

Dengue hemorrhagic fever: Knowledge, attitude, and practice in Palmeriam, Jakarta, Indonesia

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ABSTRACT

Background: Dengue hemorrhagic fever (DHF) is the most rapidly spreading mosquito-borne viral disease in the world. It is an emerging disease, episodic and occurring annually.

Aims: This study was to examine the knowledge, attitude, and practice of community in Palmeriam, Jakarta regarding dengue hemorrhagic fever.

Methods: A community-based cross-sectional study was designed in this study between June to July 2016. Purposive sampling was done to collect data from 148 respondents.

Results: This study found that average age was 47 years old, 75% were women, and 46.6% finished secondary high school. In another hand, 23.6% respondents had good knowledge, and 49.3% had a neutral attitude for preventing dengue hemorrhagic fever. The study found that 68.2% respondents had a mid-level of practice prevention dengue hemorrhagic fever and it can be improved. This study indicated that the community was quite familiar with Dengue hemorrhagic fever, but there was confusion about water storage and environment effect.

Conclusion: Health promotion program and community participation should improve dengue awareness. Continuous campaign for enhancing the knowledge and attitude would result in better practice for DHF prevention.

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INTRODUCTION

Dengue Hemorrhagic Fever (DHF) is recognized as emerging infectious diseases. Dengue is a viral infection carried by the typical household mosquito (*Aedes aegypti*) and becomes a health problem in tropical countries. In the world, there were about 50 million people infected DHF with 2.5% death reported annually [1]. *World Health Organization* (WHO) has declared that DHF to be endemic in South East Asia [1]. Tropical areas such as Indonesia provide a climate that is conducive to the breeding of dengue-transmitting mosquitoes. Since the first case of DHF was reported in 1968 to 2009, WHO declares

Indonesia as a country with the highest DHF cases in South East Asia [1]. The geographical distribution of DHF has included urban and rural areas, making Indonesia as the most rapidly expanding *dengue* viral disease [2]. Jakarta is the capital city of Indonesia with the highest incidence rate of DHF [3]. Public Health Office of Jakarta reported the incidence rates of DHF were 12,254 cases with 7 mortality in 2012 [3]. The highest incidence was found in Palmeriam with 3,801 cases and 134 per 100,000 population, with a 0.08 mortality rate per 100,000 population. Then Palmeriam is one of the districts in East Jakarta with doubling increased incidence rates from 2010 to 2014 [3]. The data showed that Palmeriam is one of

the endemic areas that need attention for DHF prevention.

The government of Jakarta concerns for decreasing DHF cases by some programs such as chemical insecticidal control. However, the WHO and Centers for Disease Control and Prevention recommend limited reliance on insecticidal control and emphasis on community educational programs that emphasize communities responsibility in reducing vector breeding sites [4,5]. This recommendation is supported by prior research which found that community education was more effective in lowering dengue vector breeding sites than chemicals alone [6]. Therefore, the communities should know prevention program of DHF. Then, the effective prevention transmission of the DHF requires support, cooperation and participation by the community.

The concept of Knowledge, Attitude, and Practice, or is known as KAP is a useful conceptual framework for assessing the level of awareness and prevention practices on Dengue Hemorrhagic Fever (DHF) problems in the endemic community [7]. Therefore, KAP concept was applied to guide this study. The idea explained how knowledge, attitude, and practice deliver benefits to improve participation of communities for doing DHF prevention. This KAP study was designed to identify human behavior related to what people know (knowledge), what people feel (attitude), and what people do (practice).

Therefore, it is essential to know the level of knowledge, attitude, and practice (KAP) of the community concerning the DHF. There is limited KAP study on dengue in communities in the urban area. It is important to conduct a KAP study concerning dengue in urban communities because almost a quarter of dengue cases occur in the urban setting. Therefore, through this study, we will define the level of knowledge, attitude, and practice concerning DHF among communities living at Palmeriam district in Jakarta, one of endemic areas in Indonesia. The results will identify the real community situation of DHF prevention and the success of government program.

METHODS

The cross-sectional study was conducted between June to July 2016 in District 01 Palmeriam, Jakarta, Indonesia. There were one hundred forty-eight (148) participants where the sample size was determined using Slovin's formula. The purposive sampling was

employed within inclusion criteria including: aged 18 to 55 years old, living in District 01 Palmeriam, Jakarta, able to read, write, and communicate in Indonesian, and willing to participate in this study.

Questionnaires employed in this study were composed of demographic information questionnaire and DHF Knowledge, Attitude, and Practice (KAP) questionnaire. The DHF KAP was adapted from previous study [8]. The DHF KAP questionnaire consisted of 39 items dividing into 3 variables; 1) an interval scale of knowledge (14 items), 2) a Likert attitude scale (12 items), and 3) an interval scale to measure practice of prevention DHF (13 items). The internal consistency obtained Cronbach's alpha was knowledge = .79, attitude= .79, and practice of prevention DHF= .80.

The study was approved by the head of research center in Sint Carolus School of Health Sciences and data was collected after obtaining permission and written consent from the head of public health care and head of the district. The researchers also provided participants information sheets. The participants signed an informed consent before getting questionnaires. Participants took approximately 30 to 45 minutes to complete all questions.

RESULTS

All of the participants (148 participants) completed the questionnaire. Table 1 describes the socio-demographics of the participants. The majority age of participants was ranged 21 to 44 years old (43.9%) where 75% participants were women, and 46.2% participants had a middle level of education and only 16.2% participants had a high level of education.

Table 1. Distributions and frequencies of socio-demographic of the participants among (N=148)

Characteristics	N	%
Age		
Adolescents (13-20 years)	4	2.7
Adult (21-44 years)	65	43.9
Pra-elderly (45-59 years)	50	33.8
Elderly (≥ 60 years)	29	19.6
Gender		
Women	111	75
Men	37	25
Education level		
Elementary School	55	37.2
Secondary high school	69	46.6
University	24	16.2

The knowledge in this study divided to 3 levels; low level, moderate level, and high level. As shown in Table 2, we noted that most participants had moderate level of knowledge about DHF (45.9%) followed by low level (30.4), where only 23.6% participants had a high level of knowledge. Even though the majority of participants had a neutral attitude of prevention DHF (49.3%), the study found that 40.6% participants had a negative attitude of prevention DHF. This study also identifies practice of prevention DHF among participants. Only 16.9% participants had a high level of practice of prevention DHF, the most participants (68.1%) had a moderate level of practice of prevention DHF. This finding means that participants did not practice the prevention DHF regularly.

Table 2. Distributions and frequencies of knowledge, attitude, and practice of prevention Dengue Hemorrhagic Fever (N= 148)

Variables	N	%
Knowledge		
Low (0-8 scores)	45	30.4
Moderate (9-11 scores)	68	45.9
High (12-14 scores)	35	23.6
Attitude		
Negative (12-40 scores)	60	40.6
Neutral (41-46 scores)	73	49.3
Positive (47-60 scores)	15	10.1
Practice Prevention		
Low (0-4 scores)	22	14.9
Moderate (5-6 scores)	101	68.1
High (7-8 scores)	25	16.9

DISCUSSION

In this study, only 45.9% of the participants had a moderate level of knowledge about DHF, and 30.4% of the participants had a low level. This refers the participants' knowledge needs improvements. This finding supported by the previous study that mentioned the majority of participants had heard of DHF, however, the level of knowledge was low. The knowledge will be affected by the attitude and practice regarding DHF. A study in Nepal found that the enhancing knowledge is the critical campaign to prevent DHF in the community [9,10]. Previous studies show that the level of knowledge was different in some areas. The knowledge should concern the breeding mosquitoes of DHF [11, 12], causes of bite *Aedes aegypti* [11,12,13,14], prevention program [15], signs and symptoms of DHF [12,16], DHF related to seasonal [12], and DHF management [9].

Regarding attitude towards DHF control, 40.6% participants in this study was classified as having a negative attitude. This shows that the majority of people had a less perceived risk of DHF and supports toward DHF control. However, this result might also be partially influenced by characteristic individuals who did not perceive the benefit of DHF prevention. This finding similar to previous studies in Laos and Philippines [17,18]. This is the area needs attention for the modification of health promotion related DHF prevention.

The finding reported the majority of participants (68.1%) had a moderate level of practice on prevention DHF. The good practice level will achieve a good knowledge level. The results corresponded with study in central Nepal where people with low knowledge of DHF had less potential breeding sites in and around their houses than people with a good knowledge [19]. One of the reasons for middle practice levels attained in this study may be that many questions on practice level were related to daily practices for the control of other common mosquito-borne diseases in this area. In another hand, the previous study reported the most people who had a good attitude towards DHF prevention by monitoring mosquito larvae found half of the people said the obstacle was no time to monitor mosquito larvae [12]. Therefore, there is an urgent needed for awareness program to raise the knowledge of people of this area regarding DHF.

CONCLUSION

The success of the preventive practices of the DHF was strongly influenced by the knowledge and attitudes towards the prevention of DHF. Knowledge about the causes of disease, signs and symptoms of DHF, breeding, and the prevention DHF needs to be improved in order for DHF prevention. Government should support the communities to improve the knowledge, attitude and practice prevention DHF.

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CONFLICT OF INTERESTS

We certify that there is no actual or potential conflict of interest in relation to this article.

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