Mosquito Nest Eradication Behavior (PSN) in Communities in Rawabuntu Region South Tangerang

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ABSTRACT

Dengue Hemorrhagic Fever (DHF) is a disease that always increases and spreads widely. South Tangerang City is the highest city with several 417 cases in 2019. The role of the community is needed to break the chain of transmission using vector control through Mosquito Nest Eradication (PSN) activities. Activities such as eradicating mosquito eggs and larvae using 3M plus. This study was conducted to determine the factors related to the behavior of Mosquito Nest Eradication (PSN) in the Community in the Rawabuntu. The method of research is quantitative analytic with a cross-sectional design, univariate and bivariate analysis, primary data collection by filling out questionnaires using the PPS technique, and then by purposive sampling with an amount of 150 respondents. The result of the chi-square research shows that there is no correlation between knowledge and PSN behavior with a p-value (0,132), there is no correlation between attitudes and PSN behavior with a p-value (0,757), there is a correlation between information availability and PSN behavior with a p-value (0,001), there is a correlation between the role of health workers with PSN behavior with p-value (0,011). The result of this study there is no correlation between knowledge and attitudes with PSN behavior, but there is a correlation between the availability of information and the role of health workers with behavior (PSN). It is expected that health workers will provide information and monitor community activities to carry out PSN activities and for the community to make efforts to increase knowledge and attitude regarding PSN by conducting 3M plus regularly to prevent dengue fever.

Keywords: Mosquito Nest Eradication, Behavior, Community

PENDAHULUAN

Dengue hemorrhagic fever (DBD) is caused by infection with the den-1, den-2, den-3, or den-4 virus transmitted by the bite of the *Aedes aegypti* and *Aedes albopictus* mosquitoes that are from other dengue sufferers. The four types of viruses have been found in various regions in Indonesia and the most are type 2 and type 3 (Rojali & Amalia, 2020).

The transmission and spread of this disease are very fast and can cause an extraordinary outbreak, causing a lot of pain even to death so that the disease can cause panic in the community (Hidayat & Nasriah, 2017).

Symptoms of this disease are usually characterized by sudden fever, headache, nausea, and manifestations of bleeding such as nosebleeds or bleeding gums as well as the presence of redness on the surface of the patient's body (Kemenkes RI, 2018).

According to *the World Health Organization* (2019), the problem of DENGUE has increased drastically around the world in recent decades. It is estimated that more than 3.9 billion people (more than 40% of the world's population) are at risk of dengue infection (WHO, 2019).

Dengue *hemorrhagic* fever cases reported in Indonesia in 2019 were recorded as many as 138,127 cases. Deaths caused by DENGUE disease in 2019 also increased compared to 2018, from 467 to 919 deaths (Kemenkes RI, 2019).

Dengue Hemorrhagic Fever (DBD) is a serious case in Banten Province, proven 8 districts/cities have been affected by *dengue hemorrhagic* fever. The incidence rate of DENGUE in Banten Province in 2019 was 16.6 per 100 (Dinkes Banten, 2020).

South Tangerang city also still occupies the highest disease in 2019 with the number of problems 417. *Dengue Hemorrhagic* Fever (DBD) in the Working Area of UPT Puskesmas Rawabuntu the number of dengue cases in 2019 in 33 cases, the number of problems in 2020 in 62 cases, and the number of cases in 2021 in 17 cases (PKM Rawabuntu, 2021).

Influencing factors in the incidence of *Dengue Hemorrhagic* Fever (DENGUE) disease in Indonesia are believed to be humans(*hosts*), *dengue* virus (*agent*), mosquitoes (*vector*), and environment(*environment*). Environmental factors such as geographical conditions (height of sea level, rainfall, rain, and humidity) demographic conditions (population density, population mobility, community behavior, customs, socioeconomic population, type and density of mosquitoes as vectors of disease transmission

Poor community behavior such as aspects of clean water reservoirs, landfills, container types, and habits in holding clothes are also very influential on the incidence of *Dengue Hemorrhagic* Fever (Fauji & Al Banjary, 2020).

Control in the incidence of *dengue hemorrhagic* fever (DBD) is quite complex because there has been no cure for this disease (Hidayat & Nasriah, 2017). The role of the community is needed in

the prevention of *Dengue Hemorrhagic* Fever disease to break the chain of transmission using vector control through mosquito nest eradication (PSN) activities (Nurkhasanah et al., 2021).

Mosquito Nest Eradication Activities (PSN) are eradicating eggs and mosquitoes using 3M plus (Drain, Closing, and Burying) plus sowing larvacides, keeping fish in water shelters, and activities that can eradicate breeding *Aedes* mosquitoes (Kemenkes RI, 2011).

Factors that can influence mosquito nest eradication activities (PSN) by *green* behavior theory in Notoatmodjo (2014) are influenced by *predisposing factors* (*predisposing factor*), supporting factors(*enabling factor*), and driving factors(*reinforcing factor*).

Success in *dengue fever* (PSN DBD) is influenced by various factors including knowledge, attitudes, actions, and sociodemographic characteristics such as age, marital status, education level, and employment status that can affect success in the implementation of dengue mosquito nest eradication in an area (Wong et al., 2015).

In connection with previous research, this obtained a value of $p < 0.0001$. The p -value < 0.05 indicates that there is a significant relationship between DBD and PSN knowledge to PSN behavior. In previous research related to attitudes by Listyorini (2016) *Chi-Square* test results obtained results $p = 0.0001$ because the value of p (0.0001) is less than the value of α (0.5), it can be concluded that there is a significant relationship between attitude and behavior.

In previous research related to the availability of information by Nuryanti et al (2011) *Chi-Square* test results obtained results that $p = 0.0001$ which means that $p < 0.05$ then H_a received or there is a significant relationship between the availability of information with mosquito nest eradication behavior and the results of variable Role of Health Workers obtained results that $p = 0.0001$ which means that $p < 0.05$ then H_a is accepted or there is a significant relationship between the role of health workers and the behavior of eradicating dengue hemorrhagic mosquito nests in Karangjati Village.

Until now *dengue hemorrhagic* fever is still one of the problems that must be resolved immediately because it can affect adults and children. Control to break the chain of the spread of this disease must carry out Mosquito Nest Eradication Behavior (PSN) in the community.

Based on the above description, researchers are interested in knowing the factors related to mosquito nest eradication (PSN) behavior in communities in the RW 002 Rawabuntu Region in 2021.

METHODS

This type of research uses quantitative analytical surveys with *cross-sectional* analysis of univariate and bivariate analyses conducted to find out factors related to mosquito nest eradication (PSN) behavior in communities in the Rawabuntu region, South Tangerang.

A *cross-sectional* study design is a study design that is used to find out public health problems to find out the prevalence of certain diseases in one area and to see the relationship of causation that undergoes permanent changes. (Budiarto & Anggeraeni, 2001) The location of this study was conducted in RW 002 Rawabuntu Village, Serpong Subdistrict, South Tangerang City.

RESULTS AND DISCUSSIONS

The univariate analysis of respondents' characteristics describes the frequency distribution and descriptive statistics displayed with the shape of the frequency distribution table to find out the characteristics, age, gender, education, and employment in the RW 002 Rawabuntu region are as follows:

Table 1. Attributing respondents based on Age to the Community in Rawabuntu Region

Age	N	%
17 – 25	34	22,7
26 – 35	52	34,7
36 – 45	40	26,7
46 – 55	22	14,7
56 – 65	2	1,3
Total	150	100

Based on Table 1 it is known that most respondents have the age of 26-35 years as many as 52 (34.7%) compared to those aged 36-45 years as 40 (26.7%), ages 17 - 25 years as many as 34 (22,7%), ages 46 - 55 years as many as 22 (14,7%) and ages 56 - 65 years as many as 2 (1,3%).

Table 2. Attributing respondents based on Gender to The Community in Rawabuntu Region

Gender	N	%
Man	47	31,3
Women	103	68,7
Total	150	100

Based on Table 2 it is known that the most respondents are 103 (68.7%) than men as many as 47 (31,3%).

Tabel 3. Attributing Respondents based on Education to the Community in Rawabuntu Region

Education	N	%
Elementary School	7	4,7
Junior High School	14	9,3
Senior High School	71	47,3
College	58	38,7
Total	150	100

Based on Table 3, it is known that the most respondents have high school education as many as 71(47.3%) compared to Academic / College as 58 (38,7%), junior high school 14 (9.3%) and

elementary school 7 (4,7%).

Table 4. Attributing Respondents based on Work to the Community in Rawabuntu Region

Job	N	%
Student	14	9,3
Private Employees	48	32
Civil Servants	12	8
Self employed	27	18
Housewife	47	31,3
Other	2	1,3
Total	150	100

Based on Table 4, respondents have the most work as Private Employees as many as 48 (32%) compared to Housewives as many as 47 (31.3%), Self-employed as 27 (18%), Students/Students as many as 14 (9.3%), civil servants as many as 12 (8%) and others as educators 2 (1.3%).

Table 5. Attributable respondents based on knowledge related to PSN to the community in Rawabuntu Region

Knowledge	N	%
Less good	66	44
Good	84	56
Total	150	100

Based on table 5 above, the frequency distribution for Knowledge related to Mosquito Nest Eradication Behavior (PSN) in the Community showed that 84 respondents (56%) had good knowledge and 66 respondents (44%) had poor knowledge.

Table 6. Attributing Respondents based on attitudes related to PSN to the community in Rawabuntu Region

Attitude	N	%
Negative	76	50,7
Positive	74	49,3
Total	150	100

Based on Table 6, the frequency distribution for attitudes related to Mosquito Nest Eradication Behavior (PSN) in the Community showed that 76 respondents (50.7%) had a negative attitude and 74 respondents (49.3%) had a positive attitude.

Table 7. Attributing Respondents based on the Availability of Infomasi related to PSN to the Community in Rawabuntu Region

Availability of Information	N	%
Less good	44	29,3

Good	106	70,7
Total	150	100

Based on table 7, it was found that the frequency distribution for The Availability of Information related to Mosquito Nest Eradication Behavior (PSN) in the Community showed that as many as 106 respondents (70, 7%) had good information availability and 44 respondents (29,3%) had poor availability of information.

Table 8. Attributing Respondents Based on the Role of Health Officers related to PSN in the Community in Rawabuntu Region

Role of Health Officer	N	%
Less good	34	22,7
Good	116	77,3
Total	150	100

Based on table 8, it was found that the frequency distribution for the Role of Health Workers related to Mosquito Nest Eradication Behavior (PSN) in the Community showed that 116 respondents (77.3%) had a Good Health Officer Role and 34 respondents (22.7%) had a less good Officer Role.

Table 9. Attributing Respondents Based on PSN Behavior to The Community in Rawabuntu Region

Behavior	N	%
Less good	66	44
Good	84	56
Total	150	100

Based on table 9, the frequency distribution for Mosquito Nest Eradication Behavior (PSN) in the Community showed that 84 respondents (56%) had good behavior and 66 respondents (44%) had bad behavior.

Bivariate analysis is conducted by testing independent and dependent variables using the Chi-Square Test with a meaningful rate of 5% ($p\text{-value} = 0.05$) and a degree of the meaning of 95% to determine the difference in proportion or percentage and the relationship between independent and dependent variables.

Table 11. Recapitulation of Bivariate Analysis Results

Perilaku Pemberantasan Sarang Nyamuk								
Variabel	Kurang Baik		Baik		Total		P - Value	OR (95% CI)
	N	%	N	%	N	%		
Pengetahuan								
Kurang Baik	24	36,4	42	63,6	66	100	0,132	0,571 (0,296-1,105)
Baik	42	50	42	50	84	100		
Sikap								
Negatif	32	42,1	44	57,9	76	100	0,757	0,856

Perilaku Pemberantasan Sarang Nyamuk								
Variabel	Kurang Baik		Baik		Total		P -	OR (95%
Positif	34	45,9	40	54,1	74	100		(0,449- 1,631)
Ketersediaan Informasi								
Kurang Baik	10	22,7	34	77,3	44	100	0,001	0,263
Baik	56	52,8	50	47,2	106	100		(0,118- 0,585)
Peran Petugas Kesehatan								
Kurang Baik	8	23,5	26	76,5	34	100	0,011	0,308
Baik	58	50	58	50	116	100		(0,129- 0,736)

Based on Table 11, respondents who have good knowledge and behave well are 50% lower than respondents who have less good knowledge but behave well, which is 63.6%. *Chi-Square* statistical test results obtained a *p-value* by looking at *Continuity Correction* of 0.132 so that it can be concluded that there is no meaningful relationship between Knowledge and Mosquito Nest Eradication Behavior (PSN) in Communities in Rawabuntu Region.

The results of the analysis of respondents who have a positive attitude and behave well are 54.1% lower than respondents who have a negative attitude but behave well, which is 57.9%. *Chi-Square* statistical test results obtained a *p-value* by looking at *Continuity Correction* of 0.757 so that it can be concluded that there is no meaningful relationship between Attitudes and Mosquito Nest Eradication Behavior (PSN) in Communities in Rawabuntu Region.

The results of the analysis of respondents who have the Availability of Good And Well-Behaved Infomasi are 47.2% lower than respondents who have less well-being availability of information but are well behaved at 77.3%. *Chi-Square* statistical test results obtained a *p-value* by looking at *Continuity Correction* of 0.001 so that it can be concluded that there is a meaningful relationship between the availability of information and mosquito nest eradication behavior (PSN) in communities in the rawabuntu region.

The bivariate analysis also obtained an *odds ratio* value of 0.263 with CI = 0.118 - 0.585, so it can be interpreted that respondents with poor information availability have a 0.263 times greater chance of having a less good Mosquito Nest Eradication Behavior (PSN) compared to respondents with the availability of good information.

The results of the analysis of respondents who have the role of health workers and behave well are 50% lower than respondents who have a less good but well-behaved health worker role of 76.5%. *Chi-Square* statistical test results obtained a *p-value* by looking at *Continuity Correction* of 0.011 so that it can be concluded that there is a meaningful relationship between the role of health workers and Mosquito Nest Eradication Behavior (PSN) in communities in the Rawabuntu Region.

The bivariate analysis also obtained an *odds ratio* of 0.308 with CI = 0.129 - 0.736, so it can be interpreted that respondents with a less good Health Officer Role have a 0.308 times greater

chance of having a less good Mosquito Nest Eradication Behavior (PSN) compared to respondents with the Role of Good Health Officers.

This bivariate study shows that the amount of good knowledge is 50% while the knowledge is less good, which is 63.6%. From the results of bivariate analysis using the *Chi-Square* Test obtained $p\text{-value} = 0.132$ which means that knowledge has no relationship with Mosquito Nest Eradication Behavior (PSN) in Communities in the Rawabuntu Region.

This study is in line with the study of Taniansyah et al (2020) by showing a value of $p\text{-value}$ of 0.138 which can be concluded that there is no relationship between knowledge and mosquito nest eradication behavior.

This study contradicts Wulandari's research (2013) the results of the analysis with *chi-square* test found a relationship ($p < 0.05$) between respondents' knowledge and patient DBD behavior ($p = 0.002$). And this study is also not in line with Green's theory in Notoatmodjo (2014) which states that knowledge is a predisposing factor that gives rise to a person's behavior can be realized.

People who are less concerned about mosquito nest eradication (PSN) activities can cause poor behavior, therefore it is important to have good knowledge by looking for information related to PSN DBD to break the chain of *dengue hemorrhagic* fever transmission.

Hasil penelitian bivariat ini menunjukkan bahwa jumlah sikap positif yaitu sebesar 54,1% sedangkan sikap negatif yaitu 57,9%. Hasil analisis bivariat dengan menggunakan Uji *Chi-Square* di dapatkan $p\text{-value}$ sebesar 0,757 yang berarti tidak ada hubungan yang signifikan antara sikap dengan Perilaku Pemberantasan Sarang Nyamuk (PSN) pada Masyarakat di Wilayah RW 002 Rawabuntu.

Penelitian ini sejalan dengan penelitian Gafur & Jastam (2015) yang didapatkan hasil uji statistik *Chi-Square* diperoleh nilai $p = 0,1000$ karena $p > \alpha = 0,05$ sehingga dapat disimpulkan tidak ada hubungan antara sikap dengan keberadaan jentik nyamuk.

Penelitian ini tidak sejalan dengan penelitian Puspitasari (2015) Hasil Uji Chi Square pada variabel sikap diperoleh nilai Continuity Corection sebesar 5,509 dan $p\text{-value}$ $0,019 < 0,05$, maka ada hubungan antara sikap dengan pemberantasan sarang nyamuk. Sikap berhubungan dengan motivasi individu atau kelompok pada saat melakukan sesuatu. Semakin baik sikap maka semakin baik pula tindakan yang dilakukan terhadap hal tersebut. Walaupun perilaku dipengaruhi oleh sikap, namun tidak selamanya akan terwujud dalam suatu tindakan. Perilaku akan terwujud jika ada dukungan lain yang mendorong seperti fasilitas, pengalaman, dan lain – lain (Taniansyah et al., 2020).

The results of bivariate analysis using the *Chi-Square* Test were obtained a $p\text{-value}$ of 0.001 which means there is a significant relationship between the availability of Information and Mosquito Nest Eradication Behavior. This study is in line with Liestyana research (2019) which said that there is a relationship between the availability of information and mosquito nest eradication (PSN) behavior

and having a *p-value* of 0.030 ($p < 0.05$) which means there is a relationship between the availability of information and psn behavior.

Then strengthened by Nuryanti's research (2013) obtained the result that $p = 0.0001$ which means that $p < 0.05$ then H_a is accepted or there is a significant relationship between the availability of information with the behavior of DENGUE hemorrhagic fever PSN in karangjati village This study is contrary to the research Widiyaning et al., (2018) The results of the analysis of the relationship showed *p-value* amounting to 0,136, it can then be concluded that there is no relationship between the availability of information facilities and the practices of respondents in the prevention of DHF.

The availability of information is one of the contributing factors to the occurrence of a behavior. It is expected that with the availability of information, knowledge will increase and can also cause a positive attitude so that there will be changes in behavior. People who are less informed about dengue prevention are due to the distance of the house away from health care facilities, and the lack of home visits made by officers due to lack of health workers. (Syahrias, 2018) but with the help of media such as print media and the internet, the community can be helped so that it can lead to good behavior in carrying out the eradication of mosquito nets.

Bivariate results using *Chi-Square* have obtained a *p-value* of 0.011 so that means there is a significant relationship between the role of health workers and Mosquito Nest Eradication Behavior (PSN) in the Community in rw 002 Rawabuntu Region in 2021. This research is in line with Listyorini's research (2016) and the *p-value* of 0.0001 is smaller than the value of α (0.05), it can be concluded that there is a significant relationship between the role of health workers and psn dbd behavior.

This study is not in line with the Liestyana study (2019) Based on the results of the Chi-square test obtained a value of *p-value* (0.437) with α (0.05), so it is known that $p\text{-value} > \alpha$, which means there is no relationship between the role of health workers and PSN behavior. T obtained *p-Value* = 0.684 ($p > 0.05$) means there is no relationship between the role of officers and PSN.

In the case of DBD from the government, there must be steps or contributions owned by health workers (be it physical, material, non-material). In addition, community leaders also play a role in the success of the prevention of DENGUD events because with the existence of community leaders who can increase awareness and guide the community so that there are no DBD events such as conducting counseling activities to the community assisted by cadres, such as providing larvacide in the form of abate, *fogging*. under certain conditions. In addition, it can also invite the public to check the presence of mosquitoes in bathtubs, water shelters (landfill), and puddles in the home environment (Putra, 2020).

The role of health workers is very important because it can reinforce behavior changes and monitor a person's behavior. The role of health workers can motivate the community so that the community can provide good behavior in carrying out the eradication of mosquito nets.

CONCLUSIONS AND SUGGESTIONS

1. Knowledge of respondents related to Eradication of Mosquito Nests (PSN) As many as 84 respondents (56%) have good knowledge.
2. Respondents' attitudes related to Mosquito Nest Eradication (PSN) As many as 76 respondents (50.7%) had a negative attitude.
3. Availability of information related to the eradication of mosquito nests (PSN) as many as 106 respondents (70.7%) have the availability of good information.
4. The role of health workers related to the eradication of mosquito nests (PSN) as many as 116 respondents (77.3%) have the role of good health workers.
5. Respondent behavior related to Mosquito Nest Eradication (PSN) as many as 84 respondents (56%) have good behavior.
6. There is no meaningful relationship between knowledge and Mosquito Nest Eradication Behavior (PSN) in Communities in Rawabuntu Region ($p\text{-value} = 0.132$)
7. There is no meaningful relationship between Attitudes and Mosquito Nest Eradication Behavior (PSN) in Communities in Rawabuntu Region ($p\text{-value} = 0.757$)
8. There is a meaningful relationship between the availability of information and mosquito nest eradication behavior (PSN) in communities in the rawabuntu region ($p\text{-value} = 0.001$).
9. There is a meaningful relationship between the role of health workers and Mosquito Nest Eradication Behavior (PSN) in Communities in the Rawabuntu Region ($p\text{-value} = 0.011$)

The advice on this study is

- a. Puskesmas Rawabuntu
For Puskesmas Rawabuntu, it is expected that health workers routinely provide information and monitor the public to perform mosquito nest eradication (PSN) to prevent *dengue hemorrhagic fever* disease.
- b. For the people of Rawabuntu
The people of Rawabuntu are expected to make efforts to increase knowledge and attitudes related to the eradication of mosquito nests and carry out regular PSN activities such as doing 3Mplus to prevent *dengue hemorrhagic fever*.
- c. For the Next Researcher

Further researchers are expected to develop research and add other variables that have a relationship with Mosquito Nest Eradication (PSN).

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