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Visual Vs Audiovisual Health Education: Impact on Community Knowledge About Toga

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ABSTRACT

The use of medicinal plants for health care in Indonesia was still low. People did not understand about the types, planting methods, how to make, and the use of medicinal plants. Results of Riskesdas 2018 stated that the highest percentage of medicinal plant use was ginger 50,36%, galangal 48,77% and meniran 13,93%. In order to improve the level of public health, we can do health education. Health education is always related to the use of health promotion media. The vital function of media is to facilitate the process of conveying and receiving information. Therefore, efforts to improve the level of public health need to utilize various health service efforts, including traditional health. This research aims to measure the differences health education media on public knowledge about family medicinal plant. This research was quantitave with non-equivalent control group design. There were 1 control group and 2 intervention group. This research held in June-August 2021 in Independent Care Group Bumi Rindang Luhur, Samarinda city. The population was 36 respondents who live in Bumi Rindang Luhur Residence. This research used total population as technique sampling. Bivariate statistic used One-Way Annova. Statistical analytic stated that there is difference in the average knowledge score between the three groups with ρ value 0,000 (ρ <α, α=0,05). The importance of outreach activities about family medicinal plant with visual and audiovisual media to the community

***Keywords** : Health Education ; Visual ; Audiovisual ; Knowledge ; TOGA*

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INTRODUCTION

Indonesia is very rich in biodiversity, one of which is hundreds of types of medicinal plants. These plants are widely used not only to cure diseases, but also to prevent diseases through increasing endurance, which is expected to improve the health status of the community. Family medicinal plants (TOGA) are one of the choices of the community to be planted in the yard, with consideration because they can be utilized for health. In addition, TOGA is also safe from chemicals, cheap and easy to obtain(1).

The use of medicinal plants in Indonesia showed that the utilization of medicinal plants is still low, around 5%, compared to the national target of 15%. However, there was an increase in public knowledge about medicinal plants and herbal medicine, as well as belief in their effectiveness in improving immunity (2). The latest Riskesdas results in 2018 also stated that the proportion rose again to 44.3%. In addition, the highest percentage of medicinal plant use was ginger 50.36%, kencur 48.77%, temulawak 39.65%, meniran 13.93% and mengkudu 11.17% (Ministry of Health, 2019). Therefore, efforts to improve the degree of public health need to utilize various health service efforts, including traditional health(3).

Community knowledge about medicinal plants generally comes from experiences and skills that have been passed down from one generation to the next. Meanwhile, medicinal plants in Indonesia consist of various species that are sometimes difficult to distinguish from one another. Therefore, there are still many people who do not have good knowledge about the types, benefits and methods of making traditional medicines using medicinal plants(3)

The results of research in Palembang stated that there were 43.7% of research respondents who did not know the names and benefits of medicinal plants(4).

Meanwhile, the results of research in Lampung showed that 34.4% of research respondents did not know how to concoct or make traditional medicines made from medicinal plants. This is important considering the common reason for using traditional medicine is because it is considered safer than modern medicine because it has relatively fewer side effects. Therefore, there needs to be an effort to increase public knowledge in choosing medicinal plants and making them so that the program to improve the health status of the Indonesian people through traditional medicine can be achieved optimally(5).

One of the efforts to improve the degree of public health is health education. The purpose of health education is to increase the knowledge of individuals, groups or communities so that they are aware, willing and able to behave in a healthy manner. Health education is always related to the use of health education media. This is important considering that the media has a vital function in health education(6).

This is in line with research conducted on the use of related animated videos showing that there is an effect of health education with video media on adolescents' body image perceptions(7). The results of another study stated that in 80 samples at SMAN 1 and SMAN 3 Samarinda, audiovisual media was effective in increasing the knowledge of high school samples about HIV/AIDS(8)

Visual media is also known to be effective in improving the cognitive aspects of health education targets. A theory states that although the percentage of effectiveness of visual media only reaches 20%, visual media has its own advantages, namely an easier production process, can be read and carried at any time. Several studies have shown that visual media is effective in improving adolescents' knowledge(9). Research in Banjarmasin states that leaflets are more effective in increasing the knowledge of high school samples about the dangers of smoking (10). Meanwhile, research conducted in West Java, West Sumatra and

East Kalimantan showed that the knowledge of high school samples increased by 78.25% after being given nutrition education with poster media(11)

The community living in Bumi Rindang Luhur housing estate in Samarinda Ilir is one of the groups running the Healthy Village Herb Garden program. The results of the researcher's preliminary study are that the program has only been running for one month after the local community received assistance in the form of plant seeds from the government. There are three blocks in the housing estate and each block has planted various types of TOGA on the same land with different planting areas. However, the head of the RT stated that there has been no socialization from the government that explains in detail about the types, benefits and how to make traditional medicines made from TOGA. Therefore, there is a need for health education activities to increase the knowledge of people in the area about TOGA. Based on that, researchers interested to explore about differences in effectiveness between visual media and audiovisual media on respondents' knowledge of TOGA.

METHODS

This research was conducted in 2021 for 3 months in Samarinda city. This research used a quantitative with experimental research. The design of this research is Non-Equivalent Control Group Design. This experimental research used three groups consisting of two intervention groups and one control group. The first group received the visual media, the second group received audiovisual media and the control group did not receive any intervention. The intervention was conducted through face-to-face counseling methods four times during one month. Measurement of variables was carried out three times, the pretest, posttest-1, and posttest-2. The results of each measurement will then be compared through statistical analysis.

Table 1. Research Design

Group	Pre Test	Intervention	Post Test 1	Post-Test 2
N 1	O1	X1	O2	O3
N 2	O5	X2	O5	O6
N 3	O7	-	O8	O9
Total				28

The study population was all members of the TOGA Utilization Self-Help program in Bumi Rindang Luhur housing, totaling 36 people who were divided into three residential blocks. The research area is located in one place so it is estimated that the research respondents will have demographic homogeneity aspects.

The sample in this study was total sampling which means that the entire research population became the research sample. The sampling technique for this research was purposive sampling. This meant that the number of samples in each treatment group was determined purposefully by the researcher. The entire research sample amounted to 36 people who were divided or resided in three blocks of houses. Researchers divided this research sample using existing blocks. The visual media intervention group was block C residents. The audiovisual media treatment group was block B residents. While the control group was block A residents. The inclusion and exclusion criteria as followed:

a. Inclusion Criteria
    1. Registered as a resident who resides at the research site.
    2. Participated in the entire research intervention process
    3. Willing to become a research respondent
b. Exclusion Criteria
    1. Did not follow the research process to completion

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RESULTS

The results of univariate analysis in the study can be seen in the following table.

Table 2. Characteristics of Respondents (n = 36)

Characteristics	Visual Group		Audiovisual Group		Control Group	
	f	%	f	%	f	%
Sex						
Man	9	75,00	8	66,70	6	50,00
Woman	3	25,00	4	33,30	6	50.00
Age						
Adult	10	83,33	9	75,00	9	75,00
Elderly	2	16,70	3	25,00	3	25,00
Source of Information						
Health center	5	41,70	6	41,70	5	41,70
Family	7	58,30	6	58,30	7	58,30
History of Disease						
Yes	7	58,30	7	58,30	5	41,70
No	5	41,70	5	41,70	7	58,30

The results of table 2 show that the gender of most respondents is male. The visual media group had the most male respondents, as many as 9 people (75%). The visual media group had the most adult respondents, as many as 10 people (83.3%). The visual and audiovisual groups had 7 adult respondents each (58.3%). This shows that the respondents belong to the adult group. This shows that the respondents' source of information comes from the family.

The results of bivariate analysis in the study can be seen in the following table:

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Table 3. Average Distribution of Knowledge Score about TOGA at Pretest

Score	Group			*ρ-value*
	Visual	Audio Visual	Control	
Mean	67,08	65,16	66,33	0,132
Median	65,00	65,00	65,00	
Minimum	65,00	65,00	65,00	
Maksimum	75,00	70,00	70,00	
SD	3,34	0,38	2,05	

Table 3 showed that the highest average knowledge score at pretest was in the visual media intervention group with an average score of 67.08, a minimum score of 65.00 and a maximum score of 75.00. The One Way Anova test results showed a p-value of 0.132 which means that H0 was rejected. This result confirms that there is no difference in the average knowledge score between the three research groups at pretest. The absence of a difference in the average knowledge score between the three groups is an advantage in the study. This is because respondents in the three groups had the same knowledge about TOGA before the researcher provided the intervention. The difference in the average score of knowledge at posttest can be an indicator of the effect of the research intervention.

Table 4. The Average Distribution of Knowledge Score about TOGA on Posttest1

Score	Group			*ρ-value*
	Visual	Audio Visual	Control	
Mean	74,83	76,41	66,58	0,000
Median	73,00	75,00	65,00	
Minimum	70,00	75,00	65,00	
Maksimum	80,00	85,00	70,00	
SD	2,85	2,50	2,42	

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Table 4 shows that the highest average knowledge score at pretest was in the audiovisual media intervention group with an average score of 76.41, a minimum score of 75.00 and a maximum of 85.00. The One Way Anova test results show a p-value of 0.000 which means that H0 is rejected. This indicates that there is a difference in the average knowledge score of respondents between the three research groups at posttest-1. The difference in the average knowledge score between the three groups at posttest-1 could be an indication of the effect of the research intervention.

The second measurement on the knowledge of respondents from the three research groups was conducted at posttest-1. This measurement aims to analyze the effectiveness of the intervention media through differences in average knowledge scores. Statistical test results with One Way Anova showed a difference in the average knowledge score between the three groups with a p-value = 0.000 ($p<\alpha$, $\alpha=0.05$). The difference in the average knowledge score between the three groups indicates the effect of the research intervention in the form of health education with the help of visual and audiovisual media in increasing respondents' knowledge about TOGA at posttest-1.

Table 5. Average Distribution of Knowledge Score about TOGA on Posttest2

Score	Group			*ρ-value*
	Visual	Audio Visual	Kontrol	
Mean	81,83	78,41	67,25	0,000
Median	80,00	78,00	67,00	
Minimum	75,00	75,00	65,00	
Maksimum	90,00	85,00	70,00	
SD	1,40	0,68	0,62	

Table 5 shows that the highest average knowledge score at pretest was in the visual media intervention group with an average score of 81.83, a minimum score of 75.00 and a maximum of 90.00. The One Way Anova test results stated a p-value of 0.000 which means

H0 is rejected. This shows that there is a difference in the average knowledge score of respondents between the three research groups at posttest-2.

Table 6. Analysis of Differences in Knowledge Scores in Visual Group Respondents

No	Knowledge	Average Score	Differences Average Score	*ρ-value*	Conclusion
1	*Pretest*	67,08	7,75	0,000	There's a difference
	Posttest-1	74,83			
2	*Posttest-1*	74,83	7,00	0,009	There's a difference
	Posttest-2	81,83			
3	*Pretest*	67,08	14,75	0,000	There's a difference
	Posttest-2	81,83			

Source: Primary Data, 2021

The analyzed data in Table 6 shows the paired t-test results for each test resulted in a p-value <0.005. This means that H0 is rejected, which means that there is a significant difference in the average knowledge score of respondents in the visual media group between each test. The significance of this difference could be an indication of the effect of the research intervention in the form of health education using visual media.

Table 7. Analysis of Differences in Knowledge Scores in Audio Visual Group Respondents

No	Knowledge	Average Score	Differences Average Score	*ρ-value*	Conclusion
1	*Pretest*	65,16	11.25	0,000	There's a difference
	Posttest-1	76,41			
2	*Posttest-1*	76,41	2.00	0,004	There's a difference
	Posttest-2	78,41			
3	*Pretest*	65,16	13,25	0,000	There's a difference
	Posttest-2	78,41			

Source: Primary Data, 2021

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The analyzed data in Table 7 shows the paired t-test results for each test resulted in a p-value <0.005. This means that H0 is rejected, which means there is a significant difference in the average knowledge score of respondents in the audiovisual media group between each test. The significance of this difference could be an indication of the effect of the intervention using health education with audiovisual media.

Table 8. Analysis of Differences in Knowledge Scores in Control Group Respondents

No	Knowledge	Average Score	Differences Average Score	*ρ-value*	Conclusion
1	*Pretest*	66,63	0,005	0,191	No Difference
	Posttest-1	66,58			
2	*Posttest-1*	66,58	0,94	0,276	No Difference
	Posttest-2	67,52			
3	*Pretest*	66,63	0,89	0,076	No Difference

Source: Primary Data, 2021

The analyzed data in table 8 shows the paired t-test results for each test resulted in a p-value > 0.005. This means that H0 is accepted which means that there is no significant difference in the average knowledge score of control group respondents between each test. The absence of this difference could be because the control group respondents did not receive the research intervention or did not seek information independently.

DISCUSSION

The first measurement of respondents' knowledge from the three research groups was carried out during the pretest with the aim of analyzing the initial condition of respondents' knowledge. The results of statistical analysis with the One Way Anova test showed that there was no difference in the average knowledge score between the three groups with a p-value = 0.132 (p>α, α=0.05). This shows the homogeneity of respondents' knowledge between the three groups about TOGA before receiving the intervention. The

results analysis can be an advantage for researchers because the effect of the research intervention can be analyzed by differences in the average knowledge score at posttest.

A person's knowledge was influenced by the information received. The more sources and frequency of information obtained would form better knowledge. The increase in respondents' knowledge at posttest proves that a person's knowledge increases according to the increase in information exposure. The source of information in this study was the researcher and the information media used in the form of booklets used through health education activities (12).

Booklets are small and thin books that contain information, usually used for promotion or providing a brief explanation. The characteristics of a booklet include a smaller size than a book in general, a limited number of pages (usually less than 30 pages back to back), an attractive design, straightforward and easy-to-understand language, and a structure similar to a book (introduction, content, cover) but more concise. These characteristics allowed respondents' interest in reading the material in booklet so that their knowledge increased (13).

The absence of differences in the average knowledge scores of the three groups could be related to the homogeneity of the characteristics of the research respondents, such as age. The older a person gets, the more sources and frequency of information he or she obtains (14). In the end, the greater variety of sources and frequency of information obtained will form better knowledge. Most of the respondents were adults, representing homogeneity in age and source and frequency of information receipt. This could have an impact on the absence of differences in respondents' knowledge about TOGA.

Community knowledge related to TOGA is obtained from generation to generation. The survey results stated that the community's knowledge about TOGA was obtained from parents who were passed on to their children (15). This study is in line with research

conducted in Pekalongan district which shows that the source of information regarding TOGA knowledge comes from families from generation to generation (16). This is also in line with community service activities carried out in Tasikmalaya city which stated that people are not familiar with TOGA that can cure diseases (17).

The results of this study are in line with several studies that have been conducted to prove the effectiveness of visual and audiovisual media to increase target knowledge after receiving health education, the results of community service activities in Cibiru Wetan Village stated that community knowledge related to seed selection, planting methods, harvesting and processing TOGA increased by 75% after TOGA socialization with audiovisual media (18). This study is in line with research conducted in Cirebon Regency which states that poster media is more effective in changing response attitudes compared to audiovisual media (19). The results of this study are also in line with research conducted on Nasi Island which shows that there is a significant difference in stunting knowledge between the audio group and the lecture method (20). Another similar study in Deli Serdang Regency showed that health education using video media had an influence on the use of TOGA in heart patients with a p-value = 0.000(19).). Other community service activities showed that there was an increase in knowledge on the use of TOGA by 80.7% (21).

Retention is related to a person's ability to re-explain information obtained and stored within a certain time interval. The low increase in the average knowledge score of respondents at posttest-2 indicates their low level of retention. This is normal since the intervention was conducted four times a week. There is an “Ebbinghaus Retention Curve” theory which states that the more new things that must be learned, the more time it takes to learn them (22). The low retention of respondents could be due to the large amount of intervention material and the fact that the intervention was only conducted three times with limited duration.

CONCLUSIONS AND RECOMMENDATIONS

There is a difference in effectiveness between visual media and audiovisual media on respondents' knowledge. Future research is expected to explore further about applicable media on increasing knowledge. This study proves that investment in health education using effective media such as visual and audiovisual is the key to the success of the TOGA management program

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