

THE EFFECT OF HEALTH EDUCATION ON THE PREVENTION OF DENGUE HEMORRHAGIC FEVER ON THE KNOWLEDGE AND SKILLS OF POSYANDU CADRES IN TANJUNGREJO VILLAGE, JANTI HEALTH CENTER WORKING AREA, MALANG CITY

Mei Tantri Nur Amanah *, Hartaty Sarma Sangkot, Fiashriel Lundy, Moh Zainol Rachman

Prodi Promosi Kesehatan, Jurusan Promosi Kesehatan, Politeknik Kesehatan Kemenkes Malang

Jl. Besar Ijen 77C Malang, 65112, Kota Malang, Indonesia

Email: meytantry02@gmail.com

Abstract

DHF is a health problem that is commonly found and even results in death. Prevention efforts are carried out by providing education using videos. DHF cases in Tanjungrejo Village in 2023 were 16 people. The purpose of the study was to determine the effect of health education on the prevention of dengue hemorrhagic fever on the knowledge and skills of posyandu cadres of Tanjungrejo Village, Janti Health Center Working Area, Malang. This study applied quantitative methods with a pre experiment design in the form of one group pre-test post-test. Data collection techniques with purposive sampling according to inclusion and exclusion criteria as many as 40 samples. Data collection instruments used questionnaires and observation sheets. Data were analyzed univariately to obtain a description of the characteristics of respondents, and a description of the independent and dependent variables. Bivariate analysis applied the Wilcoxon Signed Ranks test. The results showed that there were changes in knowledge and skills before and after video education. The mean value of knowledge before education 6.35 increased to 9.83 the difference was 3.48. The average value of skills before education 6.15 increased to 9.75 the difference was 3.6. The conclusion of this study is that health education with video media is able to make the knowledge and skills of posyandu cadres increase about dengue prevention in Tanjungrejo Village, Janti Health Center Working Area, Malang.

Keywords: Education, DHF, Knowledge, Skills, Video

Introduction

DHF is one of the health problems in Indonesia. DHF is found mainly in tropical areas (1). DHF can affect everyone even children less than 15 years of age which can result in death. The emergence of DHF as a vector-borne infectious disease is widespread and growing globally. According to World Health Organization (WHO) data in 2020, there are many countries as endemic areas prone to DHF in the Southeast Asian region, namely 5 countries (India, Indonesia, Myanmar, Sri Lanka and Thailand) (2).

According to data from the Ministry of Health of the Republic of Indonesia in 2020, in Indonesia the number of dengue cases in 2020 was 76,802 cases, 785 deaths. The incidence rate of DHF is 42.35 per 100,000 population, the number of deaths is 2.62% (2). Data from the Ministry of Health of the Republic of Indonesia in 2020, shows that in 2020, East Java has the third highest number of DHF cases, after West Java and Bali with 5,948 cases, according to data from the Malang City Health Office in 2022 there were 569 cases of DHF, with 300 males and 269 females in 16 health centers and 5 sub-districts in Malang City. Sukun sub-district has the highest number of DHF cases.

Janti health center is included in Sukun sub-district which is the health center with the highest DHF cases with 89 cases in 2022 (3).

DHF is caused by the dengue virus spread by the *aedes aegypti* mosquito. It is characterized by a sudden onset of fever lasting between two and 7 days, pain in the joints and muscles, lack of strength or fatigue, pain in the solar plexus, red spots on the skin, nosebleeds, vomiting with blood, loss of consciousness, potential shock, and death. (4).

The government eradicates DHF through prevention and counseling. DHF control emphasizes prevention through community empowerment and participation in eradicating mosquito nests and improving the quality of human resources. Health cadres are instrumental and their role needs to be increased to further monitor, check for larvae, including the basics of DHF and how to prevent it (5).

Health cadres or often called posyandu cadres can teach people in their neighborhoods to improve people's understanding of DHF (4). Posyandu cadres are still a source of reference for handling various health problems, including DHF. Based on that, cadres are trained to gain knowledge and skills. Providing integrated training to cadres is expected to increase their knowledge and skills related to DHF prevention so that they can disseminate the importance of DHF prevention to the community (6).

Posyandu cadres who rarely socialize dengue prevention make people unaware that one of the symptoms of dengue is fever. This can lead to the death of the patient if there is a delay in treatment because the community does not understand the symptoms of DHF and its impact. Good community knowledge will help the community detect DHF early, preventing deaths (4).

Methods applied to health education vary widely. The type of approach used influences how participants learn. The lecture method is one of the most effective and fit-for-purpose methods (2). Lecture method accompanied by discussion can be applied to the implementation of counseling. The lecture method can help cadres understand how to prevent DHF. There are more opportunities to exchange opinions, solve problems and reach conclusions, therefore people can understand the message better. It is expected that combining lecture and discussion will help posyandu cadres understand early detection of DHF (4).

Lectures and videos are some examples of media methods that can be used for health counseling. If the message is given with the right media, the target can understand the information given. To convey the message, videos use both hearing and vision (2). Utilization of video media can help teachers, increase attractiveness, and not monotonous, so that it is sent quickly to the recipient of education (7).

Previous studies have shown that lectures and discussions can be the best strategy in increasing the knowledge of posyandu cadres about early detection of DHF, because in this approach, participants not only pay attention passively, but are also more active in voicing opinions, creating conclusions or solving problems based on the material learned (4). Another study mentioned that health counseling provided through videos can increase knowledge. In this way, people who are not very interested in reading are very suitable (8).

The preliminary study was conducted at the Janti Health Center in Malang City, on September 19, 2023, using the interview method. In the Janti health center area there are 3 villages, namely Bandungrejosari, Tanjungrejo, and Sukun. The total population of the 3 villages in 2023 obtained a total population of 81,113 people, the number of men 40,102 and women 41,011. Based on the data obtained, in 2023 the morbidity rate of DHF cases in Bandungrejosari village was 14 people, in Tanjungrejo village was 16 people, and in Sukun village was 4 people. There are 533 cadres at the Janti Community Health Center spread across 3 villages. There are 183 cadres in Tanjungrejo, 253 in Bandungrejosari, and 97 in Sukun. The number of posyandu in PKM Janti is 69 posyandu.

Tanjungrejo urban village has the highest dengue cases in the Janti community health center working area. In connection with this, researchers are interested in providing health education about

preventing DHF. The purpose of the study was to determine how health education affects dengue prevention on the knowledge and skills of posyandu cadres in Tanjungrejo Village, Janti Health Center Working Area, Malang.

Method

This study applied quantitative methods with a pre-experiment design in the form of one group pre-test post-test. The population was all posyandu cadres totaling 183 people. The sample was taken applying purposive sampling technique, namely 40 samples used according to the inclusion and exclusion criteria. The research location was in Tanjungrejo village, Janti Health Center Working Area, Malang City. This research started from September 2023 to May 2024.

Data sources are primary data obtained directly from respondents using data collection methods in the form of knowledge using pretest-posttest questionnaires and skills using observation sheets (check lists). Secondary data in the form of data taken from sources such as data on the number of posyandu cadres in the Janti health center area of Malang city, data from the Malang city health office, and the Ministry of Health. Data collection techniques with pretest-posttest questionnaires and observation sheets. This study used instruments in the form of knowledge measurement using a pretest-posttest questionnaire with 10 multiple choice questions. Skill measurement was done using observation with 10 skill statements. Data analysis used univariate analysis to obtain a description of the characteristics of respondents, as well as a description of the independent and dependent variables. Bivariate analysis determined the mean knowledge and skills before and after being given education with dengue prevention video media using the Wilcoxon Signed Ranks Test.

Results

Validity Test

Researchers test the validity by comparing r count with r table. The following table, where $n=10$, $df=10-2=8$, and $\alpha=5\%$, so the r table is 0.631.

Table 3. 1 Knowledge Validity Test

Variables	Questionnaire	R count	R table	Description
Knowledge	Question 1	0.781	0.631	Valid
	Question 2	0.808	0.631	Valid
	Question 3	0.772	0.631	Valid
	Question 4	0.829	0.631	Valid
	Question 5	0.733	0.631	Valid
	Question 6	0.833	0.631	Valid
	Question 7	0.781	0.631	Valid
	Question 8	0.754	0.631	Valid
	Question 9	0.781	0.631	Valid
	Question 10	0.808	0.631	Valid

Based on table 3. 1 above, testing each question item obtained $r_{hitung} > r_{tabel}$ and $sig < 0.05$ in other words, the research tool consisting of 10 questions for the knowledge questionnaire is all valid.

Table 3. 2 Skill Validity Test

Variables	Check List	R count	R table	Description
Skills	Skill 1	0.738	0.631	Valid
	Skill 2	0.718	0.631	Valid
	Skill 3	0.738	0.631	Valid
	Skill 4	0.718	0.631	Valid
	Skill 5	0.731	0.631	Valid
	Skill 6	0.731	0.631	Valid
	Skill 7	0.773	0.631	Valid
	Skill 8	0.797	0.631	Valid
	Skill 9	0.839	0.631	Valid
	Skill 10	0.839	0.631	Valid

Based on table 3. 2 above, the test results of each statement item obtained $r_{hitung} > r_{tabel}$ and $\text{sig} < 0.05$ in other words, the research tools consisting of 10 statements in the skills questionnaire are all valid.

Reliability Test

The questionnaire can be said to be reliable if it has a coefficient ≥ 0.60 and compares r_{α} and r_{table} . Questions can be said to be reliable $r_{\alpha} > r_{table}$, but $r_{\alpha} < r_{table}$, said to be unreliable. This is the reliability test of the knowledge and skills questionnaire in the study.

Table 3. 3 Reliability Test of Knowledge and Skills

Variables	Cronbach's alpha	N of items	Description
Knowledge	0.932	10	Reliable
Skills	0.920	10	Reliable

Based on table 3. 3 above, the Cronbach's alpha knowledge variable is $0.932 > 0.60$. In the skill variable, the Cronbach's alpha value is 0.920, this value is > 0.60 . The results show that the knowledge and skills variables are reliable.

Research Results

This study was conducted from April 1 to May 4, 2024 with 4 interventions. At the first meeting the researcher gave informed consent to the posyandu cadre to be filled in and continued with filling out the pretest sheet on the first day. The second meeting carried out a check list of observation sheets on the ability of respondents to perform skills before being given education, and continued to provide intervention in the form of education using video media. After being given education, the educational video was distributed to the WhatsApp group of posyandu cadres so that the material that had been delivered could be studied again by posyandu cadres. The third meeting respondents were asked to fill out a posttest questionnaire after the education was given. At the last meeting, a check list of observation sheets was carried out on the ability of respondents to perform skills after being given education. This was done to determine changes in knowledge and skills of posyandu cadres before and after the intervention.

There were 40 respondents willing to participate. The characteristics of the respondents are shown in the following table. The description of characteristics is a test to determine the general characteristics of the respondents observed, and the test is carried out using the frequency distribution test with the following results:

Table 3. 4 Respondent Characteristics

No	Variables	Category	Frequency	Percentage (%)
1	Gender	Female	40	100%
		Total	40	100%
2	Age	36-40	7	17,5%
		41-45	10	25%
		46-50	18	45%
		51-55	5	12,5%
		Total	40	100%
3	Education	SMP	12	30%
		High School	28	70%
		Total	40	100%
4	Jobs	IRT	34	85%
		Self-employed	6	15%
		Total	40	100%
5	Cadre Length	1-5 years	25	62,5%
		6-10 years	14	35%
		11-15 years	1	2,5%
		Total	40	100%
6	Experience of receiving dengue-related education	Ever	40	100%
		Total	40	100%

Based on table 3. 4 above, it can be seen that the characteristics of respondents based on gender are known that all posyandu cadres are female with a total of 100% (40 people). In the age characteristics known posyandu cadres with aged 36-40 is 17.5% (7 people), aged 41-45 is 25% (10 people), aged 46-50 is 45% (18 people), and aged 51-55 is 12.5% (5 people). In education characteristics, it is known that posyandu cadres have a junior high school education as much as 30% (12 people), and a high school education as much as 70% (28 people). On the characteristics of the work known that posyandu cadres as housewives as much as 85% (34 people), and as self-employed as much as 15% (6 people). On the characteristics of the length of time as a cadre known that posyandu cadres have worked as posyandu cadres for 1-5 years as much as 62.5% (25 people), for 6 10 years as much as 35% (14 people), and for 11-15 years as much as 2.5% (1 person). In the characteristics of experience, it is known that all posyandu cadres have received education about dengue prevention as much as 100% (40 people).

Identification of knowledge before and after being given health education about preventing DHF in posyandu cadres in Tanjungrejo Village, Janti Health Center Working Area, Malang

The researcher gave a questionnaire containing 10 questions related to the definition of DHF, the causes of DHF, the life of the aedes aegypti mosquito, where mosquito larvae grow, preventing DHF with PSN 3M Plus to the posyandu cadres of Tanjungrejo village. The answer to the question is then scored if correct gets a score = 1 and wrong = 0 with the highest score of 10. Based on the results of data collection, the following are the results of the pretest and posttest on posyandu cadres:

Table 3. 5 Average knowledge before and after education

	N	Min	Max	Mean (average)	Std. Deviation	Mean Difference
Pretest	40	5	7	6.35	0.622	3.48
Posttest	40	9	10	9.83	0.385	

Based on table 3. 5 above, the average value of knowledge of posyandu cadres has increased from 6.35 to 9.83. From the average value of pretest and posttest, the results obtained (mean difference = 3.48).

Identification of skills before and after being given health education on preventing DHF in posyandu cadres in Tanjungrejo Village, Janti Health Center Working Area, Malang

The researcher gave 10 statements on the check list sheet for cadres to explain and practice related to the material content of the video. This is related to the material previously explained by researchers about the definition of dengue, signs and symptoms of dengue, the characteristics and life of the aedes aegypti mosquito, where mosquitoes grow, preventing dengue with 3M plus, first aid when dengue symptoms occur, how to check for larvae, and how to use abate powder. Assessment of the check list sheet on posyandu cadres in explaining and practicing the material is assessed with a score of done = 1 and not done = 0 with the highest score of 10. Based on the results of data collection, the following pretest and posttest results on posyandu cadres are as follows:

Table 3. 6 Mean skills before and after education

	N	Min	Max	Mean (average)	Std. Deviation	Mean Difference
Pretest	40	5	7	6.15	0.700	3.6
Posttest	40	9	10	9.75	0.439	

Based on table 3. 6 above, the average value of posyandu cadre skills has increased from 6.15 to 9.75. From the average value of pretest and posttest obtained results (mean difference = 3.6).

The effect of health education on knowledge of dengue prevention in posyandu cadres of Tanjungrejo village, Janti Health Center Working Area, Malang

After intervening in the form of material exposure using video media related to DHF and its prevention and then conducting pretests and posttests on posyandu cadres, researchers then conducted statistical tests. Previously, a normality test was carried out to determine the normality of the data generated and then determine the statistical test used including parametric or non-parametric tests. Because the number of samples < 50, the normality of the data was tested using the Shapiro-Wilk test. The following table: Researcher's normality test.

Table 3. 7 Knowledge Normality Test

	Knowledge		
	<i>Shaphiro-Wilk</i>		
	Statistic	Df	Sig.
Pretest	0.757	40	0.000
Posttest	0.462	40	0.000

These results are then viewed as Sig. > 0.05, having a normal distribution which may be indicated by the Paired T-Test, while Sig. < 0.05, the Wilcoxon test can be used to determine an abnormal distribution. The test results showed that the data in this study were not normally distributed, so the researcher applied the Wilcoxon test in determining the difference in average knowledge before and after the education generated from the video media. These are the results of the researcher's test.

Table 3. 8 Wilcoxon Test Results Knowledge

	N	Mean	Mean Difference	P value
Pretest	40	6.35	3.48	0.000
Posttest	40	9.83		

Based on table 3. 8 above, the Wilcoxon test results show an asymp sig.0.000 value < 0.05, H0 is rejected and H1 is accepted, so it can be concluded that there is an average difference in knowledge about dengue prevention in posyandu cadres before and after education. This means that health education has an impact on the prevention of dengue hemorrhagic fever on the knowledge of posyandu cadres in tanjungrejo village, working area of Janti health center, Malang city.

The effect of health education on dengue prevention skills in posyandu cadres in Tanjungrejo Village, Janti Health Center Working Area, Malang

After intervening in the form of material exposure using video media related to DHF and its prevention and then conducting pretest and posttest skills on posyandu cadres, researchers then conducted statistical tests. Previously, a normality test was carried out to determine the normality of the data generated and then determine the statistical test used including parametric or non-parametric tests. Because the number of samples < 50, the normality of the data was tested using the Shapiro Wilk test. The following table is the result of the researcher's normality test.

Table 3. 9 Skill Normality Test

	Skills		
	<i>Shaphiro-Wilk</i>		
	Statistic	Df	Sig.
Pretest	0.801	40	0.000
Posttest	0.539	40	0.000

Then looking at Sig. > 0.05, having a normal distribution may be indicated by the Paired T Test, while Sig. < 0.05, the Wilcoxon test can be used to determine an abnormal distribution. The test results showed that the data of this study were not normally distributed, the researcher applied the Wilcoxon test in determining the average difference in skills before and after video media education.

Table 3. 10 Wilcoxon Test Results Skills

	N	Mean	Mean Difference	P value
Pretest	40	6.15	3.6	0.000
Posttest	40	9.75		

Based on table 3. 10 above, the results of the wilcoxon test show asymp sig.0.000 < 0.05, H0 is rejected and H1 is accepted, so it is concluded that the average skills on preventing DHF in posyandu cadres before and after providing education have increased and there is an effect of health education on preventing DHF on the skills of posyandu cadres in tanjungrejo village, working area of Janti health center, Malang city.

Discussion

Identification of knowledge before and after being given health education about preventing DHF in posyandu cadres in Tanjungrejo Village, Janti Health Center Working Area, Malang

The results of the study found a difference in the mean knowledge of posyandu cadres before education was 6.35 and the average after education was 9.83. The average increase in knowledge value between pretest and posttest is 3.48. The results of this study indicate that before being given education, the pretest results of posyandu cadre knowledge are still relatively low so that the results obtained are less than optimal.

In this study, increasing knowledge by providing health education using video media. Posyandu cadres are the main pillars of development, especially in the health sector, which involves health centers independently in community services. As an important figure in health services, cadres need to be considered both in terms of knowledge and implementation of cadre duties. The results of the study are in line with research by (9) that one effort needs to be done to control dengue is to empower posyandu cadres in the village. These posyandu cadres come from local community members and have contributed as health cadres. They are elected by the community and voluntarily work to improve community health conditions. The presence of cadres also helps the community to adopt healthy behaviors to achieve the best health status.

The results of this study indicate an increase in knowledge in posyandu cadres after being given education using video media. The results of the knowledge of posyandu cadres after being given education are better than before being given education. Sensing certain objects produces knowledge. The five human senses, including smell, taste, hearing, sight, and touch, function to identify objects. However, the senses of hearing and sight are the main sources of human knowledge. Education is one of the factors that influence knowledge. Education is able to provide a perspective or a way for a person to make choices, make decisions, and act. Good knowledge can be an alternative to solving problems such as reducing the incidence of DHF. This research is in accordance with what was done (10) shows that the community must know about DHF. A decrease in knowledge is definitely in line with an increase in the possibility of DHF. So, one can avoid DHF if they know about it.

In this study, one of the strategies to improve the knowledge of posyandu cadres about dengue prevention is through education. The results showed that before being given education the results obtained were still low, while after being given education the knowledge of posyandu cadres had increased. Education is a form of education that is socialized in order to be able to provide a person's understanding from not knowing to knowing. Education on posyandu cadres aims to have a positive influence in increasing knowledge. It is expected that the information obtained by posyandu cadres can be disseminated to the community regarding dengue prevention. This research is in accordance with what was done by (1) that efforts to prevent dengue disease are to educate people about dengue disease and how to prevent it. Educational activities about DHF disease can provide additional knowledge so that cadres can prevent the spread of disease and disseminate known information.

Identification of skills before and after being given health education about dengue prevention in posyandu cadres in Tanjungrejo Village, Janti Health Center Working Area, Malang

The results of the study found that the average difference in the skills of posyandu cadres before education was 6.15 and the average after education was 9.75. The average increase in skill scores between pretest and posttest was 3.6. Improving the skills of posyandu cadres in explaining and practicing the material can be done through providing education, one of which is with video media. As audiovisual media, videos use hearing and vision to convey messages, considered to be able to convey health counseling messages more clearly and interestingly. If the media used is correct and goal-oriented, the health promotion content will be easily received, processed and retrieved from the target. This research is consistent with that conducted by (11) Video media is an audiovisual

electronic educational media that is interesting and easy to understand because it uses all five senses. Video media has the ability to convey informative, instructional, or educational messages.

The study showed that there was an increase in skills in explaining and practicing the material after being given education using video media. The skills of posyandu cadres are expected to increase their role to become educators in the community, so that behavior becomes better. The role of posyandu cadres is not always within the scope of the posyandu, but cadres can participate in the health sector in two ways: on the posyandu schedule and outside the schedule, thus supporting additional health initiatives related to community issues, and reporting on activities that have been carried out. The study correlates with studies by (12) showing that posyandu cadres encourage health educators and service providers through posyandu. As the role of kaders is very important, they should continuously improve their capabilities in terms of knowledge and skills through training. Such conditions will help cadres provide health services to the community, which will result in improved health outcomes. Cadres who perform their duties well will provide motivation to achieve goals.

In this study, education had a positive effect on improving cadres' skills. This can be seen from the positive response, besides that during the demonstration the posyandu cadres also showed enthusiasm in performing the skills to explain and practice the material contained in the video content. Skills are the application of knowledge. This affects the skills performed by a person. Increased knowledge encourages understanding and awareness of posyandu cadres so as to create good action or behavior in accordance with their knowledge. Other research by (6) that the behavior of posyandu cadres in reducing DHF is very important. One of the components that most influences the number of DHF cases is the activeness of cadres in carrying out PSN. Actions that can be implemented in supporting this factor are providing education to cadres in increasing knowledge and skills about overcoming DHF, anticipated to be able to be communicated and conveyed to the community about the urgency of PSN.

The effect of health education on knowledge of dengue prevention in posyandu cadres in Tanjungrejo Village, Janti Health Center Working Area, Malang City

Based on this study, there was a significant difference in the average knowledge of posyandu cadres before and after being given education (P value < 0.05). It is known that education using video media, followed by lectures and question and answer discussions is an effective method to increase the knowledge of posyandu cadres in Tanjungrejo Village about DHF and its prevention. There was a significant increase in respondents' knowledge from pretest and posttest. The lecture method can increase cadres' knowledge about DHF and how to prevent it. The discussion method provides many opportunities in collaborating ideas, solving problems and generating conclusions hence people can understand the message better. It is expected that cadres' knowledge can be improved by combining the lecture and discussion approaches of posyandu related to DHF and its prevention. Education with videos has an effect on increasing the knowledge of posyandu cadres. Research conducted by (8) showed that the knowledge of health cadres increased after being sent health counseling. This study used video media. Health counseling through video is able to increase the knowledge of health cadres, because this method is ideal for people who do not really like to read. Health counseling aims to increase knowledge and actions to minimize the incidence of DHF every year. The results of the study are in accordance with what was done (4) showed that cadres had better knowledge when educated through lectures and discussions. To increase the knowledge of health cadres on early detection of DHF, a combination of lectures and discussions can be an appropriate approach. This method allows the target not only to listen passively, but also to be more active in voicing arguments, creating education not only to listen passively, but also to convey many opinions, active in producing conclusions or providing solutions related to the material learned.

Researchers also use video media as an educational medium. In teaching, the use of video media can improve learning, increase attractiveness, and not get bored, so the content is more quickly conveyed to the target. The media used in the process of providing education can attract the attention of posyandu cadres so that they focus on paying attention and learning about it. Research conducted by (13) showed that the knowledge of health cadres increased after receiving health education compared to their previous knowledge. Audio-visual media, namely videos, are used in counseling. Video educational media was used to provide information to respondents in this study. One type of media that can help understand concepts is video, which can be replayed and presents information in a structured manner. Video media is also used for health education, because video media depends on hearing and vision, so that the target can understand the message easily. Counseling using video media can increase community understanding of dengue prevention. Video media is effective in clarifying information, expanding knowledge, and the information conveyed is easily recalled (14).

Media is an important factor in health promotion activities. In this study, video media was chosen as educational material. Video media was chosen to be in accordance with the objectives to be achieved, the topics discussed, in accordance with the characteristics of the target group, considered the most efficient to achieve certain goals, and can provide benefits for posyandu cadres who are given education. The selection and determination of media in educational activities needs to be done to support the effectiveness of educational activities. It is also important to make educational activities interesting so that it is interesting to learn, and the target remains focused on the topic of discussion. Other research by (15) found that media selection as a support for the educational process plays an important role, because with the right media for the target, the target can also understand the message. The material to be delivered and the learning objectives influence the selection of educational media and methods. A successful selection of educational media and methods shows that the presenter makes the material comfortable to deliver and the audience can understand it.

The effect of health education on dengue hemorrhagic fever prevention skills in posyandu cadres in Tanjungrejo Village, Janti Health Center Working Area, Malang City

It is proven that there is an important difference in the average skills of posyandu cadres before and after providing education with video media (P value < 0.05). In this study, researchers provided video media facilities as a learning resource so that the skills of posyandu cadres about dengue prevention could increase. Improving one's skills through health education can use video media as a tool for providing education, besides that video media also has an influence to facilitate the provision of information. Able to conclude that video media has an effect on improving skills in posyandu cadres. Other research conducted by (2) shows that the use of video as an educational media can help a person during the process of understanding data, can increase the desire to listen and learning outcomes. By using audio-visual stimulus to expose complex or complicated objects, video media enables better thinking processes, such as understanding, recalling, and linking concepts and facts. After health education activities are completed, video education is used to enhance information.

In this study, posyandu cadres, in addition to monitoring larvae, also helped the community control dengue and eradicate mosquito nests (PSN), such as providing abate powder at the breeding site of the *aedes aegypti* mosquito. Posyandu cadres acting as educators must be able to communicate well. Communication is very important in internal and external business. Good communication must be possessed by cadres so that the information conveyed to the community is in accordance with the material related to DHF and its prevention, the information is communicated in a language that is easy to understand, not too difficult so that the material delivered can be accepted and easily recognized by the target, so that the community can take part in the prevention of DHF in their respective environments. This study correlates with other studies conducted by (16) found that training provided to cadres influenced the improvement of communication techniques needed by cadres as educators in

the community. The presence of cadres who are responsible as educators is expected to increase the desire of the community to actively control DHF vectors. It is expected that the ability of cadres to teach the community will improve with training in communication techniques.

In this research, educational activities will not run effectively without media. Media is designed and used as a tool in explaining the information conveyed in educational activities. Media is used as an alternative in delivering information so that posyandu cadres understand the material presented so that it affects the improvement of skills in explaining and practicing material related to DHF and its prevention. The purpose of using media in health promotion activities is so that the media can deliver information more easily, the information conveyed is clear, and describes objects related to the material that can facilitate communication between presenters and respondents. Other research by (17) that to get the results of improving the skills of posyandu cadres, media aids are needed to divert the attention of posyandu cadres. Media in education is a means used for channeling messages. The goal is to make the communication interaction process between the speaker and the target easier. The media will certainly provide benefits for posyandu cadres. Video media as an educational media because video can combine sound (sound) and visual (image), making cadres understand the material provided by the speaker.

Conclusion

Knowledge about dengue prevention in posyandu cadres in Tanjungrejo village before being given education has an average value of 6.35 and after being given education the average value is 9.83. The difference in mean knowledge between pretest and posttest was 3.48. Skills on dengue prevention in posyandu cadres in Tanjungrejo village before being given education had an average value of 6.15 and after being given education the average value was 9.75. The difference in the mean value of skills between pretest and posttest was 3.6. There is an effect of health education on the knowledge and skills of DHF prevention of posyandu cadres in Tanjungrejo Village, Janti Health Center Working Area, Malang City (P value < 0.05).

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