

The Effect of Mosquito Nest Eridication Training and Accompaniment With 3M Plus towards Students' Behaviour at Darul Arqam Islamic Boarding School Makassar

Fitriana Salam¹, Erniwati Ibrahim², Hasanuddin Ishak³, Syamsuar Manyullei⁴, Syahribulan⁵, Wahiduddin

Master Program of Environmental Health, Faculty of Public Health, Hasanuddin University, Indonesia^{1,2,3,4}
Department of Epidemiology, Faculty of Public Health, Hasanuddin University, Indonesia⁵

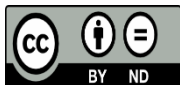


Keywords:

DHF, Mosquito Nest Eridication with 3M Plus, Behavior, Islamic Boarding School Students, Aedes aegypti.

ABSTRACT

The Directorate General of Communicable Disease and Environmental Health Prevention (or PPM-PLP) said that the most effective and appropriate way in preventing and eradicating Dengue Hemorrhagic Fever (DHF) is breaking the first chain with the program called Mosquito Nest Eridication with 3M Plus. This study aims to analyze the effect of Mosquito Nest Eridication with 3M Plus training and accompaniment towards Islamic boarding school students. This type of study is quantitative with pre-experimental one group pre-test and post-test design. This study involved 70 students with purposive sampling technique. Behavior was measured through knowledge using a questionnaire and action using an observation sheet on the presence of larvae in container. Data analysis used Mc Nemar Test. There was a significant effect of Mosquito Nest Eridication training and accompaniment with 3M Plus towards the participants related to knowledge ($p = 0.041$) while there was no effect on the presence of *Aedes aegypti* larvae related to action ($p = 0.250$). Training and Accompaniment had only significant effect on knowledge and not on action related to the presence of *Aedes aegypti* larvae. Mosquito Nest Eridication with 3M Plus training and accompaniment activities are always expected to increase knowledge of the importance of implementing Mosquito Nest Eridication with 3M Plus and be consistent in its application.



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1. Introduction

Mosquito Nest Eradication with 3M Plus (PSN) is one of efforts to prevent dengue hemorrhagic fever (DHF). The Directorate General of PPM-PLP of the Health Ministry Health of the Republic of Indonesia stated that the most effective and appropriate way to prevent and eradicate DHF is through Mosquito Nest Eradication with 3M Plus and the participation of all levels of society [1]. DHF Controlling effort in

Indonesia based on 7 main activities that exist in ministerial decree number 581/MENKES/SK/VII/1992 regarding DHF Eradication [2]. The main priority is emphasized on preventif action through empowerment and community participation namely the Mosquito Nest Eradication Program [3].

The most popular Mosquito nest eridication program is 3M Plus activity. 3M can be interpreted as behavior to drain water reservoir (TPA), behavior to close water reservoir (TPA) and recycle or reuse scraps This activity is also supported by the behavior of sprinkling larvicide powder (abate), using mosquito repellent, planting mosquito repellent plants, Having mosquito-eating fish and using mosquito net while sleeping [4]. This program really requires participation from all levels of society. This activity is trusted to be able to reduce mosquito breeding if it is done properly and continuously. The success of this activity can be measured by the free number of larvae (ABJ). The government states that the larva-free rate should be greater than 95% [5].

Mosquito Nest Eridication with 3M-plus program needs to be balanced with an increase of public knowledge about DHF [6]. Giving information or knowledge to the public is needed because it is the first step to change social behavior. These preventive and controlling efforts include breaking the chain of transmission of dengue fever in the form of preventing the bite of *Aedes aegypti* mosquito through the Mosquito Nest Eridication with 3M Plus activity [7].

Data on the implementation of the Mosquito Nest Eradication with 3M Plus Program in several regions in Indonesia such as [8- 10], and Gorontalo [11] are generally not maximal, this is because lack of knowledge by the public will also have a negative impact on action, even with good knowledge does not give guarantee that the action will be good. But it does not mean lack of knowledge refers to lack of action too.

In the case study of Makassar city namely the presence of *Aedes aegypti* larvae in RW 02, Pandang Village which indicates that the action for Mosquito nest eridication with 3M Plus is still less even though there has been counseling to the public for knowledge related to Mosquito nest eridication with 3M Plus [12].

School is potential place for the spread and transmission of Dengue Hemorrhagic Fever (DHF) [13]. study conducted by [14] explained that there was an effect of female students' knowledge of Mosquito nest eridication with 3M Plus on the ability to prevent infectious disease by *Aedes aegypti* larvae. Therefore, not only doing vector controlling at the residential level, public health strategies should be also expanded to schools [15].

Based on the explanation above, it is important to conduct study to analyze the effect of Mosquito nest eradication with 3M Plus Training and Accompaniment on the behavior of students.

2. Methods

2.1 Type of study

The study used is quantitative with pre-experimental design with one group pre-test post-test.

2.2 Population dan sample

The population in this study were students of Muhammadiyah Darul Arqam Islamic School Boarding School Gombara Makassar about 172 people, The sample in this study used Sloving formula and obtained 70 people with the purposive sampling technique.

2.3 Instrument dan procedure

The instrument in this study used Questionnaire and Observation Sheet from the Ministry of Health of the Republic of Indonesia 2016 [16] where knowledge used questionnaire and action used observation sheet. The study procedure was the provision of post-test questionnaire to the most advanced students which was distributed by researcher before intervention in the form of counseling, distribution of poster/leaflet and conducting Forum Group Discussion as well as assistance related to how to close, drain and recycle as well as sowing abate powder activity, use of mosquito repellent and behavior of hanging clothes, then 3 weeks later after the intervention was carried out and then the same respondent filled out the post-test [14] questionnaire again. Observation of the presence of larvae was carried out by the studyer himself, by looking directly at the container in Islamic boarding school both inside and outside the room by using observation sheet such as checking accessible water reservoirs, bucket, bathtub, swimming pool, fish pond, drum, flower vase filled with water as well as dispenser and toilet tub. All procedures in this study have been approved by the Ethic Commission of the Faculty of Public Health at Hasanuddin University with the number: 9082/UN4.14.1/TP.01.02/2022.

2.4 Data Analysis

The data was analyzed statistically using IBM SPSS for Windows (IBM Corp., Armonk, NY, USA) with McNemar Test [14].

4. Results

Table 1. General Characteritic of Respondents

Characteritic of Respondents	n = 70	%
Age (years)		
12	3	4,3
13	15	21,4
14	40	57,1
15	10	14,3
16	2	2,9
Class		
7	19	27,1
8	50	71,4
9	1	1,4

Source: Primary Data, 2022

Table 1 showed that the age of respondents varied from 12 years to 16 years. Most respondents are 14 years old which is 57.1%. The class level of respondents varied from grade 7 to grade 9. Most respondents are respondents in grade 8 which is 71.4%.

Table 2. Different knowledge level before and after Mosquito Nest Eridication with 3M Plus Training and Accompaniment at Darul Arqam Islamic Boarding School Makassar

Level of Knowledge	Before		After		Statistical Test
	n	%	n	%	
Enough	54	77,1	64	91,4	$p = 0,041^*$
Less	16	22,8	6	8,6	

Total	70	100	70	100
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*Mc Nemar Test

Table 2 showed that based on statistical test, it was obtained that there was an effect of Mosquito Nest Eridication training and accompaniment with 3M Plus on the level of students' knowledge. This can be proven that the intervention in the form of training and accompaniment for Mosquito Nest Eridication with 3M Plus is quite effective in its implementation.

Table 3. Different Action and Presence of *Aedes aegypti* Larvae Before and After Mosquito Nest Eridication Training and Accompaniment with 3M Plus at Makassar Darul Arqam Muhammadiyah Gombara Islamic Boarding School

Presence of Larva <i>Aedes</i>	Before		After		Statistical test
	n	%	n	%	
Exist	5	12,2	2	4,9	$p = 0,250^*$
Not Exist	36	87,8	39	95,1	
Total	41	100	41	100	

*Mc Nemar test

Table 3 showed that the number of *Aedes aegypti* larvae in the inspected containers has decreased. Based on the statistical test that there is no significant effect of training and accompaniment with 3M Plus on the action of students. It is proven that before and after the intervention, less than half of the containers were found with larvae.

5. Discussions

5.1 Respondents' Knowledge before and after Mostquito Nest Eridication with 3M Plus

There is an effect of Mosquito Nest Eridication with 3M Plus training and Accompaniment on the level of students' knowledge with a significant difference between the level of students' knowledge before and after Mosquito Nest Eridication training and accompaniment with 3M Plus. This study is in line with the study conducted by Ningrum in 2021 [17]. The results of the pre and post knowledge test using e-book media, illustrated stories and religious speech show that there is an influence of intervention on respondents' knowledge. This is also supported by study conducted by Ibrahim in 2020 [18] which found that there was an effect of Mosquito Nest Eridication training on people's knowledge.

With some results of the study above, it is said that there is an effect to change knowledge before and after and accompaniment intervention with counseling method and leaflet / poster leaflet as a media to transfer information [17]. Giving intervention to the public through counselling with KIE Technic to increase awareness of the importance of prevention and controlling of DHF through Mosquito Nest Eridication with 3M Plus [17] is considered as effective.

Knowledge is an important factor that influences a person's attitude and action [13]. Therefore, It is clear in this study that the intervention in the form of Mosquito Nest Eridication training and accompaniment with 3M plus to increase knowledge of students is needed, so that to make significant with one's action in this case is the presence of *Aedes aegypti* larvae after the intervention. Health Education as one of the

interventions in the form of health education is a process to human that have correlation with health purpose either individually or in society. Beside that, the purpose of Health Education is to gain knowledge and understand the importance of Health to achieve Health behavior so that it can improve the economy and social to change unhealthy people's behavior to be healthy [19].

5.2 Action and Presence of Respondent Aedes aegypti Larvae Respondents Before and After Mosquito Nest Eridication with 3M Plus Training and Accompaniment

There was no effect of Mosquito Nest Eridication with 3M Plus training and accompaniment on Student's Mosquito Nest Eridication action with 3M Plus as proven by the decrease in the presence of *Aedes aegypti* larvae after the intervention which did not reach half of number of identified larvae before the intervention.

The same thing was also found in a study conducted by Sukendra in [20] about Empowerment Based on Innovative Community-Centered. Dengue-Ecosystem Management to Reduce IR DHF. The result of study showed that there was no the difference on preventif action conducted by women empowerment groups at RT 2 and RT 3 in Sabrang Kulon village regarding DHF before and after counseling.

From the result of the study above, it is said that there was no effect of training and accompaniment on the presence of *Aedes aegypti* larvae, this is because the provision of knowledge about Mosquito Nest Eridication with 3M plus for students is not enough to eradicate the presence of larvae in Islamic boarding schools, it requires maximum awareness so that it can be practiced mechanically and adoption practices relates to the theory proposed by Notoatmodjo [13] It is hoped that Mosquito Nest Eridication with 3M Plus will reach the independent stage. Therefore, consistency in Mosquito Nest Eridication with 3M Plus activity by students is needed so that the interventions carried out does not only reduce the number of larvae but also have a significant effect.

It is contradicted with study conducted by Gifari (2017) [21] that there is a relationship between Mosquito Nest Eridication with 3M Plus behavior and the presence of larvae which is good behavior that supports a larva-free condition because Mosquito Nest Eridication with 3M Plus Activity such as breaking the mosquito life cycle, draining the water reservoir once a week to make the water reservoir be free of eggs and *Aedes aegypti* mosquito larvae.

The habit of draining water reservoir once a week is what differentiates where the students have not had habit / culture to carry out these routine activities, this is due to the attitude of expecting each other by students because it is considered that the water reservoir is a public facility provided by school, so that the sense of belonging is low which cause careless action to drain it.

Notoatmodjo (2012) [13] explained that the quality of action is divided into three categories such as guiding practice, mechanic practice, and adoption. Darul Arqam Makassar students is still on a guided quality where a person or subject has done something but it still depends on demands or using guidelines.

Therefore, although the actions of the students were positive which proven by the decrease in the number of containers that were positive with larvae based on statistical test, there was no significant effect of Mosquito Nest Eridication with 3M Plus training and accompaniment activities on the action of the students.

Action is a tangible form from the knowledge domain and attitude that become one's action from a certain stimulus. It is the same with someone doing 3M Plus action. To encourage the stimulus, it needs factors that can support such as good knowledge about DHF and Mosquito Nest Eridication as well as a positive

attitude so that the expected actions can be carried out properly [22].

The existence of support and strict rules by the school will facilitate the implementation of Mosquito Nest Eridication with 3M Plus at school more easily, as well as the cooperation from related parties such as Health Institutes. In this case, Public Health Center officers to directly check routinely in providing counseling on related matters as form of concern and support to the community of Islamic boarding school. In this case, the students that hoped with controlling of the presence of *Aedes aegypti* larvae can be realized when the quality of the action of students is already in the practice of adoption.

This study has some limitations. it was conducted during pandemic so that training activities were carried out through online with accompaniment methods that must relate to the effective learning time of students for both general and extracurricular learning activities, there is a big landfill site and located in a high place which is not observed so that no larvae is known and there is no control as comparing group.

6. Conclusion

The result of this study showed that there was an effect of Mosquito Nest Eridication with 3M Plus training and accompaniment on students' knowledge, but it does not have a significant effect on the action and presence of larvae at Makassar Darul Arqam Islamic Boarding School This study is not generalized to the general population of Makassar.

7. Acknowledgements

We thank Dr. Andi Agus Mumang, SKM from Research, Community Service and International Journal Unit for his helpful insight to improve this manuscript.

8. References

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