

The Effect of 3M Plus Program Training to Knowledge, Attitude, and Practice of Elementary Students

Anung Putri Illahika, Gita Sekar Prihanti, Vonny Riska Rahmawati, Aulia Nur Cahyani, Laksita Anindhita Putri

Abstract: Dengue hemorrhagic fever (DHF) is one of major diagnosis in Indonesia and its case was increasing in 2015 than previous year. Community participation to control DHF especially students to instill practice for eradication mosquitoes sources in earliest age was needed. This study aimed to know about effect of 3M Plus program training to knowledge, attitude, and practice of elementary students in Kediri City. This research used quasi experimental with one group pre test post test design involving 123 respondents. McNemar test and Wilcoxon test were applied to analyse these research. There was a significant result between 3M plus program training to knowledge level ($p < 0,000$), attitudes ($p < 0,000$), and practices ($p < 0,000$) of students in Elementary School X Kediri City. There was influence of 3M plus program training on larvae density by Container Index ($p < 0,000$). There was a need to increase health education activities to raise knowledge regarding dengue fever. Strengthening student knowledge and attitude would elevate community participation and cultivate better preventive practices among the public to eliminate dengue fever in the country. Furthermore, wide range of information, skills and support must be provided by the government to increase dengue awareness among student

Keywords: Dengue; Knowledge; Attitude; 3M Plus; Elementary Students

I. INTRODUCTION

Dengue is the important arthropodborne viral infection. This disease is a global public health concern, spreading from tropical regions to most subtropical regions of the world. Globally, it is estimated 50 to 100 million dengue cases occur each year across approximately half of the population, particularly in hyperendemic region such as Southeast Asia and the Pacific. It is estimated that dengue is responsible for 20,000 deaths every years. A study by Bhatt et al result that dengue infection diagnosis increase more than three times per year, with 67 to 136 million cases every year. [1]

Dengue hemorrhagic fever (DHF) is also one of major public health problem in Indonesia. There were 126,675 DHF patients in 2015 on 34 provinces in Indonesia, and

Revised Manuscript Received on January 2, 2020.

* Correspondence Author

Anung Putri Illahika, Anatomy, Muhammadiyah University of Malang, Malang, Indonesia. Email: anungputri113@gmail.com

Gita Sekar Prihanti, Public Health, Muhammadiyah University of Malang, Malang, Indonesia. Email: gitasekarprihanti@gmail.com

Vonny Riska Rahmawati, Public Health, Muhammadiyah University of Malang, Malang, Indonesia.

Aulia Nur Cahyani, Public Health, Muhammadiyah University of Malang, Malang, Indonesia.

Laksita Anindhita Putri, Public Health, Muhammadiyah University of Malang, Malang, Indonesia.

1,229 peoples were died. This number were higher than the previous year, which were as many as 100,347 people with DHF and 907 patients died in 2014 [2,3]. Based on PKP Puskesmas Kota Selatan (Kowisel) Kediri in 2016, from 28,650 population, there was increasing incidence of dengue 45 cases compared to 2015 that was 16 cases [4].

Community participation is a key component in the control of DHF, since the vector of *Aedes aegypti* is around the settlements and mosquito breeding places are mostly in the house. The role of communities in this case is eradication breeding places through the 3 M Plus program (draining the tub, closing the water tank and burying item that can contain rain water) regularly once a week [5].

Students in elementary, junior, and senior high school is a part of community group that can play strategic role [5]. Students empowerment in school especially at elementary school level needs to be done [6]. The understanding of mosquito breeding place eradication for students has a role to instill practice mosquito breeding place eradication at the earliest age [5]. Students who obtained health education on eradicating mosquito larvae are expected to monitor larvae or we call it Simantik program (larva monitoring innovation program) starting from their school environment. From this school environment, students expected to form a clean and healthy life practice and increase early awareness of outbreaks of DHF that will be applied in the student's environment. [6].

Considering the increase cases of Dengue Hemorrhagic Fever and the existence of program from puskesmas about larva monitoring innovation program for students which become innovation program of puskesmas Kota Wilayah Selatan, so writer is doing research in line with the innovation program that is influences of 3M Plus program training to knowledge, attitude, and practice of 4th-6th grade students in SDN 8 Ngronggo in Public Health of South Kediri City working area.

II. METHODS

This research used quasi experimental with one group pretest post test design. Observation and retrieval of primary data using prepared questionnaire were used for collecting data in this research. Researchers observed and distributed questionnaires before and after 3M plus training. McNemar test and Wilcoxon test were applied to analyze this research.

III. RESULT

The primary data we got was based on the questionnaire. Table 1 showed about the respondent's knowledge level comparative before and after training. The result were 83 (91,2%) respondents with low knowledge, 8 (8,8%) respondents with moderate knowledge before the training done. After training, we got the result such as 73 (80,2%) respondents with high level of knowledge and 18 (19,8%) respondents had an moderate knowledge. It can be concluded that there was change of knowledge level, before we did the training, there was no respondents had high level of knowledge, but after we did the training there was 73 respondents which had high level of knowledge.

Table 1. The distribution of knowledge level

Knowledge level	Before training		After training	
	N	%	N	%
Low	83	91.2	0	0
Moderate	8	8.8	18	19.8
High	0	0	73	80.2
Total	91	100	91	100

Table 2 showed the comparative about respondent's attitude before and after the training done. From the table, it can be seen that before the training there were no respondents who had positive attitude and after 3M plus program training, it was found improvement from 0 (0%) respondents who had positive attitude to 75 (82,4%) respondents. In addition, prior to the training of 3M plus, 79 (86,8%) respondents had negative attitudes, and after 3M training plus attitude improvement by respondents and 0 (0%) respondents who had negative attitude

Table 2. The distribution of Attitude

Attitude	Before training		After training	
	N	%	N	%
Positive	0	0	75	82.4
Neutral	12	13.2	16	17.6
Negative	79	86.8	0	0
Total	91	100.0	91	100

From the Table 3 it can be seen that there was an increase in behavior, before the training showed that none of the respondents had good practice, and after 3M training plus obtained 77 (84,6%) respondents whose practice was good. In addition, there was a decrease in the number of respondents who had bad practice to 0 (0%) respondents who have good practice.

Table 3. The distribution of Practice

Practice	Before training		After training	
	N	%	N	%
Bad	71	78.0	0	0
Neutral	20	22.0	14	15.4
Good	0	0	77	84.6

Total	91	100	91	100
-------	----	-----	----	-----

From Table 4 above can be known about the spread of larvae density before and after the training 3M plus, found as many as 41 (45.5%) respondents with moderate density, 23 (25.3%) respondents have high larva density and as many as 27 (29.2%) respondents which was free of larvae. After 3M plus training program, there was an increase of respondents who were free of larvae to be as many as 81 (89.01%) of respondents, and decrease the number of respondents who had high density that was to be as many as only 1 (1.09%) of respondents.

Table 4. Larval Distribution

Mosquito larvae existences	Before training		After training	
	N	%	N	%
Low	0	0	0	0
Moderate	41	45.5	9	9.89
High	23	25.3	1	1.09
Negative	27	29.2	81	89.01
Total	91	100.0	91	100

Table 5 showed the detail of the amount of knowledge changes of respondents before and after training 3M plus. According to Table 5.2 on the distribution of knowledge levels before and after the 3M plus training, there were 83 respondents who had low knowledge before receiving 3M plus training, but after training, none of the knowledge levels were low, it can be seen from Table 5.5 above that 83 of low knowledge respondents to 16 respondents knowledgeable enough and 67 respondents are knowledgeable. From the above table it can be seen that before getting 3M plus training, got 8 respondents who have sufficient level of knowledge and from the eight respondents, 2 of them remain knowledgeable enough and 6 other respondents turned into high knowledge after getting training program 3M plus.

Table 5. Change of Knowledge Level of Respondents before and after 3M plus training

Knowledge pre	Knowledge post		
	Low	Moderate	High
Low	0	16	67
Moderate	0	2	6
High	0	0	0

Table 6. Attitude Change of Respondents before and after 3M plus training

Attitude pre	Attitude post		
	Negative	Neutral	Positive
Negative	0	13	66
Neutral	0	3	9
Positive	0	0	0



Table 6 showed detail of the number of respondents' attitude changes before and after training 3M plus. According to table 5.3 on attitude distribution before and after 3M plus training, there were 79 respondents who had negative attitude before got 3M plus training, but after training, none had negative attitude, it can be seen from table 5.6 above that 79 respondents which initially had a negative attitude to 13 respondents with a neutral attitude and 66 respondents had a positive attitude. From the above table it can be seen that before getting 3M plus training, 12 respondents who have neutral attitude and from 12 respondents, 3 of them remain neutral and 9 respondents changed to be positive after getting training program of 3M plus.

Table 7. Change of Respondents' Practice before and after 3M plus training

Practice pre	Practice post		
	Bad	Neutral	Good
Bad	0	8	63
Neutral	0	6	14
Good	0	0	0

Table 7 showed details of the number of changes in respondent behavior before and after 3M plus training. In accordance with Table 5.4 on the distribution of behavior before and after 3M plus training, there were 71 respondents who had bad behavior prior to 3M plus training, but after training, none had negative behavior, it can be seen from table 5.7 above that 71 respondents which initially had bad behavior to 8 respondents with neutral behavior and 63 respondents had positive behavior. From the above table it can be seen that prior to getting 3M plus training, 20 respondents were obtained who have neutral behavior and from 20 respondents, 6 of them still behave neutral and 14 other respondents changed to behave well after getting training program of 3M plus.

Table 8. Larva Density Change

Respondents		N	%
Larvae post – larvae pre	Negative	59	64.8
	Positive	0	0
	Constant	32	35.2
	Total	91	100

It can be seen from Table 8 about larva density before and after the respondents were given training, there were 59 (64.8%) of respondents, and 32 (35.2%) of respondents no change, still as before the training, and also from the table above no respondents experienced larvae increase from before the training until after the training.

This study aims to determine whether there are differences before and after 3M training plus on the level of knowledge, attitude and practice of students 4-6 grade in SDN Ngronggo 8 Kediri. Data This study is ordinal data and consists of 2 groups in pairs so that the comparative test using Wilcoxon test, but in the research results obtained only two categories (low-enough, good-enough, bad-enough, negative-enough,

enough-high, quite positive) then the test used was Mcnemar test.

Table 9. McNemar Test Results Variables Before and After Program of 3M plus

Variable	Sig.	Conclusion
Knowledge	0,000	There is a Significant Difference
Attitude	0,000	There is a Significant Difference
Practice	0,000	There is a Significant Difference
Larvae	0,000	There is a Significant Difference

Table 9 on the above level of knowledge level variables obtained sig value 0,000 ($P < 0.05$) indicating that there is a significant difference in knowledge level between before and after training 3M plus motion program. In the practice level variable, sig 0,000 ($P < 0,05$) showed that there was a significant difference of practice level between before and after 3M plus motion program training. While attitude variable obtained sig value 0,000 ($P < 0,05$) indicating that there are difference of attitude meaningful between before and after training program of 3M plus. From table 9 above it can also be known that the significance value of larvae density change before and after the training of 3M plus program prog is 0.000 ($P < 0,05$) showed significant change result about the number of mosquito larvae before and after the counseling. The purpose of this research is to know whether there is influence of training program of 3M plus to level of knowledge, attitude, and practice of 4-6 elementary school student at SDN Ngronggo 8 Kota Kediri working area of Puskesmas Town of south region. By performing the McNemar test and it was found that the variables of significance value of 0,000 ($P < 0.05$) showed that there was a significant effect of 3M plus motion program training on the level of knowledge, attitude, and behavior, but it cannot be understood how much influence on knowledge, attitude, and respondent behavior about 3M plus.

IV. DISCUSSION

This study aims to determine whether there are differences before and after 3M training plus on the level of knowledge, attitude and practice of students in 4-6 grade SDN Ngronggo 8 Kota Kediri. Based on the questionnaires that have been given, data on the distribution based on the level of knowledge, attitudes and behavior. Data This study was an ordinal data consisting of 2 groups in pairs so that the comparative test using Wilcoxon test, but in the research results obtained only two categories (low-enough, good-enough, bad-enough, negative-enough, enough-high, quite positive) then the test used is Mcnemar test. By conducting the McNemar test, the results show that there is a significant effect of 3M plus motion program training on the level of knowledge, attitude, and behavior, but it cannot be understood how much influence the respondents' knowledge, attitudes and behavior about 3M plus. From table 5.10 it is also possible to know the significance value of larvae density change before and after the training of 3M plus program, that is 0.000 ($p < 0,05$), it shows significant change result about mosquito larva density before and after

counseling.

The significance of the training program of 3M plus towards the level of knowledge, attitudes, and behavior in this training is in line with the research by Pujiyanti entitled Knowledge, Attitude and Behavior Relationships in the Control of Dengue Vector Vectors in Elementary School Students in Tembalang Sub-district, Semarang in 2016, Vector control efforts conducted by elementary / MI students in Kecamatan Tembalang. The results showed no significant relationship between knowledge with attitude and knowledge variable with behavior. Attitudes are proven to be significantly related to student vector control behaviors. Good vector control behavior can be done by elementary school children with low / limited knowledge. Efforts to control vectors by elementary school students in Tembalang sub-district are based on attitude components rather than knowledge components and health promotion on awareness of DHF and prevention efforts need to involve schools. [7]

School-aged children are the best imitators. The results of Bezerra et al. it is known that children easily assimilate information because school age is a rapid stage of cognitive development. Children aged 7-11 years into concrete operational stage have the ability to think logically about events and classify objects into different forms. Based on the social cognitive theory of social and cognitive factors as well as individual factors play an important role in the learning process. Cognitive factors in the form of acceptance of students to achieve success, while social factors include student observation of the behavior of adults around him both teachers and parents. [7] Teachers, peers, parents and health workers can be a reinforcing factor to maintain health behavior. Schools have an important role to play in improving hygienic behavior by providing information and socializing about DBD vector control. [8] The goal is that students know how to spread and prevent DHF and are expected to disseminate information about DHF to family and peers. In this study there was also a change of larvae density before and after the training of 3M plus motion program. Table 5.9 shows the density of larvae before and after training. After being trained, 59 respondents (64.8%) observed a decrease in larva density. Based on the McNemar test of the variables before and after the 3M training plus the density of larvae, obtained the significance of 0.000 ($P < 0,05$) showed significant changes in the number of mosquito larvae. This is in line with the research of Sirotus conducted in Prabumulih which aims to find out the vector of DHF vector before and after intervention in Prabumulih City. The results showed that controlling the DHF vector through the promotion of health in community groups along with selective larvasidation contributed to the decrease of larva density greater than other regions. [9]

Common indexes used to monitor larva density are House Index (HI), Container Index (CI), and Bretau Index (BI). The House Index is calculated through the number of larval positive houses in the number of houses examined multiplied by 100. The Container Index is calculated based on the number of positive larval containers in the number of containers examined multiplied by 100. The Bretau Index is calculated on the number of positive larval containers divided by the number of houses examined per hundred [10]. In this study, we use the container index.

V. CONCLUSION

There was significant influence between 3M Plus program training towards knowledge, attitude, and practice of 4th-6th grade students in SDN Ngronggo 8. There was significant influence between 3M Plus program training towards larvae density on container index.

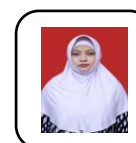
REFERENCES

1. Cucunawangsih, Lugito, NPH,. (2017). Trends of dengue Disease Epidemiology, Virology: Research and Treatment, Vol.8: 1-6.
2. Kemenkes, (2016). Situation of DHF, Data and Information Center of the Ministry of Health of the Republic of Indonesia.
3. Kemenkes, (2016). Control of DHF with 3M PLUS PSN, Republic of Indonesia Ministry of Health Data and Information Center.
4. PKP Public Health Centre Kowilsel, (2016). 2016 Public Health Centre Performance Evaluation Report, UPTD Public Health Centre Kota Wilayah Selatan, Kota Kediri.
5. Kemenkes, (2014). Technical Guidance for PSN Jumentik - School Children, Ministry of Health of the Republic of Indonesia, Director General of Disease Control and Environmental Health.
6. Public Health Centre Kowilsel (2017). Dengue Haemorrhagic Fever (Simantic) Monitors Movement Program (DBD).
7. Pujiyanti A., Pratamawati, D. A., Trapsilowati, W., (2016). The Relationship of Knowledge, Attitude, and Behavior in the Control of DBD Vector on Elementary School Students in Tembalang District, Semarang, Litbangkes Media, Vol. 26 No. 2, Juni 2016, 85 – 92.
8. Liu, X., Fangjun, W., Cirendunzhu, Cirenwangla, Bai, L., Pengcuicuren, et al., (2014). Community Knowledge and Experience of Mosquitoes and Personal Prevention and Control Practices in Lhasa, Tibet . Int. J. Environ. Res. Public Health 2014, 11, 9919-9937; doi:10.3390/ijerph110909919.
9. Sirotus, H., Taviv, Y., Budiyanto, A., Ambarita, L. P., Salim, M., Mayasari, R., (2017). (Comparison of Dengue Vector Larvae Indices Pre and Post-Intervention in Prabumulih), BALABA Vol.13 No.1, Juni 2017: 55-64.
10. WHO, (2011). Comprehensive Guidelines for Prevention and Control of Dengue and Dengue Haemorrhagic Fever, Revised and Expanded Edition. (serial online).

AUTHORS PROFILE



Anung Putri Ilahika was born in Surabaya on March 11 1986, she is a lecturer in medical faculty of University Muhammadiyah of Malang since 2011 until now. She work in Anatomy Departement.. I was completed magister program of Anatomy-Histology at Medical Faculty of Airlangga University. Anung have some article. The title article are Factors That Influence The Performance of Jumentik Cadres, Correlation analysis of skinfold thickness based on Body mass Index of Madura's Teenager of Surabaya.



Gita Sekar Prihanti, Gita Sekar Prihanti is medical teacher who lead Medical Education Unit (MEU) in Faculty of Medicine University of Muhammadiyah Malang (FM UMM) since 2011 until now. Gita Sekar Prihanti research interest was in medical education and public health field.



Vonny Riska Rahmawati, Vonny Riska Rahmawati is Medical Doctor graduated from Medical Faculty- Muhammadiyah Malang University. Her Interest on public health research.



Aulia Nur Cahyani, Aulia Nur Cahyani is Medical Doctor graduated from Medical Faculty – Muhammadiyah Malang University. Her Interest on public health research.



Laksita Anindhita Putri, Laksita Anindhita Putri is Medical Doctor graduated from Medical Faculty – Muhammadiyah Malang University. Her Interest on public health research.