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Original Research Article

EXPOSURE OF INFORMATION, FAMILY KNOWLEDGE OF DENGUE HEMORRHAGIC FEVER, AND BEHAVIORS IN IMPLEMENTING ERADICATION OF MOSQUITO NESTS IN SIDOARJO

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Abstract

Background: Dengue Hemorrhagic Fever (DHF) is an infectious disease caused by one of four dengue viruses that is transmitted by mosquitoes, especially aedes aegypti and aedes albopyctus. The occurrence of outbreaks in Indonesia caused by various factors, including an environment that is still conducive to the breeding of Aedes mosquitoes, expansion of endemic areas due to the emergence of new residential areas, minimal eradication of mosquito nests, and increased population mobilization (Candra, 2010).

Objectives: This study aimed to determine the relationship between exposure of information about dengue hemorrhagic fever, the level of family knowledge, and behaviors in the implementing mosquito nests eradication (PSN) in Sidoarjo regency.

Methods: This research study used a correlational study with cross sectional approach. This study was conducted in six sub-districts of Sidoarjo regency from April until August 2020. The number of samples in this study were three hundred (300) respondents who were drawn using stratified random sampling technique. Data of this study collected by questionnaires. In assessing exposure to information about dengue hemorrhagic fever, researchers used demographic data. The questionnaire for knowledge about dengue hemorrhagic fever, which is a questionnaire made by researchers, consists of 10 items with the results of the validity test using the I-CVI is 0.84 and the reliability test results are 0.561. The Behaviors in Implementing Mosquito Nests Eradication (PSN) questionnaire was also a questionnaire that the researcher made himself consisting of 10 items with the results of the validity test using the I-CVI was 0.90 and the result of the reliability test was 0.777. The statistical test used in this study was the Spearmen Rho Test with $\alpha < 0.05$.

Results: The statistical test results of the relationship between the level of knowledge and behavior in mosquito nests eradication using the Spearmen rho test showed that *p*-value = 0.88 > α so that it was concluded that there was no relationship between them. While the statistical test results of the relationship between information exposure and behavior mosquito nests eradication using the Spearmen rho test found that there was no relationship between the two variables *p*-value = 0.23 > α so it was concluded that there was no relationship between them.

Conclusion: The community must be active in seeking information about dengue hemorrhagic fever and increase their participation in eradicating mosquito nests on an ongoing basis both at home and in the surrounding environment.

Keywords: Exposure of Information, Knowledge Level of Family, Dengue Hemorrhagic Fever, PSN Behaviors.

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INTRODUCTION

Dengue hemorrhagic fever is an infectious disease caused by one of the four dengue viruses that is transmitted by mosquitoes, especially aedes aegypti and aedes albopyctus. In tropical and subtropical areas, dengue fever is an endemic disease that can occur throughout the year, especially during the rainy season. Dengue hemorrhagic fever is a major health problem in Indonesia because the number of sufferers tends to increase every year. The increase in rainfall will increase the amount of standing water that mosquitoes can use as breeding grounds (Candra, 2010).

Throughout 2016, the Ministry of Health's Directorate of Vector Infectious Disease and Zoonosis Control recorded 3,298 dengue cases with 50 deaths throughout Indonesia (Ministry of Health, 2016). The incidence of dengue hemorrhagic fever in 2018 was 6,800 cases with 43 deaths. Since the beginning of 2019, dengue hemorrhagic fever case reports have reached 13,683 cases with a death rate of 133 people throughout Indonesia. East Java Province ranks first of ten provinces with the highest incidence of dengue hemorrhagic fever in Indonesia, amounting to 2,567 cases with a death rate of 47 people (Damanik, 2019).

The occurrence of Extraordinary Events (KLB) in Indonesia were caused by various factors, including: an environment that is still conducive to the breeding of the Aedes mosquitoes, expansion of endemic areas due to the emergence of new residential areas, eradication of mosquito nests is still minimal, and increasing population mobilization. The active role of the community needed in reducing the incidence of dengue fever by suppressing vector reproduction. Throughout 2016, the Ministry of Health issued a circular, which urged the public to make efforts to prevent and control the nest of dengue infection through the 3M Plus PSN program with one house and one Jumantik. The mosquito nests eradication program (PSN) consists of: 1) Draining water reservoirs regularly, 2) Closing water reservoirs, 3) Recycling used items that have the potential to become breeding grounds for mosquitoes that transmit dengue fever. Meanwhile, 3M plus consists of: 1) sprinkling larvicide powder into water reservoirs, 2) using mosquito repellent, 3) using mosquito nets while sleeping, 4) maintaining larvae predators in water reservoirs, 5) planting mosquito repellent plants such as lavender , 6) maximizing ventilation in the house, 7) avoiding the habit of hanging clothes in the house, especially dirty clothes. The role of nurses in this case is to provide health education to the public about the 3M plus PSN and to provide motivation to implement the one house one Jumantik program. Armed with adequate knowledge, it hoped that the chain of transmission of dengue hemorrhagic fever be broken.

This study aimed to determine the relationship between exposure of information about dengue hemorrhagic fever, the level of family knowledge, and behavior in implementing mosquito nests eradication (PSN) in Sidoarjo Regency. The urgency of this research is to increase public insight about dengue hemorrhagic fever and improve behavior in efforts to eradicate mosquito nests and break the chain of spread of dengue fever.

Methods

Study Design

The design of this study was a correlational study with cross sectional approach.

Research Subject

The population in this study were all families in six Sub-District of Sidoarjo Regency. The sampling technique used was stratified random sampling. The number of samples in this study were three hundred (300) respondents who were drawn using stratified random sampling technique. The researcher chose 6 sub-districts in Sidoarjo district which was done randomly, after that the researcher randomly assigned one village to the 6 selected sub-districts and gave a questionnaire to 50 respondents in each village.

Setting

This study was conducted in six sub-districts of Sidoarjo regency from April until August 2020. The six sub-districts were Waru sub-district, Jabon sub-district, Buduran sub-district, Tanggulangin sub-district, Candi sub-district, and Krembung sub-district.

Instruments

This study used a demographic data questionnaire. In assessing exposure to information about dengue hemorrhagic fever, researchers used demographic data. The questionnaire for knowledge about dengue hemorrhagic fever, which is a questionnaire made by researchers, consists of 10 items with the results of the validity test using the I-CVI is .84 and the reliability test results are .561. The Behaviors in Implementing Mosquito Nests Eradication (PSN) questionnaire was also a questionnaire that the researcher made himself consisting of 10 items with the results of the validity test using the I-CVI was .90 and the result of the reliability test was .777

Data Analysis

This study was analyzed using Spearmen Rho Test with $\alpha < .05$.

Ethical Consideration

This research has received permission from the National and Political Unity Agency of Sidoarjo Regency with license number 072/256/438.6.5/2020. In addition, this study has passed the health research ethics test from the research ethics committee of the Kerta Cendekia Nursing Academy, Sidoarjo with No. 07/KEPK.AKC/IV/2020.

RESULTS

Characteristics of Respondents by Age, Gender, Occupational, Educational Level, and Exposure of Information of DHF

Demographic data from the results of the study based on age, gender, occupational, educational levels, and exposure of information of DHF can be seen in table 1.

Table 1 Distribution of Respondents by Age, Gender, Occupational, Educational Level, and Exposure of Information of DHF in Six Sub-District of Sidoarjo Regency from April until August 2020 (n = 300).

Characteristics of Respondents	Number (n)	Percentage (%)
Age (Years)		
≤ 40	72	24.01
41-50	103	34.33
51-60	85	28.33
≥ 61	40	13.33

Characteristics of Respondents	Number (n)	Percentage (%)
Gender		
Male	115	38.33
Female	185	61.67
Occupational		
Government Employees	53	17.67
Private	129	43.00
Unemployed	118	39.33
Educational Level		
Elementary School	24	8.00
Junior High School	84	28.00
Senior High School	149	49.67
Bachelor Degree/ College	43	14.33
Exposure of Information of DHF		
Ever	224	74.67
Never	76	25.33

Sources: Primary data of Questionnaire, 2020.

Most respondents in this study were aged 41-50 years as many as 103 respondents (34.33%) and the majority were female as many as 185 respondents (61.67%). Respondents most private work were 129 respondents (43.00%). The majority of respondents' education level is senior high school as many as 149 respondents (49.67%). More than half of them had received information about DHF as many as 224 respondents (74.67%).

Analysis of the Correlation between Exposure of Information about Dengue Hemorrhagic Fever, the Level of Family Knowledge, and Behavior in Implementing Mosquito Nests Eradication (PSN) in Sidoarjo Regency using Spearmen Rho Test

Table 2 Result of the Analysis of the Correlation between Exposure of Information about Dengue Hemorrhagic Fever, the Level of Family Knowledge, and Behavior in Implementing Mosquito Nests Eradication (PSN) in Sidoarjo Regency using Spearmen Rho Test.

Variables	Behaviors in Implementing Mosquito Nests Eradication (PSN)				*p*-value	*r*
	Active		Passive			
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)		
Exposure of Information of DHF					0.23	-0.070
Ever	224	74.67	0	0.00		
Never	73	24.33	3	1.00		
Level of Family Knowledge					0.88	-0.009
Good	94	31.33	0	0.00		
Moderate	124	41.33	0	0.00		
Less	79	26.34	3	1.00		

Sources: Primary data of Questionnaire, 2020.

Based on the research data in table 2, it is found that there is no relationship with the exposure of information of DHF and the Level of Family Knowledge about DHF with behaviors in implementing mosquito nests eradication (PSN) (*p*-value = 0.23, *r* = -0.070; *p*-value = 0.88, *r* = -0.009 respectively).

DISCUSSION

The information exposure variable shows that most respondents have received information about dengue fever, as many as 224 respondents (75%). Information about dengue fever has now spread to all levels of society. It is easier for the public to get access to information due to the widespread use of mass media such as television, newspapers and the internet. Mass media has an important role for society because it can increase the effectiveness of communication so that information more easily accepted and understood by the public.

In the variable level of respondent's knowledge about dengue fever, it shows that almost half of the respondents have a moderate level of knowledge, namely 41.33% and a good level of knowledge as much as 31.33%. According to Mubarak (2007), factors that influence the level of knowledge include age, education level, occupation, interests, experience, and sources of information. Based on the characteristics of the respondent's education level, it shows that almost half of the respondents have high school education, namely as much as 49.67%. The higher the level of education, the easier it is to receive and understand information so that the more knowledge it will have. The age characteristic of the respondents shows that most of the respondents are adults. The more mature a person is, the more mature they are in thinking and the easier it is to receive and digest information.

The statistical test results of the relationship between the level of knowledge and behavior using the Spearmen rho test found that *p*-value = 0.88 > α (r = -0.009), so it can be concluded that there is no relationship between the level of knowledge and family behavior in implementing mosquito nests eradication (PSN). Meanwhile, the statistical test results of the relationship between information exposure and behavior using the Spearmen rho test found that there was no relationship between the two variables *p*-value = 0.23 > α (r = -0.070) so it was concluded that there was no relationship between information exposure and family behavior in carrying out mosquito nests eradication (PSN). Similar research conducted by Shuaib (2010) and found that there was no correlation between knowledge of dengue hemorrhagic fever and preventive measures with a *p*-value = 0.34.

Family behavior in implementing mosquito nests eradication (PSN) in Sidoarjo Regency shows that 99% of respondents have an active attitude. Respondents, both those who have exposed to information and those who never exposed to information about dengue fever, have active behavior in eradicating mosquito nests.

Respondents who have active behavior in eradicating mosquito nests and have good knowledge are 31.33%, 41.33% have moderate level of knowledge, and 26.34% have less level of knowledge. This shows that not all families who have active behavior accompanied by a good level of knowledge. Knowledge is one of the factors shaping behavior, but human behavior will be difficult to limit because behavior itself is a combination of various factors, namely internal factors and external factors. According to Notoatmojo (2003), one of the strategies for changing behavior is to use strength and power, for example by establishing a rule that obeyed and implemented by the community. One of the factors that can shape the active behavior of families in Sidoarjo Regency in eradicating mosquito nests is due to the policy of the Health Minister in Sidoarjo Regency where provides Dengue Fever Control Cards in each house. This control card must fill out by the family and will checked periodically by cadre of Jumantik. This policy eventually forces people to behave actively in accordance with what the government wants.

The active behavior of respondents in preventing dengue fever in the house not necessarily accompanied by awareness in protecting the surrounding environment so that the development of dengue fever is still widespread. The role of Jumantik cadres is expected not only to motivate families to be active in eradicating mosquito nests (PSN) in the house, but also to motivate public leaders to actively mobilize the community in cleaning the surrounding environment through regular community service. If the eradication of mosquito nests done continuously in the house and in the surrounding environment, it is hope that it can break the chain of mosquito breeding and transmission of dengue fever.

CONCLUSION

The conclusion in the research entitled exposure to information and family knowledge about dengue fever and behavior in eradicating mosquito nests in Sidoarjo Regency is that there is no relationship between information exposure and behavior in eradicating mosquito nests with a *p*-value 0.23 and there is no relationship between knowledge and behavior in implementing mosquito nests eradication with *p*-value 0.88.

SUGGESTION

The community expected to actively seek information about dengue fever and increase their participation in eradicating mosquito nests on an ongoing basis, both at home and in the surrounding environment.

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DECLARATION OF CONFLICTING INTEREST

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AUTHOR CONTRIBUTION

Meli Diana: Coordinator of the research, compile the article, dan analyze data.

Riesmiyatiningdyah: Assist in data collection and complete articles.

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