Dengue Hemorrhagic Fever (DHF) Behavior to Prevent

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ABSTRACT

***Background**: Dengue Hemorrhagic Fever (DHF) is a disease caused by a virus that is transmitted by female mosquitoes, especially from the Ae. aegypti species. Knowledge and attitude factors are factors that influence the prevention of DHF. **Purpose**: To find out the knowledge, attitudes and practices of the community in preventing DHF and relationship between knowledge and attitudes, knowledge and practice, attitude and practice. **Methods**: This study used a cross-sectional design. The research location was Kelurahan 30 Ilir, Palembang City which consists of RT.11 and RT.16. The population in this study was housewives with a sample of 95 respondents using purposive sampling technique. The data were collected by interview using a questionnaire. **Results**: The results of statistical analysis showed that there was a relationship between knowledge and practice in DHF prevention measures (p value = 0.006), there was no relationship between knowledge and attitudes in DHF prevention measures (p = 0.480), attitudes and practice in DHF prevention measures (p = 0.723). Providing education to the community is important to do as an effort to increase DHF prevention behavior. **Conclusion**: DHF prevention behavior comprising the aspects of knowledge, attitudes and practices were good and there was a significant relationship between knowledge and DHF prevention measures.*

***Keyword**: Attitude, Dengue, Knowledge, Practice, Prevention.*

INTRODUCTION

DHF (Dengue Hemorrhagic Fever) is a disease caused by a virus that is transmitted by female mosquitoes, especially from the Ae. species. aegypti. WHO reported that the number of dengue cases has increased more than eight times over the last two decades, and it was the only infectious disease increasing due to the urbanization and environmental changes (WHO, 2020). WHO estimates that around 40% of the world is at risk of DHF, and there are around 390 million infections per year. The WHO DHF control strategy aimed to reduce deaths by 50% by 2020 (WHO, 2019). It is estimated that there are 390 million dengue virus infections per year in the world of which 96 million are clinically manifested. Another study on the prevalence of dengue estimates that as many as 3.9 million people have been infected with the dengue virus, and billions of people are at risk of being infected with the dengue virus. Although the risk of infection exists in 129 countries, 70% of the true burden is in Asia ((Scott; Brady Oliver J;Peter W. Gething; Samir Bhatt; Jane P. Messina; John S. Brownstein; Anne G. Hoen; Catherine L. Moyes; Andrew W. Farlow; Thomas W. and Hay, 2012).

In Indonesia, based on the data, the increasing trend of dengue incidence has occurred for more than 50 years. The island of Java accounts for the highest average number of dengue cases each year. In recent years, Bali and Kalimantan had the highest incidence while Papua Island, the easternmost region of the Indonesian archipelago, had the lowest incidence (Harapan et al., 2019).

Early identification of dengue infection is very important so that timely and effective quarantine can be carried out as well as vector control measures to prevent disease outbreaks (Chang et al., 2018). The knowledge and attitude factors influence the prevention of dengue fever (Sayavong *et al.*, 2015);(Rakhmani *et al.*, 2018) (Herbuela *et al.*, 2019)(Herbuela *et al.*, 2019);(Hossain *et al.*, 2021). A study on knowledge, attitudes and preventive measures for DHF in Sri Lanka and Dhaka, Bangladesh showed that on average the respondents had good knowledge,

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attitudes and practice related to DHF prevention (Jayawickreme *et al.*, 2021) (Abir *et al.*, 2021). The study in Malaysia by Selvarajoo et al. (2020) showed that the participants who had good knowledge were 50.7%, 53.2% of the people had a bad attitude and 50.2% had poor DHF control practices. While the study by Wong and AbuBakar(2013) in Malaysia showed that, regarding the awareness about DHF, the attitudes and preventive measures were quite good. The results of the analysis showed a significant correlation between demographic background, perceptions and knowledge about DHF and prevention practices (Wong et al., 2015). In the village of Orang Asli Peninsular Malaysia, it showed that knowledge and perceptions about DHF are an obstacle in taking steps to prevent DHF. Low knowledge and perceptions are less likely to practice dengue prevention (Chandren, Wong and AbuBakar, 2015). Knowledge of DHF, in La Lisa City, Havana, Cuba, has an influence with practice, but not with perception and practice (Castro et al., 2013). The practice of covering the water container with a lid and adding temephos in the water has shown the success of preventing DHF to reduce the production of immature Aedes (Waewwab et al., 2020). Providing education with audiovisual media can facilitate an increase in changes in the level of family attitudes and practices in preventing dengue DHF disease (Boonchutima *et al.*, 2017); (Hanklang, Ratanasiripong and Sivasan, 2018); (Arneliwati, Agrina and Dewi, 2019).

The data of the Office of Health of Palembang City in 2017 - 2019 stated that the Makrayu Public Health Center working area was one of the areas with the highest DHF case rate. From 2017 to 2020 there were 21, 14, 49, and 39 cases. respectively (Dinkes, 2019). This study aimed to find out the prevention behavior of DHF including knowledge, attitudes and practices in Kelurahan 30 Ilir in 2021.

METHODS

This study was an analytic observational study using a cross-sectional design. The research variables were knowledge, attitudes and practices. The research was conducted in February – June 2021. The research location was Kelurahan 30 Ilir, Palembang City, which consists of RT.11 and RT.16. The population in this study was housewives. The sample size was calculated using the sample formula obtaining 95 people. The sample was selected using purposive sampling (Sujarweni, 2014). The data were collected by means of interviews (Notoadmodjo, 2010). The data collection instrument used a questionnaire to measure the level of knowledge, attitudes and practices of the community in preventing dengue fever (Arikunto, 2006).

The data analysis was carried out using univariate and bivariate methods. Univariate analysis was conducted by tabulation to describe a frequency table of respondents' characteristics, knowledge, attitudes and preventive measures for DHF. while the bivariate analysis was conducted to find out the relationship between knowledge and attitudes, the relationship between knowledge and practice and the relationship between attitudes and practices. Bivariate analysis used Chi-Square test with SPSS 21 application. The degree of confidence used was 95% (α = 0.05) (Budiarto, 2002).

RESULTS AND DISCUSSION

Characteristics

This research was conducted on 95 respondents who were members of RT 11 and RT 16 of Kelurahan 30 Ilir. The distribution of respondents' characteristics described aspects of education, occupation, knowledge, attitudes and practices of respondents (Table 1).

Table 1. The Characteristics Distribution of 95 Respondents

Characteristics	n	%
Education		
a. High	51	53.6
b. Moderate	24	25.3
c. Low	20	21.1-
Occupation		
a. Employed	61	64.2
b. Unemployed	34	35.8
Knowledge		
a. Good	86	93.6
b. Moderate	9	9.4
Attitude		
a. Positive	63	66.3
b. Negative	32	33.7
Practice		
a. Good	79	83.2
b. Not good	16	16.8

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The above table shows that the respondents with higher education levels were 53.6%, those who work were 64.2%. For the description of behavior including aspects of knowledge, attitudes and practices, it showed that of the 95 respondents, 93.6% of them had good knowledge, 66.3% of respondents had positive attitudes and 83.2% had good practices.

The results of Table 1 showed that the average knowledge, attitudes and practices of respondents regarding dengue prevention were good. These results are in line with the studies conducted in Malaysia, Sri Lanka and Dhaka, Bangladesh, regarding knowledge, attitudes and preventive measures for DHF which stated that on average respondents had good knowledge, attitudes and practices related to DHF prevention (Wong and AbuBakar, 2013; Abir et al., 2021; Jayawickreme et al., 2021)(Abir *et al.*, 2021)). Knowledge is the result of knowing and is obtained from a person's process for something good. Attitude is a person's closed repractice to a given stimulus. While practice is a judgment/opinion that a person believes and practices. Knowledge is very important in shaping one's practices (Soekidjo Notoadmodjo, 2003).

Knowledge and Attitude

Table 2 describes the results of the analysis of the relationship between knowledge and attitude to prevent dengue.

Table 2. Relationship Between Knowledge and Attitude in Prevention of DBD

Knowledge	Attitude				Total		P Value (95 CI)	OR
	Negative		Positive					
	n	%	n	%	n	%		
Moderate	4	44.4	5	55.6	9	100	0.480	
Good	28	32.6	58	67.4	86	100	(0.413-6.653)	1.657
Total	32	33.7	63	66.3	95	100		

From the analysis table, it showed that the p-value was 0.480, which means that there was no significant relationship between knowledge and the attitude of preventing DHF. Similarly, the research result carried out by Karimah et al in Kuantan, Pahang showed that there was no relationship between knowledge about DHF and respondents' attitudes towards DHF (Aziz et al., 2015). Attitude is a person's response or repractice that is still closed to an object, stimulus, or topic.

It can also be interpreted as a person's tendency to act, both supporting or not supporting an object. Attitude is not yet a practice, but is a predisposing factor to a behavior. A complete attitude is formed by the components of cognition, affection and conation (Sunaryo, 2004).

Knowledge, Attitude and Practice

Table 3 describes the relationship between knowledge and attitudes with DHF prevention measures.

Table 3. Relationship Between Knowledge and Practice with Attitude and Practice, in Prevention of DBD

Variable	Practice				Total		P Value (95 CI)	OR
	Not Good		Good					
	n	%	n	%	n	%		
Knowledge								
Moderate	5	55.6	4	44.4	9	100	0.006	8.523
Good	11	12.8	15	87.2	86	100	(1,981-36.67)	
Total	16	16.8	79	83.2	95	100		
Attitude								
Negative	6	18.8	26	81.2	32	100	0.723	1.223
Positive	10	15.9	53	52.4	63	100	(0.401-3.732)	

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Total	16	16.8	79	83.2	95	100

The results of statistical analysis showed that for the relationship between knowledge and practice, the value of p = 0.006, which means that there was a significant relationship between knowledge and prevention of DHF. The OR was 8.523, meaning that the respondents with poor knowledge had the opportunity to have bad practices of 8.523 times in preventing DHF. Meanwhile, for the relationship between attitudes and practices, the p value was 0.723, meaning that there was no relationship between attitude and dengue prevention measures.

The result of the analysis showed that there was a significant relationship between knowledge and practice. This is in line with the research by Nguyen et al. (2019) on the incidence of dengue outbreaks in Vietnam, people who have better knowledge tended to have better prevention practices against dengue. The study by Castro et al. (2013), in the City of La Lisa, Havana, Cuba, stated that the knowledge about DHF had an influence with practice, but not with the perception and practice). In the Orang Asli village of Peninsular Malaysia, knowledge and perception of DHF, is an obstacle in taking practice to prevent DHF. Low knowledge and perceptions are less likely to practice dengue prevention (Chandren, Wong and AbuBakar, 2015). However, the study conducted by Nurain and Raof (2017) in Sepang, Selangor, showed that the knowledge was not associated with dengue prevention measures (Ain et al., 2017). This is in line with the theory put forward by Notoatmodjo (2003) stating that a practice taken by a person will be lasting if the practice is based on high knowledge and good attitude (Notoadmodjo, 2003). The level of a person's knowledge can basically be influenced by many factors. According to Mubarak (2007), several factors can affect a person's knowledge, including age, education level, occupation, interests, experience, and sources of information. One of the factors that can affect a person's knowledge is the level of education possessed by an individual; the higher the level of education of a person, the higher the level of knowledge s/he has (Mubarak, 2007). The results showed that the average respondent had a high level of education, namely high school and above, which was one of the factors that influenced the emergence of good knowledge.

The results of the analysis of the relationship between attitudes and dengue prevention measures showed insignificant results. The attitude had no relationship with dengue prevention measures. This result is different from that conducted by Al-Maleki and Alhoot et al. (2017) stating that there was a significant relationship between attitudes and dengue prevention measures (Alwan et al., 2021).

Knowledge and attitude are very important in forming a practice. Someone taking good DHF prevention measures is certainly based on a good understanding of DHF and a desire to make efforts to prevent it. The obtained data showed that the average education level of the respondents was high education (senior high school to higher education).

Education level is one of the factors that can affect a person's level of knowledge. Education in the individual will affect the ability to think; the higher the level of education, the easier one thinks rationally and understands the information received. A person's level of education will greatly affect his cognitive ability to receive and understand something, including information about DHF prevention. This cognitive ability will encourage a person to behave and act in accordance with his/her understanding of DHF prevention. The level of knowledge, attitudes and practices that are not good about preventing DHF are at risk of developing dengue disease compared to those who have a good level of knowledge, attitudes and practices. In practice, this study has limitations, namely the possibility of obtaining biased information due to filling out questionnaires based on memory recall. This study also used a cross-sectional study design, and, therefore, could not draw conclusions regarding causality of associations.

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CONCLUSION

The results of the study showed that there was a significant relationship between knowledge and preventive measures for DHF, while there was no significant relationship between knowledge and attitudes toward preventing DHF and knowledge with DHF prevention measures. It is hoped that the community will continue to make efforts to prevent DHF and the public health centers will continue to educate the public regarding the prevention of DHF

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