest

Knowledge	Booklet Group		Audiovisual Group	
	Frequency	%	Frequency	%
Not Enough	9	31.0	12	41.4
Enough	13	44.8	10	34.5
Well	7	24.1	7	24.1
Total	29	100.0	29	100.0

Figure 3. Posttest of dental caries knowledge.

Based on figure 3, it shows that from the two groups, the most posttest booklet knowledge was sufficient, namely 13 people (44.8%) and the most audiovisual was less, namely 12 people (41.4%).

3.1.3. Bivariate Analysis

(i). Homogeneity Test

Variable	Levene's test	p-value	Conclusion
Posttest Knowledge	1,308	0.258	Homogenous

Figure 4. Homogeneity Test on Booklet and Audiovisual Media.

Based on figure 4, it is known that the knowledge data for the posttest group is homogeneous, because the p-value is greater than 0.05.

(ii). Normality Test

Based on figure 5, it shows that the knowledge data for the booklet and audiovisual groups were normally distributed, because the p-value of each group was greater than 0.05 except for the posttest group for audiovisual knowledge, the value of sig < 0.05, so that the distribution of the data proved to be abnormal.

Variable	p-value	Conclusion
pretest knowledge booklet	0.061	Normal
posttest knowledge booklet	0.143	Normal
pretest audiovisual knowledge	0.309	Normal
posttest audiovisual knowledge	0.027	Abnormal

Figure 5. Normality Test on Booklet and Audiovisual Media.

(iii). Paired T-Test (Pre-Posttest Mean Difference Test for Booklet Group Knowledge)

Based on figure 6, the t-test results are - 3.984 and the p-

value is 0.000 so that the data is significant, which means that there are differences in knowledge before and after health education with booklet media about dental caries.

Knowledge	Average	t-test	p-value	Conclusion
pretest	7.00	-3,984	0.000	Significant
posttest	9.55			

Figure 6. The Results of the Pre-Posttest Mean Difference Test for Knowledge of the Booklet Group.

(iv). Wilcoxon Test (Pre-Posttest Mean Difference Test Audiovisual Group Knowledge)

Knowledge	Average	Z	p-value	Conclusion
pretest	6.62	-3,325	0.001	Significant
posttest	9.45			

Figure 7. Pre-Posttest Average Difference.

Test Results Audiovisual Group Knowledge Based on the table above, the t-test results are -3.325 and the p-value is 0.001 so that the data is significant, which means that there is a difference in knowledge before and after health education with audiovisual media about dental caries.

(v). Mann Whitney Test

Posttest Knowledge	Average	t-test	p-value	Conclusion
Booklet Group	9.55	0.157	0.875	Not Significant
Audiovisual Group	9.45			

Figure 8. The test results of the average difference between the booklet group and the audiovisual group.

Based on figure 8, the t-test results were 0.157 and the p-value was 0.875, so that the data was not significant, which means that there was no difference between the booklet group and the audiovisual group. In other words, the two media groups are not different or the same.

3.2. Discussion

3.2.1. Characteristics of Respondents

Based on the results of the research, the characteristics of the respondents were 6th graders at SDN 09 Aie Pacah with the most gender being female with the most age being 12 years in both research groups, namely the group being given health promotion with booklets and with audiovisuals.

In accordance with the theory that childhood is a golden age or often called the Golden Age. It is usually characterized by rapid changes in physical, cognitive, social and emotional development. Childhood is a time when all aspects of the development of spiritual intelligence experience extraordinary development. Children are individual figures who are undergoing a process of rapid and fundamental development for the next life [9, 10].

3.2.2. The Level of Knowledge of Students Before and After Being Given Health Promotion Using Booklets

Based on the research, the results of the t-test were -3.984 and the p-value was 0.000 so that the data was significant, which means that there was a difference in knowledge before and after health education was carried out with booklet media

about dental caries for 6th grade students at SDN 09 Aie Pacah.

Health education is a health education activity carried out by spreading messages, instilling confidence so that people are not only aware, know, and understand, but are also willing and able to make recommendations related to health. Health extension workers must master the science of communication and master a complete understanding of the message to be conveyed. Health education in health promotion is needed as an effort to increase knowledge and awareness, in addition to knowledge and attitudes. Therefore, it is certainly necessary to provide and deliver information, which is the field of health education. The original meaning of counseling is the provision of information and information [10].

(i). The Level of Knowledge of Students Before and After Being Given Health Promotion Using Audiovisual

Based on the research, the results of the t-test were -3.325 and the p-value was 0.001 so that the data was of significant value, which means that there is a difference in knowledge before and after health education with audiovisual media about dental caries in 6th grade students of SDN 09 Aie Pacah.

Judging from the average value before being given treatment with audiovisual media the average knowledge was 6.62 and after treatment the average knowledge increased to 9.45, this shows an increase in the average score in the audiovisual group after being given health education. Based on the analysis before and after treatment using audiovisual media on respondents' knowledge about dental caries, it can be concluded that there is an effect of health knowledge after health education using audiovisual media is carried out.

Health promotion is essentially an activity or effort to convey health messages to the community, group, or individual, with the hope that with the message, the community, group or individual can gain knowledge about better health. This knowledge is ultimately expected to have an effect on behavior. In other words, with the health promotion, it is hoped that it will bring about changes in the behavior of the target. Health promotion is also a process where the process has inputs and outputs. In a health education process that leads to the achievement of promotional objectives, namely behavior change, it is influenced by many factors [11].

(ii). Differences in Students' Knowledge After Being Given Health Promotion Between Booklets and Audiovisuals

Based on the results of the t-test of 0.157 and the p-value of 0.875 so that the HO is accepted, which means there is no difference between the booklet group and the audiovisual group. In other words, the two media groups are not different or the same.

The average value in the booklet group is 9.55, while in the audiovisual group is 9.45, the probability value is 0.863 ($0.863 > 0.05$), then H_a is rejected and H_0 is accepted. This shows that there is no difference in mean between the health education group with booklet media and the health education

group with audiovisual media. Based on the small value of the difference and it was concluded that the H_0 was accepted, it indicated that the two media, namely booklets and audiovisuals, were equally effective in increasing knowledge about dental caries. This possibility can occur because after health education is carried out, both using booklets and audiovisual media, discussions or questions and answers are carried out so that it can affect the results of filling out questionnaire questions. In addition, the influence of the environment or conditions when the respondent sits or can interact with others so as to reduce concentration and create conditions that are not conducive to filling out questionnaires for both media and may make the average value of the two media almost have the same average knowledge to respondents. This makes the health education media have almost the same effectiveness.

4. Conclusion

4.1. Summary

Based on data from research and discussion of the title of the difference in the influence of health promotion media using booklets and audio visuals to the level of dental caries knowledge of 6th grader Aie Pacah, it can be concluded as follows:

- 1) There is the influence of health promotion media using booklets on the level of dental caries knowledge of 6th grader Aie Pacah.
- 2) There is the influence of health promotion media using audio visuals against the dental caries knowledge level of 6th grader Aie Pacah.
- 3) There is no average difference between the group that has been given health education using booklet and audio visual media against dental caries knowledge of 6th grader Aie Pacah.

4.2. Suggestion

- 1) For the principal to work with the nearest Health Center to conduct coaching in the form of health education regularly and will be more maximal when using media so that parents take better care of their children's dental health, especially dental caries problems that still occur and are able to care for them properly.
- 2) For further researchers are expected to be able to examine the extent of the influence of media booklet health education and audio visual media health education on the attitudes and behaviors of parents about dental caries in children aged 5-9 years.

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