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FACTORS RELATED TO DENGUE HEMORRHAGIC FEVER (DHF) PREVENTION BEHAVIOR IN THE COMMUNITY IN THE WORKING AREA OF THE KRAMATWATU HEALTH CENTER, SERANG REGENCY IN 2023

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Abstract
Dengue Hemorrhagic Fever is one of the public health problems in Indonesia, because the number of patients and the area of spread is increasing along with increasing mobility and population density. In the last 5 years, the number of cases and infected areas has continued to increase and spread widely and often cause Extraordinary Events. This study aims to determine the factors related to dengue fever prevention behavior in the community in the working area of the Puskesmas Kramatwatu District, Serang Regency in 2023. The type of research is quantitative with Cross Sectional design. Independent variables are education, income, knowledge, and attitude. While the dependent variable is dengue fever prevention behavior. Population is the community in the working area of the puskesmas Kramatwatu District. The sample of 88 people was selected by cluster random sampling in four endemic villages. Statistical tests are performed with Chi-Square test and Logistic Regression Test. The results of statistical tests show that the majority of respondents have poor behavior (66.3%). The Chi Square test found that the variables of education, knowledge, and attitude obtained a value of $p<0.05$ there was a significant relationship with dengue fever prevention behavior, while the income variable obtained a value of $p>0.05$ there was no significant relationship with dengue fever prevention behavior. In the logistic regression test, it is known that the biggest variable affecting dengue prevention behavior is the knowledge variable with an Odd Ratio value = 4.8.

Keywords: Behavior, Prevention, Dengue Hemorrhagic Fever

1. Introduction

The incidence of dengue fever can potentially cause social impacts in the form of public unrest because of the rapid course of the disease and can cause death in a short time, as well as the economic impact of increasing state spending for the treatment of dengue fever (Afrian, N., Dhina, W., &Dwi, 2016).

Data from the World Health Organization (WHO) in 2015 estimates that 2.5 billion or 40% of the world's population is at risk of dengue disease, especially those living in urban areas in tropical and subtropical countries. Currently there are also an estimated 390 million dengue infections that occur worldwide every year (Dewi, 2015).

Dengue cases in Indonesia in 2020 were spread across 472 regencies/cities in 34 provinces. Dengue deaths occurred in 219 regencies/cities. Throughout 2020, 95,893 cases were found, while the number of deaths due to dengue fever was 661. Incident Rate (IR) in 377 regencies/cities (73.35%) reached less than 49/100,000 population (Rokom, 2020).

Data from the Serang Regency Health Office has increased dengue cases in the last 3 years, the most cases in Serang Regency are: Kramatwatu District with 115 cases, Cikande District with 63 cases and Ciruas District with 60 cases (Serang Regency Health

Office Profile, 2022). One of the causes of the high dengue cases that occur in Kramatwatu District is because of the low Flick Free Rate, the Flick Free Rate in Kramatwatu District is 85%, as low as the target of ABJ nationally is 95% (Serang District Health Office 2022).

2. Theoretical Background

Factors that cause dengue hemorrhagic fever include the low practice of 3M in households. The 3M Plus Mosquito Nest Eradication Program (PSN) contains activities, including draining water reservoirs, tightly closing water reservoirs, burying and removing used items, monitoring the presence of larvae, and continuous environmental management such as increasing awareness of environmental cleanliness to reduce the potential for mosquito breeding sites (Respati, T., Piliang, B., Nurhayati, E., Yulianto &; A., &; Feriandi, 2016).

Efforts to prevent and control dengue fever The government has made many efforts including: the establishment of functional working groups (pokjanal) at the central, provincial and district or city levels as well as working groups (pokja) at the sub-district and village/kelurahan levels, dengue mosquito nest eradication campaigns through officer training, cadre training, community counseling, fogging focus, abatization and periodic inspection of mosquito larvae, but some of these efforts have not shown results which is satisfying.

Based on the description above, the researcher aims to find out about factors related to community behavior in efforts to prevent dengue disease in the working area of the puskesmas Kramatwatu sub-district, Serang Regency.

3. Methods

This type of research is quantitative research with a research design using a cross sectional approach. This research will be conducted in November – December 2023. The location of this research was carried out in four villages in the working area of the Kramatwatu health center, Serang Regency, Banten Province, namely Harjatani, Margatani, Lebakwana and Kramatwatu Villages. The population in this study is people in the working area of the Kramatwatu health center, Serang Regency, Banten Province. The sample inclusion criteria are residents in the working area of the puskesmas Kramatwatu District who are productive aged 20-49 years, while the sample exclusion criteria are Kramatwatu residents who work with high mobility or have suffered from DHF. The sample in this study was 88 with a sampling technique using cluster random sampling. This study randomly selected 4 clusters from endemic villages (Harjatani, Margatani, Lebakwana, Kramatwatu).

4. Results and Discussion

4.1 Univariate Analysis Results

Univariate statistical test results based on DHF Prevention Behavior Indicators:

1) The majority of respondents answered that they drain water reservoirs (bathtubs, torens, etc.) (70.5%)
2) The majority of respondents answered not using larvicide powder (71.6%)
3) Most respondents answered that they often hoard used goods (57.9%)
4) The majority of respondents closed their water reservoirs (73.8%)

5) The majority of respondents clean other water reservoirs such as animal drinking places, aquariums, flower vases, and others, as much as (69.3%)
6) The majority of respondents have a habit of hanging consumables (73.8%)
7) Most respondents use mosquito repellent either spray, burn, or lotion as much as (52.2%)
8) The majority of respondents did not work together to clean the environment (82.8%) in cleaning the environment.
9) Some respondents use gauze/bed nets and some do not use gauze/bed nets (50%).
10) The majority of respondents do not own or do not grow mosquito repellent plants (lavender, lemongrass, eucalyptus, etc.) or raise larvae-eating fish (bettas, carp, koi, etc.) (80.6%)

Table 1. Frequency Distribution of Factors Related to DHF Prevention Behavior in the Community in the Working Area of the Kramatwatu Health Center, Serang Regency in 2023

Variable	Sum	(%)
Education		
Low	35	39.7 %
Tall	53	60.3 %
Income		
< UMR Kab. Serang	51	57.9 %
> UMR Kab. Serang	37	42.1 %
Knowledge		
Less	42	47.7 %
Good	46	52.3 %
Attitude		
Not Supported	47	53.4%
Support	41	46.6%
Behaviour		
Less	57	64.7 %
Good	31	35.3 %

Based on table 6. It is known from 88 respondents who stated that those who have higher education are 53 (60.3%), < income of UMR Serang Regency as much as 51 (57.9%), good knowledge as much as 46 (52.3%), unsupportive attitudes as many as 47 (53.4%), and less behavior as much as 57 (64.7%).

4.2 Results of Bivariate Analysis

Table 2. Factors Related to DHF Prevention Behavior in the Community in the Working Area of the Kramatwatu Health Center, Serang Regency in 2023

Variable	Behaviour				N	P value	OR
	Not Good		Good				
	F	%	F	%	F		
Education							
Low	27	30.7%	8	9.1%	35	0.030	3.125
Tall	30	34.1%	23	26.1%	43		
Sum	57		31		88		
Income							

< UMR Kab. Serang > UMR Kab. Serang	36 21	40.9% 23.8%	15 16	17.1% 18.2%	51 37	0.427	1.927
Sum	57		31		88		
Knowledge Less Good	34 23	38.6% 26.1%	8 23	9.1% 26.2%	 42 46	0.001	5.333
Sum	57		31		88		
Attitude Not Supported Support	 36 21	 40.9% 23.8%	 11 20	 12.5% 22.8%	 47 41	0.000	3.579
Sum	57		31		88		

Based on the table above, it shows that of the 88 respondents, most of them had a high education or graduated from high school to college, which is as many as 43 people, and most had poor behavior as many as 30 people (34.1%) with higher education. The results of the Chi-Square Test show that in education obtained p value = 0.030 < 0.05, meaning that there is a meaningful relationship between education and DHF prevention behavior.

Based on the table above, it shows that from 88 respondents, most of the 51 people have an income that < the UMR of Serang Regency (Rp.4,492,961) and most of them who behave poorly with the income of the < of the UMR of Serang Regency as many as 36 people (40.9%), In income, the results of the Chi-square test were obtained with a value of p = 0.427 > 0.05, meaning that there is no significant relationship between income and DHF prevention behavior.

While in the knowledge of 88 respondents, there were mostly 46 people with good knowledge, and most had poor behavior 34 (38.6%) with less knowledge. In the knowledge obtained p value = 0.001 < 0.05 means that there is a meaningful relationship between knowledge and DHF prevention behavior.

In the attitudes of 88 respondents, most of the 47 people had an unsupportive attitude, and most had a bad attitude with an unsupportive attitude of 36 (40.9%). While the results of the Chi-square test on attitude obtained p value = 0.000 < 0.05 means that there is a meaningful relationship between attitude and DHF prevention behavior.

4.3 Multivariate Analysis Results

The variable included in the multivariate analysis is if the variable with a value of p<0.25 in bivariate selection. The following are multivariate Kandindat variables:

Table 3. Multivariate Candidate Variables

Variable	P value
Education	0.030
Income	0.427
Knowledge	0.001
Attitude	0.000

So based on the conditions obtained, the variables that pass become covariate variables, namely education, knowledge, and attitude variables.

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Next, all variables that have p value> 0.1 are excluded from the model one by one starting from the variable that has the largest p value (Lestari, 2012). The first multivariate modeling is as follows:

Table 4. The First Multivariate Modeling

Variable	B	P value	Exp B	95% CI
Education Level	0.929	0.107	2.531	0.819-7.824
Knowledge Level	1.338	0.020	3.811	1.235-11.75
Attitude	0.855	0.117	2.352	0.806-6.860

Constant = 1.467

From the results above, the largest p value is attitude, so the first to be excluded from the first modeling is attitude. After removing the attitude from the first modeling, the results of the second modeling are as follows:

Table 5. Second Multivariate Modeling

Variable	B	P value	Exp B	95% CI
Education Level	0.995	0.080	2.705	0.889-8.237
Knowledge Level	1.587	0.004	4.890	1.659-14.41

Constant = 1.348

From the second multivariate modeling analysis, the resulting logistic equation is as follows:

Logit p (behavior) = 1.348 + (0.995*Education) – 1.587*Knowledge

1) The knowledge OR is 4,890, It can be interpreted that the presence of good knowledge is at risk of increasing good behavior 4,890 times compared to poor knowledge after controlling for other variables.
2) The independent variable that has the most influence on dengue prevention behavior is the variable that has the largest OR. The greater the OR of an independent variable, the greater the influence on the behavioral variables of DHF prevention. Thus, in this study the variable that has the most influence on DHF prevention behavior is knowledge.

4.4 Discussion

4.4.1 The Relationship of Education with DHF Prevention Behavior

The results of bivariate analysis showed that educational variables had a meaningful relationship (p = 0.030; OR=3.12) with dengue prevention behavior. This is in line with the research of Putri and Naftassa (2017) which examined the relationship between the level of education and community knowledge with dengue hemorrhagic fever prevention behavior in Kemiri Village, Jayakerta District, Karawang in 2016, where the results showed that there was a significant relationship between the level of education and dengue prevention measures in Candlenut Village with the acquisition of p = 0.003 and OR = 4.18. This shows the influence of intelligence or high level of education on public awareness to prevent DHF. The level of education also affects a person's knowledge, health knowledge will affect behavior as a medium-term result (intermediate impact) of health education, then health behavior will affect the improvement of public health indicators as an output of health education (Rezki Putri, et al, 2017).

4.4.2 The relationship of income with dengue prevention behavior

The results of bivariate analysis showed that income variables did not have a meaningful relationship (p = 0.427; OR=1.92) with dengue prevention behavior. This

finding is in line with Ratnawati's (2018) research on factors related to dengue prevention behavior in the Geger Health Center area, Madiun Regency. From the results of statistical analysis, it was found that respondents' income was not related to dengue prevention behavior with a value of p = 0.566.

There is no significant relationship between income and dengue prevention behavior in this study because in carrying out dengue prevention measures, no financing, maintenance, or funding is needed that is enough to affect family income. The awareness factor of the community members themselves contributes greatly to the implementation of these activities. From this, dengue prevention behavior should be carried out by every member of the community as a whole.

4.4.3 Knowledge Relationship with DHF Prevention Behavior

The results of bivariate analysis showed that knowledge variables had a meaningful relationship (p = 0.001; OR=5.33) with dengue prevention behavior. The results of the multivariate analysis of the four independent and dependent variables found that the knowledge variable has the greatest influence on DHF prevention behavior, this can be in (see that the odds ratio (OR) value of the knowledge variable is 4.8 meaning that respondents who have good knowledge have a chance of 4.8 times doing DHF prevention behavior compared to those who have less knowledge. This finding is in line with the research of Nurkhasana, et al (2021) on Factors related to dengue prevention at the Simpang Babat Health Center, PALI Regency. From the results of the analysis, a p. value of 0.001 was obtained. this means that there is a significant relationship between knowledge and dengue prevention with a value of OR=10.93.

4.4.4 Knowledge Relationship with DHF Prevention Behavior

The results of bivariate analysis showed that knowledge variables had a meaningful relationship (p = 0.000; OR=3.57) with dengue prevention behavior. This is in line with the findings of research conducted by Nurkhasana, et al (2021) on Factors related to dengue prevention at the Simpang Babat Health Center, PALI Regency. From the results of the analysis, a p. value of 0.009 was obtained. This means that there is a significant relationship between attitudes and dengue prevention. Also obtained OR value: 5.625. Community attitudes towards dengue prevention and control programs are still unstable, the boundaries between supporting and not supporting are very thin and easily move from supporting to not supporting or vice versa, but when people are positive when influenced by certain facilities (enabling factors) for example: the availability of larvicide and environmental support such as there are recommendations from community leaders and community movements such as community service work (reinforcing factor) then the community easily carry out preventive measures such as PSN activities.

5. Conclusion

1) The sample in this study that became the majority of respondents were those with higher education 49 people (61.3%), Income < UMR Kab. Serang 47 people (58.8%), good knowledge 42 people (52.5%), unsupportive attitude 43 people (53.8%), and bad behavior 53 people (66.3%)
2) There was a significant relationship between respondents' education and dengue prevention behavior (p = 0.030; OR=3.12) in the Working Area of Kramatwatu District, Serang Regency in 2023

3) There was no significant relationship between respondents' income and dengue prevention measures (p = 0.427; OR=1.92) in the Working Area of Kramatwatu District, Serang Regency in 2023
4) There was a significant relationship between respondents' knowledge and dengue prevention behavior (p = 0.001; OR=5.33) and from the results of multivariate analysis, knowledge has the greatest influence on dengue prevention behavior (OR=4.8) in the Working Area of Kramatwatu District, Serang Regency in 2023
5) There was a significant relationship between respondents' attitudes and dengue prevention behavior (p = 0.000; OR=3.57) in the Working Area of Kramatwatu District, Serang Regency in 2023

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