Original research article

Relationship between Knowledge Level and Community Attitude in Dengue Fever Prevention Behavior

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ABSTRACT

Background: Dengue Hemorrhagic Fever (DHF) is an acute infectious disease caused by the Dengue virus which is transmitted by the Aedes aegypti mosquito. In cases of dengue fever, the symptoms often experienced by sufferers are sudden high fever, frequent bleeding, and if it is severe, they will experience shock and death. This research aims to determine the relationship between the level of knowledge and attitudes of the community in the behavior of preventing Dengue Fever in Jambi city in 2023. **Methods:** This research design used quantitative research with a cross-sectional design. The sample for this study comprised of residents from Kenali Besar, Paal V, and Payo Silincah Health Centers, totaling 86 respondents. Research instruments utilized questionnaires. The data were analyzed univariately and bivariately with the chi-square test. **Results:** Among the respondents, 41 individuals (47.7%) exhibited a good level of knowledge, 52 individuals (60.5%) demonstrated a positive attitude, and 37 individuals (43%) displayed good behavior. From the chi-square test, a p-value of 0.000 was obtained between the level of knowledge and preventive behavior towards dengue fever. A p-value of 0.000 was also obtained between attitudes and preventive behavior towards dengue fever. **Conclusion:** The level of knowledge and attitude of the community has a relationship with dengue prevention behavior in Jambi city.

Keywords: dengue hemorrhagic fever (DHF); dengue fever; behavior; knowledge; attitude

INTRODUCTION

Dengue Hemorrhagic Fever (DHF) is a disease caused by dengue virus with clinical fever, muscle and joint pain accompanied by leukopenia, rash, lymphadenopathy, thrombocytopenia, hemorrhagic diathesis, and bleeding in critical phase. Dengue hemorrhagic fever is caused by dengue virus, which belongs to the genus flavivirus, family flaviviridae.[1]

The epidemiological incidence of dengue fever worldwide is changing rapidly. Over the past three decades globally, DHF has continued to increase in

both frequency and incidence of disease.[2] According to WHO (World Health Organization), there are approximately 390 million dengue infections per year, of which 96 million are clinical manifestations of dengue infection. The World Health Organizaton (WHO) states that the number of reported dengue fever cases has increased more than 8-fold over the past 4 years, from 505,000 cases increased to 4.2 million in 2019.[3] About 500,000 people suffering from dengue are hospitalized every year.[2]

In Indonesia, 103,509 cases of DHF were recorded in 2020, 2019 amounted to 138,127 cases, this number has decreased during 2019 - 2020. In line with the number of cases, the number of DHF deaths recorded in 2020 also decreased compared to 2019, from 919 to 725 deaths. The incidence rate of DHF in 2020 was 38.15 per 100,000 population.[4] Based on the data of DHF cases from the Jambi City Health Office from January to September 2022, it is known that there were 296 cases of DHF in Jambi City. with a death rate of 15 cases. From these data, DHF cases must be the main concern of the government and especially the community to prevent the spread of DHF cases.

Environmental factors and the role of the community in preventing DHF are closely related to the incidence of DHF in an area. Environmental factors associated with DHF incidence consist of biological environmental factors (density of *Aedes aegypti* mosquito vectors and the presence of larvae), physical environmental factors (air temperature, humidity, lighting, screen ventilation and availability of lids on containers), and social environmental factors (population density, occupancy density and health worker support).[5]

Research conducted by Atika et al (2021) found that the factors associated with the prevention of DHF are knowledge, cleanliness of the home environment, and the implementation of 3M. In this study, the dominant factor associated with the prevention of DHF at the Tanjung Baru Health Center was the cleanliness of the home environment.[6]

Knowledge and behavior are very influential on DHF prevention measures because they are directly related to illness, disease and the health care system. DHF prevention measures can be carried out in three ways, namely, draining water reservoirs, burying items that are no longer used and cleaning the surrounding environment. This prevention aims to eliminate the development of Aedes aegypti mosquito larvae as the spread of the dengue virus.[7]

Research conducted by Aran et al (2020) found that, the dominant community behavior factor associated with the incidence of DHF is the habit of hanging clothes, where people who have the habit of hanging clothes. Those who hang clothes in their homes have a 6.29 times greater risk of DHF compared to those who do not hang clothes. Clothes hanging indoors is a favored place for Aedes

aegypti mosquitoes to rest after sucking human blood. The presence of water storage containers (TPA), affects the high density of Aedes aegypti mosquito vectors, where the more containers, the more breeding places and mosquito populations will be denser so that the risk of dengue transmission is higher.[8]

Research conducted by Wirakusuma et al (2016) found that the level of knowledge of respondents about dengue prevention in the Bedandem health center working area was mostly moderate and respondents in the Bedanddem health center working area mostly had a positive attitude towards prevention DHF. Respondents with negative attitudes had poor family practices.[9]

Due to the high rate of DHF disease in Jambi city, further research is needed to the community about knowledge and attitudes towards DHF disease prevention behavior in Jambi city.

METHODS

This study used quantitative research with cross-sectional design. This research was conducted at Kenali Besar Health Center, Paal V Health Center, and Payo Silincah Health Center. The population in this study were people who were at risk of DHF disease in June 2023 as many as 447 people in the working areas of Kenali Besar Health Center, Paal V Health Center, and Payo Silincah Health Center. With sampling using accidental sampling technique totaling 86 respondents. Technique data collection in this study was the interview method. The data analysis techniques used were univariate analysis and bivariate analysis.

RESULTS

This research was conducted on the community in the working area of Kenali Besar Health Center as many as 32 respondents, Paal V Health Center as much as 30 respondents, and Payo Silincah Health Center 24 with a total of 86 respondents.

Table 1. Frequency distribution of dengue prevention behavior

Behavior	Frequency (n=86)	Percentage (%)
Less Good	49	57.0
Good	37	43.0
Total	86	100

As shown in **Table 1**, 37 of the 86 respondents (43%) demonstrated good behavior, whereas 49 respondents (57%) exhibited poor behavior.

Table 2. Frequency distribution of respondents' knowledge

Knowledge	Frequency (n=86)	Percentage (%)
Less Good	45	52.3
Good	41	47.7
Total	86	100

In **Table 2**, Based on table 2, it shows that out of 86 respondents, 41 respondents had a good level of knowledge (47.7%), while respondents who had a poor level of knowledge were 45 people (52.3%).

Table 3. Frequency distribution of respondents' attitudes

Attitudes	Frequency (n=86)	Percentage (%)
Negative	34	39.5
Positive	52	60.5
Total	86	100

Based on **Table 3**, it shows that out of 86 respondents, 52 respondents(60.5%) had a positive attitude, while respondents who had a negative attitudewere 34 people (39.5%).

Table 4. Relationship between knowledge level and dengue prevention behavior

Knowledge	DHF Behavior						P-value	PR
	Less Good		Good		Total			
	f	%	f	%	f	%		
Less Good	38	84.4	7	15.6	45	100	0.000	2.70
Good	11	26.8	30	73.2	41	100		

The **Table 4** above shows that the proportion of respondents who have poor knowledge and good behavior is 15.6%, while the proportion of respondents with good knowledge and good behavior is 73.2%. From the results of the chi-square test, a p-value of 0.000 was obtained, which is smaller than alpha, so it means that there is a relationship between knowledge and dengue prevention behavior.

Table 5. Relationship between attitude level and dengue prevention behavior

Attitude	DHF Behavior						P-value	PR
	Less Good		Good		Total			
	f	%	f	%	f	%		
Negative	30	88.2	4	11.8	34	100	0.000	2.25
Positive	19	36.5	33	63.5	52	100		

Table 5 above shows that the proportion of respondents who have a negative attitude and good behavior is 11.8%, while the proportion of respondents who have a positive attitude and good behavior is 63.5%.

From the results of the chi-square test, a p-value of 0.000 was obtained, which is smaller than alpha, so it means that there is a relationship between attitude and DHF prevention behavior.

DISCUSSION

Relationship Between Knowledge and Dengue Prevention Behavior

From the results of the chi-square test, a p-value of 0.000 was obtained, which is smaller than alpha, so it can be concluded that there is a relationship between knowledge and dengue prevention behavior. The interpretation of the PR value is that a poor level of knowledge has a risk of 2.7 times the occurrence of poor DHF behavior.

Knowledge is an experience that a person has, which is obtained through observation of a certain object using the five senses that are owned, the results of this observation will affect the form of behavior and actions that a person will take (overt behavior). In shaping a person's behavior, the factors that play an important role are knowledge.

Knowledge has several levels, namely:[10] (1) Know is something that is obtained from remembering material that has been previously learned, recalling or recalling events that have been observed on a particular object. (2) Understand (Comprehension) is the ability a person has to explain correctly about the material or object. known and able to explain the material/object well and broadly. (3) Application is defined as a real action taken based on material that is already known. (4) Analysis is the ability to break down the material that has been obtained into the form of data, and still have a connection between one another. (5) Synthesis is defined as ability to connect known material into new parts as a whole. (6) Evaluation is the ability to provide justification or assessment of the material or object obtained.

The results of this study are in line with the results of research by Ni Kadek Dian Rastika Dewi, et al showing that there

is a significant relationship between knowledge with DBD prevention behavior in Panji Anom Village, Sukasada District, Buleleng Regency with a significant level of p-value (0.002) < sig level (0.05) and has a relationship size of 0.308 and has a positive relationship direction with a low level of relationship. The results of this study indicate that community behavior in preventing DHF is influenced by the knowledge possessed by the community.[10]

The results of this study are also in line with research conducted by Fajar Alam, et al (2020) on the Relationship between Knowledge and Behavior in Preventing Dengue Fever Outbreaks. Dengue in the Colomadu I Karanganyar UPT Puskesmas Work Area which shows that there is a significant relationship between knowledge about dengue fever and behavior in preventing dengue fever outbreaks (p-value 0.023 < α-level 0.05). The meaning of the relationship can be interpreted that the better and more knowledge about DHF, the better the behavior in preventing Dengue Fever outbreaks. Behavior that is included in the moderate category, in addition to performing hygiene on themselves, have also begun to take actions in environmental health, such as keeping the house and yard clean, draining bathtubs and water reservoirs, cleaning sewage channels regularly.[11]

The need for good knowledge about personal and environmental health so that community have an awareness of the importance of health for themselves themselves and the surrounding environment. aintaininga clean and healthy environmentpracticing clean and healthy living (PHBS) are ways to improve the quality of life and health community and can reduce the current incidence of DHF.

Researchers suggest that the Jambi City Health Office and Puskesmas should be able to increase public knowledge by intensifying health promotion activities both directly and through social media such as Facebook, Instagram, YouTube, etc.so that people are more interested in knowing about dengue prevention.

Relationship Between Attitude and Dengue Prevention Behavior

From the results of the chi-square test, a p-value of 0.000 was obtained, which is smaller than alpha, so it can be concluded that there is a relationship between attitude and dengue prevention behavior. The interpretation of the PR value is that a bad attitude has a risk of 2.25 times the occurrence of poor dengue behavior.

Attitude is a reaction or response that is still closed from a person to a stimulus or object. Attitude is also a readiness or willingness to act and is also the implementation of certain motives. Attitudes cannot be formed before getting information, seeing or experiencing an object.

Like knowledge, this attitude consists of various levels, namely: (1) Receiving: It

means that the person (subject) wants and pays attention to the stimulus given (object). (2) Responding: Provide answers when asked, do or complete the task given is an indication of attitude. (3) Valuing: Inviting others to work on or discuss a problem is an indication of a third-level attitude. (4) Responsibility: Being responsible for everything one has chosen with all the risks is the highest level of attitude.[12]

This study is in line with the results of research by Ni Kadek Dian Rastika Dewi, et al, which showed that there is a significant relationship between attitude and DHF prevention behavior (r = 0.601, p-value = 0.000). The results of this study indicate that community behavior in preventing DHF is influenced by the attitudes of the community.[10]

This study is also in line with the results of research by Christina South et al, namely that there is a relationship between attitudes and preventive behavior towards DHF (p-value = 0.002) in Winangun I sub-district of Malalayang, because p = 0.002 or smaller than the value of α = 0.05 (p < 0.05).[13]

Respondents who have a positive attitude already have an awareness of the importance of DHF prevention and respond to DHF incidents with concrete actions such as maintaining the cleanliness of the home environment. However, there were also respondents with unfavorable attitudes caused by personal experience. If the influencing factors tend to be positive then. If the factors tend to be negative, the community will also have a positive attitude, but on the contrary, if these factors tend to be negative, then the community will have a negative attitude. But there are also those who have a negative attitude because the community only accepts and responds but does not make real applications.

The researcher suggests that the Puskesmas can increase community participation community to carry out mosquito nest eradication activities, namely by draining water reservoirs, tightly closing water reservoirs, and recycling used goods (PSN 3M Plus), and optimizing community empowerment in dengue prevention. The community is advised to be more active in participating in mosquito nest eradication activities, maintaining the cleanliness of the surrounding environment, protecting themselves and their families and seeking as much health information as possible.

CONCLUSION

There is a relationship between knowledge and dengue prevention behavior with p-value of 0.000. There is a relationship between attitude and dengue prevention behavior with p-value of 0.000 in Jambi City.

RECOMMENDATIONS

The suggestions given to the Jambi City Health Office, in order to increase public knowledge by intensifying health

promotion activities both directly and through social media such as Facebook, Instagram, YouTube, etc. so that people are more interested in knowing about dengue prevention. Kenali Besar Health Center, Paal V Health Center, and Payo Silincah Health Center, in order to increase community participation to carry out mosquito nest eradication activities, namely by draining water reservoirs, tightly closing water reservoirs, and recycling used goods (PSN 3M Plus), and optimizing community empowerment in dengue prevention. Community empowerment in DHF prevention. For the community, to be able to convince and improve the community by reading literacy media about DHF on social media and attending counseling held by the health department.

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