



An Original Article

The Effect of Prevention Education of Dengue Hemorrhagic Fever on Knowledge and Attitudes of Family Heads

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ABSTRACT

Introduction : Assistance and health education about DHF is one way that is used to increase one's knowledge about DHF with the aim of changing or influencing human behavior in the prevention of dengue. The purpose of assistance and education about DHF is to inform the public about the disease.

Objective : To determine the effect of assistance and education to prevent dengue hemorrhagic fever against the knowledge and attitudes of family heads in Batetangnga village.

Method : used pre-experimental research with the form of one group pretest and posttest design. The number of samples in this study were 20 people. Sampling in this study using non-probability sampling technique with Consecutive sampling method.

Results : of the study were obtained by using the Mc Nemar test and Wilcoxon signed ranks test.

Conclusion : showed that there was an effect of assistance and education (penyu) prevention of dengue haemorrhagic fever (DHF) on knowledge ($p=0.001$) and attitudes of family heads ($p = 0.001$) in Batetangnga Village.

INTRODUCTION

Dengue fever or often called Dengue Hemorrhagic Fever (DHF) is a disease caused by a dengue virus infection. The virus enters the human bloodstream through the bites of mosquitoes from the genus *Aedes*, for example *Aedes aegypti* or *Aedes albopictus*. Until now, DHF is still a health problem that worries the community. Every year an estimated 20 million people are infected with the dengue virus worldwide, most of which are developed by children. The World Health Organization (WHO) has determined dengue fever as a disease that must receive attention and its ways of treatment and control are always sought so that it does not

spread and takes more lives (Susanto 2013b).

The dengue virus itself is part of the flaviviridae and can be classified into four serotypes, namely Dengue-1, Dengue-2, Dengue-3 and Dengue-4 serotypes. Of the four serotypes, the most frequent cause of serious cases and death is the Dengue-3 serotype (Air, Anggraini, & Cahyati, 2017);(Rubandiyah, 2018).

The first case of dengue fever was discovered in Manila, Philippines in 1953. Two years later, dengue fever spread to Thailand. After that, in the next 30 years dengue fever spread to Cambodia, China, India, Indonesia, Laos,

Malaysia, Singapore, Sri Lanka, Vietnam and several other countries. Currently, dengue fever is spread in almost all parts of the world, especially in tropical and subtropical countries. In Indonesia, DHF was first discovered in Surabaya in 1968. In 1994 this disease has spread to all provinces in Indonesia, even since 2001, DHF has become an endemic disease in several cities and towns, as well as in rural areas. Factors such as increasing population density, climate change and urbanization can increase the spread of the dengue virus. (Susanto, 2013) ; (Putri & Mutakin, 2018).

Based on the number of dengue cases reported globally to the World Health Organization (WHO), it is known that there has been an increase in the number of dengue cases from 2.2 million cases in 2010 to 3.2 million cases in 2015, about 40% of the world's population. Including unreported cases, WHO estimates that there are around 50 million - 100 million cases of dengue that occur each year, especially in Asia, Latin America and Africa. In 2016, more than 2.38 million cases were reported in the Americas region, 375,000 suspected cases in the Bar-at Pacific region, and 1,061 possible cases in the African region, Burkina Faso. (Putri & Mutakin, 2018).

In 2016, the number of DHF sufferers in Indonesia was reported as many as 204,171 cases with a total death rate of 1,598 people (Incidence Rate (IR) = 78.85 per 100,000 population and Case Fatality Rate (CFR) / mortality rate = 0.83%). Compared to 2015 with 129,650 cases and IR 50.75, there was an increase in cases in 2015 (Kementrian Republik Indonesia, 2016).

Based on Indonesia's 2017 health profile, there are 68,407 cases of dengue fever, with 493 deaths. This number decreased quite drastically from the previous year, namely 204,171 cases and the number of deaths as many as 1,598 people. The DHF morbidity rate

in 2017 decreased compared to 2016, from 78.85 to 26.10 per 100,000 population. However, the decline in case fatality rate (CFR) from the previous year was not too high, namely 0.78% in 2016, to 0.72% in 2017 (Kementrian Republik Indonesia, 2018).

Dengue Hemorrhagic Fever (DHF) cases in Polewali Mandar Regency in 2016 were 194 cases. The most common cases of dengue fever were found in Polewali sub-district as many as 85 dengue cases followed by Campalagian 34 cases, Tin-ambung 19 cases and Binuang sub-district 16 dengue cases. In 2017, the number of cases of DHF has decreased with 26 cases and the highest area of DHF incidence is still in Polewali District with 15 cases. In 2018 the incidence of dengue fever has increased with the number of cases as many as 65 people and the largest distribution in Binuang District as many as 30 cases and Batetangnga Village was designated as Extraordinary Events (KLB) (Dinas Kesehatan Polewali Mandar, 2019).

The increase in the number of cases and the increase in infected areas is due to the better transportation of the population, the presence of new settlements, the lack of community behavior towards cleaning mosquito nests, the presence of mosquito vectors in almost all corners of the country and the existence of four virus type cells that circulate throughout the year. The factors that influence the incidence of dengue hemorrhagic fever include host factors, environment, clean and healthy living habits and the virus itself. Host factors, namely vulnerability and immune response; environmental factors, namely geographic conditions (altitude from sea level, rainfall, wind, humidity, season); demographic conditions (density, mobility, behavior, customs) (Depkes RI, 2016).

The eradication efforts that have been carried out include cutting the dengue transmission

chain by eradicating the DBD Mosquito Nests (PSN-DBD) through the 3M movement (draining, closing, burying) plus other activities such as draining and scrubbing baths and other places of water storage place at least once a week, closing the water reservoir tightly with the aim that mosquitoes cannot lay eggs in these places, Periodic Larva Inspection (PJB), selective abatement, fogging or fumigation at all infected case locations. (Dirjen PP&PL Ministry of Health, 2011; 2013) (Pelatihan et al., 2018).

Apart from the efforts mentioned above, education is also an activity that has been carried out, which aims to change people's behavior. As it is known, education is an effort to provide learning experiences or create conditions for individuals, groups and communities including increasing knowledge, attitudes and behavior (Depkes RI, 1997). (Pulungan, 2008).

The eradication efforts that have been carried out have not obtained maximum results in reducing the occurrence of Dengue Hemorrhagic Fever (DHF) because the public's awareness to prevent dengue has not changed, people usually come too late, when they fall victims they just realize the importance of a healthy life culture which must be started from the environment itself (Heraswati, 2008).

The lack of knowledge and low level of awareness is presumed to have a bad impact on the quality of public health, lack of knowledge with an indication of low awareness will reduce community behavior towards health care (Setiawan, Ediati, & Winarni, 2017; Setiawan, Firdaus, Ariyanto, & Nantia, 2020; Setiawan, Sopatilah, Rahmat, Wijaya, & Ariyanto, 2018), especially in the prevention of DHF and from experience it is proven that behavior is based on knowledge and awareness will be more lasting than behavior that is not based on knowledge and awareness, it will not last long (Heraswati, 2008).

Healthy behavior and the ability of the community to choose and get quality health services will greatly determine the success of Health Development. Behavior includes knowledge, attitudes and actions of the individual himself (Notoatmodjo, 2012). From the results of previous research in Kendari, it was found that there was a relationship between the incidence of dengue fever and knowledge, where the percentage of knowledge that was less than the positive respondents was 74 people (71.8%), while 29 people (28.2%) had less knowledge (Duma, 2007). Research in Mataram concluded that the more people are not serious and not careful about the transmission of dengue, the more risk of dengue transmission will be (Fathi, 2005).

Based on a preliminary study conducted by prospective researchers, public knowledge and awareness about the prevention of DHF was still low, this could be seen from the high incidence of dengue in the community. Data obtained in 2018 in the Binuang Health Center Work Area from 7 working areas, it was known that the number of dengue cases was 27 cases. Age 5-9 years 6 cases of DHF, 10-14 years 7 cases, 15-20 years 4 cases, 21-40 years 7 cases and age 40 years and over there were 3 cases of DHF. Of the 7 working areas of the Binuang Health Center, the residents of Batetangnga Village who experienced the most cases of DHF were 26 people and were designated as Extraordinary Events (KLB) then one person in Mirring Village (Puskesmas Binuang, 2019).

The still high incidence of DHF, especially in Batetangnga Village, can be influenced by internal and external factors such as knowledge, attitudes, and behavior of the community in understanding and carrying out cleaning activities of the home environment in preventing the recurrence of DHF. In increasing public knowledge about health problems, a real

effort is needed, such as providing assistance and education. The PENYU method is a process of assistance and education that takes place continuously (Continues) for a certain time. In this PENYU method, researchers will provide structured guidance to family heads regarding the prevention of dengue hemorrhagic fever for 3 consecutive days after conducting education. To break the chain of dengue vector transmission, the community must do it themselves in an effort to prevent DHF. The community, especially head of the family, must have good knowledge and attitudes that can prevent the occurrence of Dengue Hemorrhagic Fever (DHF). Therefore, to increase good knowledge and attitudes in preventing dengue disease, researchers conducted education about dengue prevention using the Penyu method. According to Andan Firmansyah (2017) The Penyu Method (Assistance and Education) affected to the changes of community behavior.

Based on the description above, researchers were interested in conducting research on "The Effect of Dengue Hemorrhagic Fever (DBD) Assistance and Education (PENYU) on the Knowledge and Attitudes of the Head of the Family in Batetangnga Village, Binuang District, Polewali Mandar Regency".

METHOD

This research was a pre-experimental research (Pre-Experiment Design) which was an experimental study used to reveal the causal relationship only by involving one group of subjects, so there was no strict control over the variables (Swarjana, 2015). This research was conducted using a single group pretest-posttest research design (The One group Pre-test and Post-test) (Swarjana, 2015).

This research was conducted in Batetangnga Village, Binuang District, Polewali Mandar Regency for 17 days starting from 25 May to 10 June 2019. The number of samples in this study were 20 households. Data collection in this

study was obtained by carrying out the pretest and posttest using a questionnaire that has been tested for validity and reliability to assess the knowledge and attitudes of the head of the family.

Univariate analysis was performed on each variable from the research results. The univariate analysis in this study included age, gender, occupation, education. In this study, univariate analysis was carried out and presented in a frequency distribution table.

Bivariate analysis was performed to answer the research hypothesis with the help of SPSS using the Marginal Homogeneity test for knowledge variables and the Mc Nemar test for attitude variables. The working hypothesis in this study was that there was an effect of assistance and education on the prevention of DHF on the knowledge and attitudes of the head of the family.

RESULTS

Univariate

a. Knowledge

Table 1 Criteria for Respondents Based on Prior Knowledge

Variables	n	%
Knowledge (pre)		
Good	4	20.0
Enough	8	40.0
Less	8	40.0
Knowledge (post)		
Good	14	70.0
Enough	6	30.0
Less	0	0.0

Knowledge of respondents before assistance and education (pretest) which were categorized as good as many as 4 people (20.0%), quite good as many as 8 people (40.0%) and those in the poor category were as many as 8 people (40.0%).

Based on the table above the level of respondent's knowledge after assistance and

education(posttest) which was categorized as good as many as 14 people (70.0%), quite good as many as 6 people (30.0%) and those in the bad category did not exist.

b. Attitude

Table 2 Criteria for Respondents Based on Attitudes

Variables	n	%
Attitude (Pre)		
Positive	5	25.0
Negative	15	75.0
Attitude (Post)		
Positive	16	80.0
Negative	4	20.0

Based on the table above, the respondent's

attitude level before assistance and education(pretest) which was in the negative category was 15 people (75.0%) more than those in the positive category, namely 5 people (25.0%).

Based on the table above, the level of respondent's attitude after assistance and education(posttest) which was in the positive category was 16 people (80.0%) more than those in the negative category, namely 4 people (20.0%).

Bivariate Analysis

a. Knowledge Analysis Before And After Assistance and Education

Table 5
The cross tabulation of the knowledge of the head of the family before and after

Variables		knowledge after			Total	P-value
		Good	Enough	Less		
knowledge before	Good	4	0	0	4	0.000
	%	20.0%	0.0%	0.0%	20.0%	
	Enough	6	2	0	8	
	%	30.0%	10.0%	0.0%	40.0%	
Less	4	4	0	8		
%	20.0%	20.0%	0.0%	40.0%		
Total		14	6	0	20	
%		70.0%	30.0%	0.0%	100.0%	

Based on the results of cross tabulation of table 5, it could be seen that the level of knowledge of respondents before the penyuluhan which was categorized as good were 4 people (20%), 8 people (40%) were good enough and 8 people (40%) were not good enough (less). The level of knowledge of respondents after the penyuluhan which was categorized as good were 14 people (70%), 6 people were good enough (30%) and none of not good enough (less).

The results of data analysis used statistics with

the marginal homogeneity test obtained a p-value of 0.000. Because p -value < from alpha 0.05 then H_0 was accepted and H_a was rejected, so it could be said that there was an effect of Dengue Hemorrhagic Fever (DHF) Prevention Assistance and Education on Knowledge of Family Heads in Batetangnga Village, Binuang District, Polewali Mandar Regency.

b. Attitude analysis before and after assistance and education

Table 6
Cross tabulation of the attitude of the head of the family before and after

Variables		knowledge after being given a penyu		Total	P-value
		Positive	Negative		
knowledge before being given a penyu	Positive	5	0	5	0.001
	%	25.0%	0.0%	25.0%	
	Negative	11	4	15	
	%	55.0%	20.0%	75.0%	
Total		16	4	20	
%		80.0%	20.0%	100.0%	

Based on the results of the cross tabulation of the table above, it could be seen that the level of respondent's attitude before assistance and education which was in the negative category were 15 people (75%) more than the positive category, namely 5 people (25%). The level of respondent's attitude after assistance and education (posttest) which was in the positive category were 16 people (80%) more than the negative category, namely 4 people (20%).

The results of data analysis using statistics with the Mc Nemar test obtained a p-value of 0.001. Because p -value $<$ from alpha 0.05, H_a was accepted and H_0 was rejected, so it could be said that there was an effect of Dengue Hemorrhagic Fever (DHF) Prevention Assistance and Education on the Attitude of Family Heads in Batetangnga Village, Binuang District, Polewali Mandar Regency.

DISCUSSION

Univariate Analysis

a. Knowledge

Based on the data obtained, the majority of respondents' level of initial knowledge was in the poor and good enough categories, namely 8 respondents (40%) respectively, then it changed to the majority in the good category after being given assistance & education, namely 14 respondents (70%).

This was in line with Kamil's (2010) theory, which stated that knowledge could be

increased through training (assistance and education) with the lecture method. Based on the pretest knowledge data, it was found that 4 respondents (20%) were in the good category. Some of the factors related to this level of knowledge include information about DHF. The occurrence of dengue fever in the Binuang Community Health Center working area each year has led to the continuous promotion of DHF prevention programs in the *Puskesmas* working area so that it was very familiar to the community. These programs indirectly helped the community (head of the family) to understand about DHF, including the procedures for preventing dengue disease. This was in accordance with the opinion of Notoatmodjo (2012), which stated that one of the factors that affected a person's knowledge was information.

Based on the posttest knowledge data, there were still 6 respondents (30%) who were categorized as good enough and those who were categorized as poor were none. This was because of in this study the researchers themselves provided education for the head of the family, where the researchers still did not really understand the material presented so there were still some family heads who did not understand the material presented. Even so, the effect of DHF prevention assistance and

education on increasing the knowledge of family heads in this study was significant ($p = 0.000$).

The results of this study was in line with the research of Soeparmanto (2006), which stated that education was able to significantly increase the average knowledge, from 16 at the start of the study to 50 at the end of the study in the study group from a maximum score of 100. Puspitasari (2011), which concluded that education about HIV and AIDS by shemale was effective in increasing knowledge of transgender women in Surakarta with an average increase of 2.302.

b. Attitude

Based on the data obtained, the majority of respondents' initial attitudes were in the negative category, namely 15 respondents (75%), then it changed to the majority in the positive category after being given assistance and education, namely 16 respondents (80%).

The improvement in the quality of this positive attitude also showed that the researcher had succeeded in communicating with respondents. Given that attitude was a person's closed response to certain stimuli or objects that involved the opinion and emotional factors concerned (Notoatmodjo, 2012).

Based on the posttest data on attitudes, it was found that 4 respondents (20%) were still in the negative category. This was because in this study the researchers themselves provided education for the head of the family, where the researchers still did not really understand the material presented so there were still some family heads who did not understand the material presented. However, the effect of DHF prevention assistance and education on improving the

attitude of the family head in this study was significant (0.001).

The results of this study was in line with the results of research by Fatmawati (2010), which concluded that there were differences in the level of students' attitudes about sexually transmitted diseases between before and after being given health education interventions between the experimental group and the control group in SMAN 8 Surakarta students with an average increase of 1, 18. This was also in line with the results of Widyastuti's (2008) study, which concluded that there was a significant effect of providing health education on the attitude level of osteoarthritis patients with a p value of 0.01.

The Effect of Dengue Prevention Assistance and Education on Knowledge and Attitudes

After testing using a questionnaire research instrument, it showed that there was significant differences between before and after the provision of assistance and education on prevention of DHF. This showed that assistance and education affected the knowledge and attitudes of the family head.

The results of this study was in line with those stated by WHO in Notoatmodjo (2007) in Zul Salasa (2013), one of the strategies for behavior change was providing information to increase knowledge so that awareness arised that in the end people would behave according to this knowledge. One of the efforts to provide information that could be done was education. Knowledge occured after a person sensed an object or stimulus, with Notoatmodjo (2007) in Zul Salsa (2013) also stated that changes in attitude was basically influenced by factors of knowledge and

belief / belief obtained from sensing results, one of which was obtained through education or the learning process.

This was in line with Sugiyono's research (2017) which concluded that there was an effect of training (assistance and education) for dengue hemorrhagic fever prevention on the knowledge and attitudes of family heads. This research was also supported by the results of research by Andan Firmansyah (2017) which stated that there was an influence between assistance and education (Penyu) of KKN students on changes in knowledge, attitudes and behavior of EFA in Alu sub-district, namely knowledge with a p value of 0.005, attitude with a p value of 0,000 and behavior with a p value of 0.000.

This research was also strengthened by the research of Indah (2011) with the title Study of Knowledge, Attitudes and Behaviors of the Acehnese People in the Prevention of Dengue Hemorrhagic Fever. The result of the research was that there was a significant relationship between knowledge and attitudes towards respondents' behavior in DHF prevention.

This research was also in line with al-Ghazali's theory in Mustika (2010) which stated that humans acquired knowledge through learning under a teacher by using senses and reason. In this case, the respondents' knowledge was obtained through education and guidance in the form of assistance that had been provided by the researcher.

It was also in line with Azwar's (2011) theory, which stated that attitudes could be improved through training (assistance and education) by paying attention to the effectiveness of a training.

Knowledge and good attitude of the head of the family could provide effective prevention of dengue hemorrhagic fever so that it could reduce the incidence rate and increase the degree of family health.

Based on the results of this study, supported by existing theories and research results, it was assumed that there was an influence of Dengue Hemorrhagic Fever (Dengue) Prevention and Education (PENYU) on the Knowledge and Attitudes of the Head of the Family in Batetangnga Village, Binuang District, Polewali Mandar Regency.

CONCLUSION

Based on the results of the study, the results of the knowledge of the head of the family before being given assistance and education for the prevention of dengue hemorrhagic fever, were good category 4 people (20%), enough 8 people (40%) and less good 8 people (40%). Based on the results of the study, the results of the knowledge of the head of the family after being given assistance and education for the prevention of dengue hemorrhagic fever, namely the good category for 14 people (70%), enough for 6 people (30%) and none for not good enough.

Based on the results of the study, the results of the attitude of the head of the family before being given assistance and education on the prevention of dengue hemorrhagic fever, were in the positive category 5 people (25%), and the negative category 15 people (75%).

Based on the results of the study, the results of the attitude of the head of the family after being given assistance and education on the prevention of dengue hemorrhagic fever, namely the positive category of 16 people (80%), and the negative category of 4 people (20%).

Based on the results of the study, it was found that there was an effect of assistance and education on the prevention of dengue fever on the knowledge of the head of the family p -value = 0.000 <alpha 0.05.

Based on the results of the study, it was found that there was an effect of assistance and education on the prevention of dengue hemorrhagic fever on the attitude of the head of the family p -value = 0.001. <alpha 0.05

Hopefully this research will provide new benefits

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and understanding to the respondents so that they will no longer be left behind regarding the development of knowledge regarding the prevention of Dengue Fever.

Public health center officers can conduct health education and socialization continuously to the public regarding the prevention of dengue hemorrhagic fever.

This research can still be developed by adding behavioral variables and using a different design by giving control to the research subject.

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