Knowledge, Attitude, and Practice regarding Dengue Fever among Mothers in Select Dengue Outbreak Villages in Malaybalay City, Bukidnon, Philippines

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ABSTRACT

Dengue fever (DF) is the most rapidly spreading mosquito-borne viral disease in the world. In this decade, it has expanded to new countries, from urban to rural areas. The main objective of this study was to assess the local knowledge, attitude, and practice (KAP) of DF among mothers in select dengue outbreak villages in Malaybalay City, Bukidnon. A descriptive cross-sectional study was conducted among 280 respondents living in top five dengue hot spot villages. The research protocol was strictly observed in the study. The authors asked permission to make use of the designed questionnaire by Mohapatra and Aslami (2016) on knowledge, attitude and practice regarding DF using. Out of 280 individuals interviewed, 89% identified fever as a cardinal symptom of DF. The knowledge about other symptoms of DF was low among participants. Only 10.8 % knew that DF is transmitted by Aedes mosquitoes. The correct timing of biting time was known by only 7%. Despite low knowledge, the participants had a good attitude and most of them reported good preventive practices against dengue prevention and control. Therefore, there is an urgent need for awareness programs to raise the knowledge of people of this selected dengue fever outbreak villages to protect the health of the people.

Keywords: Dengue fever, mothers, out-break villages, KAP

INTRODUCTION

Dengue fever (DF) is the most widely distributed and rapidly spreading mosquito-borne viral disease in the world. The Philippines, like many other of the developing countries, is among the most vulnerable.

Dengue fever is caused by a mosquito-borne human viral pathogen that belongs to the genus Flavivirus of the family Flaviviridae. Dengue fever predominantly occurs in Southeast Asia, the Americas, Africa, and the Caribbean Islands. There has been a gradual global upsurge in the number of dengue cases in recent years (Hales, Maindonald, and Woodward, 2002).

World Health Organization (2013; 2011; 2008) officials warned that climate change is increasing the incidence of dengue fever and other infectious diseases in the country. Climate change may contribute to an increase in dengue incidence. It may also influence the success or failure of future efforts against dengue (Colon-Gonzalez, Fezzi, Lake, & Hunter, 2013) as cited in the study of Lubos (2015).

According to a report by the Asian Development Bank (ADB), vector-borne diseases such as malaria and dengue are set to become more lethal and widespread than ever and cause far worse cases of mortality, especially among children.

"In Indonesia, the Philippines, Thailand, and Vietnam, an estimated 24,632 people died from malaria and dengue in 1990. With global warming, deaths are expected to increase by 18 percent in 2020, the ADB report furthered. The overall burden from climate change to be expected in the different Asian regions by the 2030s and 2050s is therefore projected to be much greater than reflected by the mortality estimates shown here.

FRAMEWORK

Conceptual Model

INDIVIDUAL PERCEPTIONS   MODIFYING FACTORS   LIKELIHOOD OF ACTION

Age, sex, ethnicity
Personality
Socio-economics
Knowledge

Perceived benefits
versus
barriers to behavioural
change

Perceived susceptibilty/
seriousness of disease

Perceived threat of
disease

Likelihood of behavioural
change

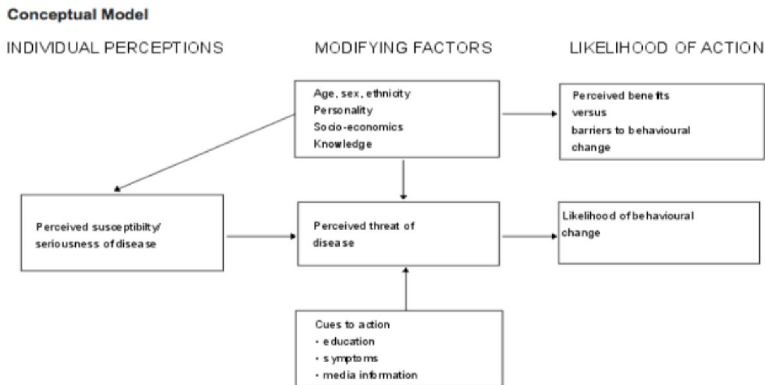Cues to action
• education
• symptoms
• media information

Figure 1. Health belief model on dengue fever preventive behaviors. Source: Glanz et al., 2002, p. 52

Health and safety behaviors contribute to many of today's public health problems (Mokdad et al., 2004). The health belief model (HBM) is a psychological health behavior change model developed to explain and predict health-related behaviors, particularly in regards to the uptake of health services (Siddiqui et al., 2016).

As Jones et al., (2015) said, the Health Belief Model postulates that people will take action to prevent illness if they: regard themselves as susceptible to a condition (perceived susceptibility), believe it would have potentially serious consequences (perceived severity), believe that a particular course of action available to them would reduce the susceptibility or severity or lead to other positive outcomes (perceived benefits), and perceive few negative attributes related to the health action (perceived barriers).

Dengue knowledge, preventive actions, and related statistic factors in connection to Health Belief Model (HBM) builds have never been explored among mothers in select dengue outbreak villages in Malaybalay City, Bukidnon.

The Health Belief Model guided this study as it is one of the commonest theoretical frameworks used in health promotion and health education studies. The major objective of the health belief model is to promote health, healthy environment and prevent individuals from harmful illness through modifiable- predictive theoretical constructs. The seven theoretical constructs discussed in this model are

perceived severity, perceived susceptibility, perceived benefits, perceived barriers, cues to action, motivating factors and self-efficacy (Manzoor et al., 2018)

OBJECTIVES OF THE STUDY

This study sought to determine the knowledge, attitude and practice (KAP) regarding DF among Mothers in Select Dengue Outbreak Villages in Malaybalay City, Bukidnon.

METHODS

A descriptive cross-sectional study was conducted among 280 respondents living in a top five dengue hot spot villages. The Research protocol was strictly observed in the study. Written informed consent was obtained from participants. Participation in the study was voluntary and no incentives were provided. The objectives of the study were explained to the respondents. The authors asked permission to make use of the designed questionnaire by Mohapatra and Aslami (2016) consisted in six parts; (1)socio-demographic information (area of residence, age, marital status, and education level); (2) Knowledge of Symptoms, sign and transmission of Dengue Fever (DF); (3) Attitude towards Dengue Fever (DF); (4) Preventive measures against Dengue Fever (DF); (5) Source of information of Dengue Fever; and (6) Knowledge of biting time of dengue fever . Sufficient time was given to ask questions and it was emphasized that the respondents could quit anytime during the interview. All completed questionnaire were double-checked and verified on the same day for completeness and consistency. In this project, environmental scientists, entomologists, public health physicians, sociologists, and biologists collaborated closely. KAP assessment was done by a scoring system. Data were entered in MS Excel and analyzed by statistical package SPSS software.

RESULTS AND DISCUSSION

Out of 280 individuals interviewed, 89% identified fever as a cardinal symptom of DF. The knowledge about other symptoms of DF was low among participants. Only 10.8 % knew that DF is transmitted by Aedes mosquitoes. The correct timing of biting time was known by only 7%. Despite low knowledge, the participants had a good attitude and most of them reported good preventive practices against dengue prevention and control.

Table 1

Socio – Demographic Profile of the Study

AGE		FREQUENCY	PERCENTAGE
21 – 30 years old		130	46.43
31 – 40 years old		89	31.79
41 – 50 years old		40	14.29
51 – 60 years old		16	5.71
60 years old and above		5	1.79
	Total	**280**	**100**
RESIDENCE			
Rural		138	49.29
Semi – urban		142	50.71
	Total	**280**	**100**
MARITAL STATUS			
Single Mother		53	18.93
Married		202	72.14
Widowed		25	8.93
	Total	**280**	**100**
EDUCATION LEVEL			
High School		18	6.43
High School Graduate		50	17.86
College Level		72	25.71
College Graduate		105	37.50

Table 1 Continued

AGE		FREQUENCY	PERCENTAGE
Masteral Level		11	3.93
Masteral Graduate		12	4.29
Doctorate Level		2	0.71
Doctorate Graduate		10	3.57
	Total	280	100
MAIN OCCUPATION			
Farmer		31	11.07
Government Employee		93	33.22
Business		65	23.21
Housewife		65	23.21
Others		26	9.29
	Total	280	100

Table 1 shows the socio-demographic details of the study subjects. The study showed that the age of the respondents (n=280) varied from 21 to 60 years and above. Most of the respondents were in the age group 21 – 30 years old. The residences of the respondents are most likely equally distributed, rural 49.29 (138) and semi-urban 50.7 (142). Majority of the respondents were married 72.14 (202), college graduate 37.50 (105), and government Employee 33.22 (93).

Table 2

Knowledge of Symptoms, sign and transmission of Dengue Fever (DF)

	YES		NO		DON'T KNOW	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Is fever a symptom of DF?	263	93.93	11	3.93	6	2.14
Is Headache a symptom of DF?	249	88.93	25	8.93	6	2.14
Is Joint pain a symptom of DF?	201	71.79	54	19.29	25	8.92

Table 2 Continued

	YES		NO		DON'T KNOW	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Is Muscle pain a symptom of DF?	183	65.36	64	22.86	33	11.79
Is pain behind the eyes a symptom of DF?	170	60.71	57	20.36	53	18.93
Are Nausea/Vomiting symptoms of DF?	220	78.57	44	15.71	16	5.72
Is rash a symptom of DF?	230	82.14	34	12.14	16	5.72
Is Diarrhea common in DF?	148	52.86	93	33.21	39	13.93
Is Stomach pain common in DF?	168	60.00	82	29.29	30	10.71
Can all mosquitos transmit DF?	99	35.36	158	56.43	23	8.21
Do the *Aedes* mosquitoes transmit DF?	157	56.07	54	19.29	69	24.64
Do *flies transmit* DF?	74	26.43	164	58.57	42	15.00
Do Bugs/Tick transmit DF?	64	22.86	174	62.14	42	15.00
Does person to person contact transmit DF?	82	29.29	163	58.21	35	12.50
Is DF transmitted through food and water?	98	35.00	154	55.00	28	10.00
Can DF be transmitted by blood transfusion?	174	62.14	78	27.86	28	10.00
Mosquitoes can breed in clear standing water?	208	74.29	53	18.93	19	6.79
Window screen and bed net reduce mosquitoes	235	83.93	32	11.43	13	4.64

Table 2 Continued

	YES		NO		DON'T KNOW	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Insecticidal spray reduce mosquitoes	248	88.57	25	8.93	7	2.50
Tightly covering water container reduce mosquitoes	263	93.93	17	6.07	0	0.00
Removal of standing water can prevent breeding	260	92.86	18	6.43	2	0.71
Mosquito repellents prevent mosquito bites	246	87.86	23	8.21	11	3.93
Can you identify *Aedes* mosquitoes?	108	36.57	131	46.79	41	14.64

Indicates correct response

Table 2 shows knowledge of symptoms, sign, and transmission of Dengue Fever (DF). The majority (93.93%) of the respondents were able to identify fever as an important symptom of DF. However, when further queried about the typical symptoms of DF, a significantly lower number of respondents were able to identify these correctly. A good percentage of respondents (56.43%) knew that not all mosquitoes could transmit dengue and more than half (17.5%) knew that Aedes mosquitoes transmit it. On the other hand, more than half of the respondents were aware of the fact that flies and ticks do not transmit dengue. About 62.14% of the respondents responded that DF could be contracted through blood transfusion.

Table 3

Attitude towards Dengue Fever (DF)

Variable	Strongly agree (%)	Agree (%)	Not Sure (%)	Disagree (%)
Is DF a serious disease?	168	97	1	10
Are you at risk of getting DF?	89	176	8	7
DF can be treated at home	5	10	6	259

Table 3 Continued

Variable	Strongly agree (%)	Agree (%)	Not Sure (%)	Disagree (%)
Can DF be prevented?	70	198	8	4
Is controlling the breeding places of mosquitoes of a good strategy to prevent dengue?	82	195	1	3
Do you think that stagnant water around the houses is discarded tyres, broken pots and bottles are breeding places of dengue mosquitoes?	30	248	1	1
Do you think it is only government responsibility to control mosquitoes?	65	10	4	201
Do you think everybody should actively participate in controlling mosquitoes?	267	10	2	1

Table 3 shows respondents attitude regarding DF. Most of them strongly agreed (60%) or agreed (34.6%) that DF is a serious illness. Thus, 95.3% of the respondents effectively appreciated the serious nature of the disease. Most of the respondents disagreed (92.5%) that DF can be treated at home. Also, about 25% of respondents strongly agreed or agreed (70.7%) that the disease is preventable. Almost 69.6% believed that dengue could be prevented by controlling breeding sites of mosquitoes. On the other hand, 71.7% of the respondents disagreed that it is only governments' responsibility to control mosquitoes and 95% of them believed that everybody should actively participate in controlling mosquitoes.

Table 4

Preventive measures against Dengue Fever (DF)

	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Use mosquito net	269	96.07	11	3.93
Use insecticide sprays to reduce mosquitoes	265	94.64	15	5.36
Use screen windows to reduce mosquitoes	263	93.93	17	6.07
Use screen windows to reduce mosquitoes	260	92.86	20	7.14
Eliminate standing water around the house to reduce mosquitoes	270	96.43	10	3.57
Cut down extra bushes in the yard to reduce mosquitoes	263	93.93	17	6.07
Cleaning of garbage/trash	273	97.50	7	2.50
Disposing water holding container (Tyres, bottles, etc.)	275	98.21	5	1.79
Use mosquito repellent equipment (electric/coil)	258	92.14	22	7.86
Use mosquito repellent cream	260	92.86	20	7.14
Use mosquito repellent oil	257	91.79	23	8.21
Use smoke to drive away mosquitoes	253	90.36	27	9.64
Use fan to drive away mosquitoes	242	86.43	38	13.57
Covering body with clothes	259	92.50	21	7.50
Cover water containers at home	272	97.14	8	2.86
Average	263	93.79	17	6.21

Table 4 shows different preventive measures against Dengue Fever (DF). Almost all (98.21%) respondents have the habit of disposing water holding container ass the best strategy for the prevention of DF. Nearly most of them (97.50%) are cleaning of garbage/trash to reduce mosquitoes. Cover water containers at home (97.14%) are also favored by them.

Table 5

Source of information of Dengue Fever

Source of information of Dengue Fever		Ranked
TV	252	1
RADIO	210	2
NEWSPAPER	161	5
HEALTH PROFESSIONAL	179	4
NEIGHBOR	144	6
TEACHER	183	3

Table 5 presents findings on sources of information on DF. The majority of the research participants reported that they had heard them through Television, followed by radio, teacher, health professional, newspaper, and lastly, neighbor. Therefore, strengthen dengue prevention and awareness program is needed in the community through Information, Education, and Communication (IEC) materials.

Table 6

Knowledge of biting time of dengue fever

Knowledge of biting time of dengue fever	
NIGHT	64
DAY	126
BOTH DAY AND NIGHT	87
DON'T KNOW	3
TOTAL	280

Table 6 presents knowledge of participants about biting time of dengue mosquitoes. Only 45% knew that these mosquitoes mostly bite in day time.

CONCLUSIONS

It is concluded that there is a low level of good or sufficient knowledge of DF in our sample population. Despite this low level of knowledge, the practice level was fair, and attitude level was good. Therefore, there is an urgent need for awareness programs to raise the knowledge of people of this select dengue fever outbreak villages.

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