

Original Research

## Relationship Between Knowledge Level and Community Behavior about Eradication of Mosquito Nest



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Article Info	Abstract
Article history: Received: 25 July 2021 Accepted: 29 July 2021	<i>Introduction:</i> Dengue hemorrhagic fever is one of the population's health issues in Indonesia, with an increasing number of sufferers as the disease spreads. The cases rose dramatically in Panji Village, with a significant spike in cases per year. In 2018 there were 16 cases, in 2019 it increased to 177 cases and in 2020 until February 122 cases were recorded. Mosquito nest eradication is the most reliable, safe, and cost-effective method of eliminating dengue fever vectors. The aim of this study is to know relationship the level of knowledge and behavior regarding mosquito nest eradication in Panji Village. <i>Methods:</i> The design used was descriptive correlation with a cross sectional approach. The population of this study is the population living in the Banjar area, Dinas Dangin Pura Panji Village Sukasada, Bali with 1222 residents, after entering the Slovin's formula, 400 samples were obtained using purposive sampling technique. The instrument used to collect data in this study was a questionnaire sent via google form. Test the relationship using the Pearson test. <i>Results:</i> Most people have less knowledge and behavior and when viewed from the correlation test, a significant value of $p = 0.000$ is obtained with a value of $r = 0.524$ which means that the relationship is moderate and has a positive value. <i>Conclusion:</i> There is a moderate and positive relationship between knowledge and behavior in the Eradication of Mosquito Nests.
Keywords: knowledge, behaviour, Dengue hemorrhagic fever, mosquito nest eradication	

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## INTRODUCTION

One of the health problems of the population in Indonesia whose number of sufferers tends to increase and its spread continues to expand is Dengue Hemorrhagic Fever (DHF). Dengue Hemorrhagic Fever (DHF) is an inflammation caused by the dengue virus. Dengue is a virus transmitted by the *Aedes aegypti* mosquito, the fastest growing mosquito in the world and has infected nearly 390 million people every year [1]. The lack of knowledge of citizens will lead to an increase in the problem of DHF residents who have not been consistent in implementing the prevention and eradication program for DHF have become barriers to citizen behavior in preventing DHF [2]. Eradication Mosquito Nest is the shared responsibility of all elements of society. The community plays an important role in eradicating vectors which is the most important effort to break the chain of transmission in order to eradicate dengue disease [3]

World Health Organization (WHO) explained, Southeast Asia has experienced an explosion of dengue cases in 2020, one of which is Singapore, where as of July 2020 there have been 15,500 cases of dengue fever, and Indonesia is reported to have the second largest number of dengue fever cases among 30 endemic countries [4]. Siti Nadia Tarmisi, M. Epid, Director of Prevention and Control of Infectious and Zoonoses Diseases, stated that the number of dengue cases in Indonesia reached 71,633 as of July 2020. Infodatin states that as of September 2020 the number of dengue cases reported was 84,734 cases [1]. Bali Province was recorded as the province with the second highest number of

cases with 8,930 cases. Among DHF cases, one of the areas with the most cases is Buleleng Regency [5].

Given the danger of dengue fever, it is necessary to completely eradicate the disease [6]. The government has issued a mosquito nest eradication policy (EMN 3M-Plus) in the prevention of dengue fever. Considering that drugs and vaccines to kill dengue virus have not yet been found, this is the main way that is efficient, effective, and economical to eradicate dengue vectors. The 3M-Plus program includes: Draining, Closing, and Recycling, then for the Pluses such as raising fish, sowing larvicides, planting lots of mosquito repellent plants, etc. The 3M-Plus EMN program needs to be balanced with increasing public knowledge about dengue fever. Community knowledge is needed because this is the initial capital to change people's behavior. This is supported by research results [7] which states that behavior based on knowledge will be more lasting than behavior that is not based on knowledge. Respondents who know that the eradication of mosquito nests is necessary to break the chain of transmission of dengue fever will have good behavior in implementing the EMN DHF.

Community participation by conducting EMN activities, for example in the prevention and eradication of mosquito nests, is one that affects the spread of dengue disease. If there has been a change in people's behavior from not implementing to doing for positive behavior, and from doing to not doing negative behavior it will lead to community participation in reducing the spread of DHF [8]. The purpose of this study was to

determine the relationship between knowledge and community behavior regarding the Eradication of Mosquito Nests (EMN) in Banjar Dinas Dangin Pura, Panji Sukasada Village, Buleleng.

## METHODS

This type of research is quantitative using descriptive correlational method with cross-sectional design, the independent variable is public knowledge about EMN and the dependent variable is community behavior about EMN. The population of this study is the population living in the Banjar area, Dinas Dangin Pura, Panji Village, with 1222 residents, after entering the Slovin's formula, 400 samples were obtained using purposive sampling technique. The research instrument is a questionnaire, this research questionnaire is to measure people's knowledge and behavior. The instrument used to collect data in this study was a questionnaire sent via google form. Data were analyzed using Pearson. This research has passed the ethical test at the Research Ethics Commission of the Faculty of Medicine, Udayana University,

Sanglah Central General Hospital Denpasar with number 563/UN 14.2.2.VII.14/LT/2021.

## RESULTS

Based on data from table 2 where from 400 respondents, it is known that most of the population in Banjar Dinas Dangin Pura Panji Village is in the age range of 26-35 years (46.7%). In terms of gender, most of the respondents were male as many as 224 people (56%). When viewed from education, most of them have completed their last education of SMA/equivalent as many as 229 people (57.3%), and for the work of most respondents as farmers, as many as 158 people (39.4%).

The table 2 shows that most people have less knowledge and behavior and when viewed from the correlation test, a significant value of  $p = 0.000$  is obtained with a value of  $r = 0.524$  which means the relationship is moderate and positive. This means that the higher the level of public knowledge about EMN, the higher the level of community behavior in eradicating mosquito nests.

**Table 1**  
Respondent's Characteristic

Participant's Characteristic	n	%
<b>Age (Years)</b>		
17-25	110	27.5
26-35	187	46.7
36-45	76	19.0
46-55	27	6.8
<b>Gender</b>		
Man	224	56.0
Woman	176	44.0
<b>Education</b>		
College	87	21.7
High School	229	57.3

<b>Participant's Characteristic</b>	<b>n</b>	<b>%</b>
Junior High School	57	14.2
Primary School	24	6.0
No School	3	0.8
<b>Occupation</b>		
Government Employees	42	10.5
BUMN/BUMD	9	2.3
Self-employees	141	35.3
Farmer	158	39.4
Other	50	12.5
<b>Total</b>	<b>400</b>	<b>100</b>

**Table 2**

The Relationship between Knowledge Level and Community Behavior in Eradicating Mosquito Nests

<b>Knowledge</b>	<b>Behavior</b>								<b>Correlation</b>	
	<b>Good</b>		<b>Middle</b>		<b>Less</b>		<b>Total</b>		<b>r</b>	<b>p-value</b>
	f	%	f	%	f	%	f	%		
Good	37	9,3	7	1,8	14	3,5	58	14,6	0,524	0,000
Middle	49	12,3	23	5,7	21	5,3	93	23,3		
Less	41	10,2	91	22,7	117	29,2	249	62,1		
Total	127	31,8	121	30,2	152	38	400	100		

## DISCUSSION

The lack of public knowledge is caused by a lack of exposure to information about dengue disease including its prevention, namely EMN itself and public education, most of which only complete high school education. People's behavior is still lacking, seen from many people who have not done prevention by closing, draining and burying, people leave water tanks open, consider stagnant water trivial, hang clothes in the house, many do not know the proper use of abate fibers, people still think that abate powder will be toxic if poured into the bath, and the implementation of fogging is not appropriate and not sustainable where the implementation of fogging is carried out only if there is an outbreak of DHF, the community has not been able to carry out EMN properly and continuously. This is due to the lack of public knowledge, lack of exposure to information,

low level of education, occupations which are mostly farmers. This cannot be separated from the role of health workers who have not been optimal in controlling the implementation of EMN, it is necessary to have a more optimal role of health workers in mobilizing EMN activities together with the community. This is also inseparable from the lack of role of health workers who do not carry out counselling about DHF and EMN on an ongoing basis even at this time there is no Jumantik program from community officers and cadres, which makes monitoring of dengue outbreaks less and the implementation of EMN so public knowledge really needs to be improved, especially know what DHF is such as transmission of DHF, whether DHF is a virus or bacteria, the symptoms of DHF, treatment when exposed to DHF and preventing it with EMN, namely Closing, Draining, Burying, using abate

powder, proper fogging implementation and others. Respondents with higher education tend to have broader insights, making it easier to understand an event. In addition, respondents have the ability and courage to access information from various sources. The combination of easy access to information about DHF and a higher level of education can accelerate public understanding, so that knowledge of DHF will be better. Knowledge is the result of knowing and occurs after someone senses a certain object. Knowledge will raise awareness and eventually will cause people to behave in accordance with the knowledge they have. New information makes knowledge continue to grow and deepen, because knowledge will remain a control for someone to behave well [9]. The knowledge that a person has will greatly affect a person's behavior and encourage someone to take an action. Blum's theory states that a person's actions or practices are formed from that person's knowledge or cognition. So based on this research, the lack of community action is caused by the lack of public knowledge about EMN. Respondents who know that EMN is needed to break the chain of transmission of DHF will have good behavior in implementing the EMN DHF. The difference in respondents' knowledge has a significant influence on behavior in EMN DHF and it is known that the higher the knowledge of the respondents, the better the behavior of EMN DHF.

The results of this study indicate that there is a significant relationship between knowledge and community behavior in EMN (p value <0.05) and the correlation level is at a moderate correlation level. In line with research [10] there is a significant

relationship between the level of knowledge and behavior in Mosquito Eradication Nest. Likewise with research [11] there is a significant relationship between the mother's level of knowledge with the behavior of EMN DHF. The impact of behavior on health status is quite large (30-35%) on health status, so various efforts are needed to change unhealthy behavior into healthy [12]. The process is based on awareness knowledge and a positive attitude, then the behavior will be lasting. On the other hand, if the behavior is not based on knowledge and awareness, it will not last long [13].

People's behavior in EMN is caused by the knowledge possessed by the community in EMN which has a role in increasing awareness in the community to behave according to the knowledge they have [14]. The people of Panji Village have less knowledge so that the behavior in EMN is also lacking. Provision of Health Education needs to be given including how to do EMN in the 3M-Plus program including Draining, Closing and Recycling then for Plus such as raising fish, sowing larvicides, planting lots of mosquito repellent plants. Community knowledge is needed because this is the initial capital to change people's behavior [15].

## **CONCLUSION**

There is a moderate and positive relationship between knowledge and behavior in the Eradication of Mosquito Nests. This means that the higher the level of public knowledge about EMN, the higher the level of community behavior in eradicating mosquito nests.

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