



# Prevention Behavior of Dengue Hemorrhagic Fever in Community Leaders in the Work Area of the Hajimena Health Center, South Lampung Regency

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**Abstrak:** Dengue Hemorrhagic Fever is a disease that causes the hajimena health center to be included in the top 9 health centers with dengue endemic areas. In 2021, the Incidence rate (IR) is 45.29 per 100,000 residents. One of the causes of this disease is due to the lack of role of community leaders in preventing DHF. The purpose of this study was to determine the relationship between knowledge, attitudes, motivation and information sources of community leaders on DHF prevention behavior. This type of research is quantitative research with an analytic research design and a cross sectional approach. The sample is 67 community leaders with 7 hamlet heads and 60 RTs taken using total sampling technique. With analysis using the Chi - square test. This research was conducted in October–March 2023. The results of the univariate analysis showed good knowledge of 61.19%, positive attitude of 58.21%, high motivation of 53.73%. Verbal information sources at 56.72% and non-verbal information sources at 43.28%. The results of the bivariate analysis showed that there was a relationship between knowledge, attitudes, and motivation with DHF prevention behavior with p-values (0.00), (0.00), and (0.00). There is no relationship between information sources and DHF prevention behavior (0.90). The need for the role of health workers to form a community or group of community leaders who are named or term "Tomato DHF" (community leaders prevent DHF) and activate counseling activities regarding DHF prevention with 3M Plus.

**Keywords:** Community Leaders; Dengue Hemorrhagic Fever; Prevention Behavior; Work Area

## Introduction

Dengue hemorrhagic fever (DHF) is an infectious disease caused by a virus called dengue. Dengue virus is a virus that can transmit disease, because the transmission process is carried by disease-transmitting vectors, namely *Aedes aegypti* and *Aedes albopictus* mosquitoes by biting humans. Based on case data reported to the World Health Organization (WHO), from 2020 to 2021 the number of death cases will definitely decrease, but regarding the reported data, it does not yet show complete data in various countries due to the Covid-19 pandemic (Cogan, 2022).

DHF cases in Indonesia, in 2021 will experience a decrease in the Incidence rate (IR) of DHF cases of 26.4

per 100,000 population with a Case Fatality Rate (CFR) of 0.96 per 100 population. (Ministry of Health RI., 2021). The factor causing the increase in DHF cases is the low behavior of DHF prevention, prevention of dengue hemorrhagic fever can be overcome by eradicating mosquito nests using the 3M Plus method. The incidence of dengue fever is also related to the role of health workers and community leaders. The more active the role of community leaders in PSN using the 3M Plus method, the more active the implementation of PSN using the 3M Plus method is carried out by the community and vice versa (Lutfianawati & Prasetyo, 2022).

Three districts/cities in Lampung in 2021 that have the highest number of cases, one of which is South

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Lampung Regency with an Incidence Rate (IR) of DHF cases of 23.3 per 100,000 population with a Case Fatality Rate (CFR) of 0.4 per 100 population (Dinas Kesehatan Provinsi Lampung, 2021). Hajimena Health Center is included in the top 9 health centers with DHF endemic areas and in 2019 there was an Extraordinary Event (KLB) in cases of dengue hemorrhagic fever with a total of 48 cases (1.46 per 1000 population) and there were 2 deaths. Dengue cases in 2022 from January to October reached 74 cases (Hajimena, 2021).

Based on the results of the pre-survey by conducting interviews with disease control program (P2) holders of the Hajimena Health Center, the results obtained were that there were cases of dengue hemorrhagic fever in the work area of the Hajimena Health Center due to several problems such as the community's lack of awareness regarding eradicating mosquito nests (PSN) so that the program implementation prevention and control of DHF is not optimal and the lack of role of community leaders in the prevention of dengue hemorrhagic fever (DHF), namely as an activator, motivator for the community to carry out DHF prevention both individually and in the local environment and causes a lack of action in the PSN program such as implementing 3M Plus in the environment public.

The theory put forward by Lawrence Green (1990) in (Notoatmodjo, 2014) explains that the process of forming a person's behavior requires 3 factors, namely predisposing factors (knowledge, attitudes, beliefs, values), enabling factors (facilities, infrastructure, physical environment), and driving factors (attitudes, behavior of health workers, family, community leaders or other officers who are included in the reference group of community behavior) (Notoatmodjo, 2014). In this study there are independent variables, namely knowledge (included in predisposing factors), attitude (included in predisposing factors), motivation (included in predisposing factors) and sources of information (included in enabling factors) and the dependent variable, namely behavior. The purpose of this study was to determine the distribution of frequency and the relationship between knowledge, attitudes, motivation and sources of information on DHF prevention behavior among community leaders in the working area of the Hajimena Health Center, South Lampung Regency in 2023.

## Method

This type of research is a quantitative research with an analytic research design and a cross sectional approach. The population in this study amounted to 67 people and a sample of 67 formal community leaders

who were taken using a sampling technique with total sampling. This research was conducted from October 2022 to March 2023 in the Working Area of the Hajimena Health Center, South Lampung Regency. In this study, the respondents consisted of 7 people who served as hamlet heads and 60 people who served as RTs in Hajimena Village.

This research was conducted using questionnaires that had previously been tested through validity and reliability tests in Lematang Tanjung Bintang Village with the variables studied namely behavior, knowledge, attitudes, motivation, and sources of information. Data analysis includes univariate and bivariate analysis, univariate analysis produces frequency distributions and percentages of each variable used in a study (Notoatmodjo, 2018). In this study there is a frequency distribution to explain the percentage of behavior, knowledge, attitudes, motivation, and sources of information. Bivariate analysis was carried out using chi-square to determine the relationship between knowledge, attitudes, motivation, and sources of information with DHF prevention behavior among community leaders. This research has also received approval from the Health Research Ethics Commission at the University of Malahayati with No. 3102/EC/KEP-UNMAL/1/2023.

## Result and Discussion

**Table 1.** Frequency Distribution of Behavior, Knowledge, Attitudes, and Sources of Information to Community Leaders in Dengue Prevention in the Work Area of the Hajimena Health Center, South Lampung Regency in 2023

Variable	Category	Jumlah	Persentase (%)
Behavior	Good	41	61.19
		26	38.81
Total		67	100
Knowledge	Not good	41	61.19
		26	38.81
Total		67	100
Attitude	Good	39	58.21
		28	41.79
Total		67	100
ivation	Not enough	36	53.73
		31	46.27
Total		67	100
Resources	Positive	38	56.72
		29	43.28
Total		67	100

Based on Table 1, the results of univariate analysis of the variables of behavior, knowledge, attitudes, motivation, and sources of information were obtained from community leaders in the prevention of dengue hemorrhagic fever among community leaders in the

working area of the Hajimena Health Center, South Lampung Regency. In the behavioral variable, there are 41 respondents (61.19%) in the good category and 26 respondents (38.81%) in the unfavorable category. Knowledge in the good category was 41 respondents (61.19%) and in the less category were 26 respondents (38.81%). Attitudes in the positive category were 39

respondents (58.21%) and negative were 28 respondents (41.79%). Motivation in the high category is 36 respondents (53.73%) and low is 31 respondents (46.27%). Sources of information in the verbal category were 38 respondents (56.72%) and non-verbal were 29 respondents (43.28%).

**Table 2.** The Relationship between Knowledge and Dengue Hemorrhagic Fever Prevention Behavior in Community Leaders in the Work Area of the Hajimena Health Center, South Lampung Regency in 2023

Knowledge	Dengue Hemorrhagic Fever Prevention Behavior				Total	P-Value	OR 95%CI
	Good		Not good				
	N	%	N	%	N	%	
Good	36	87.80	5	12.20	41	100	0.00
Not enough	5	19.23	21	80.77	26	100	(7.82 - 116.80)

Based on the results of the Chi-Square analysis of the relationship between knowledge and behavior in preventing dengue hemorrhagic fever in community leaders, it was found that there were 41 respondents who had good knowledge with 36 (87.80%) respondents having good behavior in preventing dengue hemorrhagic fever and 5 (12.20%) respondents having poor behavior in preventing dengue hemorrhagic fever. Respondents who had less knowledge were 26 people with 5 (19.23%) respondents having good behavior in preventing dengue hemorrhagic fever and 21 (80.77%) having poor behavior in preventing dengue hemorrhagic fever. From the results of statistical tests using the Chi-Square test, a P-Value of 0.00 (<0.05) is obtained, which means that Ho is rejected, meaning that there is a significant relationship between the level of knowledge and behavior to prevent dengue hemorrhagic fever. The Odds Ratio (OR) value is 30.24.

The results of this study are in line with the precede-proceed theory developed by Lawrence Green in 1990, knowledge is included in the predisposing factor, knowledge can be influenced by the presence of an intensity of attention and also perception of an object, where everyone has different intensities and perceptions of an object depending on the results of acquiring knowledge from one's five senses. Factors that affect one's knowledge according to (A. Wawan, 2018) one of them is the internal factor which consists of education, occupation and age. Education is used to obtain a source of information about health. The higher the knowledge that the respondent has, the better the behavior carried out by the respondent in terms of preventing dengue hemorrhagic fever (Espiana et al., 2022)

This research is in line with research conducted by (Sumantri, 2022) explained that there were 110 (35.7%) respondents who had good knowledge regarding efforts to prevent dengue hemorrhagic fever and the results of the analysis were carried out through the Chi-Square

test seen from the P-Value of 0.000 (<0.05) which means that there is a significant relationship between knowledge and prevention of dengue hemorrhagic fever. Research conducted by (Syahrias, 2018) the results of the analysis carried out through the Chi-Square test were seen from the P-Value of 0.02 (<0.05) which means that there is a significant relationship between knowledge and behavior to prevent dengue hemorrhagic fever.

Community leaders who have good knowledge already know DHF, causes of DHF, symptoms and signs, prevention of DHF through 3M Plus seen from respondents who gave correct answers. This is consistent with the exposure in (Notoatmodjo, 2014) explained that knowledge can be generated from two senses such as sight using the eyes, and hearing using the ears. Therefore, sources of information in the form of verbal and non-verbal can also affect one's knowledge. It is explained that the knowledge that can be generated from the five senses of sight and hearing, in this case, is related to the acquisition of sources of information related to DHF prevention, in the form of verbal and non-verbal. However, there are still respondents who have less knowledge with good DHF prevention behavior. This is in line with research conducted by (Marini & Noyumala, 2019) it was also found that 3 (8.6%) respondents had good DHF prevention behavior. This happens because a person's lack of knowledge will affect the behavior carried out by someone.

Based on the results of the Chi-Square analysis of the relationship between attitudes and behavior in preventing dengue hemorrhagic fever in community leaders, it was found that there were 39 respondents who had a positive attitude with 34 (87.18%) respondents having good behavior in preventing dengue hemorrhagic fever and 5 (12.82%) respondents having good behavior not good in preventing dengue hemorrhagic fever. Respondents who had a negative

attitude were 28 people with 7 (25%) respondents having good behavior in preventing dengue hemorrhagic fever and 21 (75%) having poor behavior in preventing dengue hemorrhagic fever. From the results of statistical tests using the Chi-Square test, a P-Value of 0.00 (<0.05)

is obtained, which means that Ho is rejected, meaning that there is a significant relationship between the level of attitude and prevention of dengue hemorrhagic fever. The Odds Ratio (OR) value is 20.40.

**Table 3.** The Relationship between Attitudes and Dengue Hemorrhagic Fever Prevention Behavior in Community Leaders in the Work Area of the Hajimena Health Center, South Lampung Regency in 2023

Attitude	Dengue Hemorrhagic Fever Prevention Behavior				Total	P-Value	OR 95%CI	
	Good		Not Good					
	N	%	N	%				
Positive	34	87.18	5	12.82	39	100	0.00	20.40
Negative	7	25	21	75	28	100		(5.729 - 72.644)

The results of this study are in line with the precede-proceed theory developed by Lawrence Green, including attitude according to (Notoatmodjo, 2014) is a response that is owned by someone who is generally closed to a stimulus or object that exists. The results of this study are in line with those conducted by (Sutriyawan et al., 2022) with the results of the Chi-Square test, a P-Value of 0.00 was obtained, which means that attitudes influence 3M Plus' actions with 135 respondents having positive attitudes and 165 negative attitudes. Research conducted by (Rastika Dewi et al., 2022) The results obtained through the Spearman Rho test from 95 respondents that there is a relationship between attitudes and DHF prevention behavior can be seen from the P-Value of 0.00. Research conducted by (Nurkhasanah et al., 2021) 28 (54.9%) respondents with a positive attitude and 23 (45.1%) negative attitudes related to DHF prevention. In addition, there is research

conducted by (Dawe et al., 2020) there were 53 (53.53%) respondents with a positive attitude and 46 (46.47%) respondents with a negative attitude.

Most community leaders have a positive attitude with good behavior. This can be seen from the results of respondents' answers regarding statements about attitudes in preventing DHF. Negative attitudes with lacking behavior of community leaders indicate that community leaders with negative attitudes tend not to apply DHF prevention behaviors properly and correctly and do not set themselves as examples or role models for the community, as was done in research (Dawe et al., 2020) that the negative attitude of respondents in preventing DHF is caused by several factors, namely information related to DHF prevention that is obtained is lacking, causing low awareness of respondents in preventing DHF.

**Table 4.** The Relationship between Motivation and Dengue Hemorrhagic Fever Prevention Behavior in Community Leaders in the Work Area of the Hajimena Health Center, South Lampung Regency in 2023

Motivation	Dengue Hemorrhagic Fever Prevention Behavior				Total	P-Value	OR 95%CI	
	Good		Not Good					
	N	%	N	%				
Tall	28	77.78	8	22.22	36	100	0.00	4.84
Low	13	41.94	18	58.06	31	100		(1.677 - 14.006)

Based on the results of the Chi-Square analysis of the relationship between motivation and behavior in preventing dengue hemorrhagic fever in community leaders, it was found that there were 36 respondents who had high motivation with 28 (77.78%) respondents having good behavior in preventing dengue hemorrhagic fever and 8 (22.22%) respondents having poor behavior in preventing dengue hemorrhagic fever. Respondents who had low motivation were 31 people with 13 (41.94%) respondents having good behavior in preventing dengue hemorrhagic fever and 18 (58.06%) having poor behavior in preventing dengue

hemorrhagic fever. From the results of statistical tests using the Chi-Square test, a P-Value of 0.00 (<0.05) is obtained, which means that Ho is rejected, meaning that there is a significant relationship between the level of motivation and the behavior to prevent dengue hemorrhagic fever. The Odds Ratio (OR) value is 4.84.

Based on the theory put forward by Lawrence Green in Notoatmodjo (2002) in (Irwan, 2017) one of the factors that influence behavior is the predisposing factor where motivation is included in this factor. In line with research conducted by (Siregar et al., 2021) there are respondents with high motivation of 33 people and low



of 33 people. The results of the Chi-Square analysis show that there is a relationship between motivation and DHF prevention measures as seen from the P-Value of <0.001. The research conducted by (Kurniawati et al., 2022) there were 102 (51.3%) respondents with high motivation and 97 (48.7%) respondents with sufficient motivation in implementing 3M Plus as an effort to prevent DHF. The success of implementing DHF PSN in the community was due to the high motivation of the RT heads and also health cadres in terms of inviting or mobilizing the

community to always behave 3M Plus. Community leaders have a very important role to serve as role models or examples by the community (Sinta, 2018). Some of the motivations possessed by community leaders in the village of hajimena are high motivation and some are low motivation. There are still community leaders who are reluctant to implement clean Friday because it is difficult to appeal and invite the community to carry out these activities on the grounds that work and time are usually not appropriate.

**Table 5.** Relationship between Information Sources and Dengue Hemorrhagic Fever Prevention Behavior in Community Leaders in the Work Area of the Hajimena Health Center, South Lampung Regency in 2023

Resources	Dengue Hemorrhagic Fever Prevention Behavior				Total	P-Value	OR 95%CI
	Good		Not Good				
	N	%	N	%			
verbal	24	63.16	14	36.84	38	100	0.90
Non Verbal	17	58.62	12	41.38	29	100	(0.450 - 3.257)

Based on the results of the Chi-Square analysis of the relationship between information sources and prevention behavior of dengue hemorrhagic fever among community leaders, it was found that 38 respondents had verbal sources of information with 24 (63.16%) respondents having good behavior in preventing dengue hemorrhagic fever and 14 (36.84%) respondents having poor behavior in preventing dengue hemorrhagic fever. Respondents who had non-verbal sources of information were 29 people with 17 (58.62%) respondents having good behavior in preventing dengue hemorrhagic fever and 12 (41.38%) having poor behavior in preventing dengue hemorrhagic fever. From the results of statistical tests using the Chi-Square test, a P-Value of 0.90 (> 0.05) was obtained, which means that Ho is accepted, meaning that there is no significant relationship between the level of information sources and dengue prevention behavior. The Odds Ratio (OR) value is 1.21.

This research is in line with what was stated in Lawrence Green's 1990 theory, there are factors that cause behavior change. It consists of 3 factors, namely predisposing factors in which there is knowledge, attitudes, beliefs, values and others, enabling factors or enabling factors in which there is an environment, facilities in the form of health infrastructure and reinforcing factors in which there are health workers or other officers in the community. Sources of information are included in enabling factors as health infrastructure facilities. The theory put forward by Edgar Gale in (Lee & Reeves, 2018) which explains that learning media can be obtained from direct experience to verbal symbols. There is an intentional experience that prioritizes the functions of the five senses such as being seen, smelled, tasted, touched, handled, and felt. At the top of the cone

are verbal symbols consisting of abstract messages and words. This theory means that there is an acceptance of learning or information obtained from someone based on the power of the five senses.

This research is in line with research conducted by Nitbani & Siagian (2022), where the source of information that respondents obtained most came from health workers by 63% and came from television or newspapers by 27%. Research conducted by (Sari et al., 2022) states that the source of information obtained from the mass media and other people. Sources of information can influence the formation of a positive behavior that is owned by someone. Research conducted by (Harish et al., 2018) The results showed that the most sources of information were obtained from the media in the form of television (89%), radio (41%) and newspapers (33%). Television is a medium that plays a very big role in making people aware of DHF and its prevention.

This research is inversely proportional to research conducted by (Harapan et al., 2018) in Aceh. This study revealed that electronic media, namely television, is the largest media in terms of exposure to information about DHF, seen from the total percentage of 32.7%, only 16.9% of health workers from Puskesmas and 12.3% of health workers in hospitals.

Based on the results of the study, it was shown that the source of information was not related to the prevention behavior of dengue hemorrhagic fever in community leaders because there were several factors that triggered this variable which were not related. Knowledge possessed by different respondents is a triggering factor because there are respondents who have insufficient knowledge in terms of knowing, receiving and applying information related to DHF prevention, in addition to that the education possessed

by the respondents also becomes another trigger, if the education of the respondents is high then they can easily receive information related to DHF prevention in daily life and vice versa if the education of the respondents is low it is difficult to receive information related to DHF prevention.

## Conclusion

The conclusion in this study shows that there is good knowledge of 61.19%, a positive attitude of 58.21%, high motivation of 53.73%. Verbal information sources at 56.72% and non-verbal information sources at 43.28%. The results of the bivariate analysis showed that there was a relationship between knowledge, attitudes, and motivation with DHF prevention behavior with p-values (0.00), (0.00), and (0.00). There is no relationship between sources of information and DHF prevention behavior with p-value (0.90). The need for the role of health workers to form a community or group of community leaders who are named or term "Tomato DHF" (community leaders prevent DHF) and activate counseling activities regarding DHF prevention with 3M Plus.

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## Author Contributions

Aulyya Rahmah's role in this study was to compile the background and find problems that occur, design research methods, analyze, process and present data, discuss results and research findings. Meanwhile, the role of Lolita Sary, Agung Aji Perdana and Riyanti was to provide input, direction and improvement in this research.

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## Conflict of interest

There is no conflict of interest with any party or anyone in this research.

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