The Knowledge of Level of Mosquitoes as Vector Diseases at Community in the Village Tegal Rejo Sub-district Medan Perjuangan Medan City

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Abstract: The incidence of diseases caused by mosquitoes as vector transmission is still high in Indonesia. Mosquito-borne diseases such as: dengue fever, chikungunya, filariasis, malaria and zika. Until now there has been no elimination of diseases caused by mosquitoes as vector transmissions succeed. It is difficult to break the life cycle of mosquitoes. For this reason, it is necessary to conduct research on the level of community knowledge, especially mothers, against mosquitoes as vector transmitters. Data were obtained giving questionnaires before and after counseling with *quasi experiment study, pre and post test design*. Counseling was carried out for the intervention of mothers' knowledge with lectures and video in May 2018.The population of mothers who came to counseling were 100 peoples. The knowledge level before intervention were good 12%, moderate 75% and less good 13%. After intervention the level of knowledge were 62% and moderate 38%, nothing were less good. This research was conducted to mothers as representatives of the community expected to prevent transmission of diseases by eradicating vectors in or around the house.

1 INTRODUCTION

Vector is a living things that can transmit infectious diseases between humans or animals to humans. Mosquitoes are vectors that most often transmit disease. Mosquitoes are also one of the animals that can cause death in the world. The ability of mosquitoes to carry and spread disease to humans causes millions of deaths in each case (WHO, 2016). Mosquitoes as vectors can carry diseases caused by viruses such as dengue fever, chikungunya, yellow fever and encephalitis. As well as diseases caused by nematodes such as filariasis and protozoa such as malaria. The types of mosquitoes that are the main vectors are usually *Aedes sp, Culex sp, Anopheles sp,* and *Mansonia sp* (Sembel, 2009).

These vectors are generally blood-sucking insects that receive disease-causing microorganisms while sucking human or animal blood, then inserting these microorganisms in other humans while sucking blood again. Globally, there are more than 1 billion cases and more than 1 million deaths due to vector-borne diseases (WHO, 2015). The disease incidence which is carried by the mosquito vector is caused by the high density of mosquito vectors, especially in Indonesia (Ndione, 2007).

In the case of Chikungunya, there was a significant decline in 2012 compared to the previous 3 years, namely 1831 cases. One of the factors causing the decline of the Chikungunya case is the presence of some regions that have not reported this case. Clinical cases of filariasis showed an increase from 2008 to 2011, but in 2012 clinical cases of filariasis decreased by 163 cases. This is due to the commencement of the government's filariasis elimination program (WHO, 2016).

In 2012, the number of patients with dengue hemorrhagic fever (DHF) in Indonesia was reported as many as 90,245 cases with the number of deaths of 816 people. There was an increase in the number of cases in 2012 compared to 2011 of 65,725 cases (WHO, 2016). In 2014 until mid-December recorded DHF patients in 34 provinces in Indonesia were 71,668 people and 641 of them died (Ministry of Health Indonesia, 2015).

Malaria is still a health problem in Indonesia. In 2015, WHO estimated there were around 214 million new cases of malaria with 438,000 deaths worldwide. Of the total deaths due to malaria, around 306,000 occurred in infants (Ministry of Health Indonesia, 2015).

Mosquito control efforts are important to prevent outbreaks from mosquito-borne diseases (WHO, 2015). To be able to carry out mosquito control we must know how the mosquito's life cycle and the environment as it can cause high mosquito breeding (Service, 2012). In connection with this, mothers as representatives of the community play a role in controlling mosquitoes in house and around the house. For this reason, research on the level of knowledge of mothers towards mosquitoes as a vector of diseases is carried out.

2 METHODS

This study was a quasi-experimental with pre and post test design. Where this study was conducted by looking at differences in knowledge before and after being given counseling with the same material questionnaire. Counseling here is an intervention for mothers as respondents representatives of the community against mosquitoes as vector transmitters by giving lectures and video screenings. Counseling is carried out on May 2018 at the office of the Tegal Rejo Village Head, Medan Perjuangan District, Medan City.

2.1 Population

The population of this study were 100 mothers as Respondents who were representatives of their respective environments. There are 15 neighborhoods in this village. Data collection was conducted by interview using a questionnaire containing 20 questions given before and after counseling. All questions in the questionnaire have been tested for their validity and reliability. Each question has a predetermined value. The level of knowledge consists of 3 categories, namely: good if 75% (> 15 questions), moderate if 40% -75% (8-14 questions) and less good if < 40% (< 7 questions) of the answers answered correctly.

2.2 Data Analysis

The data from the questionnaires before and after counseling were answered by the respondents, then data processing is carried out. Univariate analysis is

done to explain the frequency distribution of each variable and presented in table.

3 RESULTS

The questionnaires after and before counseling were analyzed in this study. The number of 100 respondents was attended for this study. Table 1 presents the characteristics of the respondents.

Table 1: Characteristics of respondents.

Variabel	f	%
Age (yrs)		
< 30	6	6
31-40	33	33
41-50	23	23
>50	38	38
Ethnicity		
Java	42	42
Batak/Mandailing	41	41
Malay	11	11
Minang	3	3
Sunda	3	3
Education		
Elementary school	7	7
Middle school	22	22
High school	64	64
College	7	7
Jobs		
Housewife	97	97
Teacher	3	3

Knowledge of mosquiotoes as vector diseases can be know when respondents answer the questionnaires correctly. Answered correctly before and after intervention can be seen on table 2.

Table 2: Frequency of distribution answered correctly before and after intervention.

		Before		After	
	f	Number of respondents	f	Number of respondents	
Answer Correctly	7	13	0	0	
	8	10	8	3	
	9	6	9	7	
	10	9	10	7	
	11	12	11	3	
	12	11	12	7	
	12	16	13	10	
	14	13	14	1	
	15	4	15	20	
	16	6	16	39	
	17	0	17	3	
Total	100	100	100	100	

The level of knowledge good, moderate and less good classified from before and after intervention of the answers correctly (table 3.)

Table 3: Frequency of distribution the knowledge of level before and after intervention.

	Before	f (%)	After	f (%)
The knowledge level	Good	12	Good	62
	Moderate	75	Moderate	38
	Less Good	13	Less Good	0
Total		100		100

4 DISCUSSION

The results obtained showed that there were variations in the characteristics of respondents based on age, ethnicity and education.

It can be seen that out of 100 respondents, the highest number is > 50 years old, with Javanese ethnicity, Hight School education and generally housewives (table 1). In general, someone with a higher education will have a broader knowledge compared to lower education (Notoatmodjo, 2005).

Table 2, shows that out of the 20 questions given, the correct answers before the intervention were 7 questions at 10 respondents and the most were 16 questions in 6 respondents. After being given intervention the questions correctly answered became 17 questions in 3 respondents. Here it can be seen that respondents education influences the absorption of an intervention (Notoatmodjo, 2005). The intervention by lectures and video screenings interesting for them and become increase answered correctly.

Interventions on respondents are very useful. This can be seen in table 3, where before the intervention the level of knowledge was less good as 13%. After being given this unfavorable intervention, there was no more, good knowledge increased by 50% (before intervention 12 % and after intervention became 62%). While the knowledge moderate before intervention 75% were reduced to 38%. Good and moderate knowledge was influenced by several factors, such as information sources and educational factors and environmental factors.The more information was obtained, it would influence the level of one's knowledge (Notoatmodjo, 2005 and Notoatmodjo, 2007). From table 3 it can also be seen that respondents have not been aware and less concerned about the dangers of

mosquitoes as vector transmitters in their homes before intervention.

5 CONCLUSIONS

The level of knowledge mothers as respondents at community representatives before the intervention is still not good and the most is the level of moderate knowledge.After intervention,the level of knowledge of mothers as respondents increased more well compared to the moderate and there was no more less good for mosquitoes as a vector of diseasese.

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REFERENCES

Ministry of Health Indonesia., 2015. *Health ProfileIndonesia*. doi 351 077 Indonesia.

Ndione, R. D., Omar, F., and Ndiaye, M., 2007. *African Jof Biotech*, 6 (24) pp 2846-54.

Notoatmodjo, S., 2005. *Metodologi Penelitian Kesehatan*. Edisi revisi. Jakarta. PT Rineka Cipta. Notoatmodjo, S., 2007. *Promosi Kesehatan dan Ilmu Perilaku*. Edisi revisi. Jakarta. PT Rineka Cipta.

Sembel, D., 2009. *Medical Entomology*. Yogyakarta. Andi Press.

Service, M. 2012. *Medical Entomology for Students*, United Kingdom, Cambridge, University Press, *Fifth Edition*,.

WHO. 2015. accessed 8 June 2017 available at http://www.who.int/neglected_diseases/vector_ecology/mosquito-borne-diseases/en/

WHO. 2016. accessed 8 June 2017 available at http://www.who.int/mediacentre/factsheets/fs387/en/