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"The Relationship between knowledge, attitude and practice for Dengue Hemorrhagic fever disease prevention among the Villagers of Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District, Saraburi Province"

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Abstract

This research aims to identify the relationship between knowledge, attitude and practice for Dengue Hemorrhagic Fever (DHF) disease prevention among the villagers of Moo 1 Ban Klongsai, Nongyangsua Subdistrict, Muaklek District, Saraburi Province. 198 samples/ respondents were purposively selected from 406 villagers. Three questionnaires were created by the researcher, approved by 3 experts for content validity and tested the questionnaire on 30 villagers of Moo 14, Ban Panghuachang, Nongyangsua Subdistrict, Muaklek District, Saraburi Province. The first questionnaire, leave out knowledge about Dengue Hemorrhagic Fever, was tested for reliability of KR-20, giving the result of 0.73. The second and third questionnaires, attitude about DHF and practice on DHF $\bar{x}$ prevention, respectively, were tested for reliability by Cronbach's alpha coefficient, giving the values of 0.79 and 0.75 respectively. Descriptive statistics, %, , S.D. and r were employed for data analysis. General demographic data of the respondents include 1) 58.1% were female; 2) average age was 49 years old; 3) 80.8% were married; 4) 56.1% finished elementary school; 5) 43.4% were farmers and 6) average income was 58,288 Baht/month.The results showed that most respondents, 50.5%, had a high level of knowledge regarding DHF, of this, 55.6% understood that DHF was caused by a mosquito bite, 47.5% could relate the life cycle of the AE mosquito and 68.2% could relate the transmission risk of DHF. However, their knowledge of DHF prevention and protection was at a moderate level. Most of them,

82.8%, had positive of attitude about DHF. 95.5% of this group understood prevention of DHF and 75.3% understood both prevention and control. Both knowledge and attitude of respondents were positively related and statistical significant to practice for DHF disease prevention with the level of 0.05 ($r = 0.283$, $p = <0.001$, $r = 0.160$, $p = 0.025$, respectively). Recommendation on improving the knowledge and attitude of the DHF to the community would result in better practice for DHF disease prevention.

Keywords: Knowledge, Attitude, Practice, Dengue Hemorrhagic Fever disease

I. INTRODUCTION

Dengue Hemorrhagic Fever (DHF) is a viral infection carried by the common household mosquito (Ades species) and constitutes a national health problem. It is an emerging disease, episodic in nature and occurring yearly. The disease was first reported in Thailand in 1949 and the first large epidemic occurred in the Philippines in 1954. In 1958 there was a large outbreak in Bangkok with 2,706 cases and resulting in 296 deaths. Since then DHF has spread to every province of Thailand. The spread is attributed to population congestion and improvements in the national transportation system which has allowed the vector to migrate. (Infectious Control Center, 2003) According to an epidemiology report from the Infection Control Center, Ministry of Public Health for the 44th week, issued on the 15th on April 19, 2013, found that the report on April 18, 2013 revealed number of patients with DHF, Dengue Shock Syndrome (DSS), and Dengue Fever (DF) were 2.4 times higher than 5 years ago, and epidemic levels occurred 1 month earlier than in previous years. The number of patients had clearly increased by the 11th week (the middle of March) rather than the 15th-16th week (the middle of April) as expected. An increase in the number of DHF patients in 2013 is caused from a continuous infection rate that has remained high from the later part of 2012. In 2012 there were 22.495 reported cases of DHF, DSS and DF, with a morbidity rate of 35.11 cases per 100,000 people, 25 deaths with a 0.04 mortality rate per 100,000 and a 0.11 case fatality rate per 100,000 individuals. (Bureau of Epidemiology, Infectious Control Department, Ministry of Public Health, 2013).

From January 1, 2013 to August 24, 2013, 543 cases were reported in Saraburi Provence which was an 88.70 % morbidity rate per 100,000 people, 2 deaths occurred with at 0.36% mortality rate. Compared to the DHF morbidity rate in Thailand, Saraburi province was ranked 58th among the 77 provinces. In Health Services Network Area 4 on August 20, 2013 Nakhon Nayok Province had the highest morbidity rating and Saraburi Provence was 2nd. In the network area number 4, Nakhon Nayok had the highest morbidity rate, then, Saraburi, Lopburi, Nonthaburi, Pathomthani, Pranakhonsriayuthaya, Angthong, and Singburi are followed. DHF incidence in each district of Saraburi Province leave out from the most to the least occurrence were Muak Lek, Pra Phuthabaht, Chalermprakiet, Banmhoa, Muang, Nhongdon, Nhongsang, Donphut, Wangmuang, Saohai, Kangkoy, and Wiharndang, respectively. (Bureau of Epidemiology, Infectious Control Department, Ministry of Public Health, 2013). When standing water occurs during the rainy season and DHF rates increase it is imperative to closely monitor the disease. The purpose of this proposed research is to study the relationship of knowledge, attitude and practice for DHF prevention among the villagers of Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District, Saraburi Province.

No previous research has been done in this geographic area to ascertain a Knowledge, Attitude and Practice (KAP) baseline from villagers. The information will be used to plan for further DHF interventions with the long term goal of providing a plan to control and shorten the DHF epidemic peak time. Additionally, the study results will be used to develop guidelines to support the villager's knowledge, Attitudes, and practices and to prevent DHF occurrences in the future.

Objectives

1. To study the knowledge, attitude, and practice of Dengue Hemorrhagic Fever Disease prevention among the villagers in Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District, Saraburi Province.
2. To study the relationship among knowledge, attitude, and practice of Dengue Hemorrhagic Fever Disease prevention among the villagers in Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District, Saraburi Province.

Hypothesis

1. Knowledge, attitude and practice of Dengue Hemorrhagic Fever Disease prevention among the villagers in Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District, Saraburi Province are at good level.
2. The relationship among the knowledge, attitude, and practice of Dengue Hemorrhagic Fever Disease prevention among the villagers in Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District,

Saraburi Province is positive.

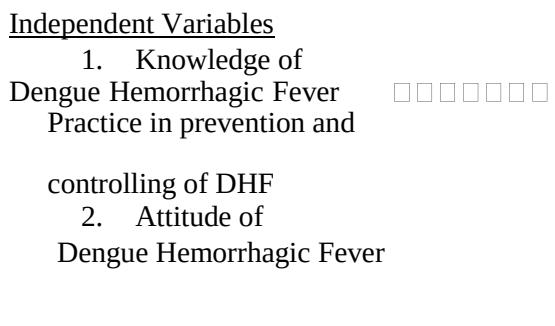
- *if the answer is correct, will get 1 point*
- *if the answer is incorrect, will get 0 point*

DHF knowledge level is divided into 3 levels

II. METHODOLOGY

Conceptual Framework

The objective of the research is to study the relationship among the knowledge, attitude, and practice of Dengue Hemorrhagic Fever Disease prevention among the villagers in Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District, Saraburi Province by using Bloom's Conceptual Framework.



- High level – the average score = 0.67-1.00
- Moderate level – the average score = *0.34-0.66*
- Low level – the average score = *0.00-0.33*

Part 3 : Attitudes toward DHF are divided into 3 Likert scale responses, both positive and negative.

Positive items

- Agree = 3
- Not sure = 2
- Disagree = 1

Negative items

- Agree = 1
- Not sure = 2
- Disagree = 3

We divided attitude of Dengue Hemorrhagic Fever into 3 levels

- Good attitude = 2.36-3.00
- Fair = 1.68-2.35
- Bad attitude = 1.00-1.67 Part 4: DHF prevention practice is divided into 3 Likert scale responses.
- practice all the time = 3
- practice sometimes =2 - Not practice at all = 1 DHF prevention practice is divided into 3 Likert scale responses.
- Good level = 2.36-3.00
- Moderate level = 1.68-2.35
- Not good level = 1.00-1.67

Population

The population in this study is 406 villagers who live at Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District, Saraburi Province.

Sample

The population in this study is 406 villagers who live at Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District, Saraburi Province. Yamane's formula was used to determine the sample size with a margin of error of less than 0.05. (Yamane, 1970) and it gave 202 respondents from purposive sampling method.

Instrument

The instrument that will be used for data collection is a questionnaire testing for knowledge, attitude, and practice of Dengue Hemorrhagic Fever Disease prevention among the villagers in Moo 1 Baanklongsai, Nhongyangsue Subdistrict, Muaklek District, Saraburi Province. The questionnaire has 4 parts:

Part 1: General demographic information such as gender, age, marital status, education level, occupation and family income Part 2: The questionnaire is a 10 item test about knowledge of DHF with 3 choices.

Validity and reliability of Instrument

Three questionnaires were created by the researchers, approved by 3 experts for content

validity and tested on 30 the villagers at Moo 14
Panghauchang village, Nhongyangsuer subdistrict, Muaklek district, Saraburi. The test populations have the same characteristics as the sample population.

Reliability
By using the Kuder-Richardson 20 formula, the reliability of the knowledge of DHF questionnaire is 0.73, Conbach Alpha Coefficient formula was used to analyze the attitude toward DHF questionnaire the reliability is 0.79 and the practice of Dengue DHF questionnaire is 0.75.

III. CONCLUSION Part 1 General information
The demographic data of the respondents include 58.1% were female with an average of 49 years (= 48.5, S.D. = 16.4, Min = 15, Max = 84), 80.8% were married, 56.1% finished elementary school, 43.4% were farmers and had an average income of 58,288 Baht/month (Table 1). $\bar{x}$

($\bar{x}$= 48.5, S.D. = 16.4, Min = 15, Max = 84),

Table 1: *Number and percentage of people at Moo 1, Ban Panghuachang, Nongyangsua Subdistrict, Muaklek District, Saraburi Province (n=198).*

Variable	Number	Percentage
Gender		
Male	83	41.9
Female	115	58.1
Age		
≤ 30 year old	30	15.2
31-40	39	19.7
41-50	38	19.1
≥ 51 year old	91	46.0
Married status		
Single	18	9.1
Married	160	80.8
Widow	14	7.1
Divorce /separate	6	3.0
Education level		
No formal education	7	3.5
Primary school (G.1-G.6)	111	56.1
Secondary school (G.7-G.9)	21	10.6
Secondary school (G.10-G.12)/ vocational certificate	42	21.2
Diploma /high vocational certificate	4	2.0
Bachelor's degree	12	6.1
≥ Bachelor's degree	1	0.5
Occupation		
Employee	37	18.7
Government service / State Enterprises	6	3.0
Business/Sale	18	9.1
Agriculture	86	43.4
Housework	19	9.6

Part 2 Knowledge, attitude, and practice of the prevention of DHF

The results showed that most respondents, 50.5% ($\bar{x}$ = 0 .6 6 , S.D. = 0 .17) had high level of knowledge about DHF. With this, 55.6% ($\bar{x}$= 0.61 , S.D. = 0 .29) were aware of the cause of DHF, 47.5% ($\bar{x}$ = 0 . 7 1 , S.D. = 0 .30) understood the life cycle of Aedes Egypti and 68.2% = 0 . 8 3 , S.D. = 0 .26) understood the transmission of DHF. However, they had moderate level of knowledge in prevention and protection of DHF 37.9%($\bar{x}$ = 0.51, S.D. = 0.27) .Most of them, 82.8% had positive attitude about DHF.

Of this group, 95.5% ($\bar{x}$ 2 . 7 2 , S.D. = 0 .24) and 75.3% ($\bar{x}$ 2 . 5 9 , S.D. = 0 .35) understood the concept of prevention and practice of DHF prevention 51.9% ($\bar{x}$ 2.42, S.D. = 0.33) (Table 2).

Table 2: *Number and percentage of knowledge, attitude, and practice of the DHF prevention (n = 198)*

Variable	**Level**			**Average**	**Standard Deviation**
	Low Amount (Percentage)	Moderate Amount (Percentage)	High Amount (Percentage)		
Knowledge	4 (2.0)	94 (47.5)	100 (50.5)	0.66	0.17
- Cause of DHF	8 (4.0)	80 (40.4)	110 (55.6)	0.76	0.29
-Life cycle of *Aedes Egypti*	12 (6.1)	92 (46.5)	94 (47.5)	0.71	0.30
-Transmission of DHF	5 (2.5)	58 (29.3)	135 (68.2)	0.83	0.26
- prevention and protection of DHF	57 (28.2)	75 (37.9)	66 (33.3)	0.51	0.27
Attitude	0 (0.0)	34 (17.2)	164 (82.8)	2.65	0.26
- the concept of prevention of DHF	0 (0.0)	9 (4.5)	189 (95.5)	2.72	0.24
- practice of the prevention of DHF	1 (0.5)	48 (24.2)	149 (75.3)	2.59	0.35
practice of the prevention of DHF	5 (2.5)	76 (38.4)	117 (59.1)	2.42	0.33

Part 3 Relationship between knowledge,attitude, and practice of DHF disease prevention

Both knowledge and attitude of correspondents were positively related and statistical significant to practice for DHF disease prevention with the level of 0.05 (r = 0.283, p = <0.001, r = 0.160, p =0.025, respectively) (Table 3).

Table 3: *Relationship between knowledge, attitude, and practice of DHF disease prevention by using Pearson's chi-square (n = 198)*

Variable	Practice of DHF disease prevention	
	r	p - value
Knowledge	0.283	< 0.001
Attitude	0.160	0.025

DISCUSSION

Knowledge of Prevention Dengue Hemorrhagic Fever (DHF)

From this study; most of the participants (50.5%) have knowledge about DHF at the high level. However, knowledge of prevention DHF is at the medium level which corresponds to Sunudta Sophachan (2007) who has studied on the topic of DHF prevention practice with the people in Ban Tar Muang Si Bun Rueang, Chonnabot District, Khon Kan Province. Her study found that 55.7 % of household have a high of knowledge regarding level knowledge on DHF which was also consistent with Sompim (2008) who studied leave out DHF preventive and control behaviors of the people in Ban Tor Pradoo Moo 6 Kranuan Khon Kaen Province. Her study has shown that 87.6% of participants have knowledge about DHF at a high level. An additional study by Sombutsawad et al. (2012) leave out in an article entitled, "DHF Prevention Behavior Comparison Study between DHF Outbreak Village and non DHF Outbreak Village in Phimai district, Nakhon Ratchasima
Province." Her study has shown that most of the people (58.84%) from a non DHF outbreak village also had a higher level of knowledge regarding DHF.

Attitude on DHF Prevention

This study has found that most of the participants (82.8%) had a positive attitude regarding DHF control by 95.5% in this study agreed that DHF prevention, prophylaxis, and control can be achieved which is in agreement with Tosati (2009) in his study of village health volunteers in Chang Thun sub-district, Bo Rai district, Trat Province. He has found that most of the village health volunteers had the highest level attitude (52.7%).

DHF Preventive Behaviors

This study has shown that 59.1% of sample had preventive behavior at a high level which is consistent with the Tosati (2009) as well. In his study the village health volunteers had the highest level of preventative behavior (73.7%). His study has found that most of the village health volunteers have had highest level preventive behavior (73.7%)

DHF Knowledge Attitude and Preventive Behavior Correlation

This study has shown that there is a statistical significance of 0.05 on DHF knowledge, attitude, and prevention which is consistent with Tosati (2009) who has studied about the knowledge attitude and DHF preventive behavior and control of the village health volunteers in Chang Thun sub-district, Bo Rai district, Trat Province which found that the correlation of DHF knowledge attitude and preventive behavior is significantly statistic at 0.05 the factors are DHF knowledge and attitude on DHF preventive behavior and control which is agreeable. Similarly, Chokchaichamnankit (2004) who studied on the topic of DHF Knowledge and Attitude on DHF Preventive Behavior and Control in the community of Phra Pradaeng district Samut Prakan Province. She found that correlation between DHF knowledge and attitude on DHF preventive behavior had a significantly statistic at $p<0.01$ which corresponds to Meepiw (2011) who has studied on the topic of DHF Knowledge, Attitude and Preventive and Control Practice of the people in Sing Khok sub-district Kaset Wisai district Roi Et province. He has found that here was a correlation between DHF knowledge and preventive and control practice, but did not correlate to attitude. He found that DHF attitude did not have any correlate to DHF preventive and control practice at significantly statistic of 0.05 which is correspond to Watanadilokwit (2011) who studied about DHF Knowledge Attitude and DHF Preventive and Control Practice of the village health volunteers in Banlang sub-district Non Thai district Nakhon Ratchasima province.

She found that there was correlation between DHF knowledge and preventive and control practice at significantly statistic of 0.05 but did not have correlation to DHF attitude. There was not any correlation between DHF attitude and DHF preventive and control practice at significantly statistic of 0.05.

From the study, we found that the knowledge about DHF prevention is at a high level but the knowledge about DHF prevention and control is at the medium level. And also, we found that DHF attitude is in a high level. It shows that DHF prevention and control by destroying mosquito breeding need to be done by every household. Secondly, the people must be willing and happy to destroy mosquito breeding in every household and in the community. The study found that DHF preventive behavior of the people is at a high level by most of them sleep under mosquitoes net or in a room that installed mosquitoes net to protect mosquitoes bites. Next, the people have to always close their water containers – both drinking and cleaning water. House environment need to be renovated to have enough light and good ventilation – enough airflow because the people in Moo 1 Ban Khong Sai, Nong Yang Suea sub-district Muak Lek district Saraburi province are agricultures. The main income is from cow milk. So, there are more mosquitoes breeding sources especially during rainy season. From the area survey, we found that the staffs of Khong Sai Health Promotion Hospital always use voice broadcasting and car broadcasting to provide knowledge in the community. By this communication, may help the people to have high level of DHF knowledge attitude and preventive behavior but according to the report of DHF pathogenesis at districts level of Saraburi province shows the report of DHF patients in every districts then arrange in order in the rate per one hundred thousand population, Muak Lek district has the most figure compare to every (Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health, 2013) and from the study we found that the level of DHF knowledge is high but the level of knowledge in DHF prevention and control is at the medium. So, it should be a process to prevent and control DHF by constantly educate proper knowledge attitude and preventive behavior in many ways before rainy season starts till the end of winter. The important proceed to control DHF is to focus on prevention and control the mosquito larvae (aegypti) – reduce as much as possible and try the best to shorten eruption period. The sufficient promoting in knowledge and attitude toward DHF in community effects positive DHF preventive behaviors.

V. BENEFIT FROM THE STUDY

1. To guide public health staffs in develop and control DHF eruption in their area.
2. To properly and effectively educate the people some DHF knowledge attitude and preventive behavior now and in future.

VI. RECOMMENDATIONS

1. There should have more studies about DHF knowledge attitude and preventive behavior correlations in others villege, district in Saraburi province and others DHF outbreak areas.
2. There should be some studies about the factors to lead communities to corporate in effective DHF preventions and try them out with outbreak communities.

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