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Factors Related to the Implementation of the One House One Larvae Monitoring Movement for the Prevention of Dengue Hemorrhagic Fever

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ABSTRACT

Background: Prevention efforts through the One House One Larvae Monitoring, which is a government program in Indonesia to monitor and control the spread of dengue fever (DBD). The movement has not been running optimally, as indicated by the increasing number of cases year by year. Several factors, such as knowledge, attitude, the role of health workers, and the presence of mosquito larvae monitor cadres, are suspected to influence the implementation of this movement. This study aims to identify the factors associated with the implementation of the One House One Larvae Monitoring Movement activities for dengue fever prevention in Pesisir Barat Regency, Indonesia in 2025. **Methods:** This study is a quantitative, cross-sectional study, employing a simple random sampling technique. The research subjects were heads of households while the study variables included knowledge, attitude, the role of health workers, mosquito larvae monitor cadres, and the implementation of One House One Larvae Monitoring. The research was conducted from March 4 to March 25, 2025. Data analysis was performed using multiple logistic regression. **Results:** The results of the study indicate a significant relationship between knowledge (p = 0.000), attitude (p = 0.000), the role of health workers (p = 0.005), and mosquito larvae monitor cadres or *Jumantik* cadre (p = 0.007) with the implementation of One House One Larvae Monitoring. The dominant factor influencing the implementation of this movement is knowledge, with an Exp(B) value of 6.986. **Conclusions:** It is recommended that the local government and health workers be more active in conducting socialization and empowering mosquito larvae monitor cadres, as well as encouraging active community involvement in the implementation of the One House One Larvae Monitor Movement as a sustainable effort to prevent dengue fever.

Keywords: Mosquito control; mosquito larvae monitor cadres; knowledge; attitude; G1RIJ

1. INTRODUCTION

In this program, the Indonesian people have known how to prevent dengue fever called 3M, namely burying used goods that can become a breeding ground for Aedes Aegypti mosquitoes, closing water reservoirs, and draining water reservoirs periodically. The mosquito nest eradication movement will only run effectively and efficiently with the participation of all levels of society.[1]

Every year there are around 100–400 million cases of dengue infection globally, with Asia accounting for around 70% of cases, and Indonesia recording 57% of cases in Southeast Asia.[2] In Indonesia, in 2020 there were 108,303 cases of dengue fever with 747 deaths out of a total population of 271 million people. In Lampung Province, the number of dengue cases in 2023 reached 2,181 with 8 deaths and ABJ of 89.79%. This number increased significantly in January 2025 to 9,228 cases.[3] According to data from West Coast Regency, dengue cases in 2023 were recorded at 148 with an ABJ of 89.44%, increasing to 285 cases in 2024 with an ABJ of 90.25%. The highest cases occurred in the South Krui, Central Coast, and Ngambur Health Centers. Compared to 2021 (38 cases) and 2022 (30 cases), dengue cases continue to increase. In 2023, there were 16 cases recorded from the Biha Health Center and M. Thohir Hospital with 3 deaths. The population of West Coast Regency has also increased from 159,205 people (2023) to 174,816 people in 2025.[4,5]

Dengue disease is transmitted through the bite of Aedes aegypti mosquitoes carrying the dengue virus. The virus is primarily transmitted by female mosquitoes, especially those of the Aedes aegypti species, and to a lesser extent, Aedes albopictus.[6] Various breeding places for these mosquitoes, for example, are found in bathtubs, drinking water containers, empty cans, plastic drinking water and other artificial containers.[7] Dengue is closely related to environmental sanitation which causes the availability of breeding sites for Aedes aegypti mosquito vectors. A poor environment is shown by not draining water reservoirs once a week, not raising larvae-eating fish, vases with standing water, allowing used items that can hold rainwater, and not burying used items.[8]

The government has made various efforts to handle Dengue Hemorrhagic Fever with a focus on the prevention and control of the Aedes aegypti mosquito vector. One of the main strategies is the implementation of the 1 House 1 Larva Movement, which invites each family to actively monitor and eradicate mosquito larvae in their respective home environments. In addition, the government also routinely holds health counseling, periodic spraying of insecticides, and distribution of abate as a larvicide to break the life cycle of mosquitoes. Empowering Mosquito Larvae Monitor Cadres (or "*Jumantik* cadres") and increasing community participation are the keys to the success of this program, which is supported by coordination between health offices, health centers, and other related agencies to reduce the incidence and death rate due to dengue in a sustainable manner.[9]

Risk factors for the occurrence of dengue include four aspects, namely environment, behavior, health services, and genetics. Genetic factors are related to the body's resistance to dengue virus infection, including abnormalities that increase susceptibility to the disease. Meanwhile, behaviors that have become habits, such as not draining the bathtub, hanging dirty clothes, and leaving canned garbage filled with water, are the main causes of mosquito breeding and an increased risk of dengue fever.[10] Research in Padukuhan VI Sonosewu, Ngestiharjo Village, Bantul Regency, showed a significant relationship between the role of larvae monitoring cadres and the success of eradicating mosquito nests that cause dengue. In addition, study on the empowerment of family independent Jumantik in Niten Nogotirto Gamping Sleman found a strong relationship between the empowerment of Jumantik cadres and family behavior in the prevention of dengue, confirming the importance of Mosquito larvae monitor cadres role in efforts to control this disease.[11]

This study aimed to identify key factors—such as knowledge, attitudes, the use of abate, and the role of mosquito larvae monitor cadres—that influence the implementation of the "One House One Mosquito Larvae Monitor" movement. By focusing on its application in dengue fever prevention efforts in Pesisir Barat Regency, the research seeks to provide insights that can enhance community-based vector control strategies and support more effective public health interventions by 2025.

2. METHODS

The research design used in this study includes a type of quantitative research with a cross-sectional research design using the Simple random sampling technique. The subject of this study is the head of the family. The object of this research is knowledge, attitudes, roles of health workers, Jumantik cadres and the implementation of the 1 House 1 Larval Monitor Movement for the prevention of dengue hemorrhagic fever. The location of the research is in the West Coast Regency Working Area. This research has been carried out on March 4-25, 2025 with a double logistics regression test analysis.

The research was conducted in Pesisir Barat Regency, Lampung Province, Indonesia on March 4 - 25, 2025.

The population is the entire research object to be studied.[13] The population in this study was all heads of families in Pesisir Barat Regency, which had the highest total number of dengue fever cases: Karya Penggawa (7,401 families), Pesisir Tengah (3,147 families), and Krui Selatan (212 families), for a total population of 10,760 families.

This study used stratified random sampling, a sampling technique that divides the population into several smaller groups (strata) based on specific characteristics. Then, random samples are selected from each stratum and combined into a single sample.[12]

The number of subjects in this study is a portion of the population taken using the Slovin formula:

$$n = \frac{N}{1+N(d)^2}$$

$$n = \frac{10,760}{1+10,760\ (0.1)^2}$$

n = 99.07 (100 respondents)

where,

n: Number of samples sought
N: Population Size
d: Margin of Error tolerated at 10%

Data were collected using a structured questionnaire distributed to respondents who met the inclusion criteria. The data were then processed and analyzed using Microsoft Excel and SPSS version 26, employing descriptive statistics and chi-square tests to identify significant relationships between variables at a 95% confidence level.

3. RESULTS AND DISCUSSION

3.1 Knowledge

Based on Table 1, the results of the knowledge frequency distribution data were mostly obtained by 69 people (69%) and good results by 31 people (31%). The distribution of attitude frequencies was mostly obtained with negative results as many as 65 people (65%) and positive results as many as 35 people (35%). The distribution of the frequency of the role of health workers was mostly obtained with bad results as many as 62 people (62%) and good results as many as 38 people (38%). The distribution of the frequency of Jumantik cadres was mostly obtained as a result of 67 people (62%) playing a role and yes playing a role as many as 33 people (33%). The distribution of the frequency of the implementation of the 1 House 1 Larvae Movement activities was mostly obtained by 68 people (68%) and yes played a role in 32 people (32%).

Based on the results of the knowledge frequency distribution data, most of the results were obtained as low as 69 people (69%) and good results as many as 31 people (31%). Knowledge or cognition is a very important domain for the formation of a person's actions. Therefore, from experience and research, it turns out that behaviors based on knowledge will be more lasting than behaviors that are not based on knowledge.[13] The results of this study are in line with the research based on univariate analysis, the results were obtained as many as 70.1% of respondents had no efforts to prevent dengue fever, as many as 64.3% of respondents had poor knowledge.[14]

Table 1. Frequency distribution of knowledge, attitudes, roles of health workers, mosquito larvae monitor cadres and the implementation of the 1 house 1 larva movement

Factor	Frequency (n)	Percentage (%)
Knowledge		
Good	31	31
Less	69	69
Attitude		
Positive	35	35
Negative	65	65
The Role of Health Workers		
Good	38	38
Bad	62	62
Jumantik Cadre		
Ya	33	33
No	67	67
Implementation of the 1 House 1 Jumantik Activity		
Good	32	32
Less	68	68

This low level of knowledge can be one of the inhibiting factors in the effectiveness of program implementation, because good knowledge is an important foundation in forming healthy attitudes and behaviors. This shows the need to continuously increase education and socialization to the community, especially through the active role of health workers and Jumantik cadres, so that public understanding of the importance of the 1 House 1 Jumantik Movement program can increase, so that dengue fever prevention efforts become more optimal.

Based on the results of the attitude frequency distribution data, most of the negative results were obtained by 65 people (65%) and positive results by 35 people (35%). Attitude is a reaction or response of a

person who is still closed to a stimulus or object. From the various limitations of attitudes it can be concluded that the manifestation of the attitude cannot be immediately seen, but can only be interpreted first from the closed behavior. Attitude clearly shows the connotation of the conformity of the reaction to a certain stimulus, attitude is not an action or activity, but is a predisposition to action or behavior. The attitude of Jumantik cadres is a very important domain as the basis for Jumantik cadres in carrying out their activeness in controlling dengue. One of the factors that affect a person's behavior is the attitude of the person.[15]

The results on univariate analysis, the results were obtained as many as 70.1% of respondents had no efforts to prevent dengue fever, as many as 62.7% had a negative attitude. In the opinion of the researcher, attitude is a readiness or willingness to act, and not the implementation of a specific motive. Attitude is not yet an action or activity, but it is a closed reaction, not an open reaction or an open behavior. According to researchers, this reflects the low awareness and willingness of the public to be actively involved in dengue fever prevention efforts. This negative attitude can be caused by a lack of understanding of the importance of the activities of the 1 House 1 Jumantik Movement, lack of motivation, a wrong perception of the responsibility for disease control, or even apathy towards health programs from the government.

Based on the results of the distribution data on the frequency of the role of health workers, most of the results were obtained as bad as many as 62 people (62%) and good results as many as 38 people (38%). The role of health workers is to provide health services, provide health information, and facilitate the community. Health workers play an important role in the handling and prevention of dengue fever.[16]

The relationship between the role of health workers and dengue prevention was obtained by 32 respondents who stated that the role of health workers was not good consisting of 23 people (71.9%).[17] According to the researcher, one of the health service providers, must be able to carry out health promotion and maintenance efforts and prevent the occurrence of diseases. As for the role of nurses, namely to intervene in family nursing, this intervention stage begins with the completion of nurse planning. Implementation can be done by many people, namely individuals and families. According to the researcher, this condition indicates that there is still a gap in the involvement and effectiveness of health workers in efforts to implement the 1 House 1 Larva Movement. The non-optimal role of health workers can reflect a lack of socialization, education, or coaching that should be carried out regularly and in a structured manner.

The researcher emphasized the importance of strengthening the capacity of health workers through continuous training, increased support from health centers and health offices, and closer collaboration between officers and the community. The active role of health workers is very important because they are the spearhead in guiding, motivating, and ensuring the successful implementation of the 1 House 1 Larva Movement in the prevention of dengue fever at the community level.

Based on the results of the frequency distribution data of Mosquito larvae monitor cadres, most of the results were obtained as many as 67 people (62%) who did not play a role and yes played a role as many as 33 people (33%). Mosquito larvae monitor cadres are cadres formed to provide counseling and mobilize the community in efforts to control dengue fever, especially in the eradication of mosquito larvae that cause dengue, so that the transmission of the disease can be prevented and limited. The role of Jumantiks in society is very important and does not only focus on the officers, but the need for an active role from the community

Based on univariate analysis, the results were obtained that 70.1% of respondents had no efforts to prevent dengue fever, as many as 61.4% did not have Jumantik cadres.[18] In the opinion of researchers, community empowerment is very important in the implementation of health efforts. Likewise with the problem of dengue fever, where community empowerment through larval monitors is a very important subject or organizer in controlling dengue vectors. According to the researcher, this reflects the low involvement of Mosquito larvae monitor cadres in the implementation of the 1 House 1 Larva Movement in the research area, especially in the prevention of Dengue Hemorrhagic Fever in West Coast Regency. This condition shows that the existence of Jumantik cadres has not been optimized, both in terms of number, training, and function in the field. Some of the possible causes include the lack of formation of Jumantik cadres in all villages, the lack of training and coaching, and the high rate of replacement of village apparatus which often has an impact on the replacement of Mosquito larvae monitor cadres without an adequate task transfer process.

Based on the results of the distribution data, the frequency of the implementation of the 1 House 1 Larva Movement was mostly obtained by 68 people (68%) and yes played a role in 32 people (32%). The 1 House 1 Larva movement is a mosquito nest eradication program to prevent and eradicate the spread of Dengue Hemorrhagic Fever. Additional Activities of Movement 1 House 1 Larva Sprinkling larvicides to kill larvae, raising larvae-eating fish, changing water in flower pots/vases.

Based on the results of the study, the percentage of actions that are lacking in the implementation of the 1 House 1 Larva Movement in Sendangmulyo Village is higher (65%) than good actions (35%). In the age variable, it is known that the actions of the respondents of Sendangmulyo Village were good in the implementation of the 1 House 1 Larva Movement.

Based on the findings of this study, the researcher assumes that the implementation of the 1 House 1 Larva Movement in the community can be an effective strategy in efforts to prevent and control Dengue Hemorrhagic Fever. This assumption is based on the importance of direct community involvement in monitoring and eradicating mosquito larvae independently and sustainably. With one Mosquito larvae monitor cadres person in every household, supervision of the potential for Aedes aegypti mosquito nests will become more systematic, participatory, and integrated with government programs. It is hoped that the implementation of the 1 House 1 Larva Movement will not only increase the knowledge and attitudes of residents, but also be able to form clean and healthy living behaviors collectively.

According to the researcher, this reflects the low implementation of the One House One Larvae Monitorng Movement program in the people of West Coast Regency. This low implementation shows that efforts to eradicate mosquito nests through household participation are still not running optimally. This may be due to several factors, including low knowledge and awareness of the community, lack of active role of Mosquito larvae monitor cadres, and lack of supervision and assistance from health workers at the village or pekon level. In addition, the uneven implementation of the 1 House 1 Larva Movement between villages is also a challenge, caused by inconsistencies in the formation of cadres, too frequent changes of village apparatus, and the lack of optimal use of village funds and BOK funds to support preventive activities such as Movement 1 House 1 Larvae Monitoring. The researcher assesses that to improve the implementation of the 1 House 1 Larvae Monitoring comprehensive approach is needed, starting from strengthening the capacity of cadres, increasing community participation through continuous education, to the commitment of the village government and health workers to make the 1 House 1 Larvae Movement a priority for dengue fever prevention programs sustainable and community-based.

3.2 Relationship between knowledge and the implementation of the 1 House 1 Larvae Movement

Based on Table 2 of 31 respondents with good knowledge, as many as 20 respondents (64.5%) carried out the 1 House 1 Larval Monitor Movement well. Meanwhile, of the 69 respondents with less knowledge, 57 respondents (82.6%) implemented the 1 House 1 Larvae Monitor Movement not well. The results of *the* Chi-Square test showed a *p*-value of 0.000 (*p*-value < 0.05), which means that the alternative hypothesis (Ha) is accepted, so that there is a significant relationship between the knowledge and implementation of the 1 House 1 Larvae Monitor Movement for the prevention of dengue hemorrhagic fever in West Coast Regency in 2025. An *odds ratio* (OR) value of 8.636 indicates that respondents with good knowledge have an 8.6 times greater chance of implementing the 1 House 1 Larvae Monitor Movement compared to respondents with less knowledge.

The results of bivariate analysis show that there is a relationship between knowledge and efforts to prevent dengue fever with a p value of 0.000. Knowledge has been shown to have a meaningful relationship with dengue disease prevention efforts. In the opinion of the researcher, based on the results of the study, it is known that most of the knowledge of the head of the family about dengue fever is good, but the respondents' knowledge is not good with no efforts to prevent dengue fever This is characterized by the knowledge possessed by the head of the family who does not understand in mentioning what activities can prevent dengue fever, so that the prevention of dengue fever has not been carried out optimally in the community. It is hoped that health workers, cadres and community leaders will be able to provide counseling/information about dengue fever and how to prevent it through electronic/radio media, places of worship, PKK cadres or other community groups such as directly practicing with props or pictures/posters. In addition, it provides training for the 1 house 1 larvae monitor movement.

Table 2. The relationship between knowledge and the implementation of the 1 House 1 Larvae Movement for the prevention of dengue hemorrhagic fever

Knowledge	Implementation of the 1 House 1 Larvae Monitor Movement						*p*-value	*OR*
	Good		Less		Total			
	n	%	n	%	n	%		
Good	20	64.5	11	35.5	31	100	0.000	8.636
Less	12	17.4	57	82.6	69	100		

Knowledge is very important for the formation of a person's actions because with experience and research, it turns out that behaviors based on knowledge will be easier to remember and last than behaviors that are not based on knowledge. Therefore, knowledge is a very important domain for the formation of a person's actions, in this case actions in handling dengue fever prevention efforts. The researcher concluded that increasing public knowledge, both through direct education, integrated counseling, and community-based health campaigns, is a strategic step and a top priority in strengthening the implementation of the 1 House 1 Larvae Monitor Movement in West Coast Regency. Without adequate understanding, the community will tend to be passive and not actively involved in mosquito nest eradication activities, so the potential for the spread of dengue fever remains high.

3.3 Relationship between attitudes and the implementation of the 1 House 1 Larvae Monitor Movement

Based on Table 3 of the 35 respondents who had a positive attitude, as many as 21 respondents (60%) carried out the 1 House 1 Larvae Monitor Movement well. Meanwhile, of the 65 respondents who had a negative attitude, 54 respondents (83.1%) implemented the 1 House 1 Larvae Monitor Movement not well. The results of the Chi-Square test showed a p-value of 0.000 (p-value < 0.05), which means that the alternative hypothesis (Ha) is accepted, so there is a significant relationship between the attitude and implementation of the 1 House 1 Larva Monitor Movement for the prevention of dengue hemorrhagic fever in West Coast Regency in 2025. An odds ratio (OR) value of 7.364 shows that respondents with a positive attitude have a 7.3 times greater chance of implementing the 1 House 1 Larva Monitor Movement than respondents who have a negative attitude. This is in accordance with L. Green's theory of attitude is a factor that exists in a person to behave. Attitude is related to the motivation of an individual or group in doing something. So, the better a person's attitude or view of something, the better the action taken against it.[19]

The results of bivariate analysis show that there is a relationship between attitude and efforts to prevent dengue disease with a p value of 0.000. Attitudes have been proven to have a meaningful relationship with dengue prevention efforts. The results of the study showed that there was a relationship between attitudes and dengue fever prevention.

Table 3. Relationship between attitudes and the implementation of the 1 House 1 Larvae Monitor Movement

Attitude	Implementation of the 1 House 1 Larvae Monitor Movement						*p*-value	*OR*
	Good		Less		Total			
	n	%	n	%	n	%		
Positive	21	60.0	14	40.0	35	100	0.000	7.364
Negative	11	16.9	54	83.1	65	100		

In the opinion of the researcher, the attitude of the respondents is still much lacking in the implementation of the activities of the 1 House 1 Larvae Monitor Movement, so the researcher assumes that attitudes do not always lead to actions but can be learned and formed based on experience and practice throughout a person's development, then the attitude can change. This means that positive attitudes such as awareness, concern for the environment, and a sense of responsibility for family health are strong drivers in supporting this program. Thus, researchers conclude that interventions that not only increase knowledge, but also shape and strengthen positive attitudes of society are needed. This can be done through persuasive communication approaches, campaigns based on local social and cultural values, and the involvement of community leaders in setting a good

example. The formation of a positive attitude will be an important foundation for the sustainability and effectiveness of the implementation of the 1 House 1 Larvae Monitor Movement in West Coast Regency.

3.4 Relationship between the role of health workers and the implementation of the 1 House 1 Larvae Monitor Movement

Based on table 4 of the 38 respondents who assessed the role of health workers as good, as many as 19 respondents (50%) carried out the 1 House 1 Larvae Monitor Movement well. Meanwhile, of the 62 respondents who assessed the role of health workers as not good, 49 respondents (79%) carried out the 1 House 1 Larvae Monitor Movement not well. The results of the Chi-Square test showed a *p*-value of 0.005 (*p*-value < 0.05), which means that the alternative hypothesis (Ha) is accepted, so there is a significant relationship between the role of health workers and the implementation of the 1 House 1 Larvae Monitor Movement in the prevention of dengue hemorrhagic fever in West Coast Regency in 2025. An *odds ratio* (OR) value of 3.769 shows that respondents who rated the role of health workers as good had a 3.7 times greater chance of implementing the 1 House 1 Larvae Monitor Movement compared to those who rated the role of health workers as not good.

Table 4. The relationship between the role of health workers and the implementation of the 1 House 1 Larvae Monitor Movement for the prevention of dengue hemorrhagic fever

The role of health workers	Implementation of the 1 House 1 Larvae Monitor Movement						*p*-value	*OR*
	Good		Less		Total			
	n	%	n	%	n	%		
Good	19	50.0	19	50.0	38	100	0.005	3.769
Bad	13	21.0	49	79.0	62	100		

The results of the analysis research obtained a p. value of 0.012. This means that there is a meaningful relationship between the role of health workers and the prevention of dengue fever at the Simpang Babat Health Center, PALI Regency in 2020. In the opinion of the researcher, the role of health workers greatly affects prevention, accelerating the healing process of a disease. The researcher concluded that the support and involvement of active, competent, and communicative health workers is very important to increase community participation in the implementation of the 1 House 1 Larvae Monitor Movement Therefore, strengthening the capacity and role of health workers through training, monitoring, and a more intensive approach to the community needs to be a priority to increase the effectiveness of dengue prevention programs in this region. Although the role of health workers has proven to have a significant influence on the implementation of the 1 House 1 Larvae Monitor Movement, there are still challenges in ensuring that this role runs optimally in the field. The fact that only 50% of respondents with an assessment of the role of health workers either implemented the 1 House 1 Larvae Monitor Movement well suggests that other factors may also affect community participation, such as individual motivation, available resources, or social environment support. In addition, public perception of health workers can also be influenced by the quality of communication, frequency of visits, and trust formed during interactions.

3.5 Relationship between Mosquito larvae monitor cadres and One House One Larvae Monitoring Movement

Based on Table 5 of the 33 respondents who stated that Jumantik cadres played a role, as many as 17 respondents (51.5%) implemented the 1 House 1 Larvae Monitor Movement well. Meanwhile, of the 67 respondents who stated that Mosquito larvae monitor cadres did not play a role, 52 respondents (77.6%) carried it out poorly. The results of the statistical test with Chi-Square showed a p-value of 0.007 (p-value < 0.05), which means that the alternative hypothesis (Ha) is accepted. Thus, there is a significant relationship between the role of Mosquito larvae monitor cadres and the implementation of the 1 House 1 Larva Monitor Movement in the prevention of dengue hemorrhagic fever in West Coast Regency in 2025. The *odds ratio* (OR) value of 3.683 shows that respondents who have an active role in the Mosquito larvae monitor cadres Movement have a 3.6 times greater chance of carrying out the 1 House 1 Larva Monitor Movement compared to those who do not have a Jumantik cadre who play a role.

Table 5. Relationship between mosquito larvae monitor cadres and G1R1J in Dengue Fever Prevention.

Mosquito larvae monitor cadres	Implementation of the 1 House 1 Larvae Monitor Movement						*p*-value	*OR*
	Good		Less		Total			
	n	%	n	%	n	%		
Yes	17	51.5	16	48.5	33	100	0.007	3.683
No	15	22.4	52	77.6	67	100		

In the opinion of the researcher, the activeness of mosquito larvae cadres in monitoring their environment is an important step that can affect changes in family behavior in carrying out mosquito nest eradication such as carrying out the 1 House 1 Larvae Monitor Movement to prevent an increase in dengue cases. The Role of Larval Monitoring Cadres (*Jumantik*) with family behavior in the Eradication of Mosquito Nests Causes of Dengue Fever. Jumantik cadres in every village in West Coast Regency have not been formed comprehensively. The special task force for the prevention and control of dengue fever, especially mosquito larvae cadres, has not worked optimally. Some cadres are still concurrently on duty, such as Integrated Health Service Post cadres who also act as Jumantic cadre, and there are even Chronic Disease Management Program cadres who also serve as larval monitoring cadre.

Of the 11 villages in West Coast Regency, only 8 villages have formed mosquito larvae cadres. However, even though the task force already exists, the implementation of its work is not optimal. In fact, some mosquito larvae cadres work voluntarily without having an official decree from the *Peratin* (village head), and support in the form of operational money is only given irregularly by colleagues from surveillance and those in charge of the program. This condition is what causes the implementation of the 1 House 1 Larva Movement 1 House 1 Larva for the prevention of dengue in West Coast Regency has not run optimally. The fact that there are still many respondents who stated that mosquito larvae cadres do not play a role and the implementation of the 1 House 1 Larva Movement is not good shows that there are challenges in the field, such as a lack of training, motivation, or support for mosquito larvae cadres. Therefore, efforts are needed to increase capacity, coaching, and continuous support for Jumantik cadres so that their role is more effective in encouraging public awareness and participation in dengue fever prevention.

3.6 Multivariate Analysis

3.6.1 The first stage

In the initial stage of multivariate analysis, variable selection is carried out using bivariate tests to determine sub-variables that are suitable for inclusion in the model. Based on the results of the bivariate test, four sub-variables were obtained that had a *p*-value of < 0.05, so that they were declared suitable for inclusion in multivariate analysis. These sub-variables include: Jumantik cadres (*p*-value = 0.004), the role of health workers (*p*-value = 0.003), knowledge (*p*-value = 0.000), and attitude (*p*-value = 0.000). These four sub-variables will then be further analyzed in the multivariate stage to find out the most influential variables on the implementation of the 1 House 1 Larva Movement in the prevention of dengue fever in West Coast Regency and enter the multivariate test because the p value is < 0.25.

Table 6. First stage multivariate

Sub-variable	*p*-value	Information
Mosquito larvae Cadre	0.004	Eligible for multivariate models
The Role of Health Workers	0.003	Eligible for multivariate models
Knowledge	0.000	Eligible for multivariate models
Attitude	0.000	Eligible for multivariate models

3.6.2 The second stage

In the second stage of multivariate analysis, a logistic regression test was carried out to determine the variables that had the most influence on the implementation of the 1 House 1 Larva Movement in the prevention of dengue fever in West Coast Regency. The results of the analysis showed that all sub-variables included in the model had a significance value (*p*-value) of < 0.05, so that statistically it had a significant effect on the implementation of the 1 House 1 Larva Movement. The knowledge sub-variable had a regression coefficient value (B) of 2.156 with a *p*-value of 0.000 and an odds ratio

(OR) value of 8.636 (95% CI: 3.294–22.640), which indicates that respondents with good knowledge were 8.6 times more likely to carry out the 1 House 1 Larva Movement than those with less knowledge. Furthermore, the attitude sub-variable had a B value of 1.997 with an OR of 7.364 (95% CI: 2.886–18.791), which means that respondents with a positive attitude were 7.3 times more likely to carry out the 1 House 1 mosquito larvae Movement than those with a negative attitude. The sub-variable role of health workers and mosquito larvae cadres also showed a significant influence. The role of health workers has a B score of 1.327 with an OR of 3.769 (CI 95%: 1.560–9.107), while Jumantik cadres have a B value of 1.304 with an OR of 3.683 (CI 95%: 1.509–8.989). This means that the role of health workers and good mosquito larvae cadres increases the chances of implementing the 1 House 1 Jumantik Movement by 3.7 times and 3.6 times greater than those who are not good or do not play a role, respectively. Thus, knowledge is the most dominant factor in influencing the implementation of the 1 House 1 Larva Movement, followed by attitudes, roles of health workers, and Jumantik cadres. The next step, the sub-variable that has the largest p value does not exist to exclude from the model.

Table 7. Second stage of multivariate

Sub variable	B	Wald	Sig.	OR	CI 95%
Knowledge	2.156	19.225	0.000	8.636	3.294- 22.640
Attitude	1.997	17.447	0.000	7.364	2.886- 18.791
The role of health workers	1.327	8.690	0.003	3.769	1.560- 9.107
Mosquito larvae cadre	1.304	8.204	0.004	3.683	1.509-8.989

3.6.3 Third stage

In the third stage of the study, a final interpretation of the results of the multivariate logistics regression analysis was carried out to identify the factors that most influenced the implementation of the 1 House 1 Larva Movement in the prevention of dengue in West Coast Regency. The four sub-variables studied, namely knowledge, attitudes, the role of health workers, and Jumantik cadres, were all proven to have a significant effect on the implementation of the 1 House 1 Larva Movement (p value < 0.05). These results show that knowledge is the most dominant factor, with an OR value of 8.636 (95% CI: 3.294–22.640). This means that respondents who have good knowledge about dengue fever and the 1 House 1 Larva Movement program have an 8.6 times greater chance of implementing the 1 House 1 Larva Movement well than respondents who lack knowledge. Attitude factors also had a major influence, with an OR of 7.364 (95% CI: 2.886–18.791), suggesting that positive attitudes towards dengue fever prevention programs increased the likelihood of implementing G1R1J by up to 7.3 times. Furthermore, the role of health workers contributed with an OR of 3,769 (95% CI: 1,560–9,107), indicating that the activeness of health workers in accompanying the community increased the success of the program almost 4 times. Finally, the role of Jumantik cadres is also significant, with an OR of 3,683 (CI 95%: 1.509–8.989), which means that the existence of active Jumantik cadres can increase the implementation of the 1 House 1 Larva Movement 3.6 times greater than areas that do not have cadres playing a role. Overall, the results of this third phase confirm that the implementation of the 1 House 1 Larva Movement does not only depend on one factor, but is the result of interaction from various elements, especially community knowledge and attitudes, as well as support from health workers and mosquito larvae cadres. Therefore, the strategy to improve the 1 House 1 Larva Movement program should be focused on improving public education and strengthening the role of health assistants in the field. The sub-variables of knowledge, attitudes, roles of health workers and Jumantik cadres have a p value of < 0.05 these results can be included in the final model.

Table 8. Multivariate third stage

Sub variable	B	Wald	Sig	OR	CI 95%
Knowledge	2.156	19.225	0.000	8.636	3.294- 22.640
Attitude	1.997	17.447	0.000	7.364	2.886- 18.791
The role of health workers	1.327	8.690	0.003	3.769	1.560- 9.107
Mosquito larvae Cadre	1.304	8.204	0.004	3.683	1.509-8.989

The final modeling, which is a variable that has a p< value of 0.05 is included in the multivariate analysis and is seen to have the highest OR value, then the variable is the dominant independent variable in influencing the dependent variable. In the final stage of multivariate logistic regression analysis, final modeling was carried out to identify factors that independently had a significant influence on the implementation of the 1 House 1 Larva Movement in the prevention of dengue in West Coast Regency. Of the four subvariables included in the model, two variables proved to be statistically significant, namely knowledge, with *a value of p* = 0.005 and an odds ratio (OR) of 6.986 (95% CI: 1.786–27.332), indicating that respondents with good knowledge had almost 7 times greater chance of implementing the 1 House 1 Larva Movement compared to respondents with less knowledge. The attitude, with *a p* value = 0.001 and an OR of 5.380 (95% CI: 1.934–14.965), means that respondents who have a positive attitude towards dengue prevention are 5.3 times more likely to carry out the 1 House 1 Larva Movement than those who have a negative attitude. Meanwhile, the role of health workers (*p* = 0.551; OR = 2.017; CI 95%: 0.201–20.213) and the role of mosquito larvae cadres (*p* = 0.554; OR = 0.458; CI 95%: 0.037–5.701) showed no statistically significant influence in this final model. This is indicated by a *p*-value of more than 0.05 and a wide range of CI and includes the number 1, which signifies uncertainty and weak relationships in this context. Thus, knowledge and attitudes are the factors that play the most role in supporting the effective implementation of the 1 House 1 Larva Movement. These findings underscore the importance of an educational approach and the formation of positive attitudes in dengue eradication strategies, while support from officers and cadres remains important but not statistically strong enough in this final model. The results of the analysis can be concluded that from all independent variables that are suspected to affect the implementation of the activities of the 1 House 1 Larva Movement for the prevention of dengue hemorrhagic fever in West Coast Regency in 2025, there is one subvariable (knowledge) that is most related to the implementation of the 1 House 1 Larva Movement activities For the prevention of dengue hemorrhagic fever with a p value of 0.005 < 0.05. The largest OR value obtained was 6.986, meaning that the knowledge felt by the respondents had a 7 times chance of causing the implementation of the 1 House 1 Larva Movement for the prevention of dengue hemorrhagic fever.

Table 9. Multivariate final stage

Sub variable	B	Wald	Sig.	OR	CI 95%
Knowledge	1.944	7.801	0.005	6.986	1.786-27.332
Attitude	1.683	10.394	0.001	5.380	1.934-14.965
The role of health workers	0.702	0.356	0.551	2.017	0.201- 20.213
Mosquito larvae cadre	-0.780	0.368	0.554	0.458	0.037- 5.701

Knowledge is everything that is in our heads. We can know something based on the page, if we also become aware because we are told by others. Knowledge is also obtained from traditions, other than knowledge is the result of "Knowing" and this happens after people do sense through the human five senses, namely, sight, hearing, smell, taste and touch. Most of human knowledge is obtained through the eyes and ears.[13]

Many factors affect dengue prevention measures including PSN 3M plus Knowledge of good mosquito nest control will affect dengue prevention measures to be good. An external factor that can affect a person's knowledge is information media. Information obtained from both formal and non-formal education can have an immediate impact so as to produce changes or increases in knowledge.[20]

Explain that age can affect a person's ability to grasp and mindset, the age of adolescence and mindset is still a developmental process so that the knowledge they gain is lacking. Who explained that age has an influence on the level of knowledge on dengue prevention. Which explains that there is a relationship between the level of education and the level of knowledge with a value of sig 0.000 (<0.05) where the higher the level of education, the higher the level of knowledge possessed and vice versa.[21,22]

This study has several limitations that should be acknowledged. First, the cross-sectional design used in this research only captures a snapshot of the respondents' conditions at a single point in time, making it impossible to determine causality between the studied variables and the implementation of the One House One Larva (G1R1J)

movement. Second, the use of self-reported questionnaires may introduce information bias, as respondents might overestimate or underestimate their knowledge, attitudes, or behaviors. Additionally, the study focused only on a limited number of variables—knowledge, attitude, the role of health workers, and mosquito larvae cadres—without considering other potentially influential factors such as environmental sanitation, socioeconomic status, and local government policy support. Lastly, the findings may not be generalizable to other regions with different demographic and epidemiological characteristics.[23,24]

4. CONCLUSION

Based on the results of the study, it can be concluded that several factors are significantly related to the implementation of the One House One Larva Movement (G1R1J) in the prevention of Dengue Hemorrhagic Fever (DHF) in Pesisir Barat Regency in 2025. These factors include knowledge ($p = 0.000$), attitude ($p = 0.000$), the role of health workers ($p = 0.005$), and the presence of mosquito larvae cadres ($p = 0.007$). Among these, knowledge emerged as the most dominant factor influencing the implementation of G1R1J, with an Exp(B) value of 6.986. These findings support the main objective of the study, which is to identify key elements influencing the success of community-based vector control through the G1R1J program.

As a recommendation, it is essential for local governments and health workers to intensify educational outreach and empower mosquito larvae cadres at the household level. Community engagement should be continuously encouraged through awareness campaigns, home visits, and integration of G1R1J activities into routine public health services. It is also advised that the health department ensures sustainable support for mosquito larvae operations and improves logistical support, such as the availability of larvicides and educational materials. Future research is recommended to adopt a longitudinal approach and explore other contributing variables such as environmental sanitation, motivation, or socioeconomic status to gain a more comprehensive understanding of the effectiveness of G1R1J in dengue prevention.

Ethical Approval

This study has received ethical approval from the Research Ethics Committee of Health Faculty, Universitas Mitra Indonesia, with reference no.: S.25/050/FKES10/2025.

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Competing Interests

All the authors declare that there are no conflicts of interest.

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Underlying Data

Derived data supporting the findings of this study are available from the corresponding author on request.

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