



UNIVERSITI PUTRA MALAYSIA

***PATIENTS' KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES
OF DENGUE FEVER AT OUTPATIENT DEPARTMENT, HOSPITAL
KUALA LUMPUR***

MOHD ALIF BIN ABD HALIM

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KUALA LUMPUR**

ABSTRACT

MOHD ALIF BIN ABD HALIM

**A THESIS SUBMITTED TO THE FACULTY OF MEDICINE AND
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ABSTRACT

Introduction: Dengue fever is one of the infectious diseases in the world. The World Health Organization (WHO) declares dengue and dengue hemorrhagic fever to be endemic in South East Asia. There has been increasing year after year to about 49,173 cases of dengue infection in Malaysia (Ministry of Health, 2010). One study revealed that lack of knowledge about dengue fever and *Aedes* mosquito amongst elderly citizens in Malaysia are commonly related to the attitude towards dengue fever (Hairi et al., 2003). In addition, lack of proper preventive practices is one of the major contributions to the transmission of dengue fever; especially in the rural areas of Malaysia (Kroeger et al., 2005). **Objective:** The general objective is to determine the level of knowledge, attitude and preventive practices of dengue fever. **Methods:** A cross-sectional study was used in this study and was conducted at the Outpatient Department, Hospital Kuala Lumpur (HKL). Universal sampling was used in this study. A questionnaire was developed based on literature review (Farizah Hairi et al., 2003) consists of socio-demographic, knowledge on dengue fever, attitudes towards dengue and preventive practices of dengue fever. Information sheet will be provided to respondents and consent was taken prior to participation to the study. Data was analyzed using the Statistical Analysis Package for Social Sciences (SPSS). Chi-square test was used to determine the relationship between the dependent and independent variables. **Results:** The total of 308 respondents was participated in this study. The result showed that 75 (24.2%) have poor knowledge and 233 (75.6%) have good knowledge, 79 (25.6%) have poor attitude and 229 (74.4%) have good attitude and 27 (8.8%) have poor preventive practices and 281 (91.2%) have good preventive practices. There are significant associations were found between gender and knowledge ($p=0.041$), ethnicity and knowledge ($p=0.000$), education level and knowledge ($p=0.042$), age and attitude ($p=0.038$), ethnicity and attitude ($p=0.000$), and education level and attitude ($p=0.001$). The findings of the study indicate that if patients' had a good knowledge, attitude, and preventive practices they should implement and apply a good behavior to destroy the dengue cases. The benefits for the health care provider and health system through this study is revise the program to enhance the effectiveness of the program intervention. **Conclusion:** Majority of respondents has a good knowledge, attitude, and preventive practices should aware and alert about the consequences of dengue fever diseases.

Key words: Malaysia, HKL, dengue

PENGETAHUAN PESAKIT, AMALAN DAN LANGKAH PENCEGAHAN TERHADAP DEMAM DENGGI DI JABATAN PESAKIT LUAR, HOSPITAL KUALA LUMPUR

ABSTRAK

Pengenalan: Demam denggi adalah satu penyakit berjangkit di dunia. Pertubuhan Kesihatan Sedunia (WHO) mengisytiharkan demam denggi dan demam denggi berdarah adalah endemik di rantau Asia Tenggara. Di Malaysia, kira-kira 49,173 kes jangkitan demam denggi telah berlaku peningkatan pada setiap tahun (Kementerian Kesihatan, 2010). Satu kajian telah menunjukkan bahawa kekurangan pengetahuan mengenai demam denggi dan nyamuk *Aedes* dikalangan warga emas di Malaysia biasanya berkaitan dengan sikap terhadap demam denggi (Hairi et al., 2003). Di samping itu, kekurangan amalan pencegahan terhadap demam denggi menyumbang kepada faktor utama transmisi demam denggi terutamanya di kawasan luar bandar (Kroeger et al., 2005).

Objektif: Tujuan kajian adalah untuk menentukan tahap pengetahuan, sikap dan amalan pesakit terhadap demam denggi. **Kaedah:** Satu kajian keratan rentas dengan kaedah pensampelan bertujuan telah dilakukan yang melibatkan sejumlah 308 orang responden yang mendapatkan rawatan demam di Jabatan Pesakit Luar (JPL), Hospital Kuala Lumpur dan yang memenuhi kriteria kajian ini. Sebuah borang soal selidik telah diseragamkan dan dibina semula untuk memudahkan pengumpulan data berdasarkan kajian yang telah dilakukan oleh Farizah et al. 2003 yang mengandungi sosio-demografik, pengetahuan tentang demam denggi, sikap terhadap demam denggi dan langkah pencegahan demam denggi. Borang penerangan penyelidikan telah diberikan kepada responden di dalam kajian ini. Data kajian telah dianalisis menggunakan Statistical Analysis Package for Social Sciences (SPSS). Chi-square analisis telah digunakan untuk menentukan hubungkait di antara sosio-demografik dan pengetahuan, sikap dan amalan pencegahan demam denggi. **Keputusan dan Perbincangan:** Sebanyak 308 responden telah mengambil bahagian dalam kajian ini. Keputusan menunjukkan bahawa 75 (24.2%) responden mempunyai tahap pengetahuan yang rendah dan 233 (75.6%) responden mempunyai tahap pengetahuan yang baik, 79 (25.6%) responden mempunyai sikap yang lemah dan 229 (74.4%) responden mempunyai sikap yang baik dan 27 (8.8%) responden mempunyai kurang amalan pencegahan yang baik. Terdapat hubungkait yang signifikan di antara jantina dan tahap pengetahuan ($p=0.041$), bangsa dan tahap pengetahuan ($p=0.000$), tahap pendidikan dan pengetahuan ($p=0.042$), umur dan sikap ($p=0.038$), bangsa dan sikap ($p=0.001$). Hasil kajian menunjukkan bahawa jika pesakit mempunyai tahap pengetahuan, sikap, dan amalan yang baik mereka haruslah melaksanakan ketiga-tiga ciri tersebut di dalam menangani masalah demam denggi. Petugas kesihatan hendaklah mengambil langkah yang lebih berkesan untuk melaksanakan semua program pencegahan terhadap demam denggi. **Kesimpulan:** Kesimpulannya, kebanyakan responden mempunyai tahap pengetahuan, sikap dan amalan pencegahan yang baik haruslah sedar dan sentiasa berwaspada mengenai akibat daripada penyakit demam denggi

Kata kunci: Malaysia, HKL, denggi

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TABLE OF CONTENTS

CONTENTS	PAGE NO.
TITLE	i
ABSTRACT	ii
ABSTRAK	iii
ACKNOWLEDGEMENT	iv
CERTIFICATION	v
DECLARATION	vi
TABLE OF CONTENTS	vii
LIST OF APPENDICES	xi
LIST OD ABBREVIATIONS	xii
CHAPTER:	
1. INTRODUCTION	
1.1 Introduction	1
1.2 Problem Statement	3
1.3 Benefit of the study	4
1.4 General Objective	4
1.5 Specific Objectives	4
1.6 Research Hypothesis	5
1.7 Conceptual Framework	6
1.8 Variable of study	7
1.9 Definition of Terms	7

CHAPTER 2	19
2. LITERATURE REVIEW	19
2.1 Dengue fever in Worldwide	9
2.2 Dengue fever in Malaysia	10
2.3 Pathophysiology of dengue fever	11
2.4 Mode of transmission, symptoms and treatment	11
2.5 Knowledge of dengue fever	13
2.6 Attitude towards dengue fever	14
2.7 Preventive practices of dengue fever	14
CHAPTER 3	21
3. METHODOLOGY	22
3.1 Study Location	16
3.2 Study Design	16
3.3 Sampling Frame	16
3.4 Study Population	16
3.5 Sampling Unit	16
3.6 Sampling Technique	16
3.7 Sample Size Calculation	17
3.8 Inclusion Criteria	18
3.81 Exclusion Criteria	18
3.9 Instrument and Data Collection	18
3.9.1 Validity and Reliability	19
3.9.2 Validity	19

3.9.3 Reliability	19
3.9.4 Data Collection	19
3.9.5 Data Analysis	20
3.9.6 Ethical Consideration	20
CHAPTER 4	
4. RESULTS	
4.0 Results	21
4.1 Socio – demographic characteristics	21
4.1.1 Age	21
4.1.2 Gender	22
4.1.3 Race	23
4.1.4 Marital Status	23
4.1.5 Education Level	24
4.1.6 Occupation	24
Table I: Distribution of knowledge of dengue fever of respondents	27
Table II: Distribution of attitude towards dengue fever of respondents	30
Table III: Distribution of preventive practices of dengue fever of respondents	32
Table IV: Level of knowledge, attitude and preventive practices of dengue fever	33
Table V: Relationship between socio-demographic and knowledge of dengue fever	35
Table VI: Relationship between socio-demographic and attitude towards dengue fever	37
Table VII: Relationship between socio-demographic and preventive practices of dengue fever	39

CHAPTER 5

LIST OF APPENDICES

5. DISCUSSION AND CONCLUSION

	PAGE NO.
5.1 Discussion	40
5.2 Characteristics of socio-demographic	40
5.3 Level of knowledge, attitude, and preventive practices of dengue fever	41
5.4 Relationship between socio-demographic and knowledge of dengue fever	42
5.5 Relationship between socio-demographic and attitude towards dengue fever	43
5.6 Relationship between socio-demographic and preventive practices of dengue fever	44
5.7 Conclusion	45
5.1 LIMITATION AND RECOMMENDATION	
5.1.1 Limitation	47
5.1.2 Recommendation	47
REFERENCES	49
APPENDICES	53

LIST OF APPENDICES

APPENDICES	PAGE NO.
Appendix I Approval letter from Medical Research Committee University Putra Malaysia	53
Appendix II Letter to Hospital Kuala Lumpur	54
Appendix III Investigator's Agreement, Head of Departments and Institutional Approval	55
Appendix IV Research Submission	56
Appendix V National Institutes of Health for Conducting Research in Ministry of Health Malaysia	57
Appendix VI Approval Letter from Medical Ethical, Ministry of Health Malaysia	58
Appendix VII Questionnaire	59
Appendix VIII Information Sheet (English and Malay)	60

LIST OF ABBREVIATION

<	Less than
>	More than
%	Percentage
DF	Dengue Fever
DHF	Dengue Hemorrhagic Fever
DSS	Dengue Shock Syndrome
KAP	Knowledge, Attitude, Practice
COMBI	Communication for Behavioral Impact

CHAPTER I

INTRODUCTION

Dengue fever is defined as an acute onset of high grade fever of usually two to five days or more associated with two or more of the following symptoms such as headache, retrobital pain, myalgia, arthralgia, rash and mild haemorrhagic manifestation epistaxis, gums bleeding and petechiae (Shafie et al., 2002).

Moreover, dengue fever is also known as an infection which is virally transmitted by female mosquitoes such as *Aedes aegypti* and *Aedes albopictus*. In addition, dengue fever commonly happens in tropical and sub-tropical regions and is usually prevalent in hot and humid seasons. In current years, dengue fever has become a main global public health concern. For instance, the common symptoms developed are joint and muscle pain. The incubation period for dengue fever is seven days with sudden and acute onset. In addition, more precautions should be taken after the recovery period. Through precautions, some consequences can be avoided such as dengue haemorrhagic fever or dengue shock syndrome.

The major symptom in dengue fever is the occurrence of high grade fever at thirty eight centigrade. Moreover, after few days the high temperature will drop rapidly. Sweating will be occurring and body temperature will increase spontaneously. For instance, rash will appear all over the body especially on the arms and legs. Most patients will feel lethargic for several weeks and will take one week to recover.

In Malaysia, the first cases of dengue case was reported in 1901 in Penang and then spread to all the states in Malaysia (Naing et al., 2011). In 1973, dengue hemorrhagic fever occurred as major outbreaks in Malaysia and also all over the world (Poovaneswari, 1993).

In the state of Johor, Johor Bahru was the district with the highest number of cases with 1,356 cases to 3,030 cases of reported dengue fever cases compared to other districts (Seng et al., 2005). The important precautions for the prevention of infection of the dengue virus are vector control and self protection from the mosquito bites (World Health Organization, 2011). The difference between dengue fever (DF) and dengue hemorrhagic fever (DHF) is determined according to the plasma leakage amounts during infection (World Health Organization, 1997).

Furthermore, the World Health Organization (WHO) has developed a revised guideline for the detection of dengue in 2009, which includes the identification of gastro-intestinal abnormalities, a very important symptom in the detection of severe dengue and as a re-confirmation barrier in the diagnosis of dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS) (WHO, 2009). Dengue fever and dengue hemorrhagic fever can occur in dengue diseases. The delay of the treatment of dengue fever can result in dengue hemorrhagic fever which is one of the resulting complications.

1.1 Problem Statement

Malaysia is a dengue endemic area as outbreaks often occur during warm and rainy seasons. Every year, dengue fever is an epidemic and increases in morbidity and mortality rate. People in Malaysia know about the disease yet they ignore the signs and symptoms of dengue fever. Furthermore, all the campaigns initiated by the government were not effective enough to educate people on the awareness of dengue fever. According to the Director General of Health Malaysia, 2011, there were 14,544 cases of dengue fever cases reported in January 2011 until September 2011 with a decrease of cases about 60% or 21,962 cases compared to 2010 with 36,506 cases. In 2011, there were 22 deaths from dengue fever and it had vast differences with cases in 2010 where about 112 deaths were reported.

In Malaysia, *Aedes aegypti* is the common vector in dengue. According to the disease control division, Ministry of Health Malaysia, the total number of dengue cases increased year by year. In 2006, 38,566 cases have been reported from all states in Malaysia. The dengue cases have increased in 2007, 48,846 cases have been reported to the Ministry of Health. The total number of dengue cases in 2008 increased to 49,335 and decreased in 2009, 41,486 cases. In 2010, the cases had increased to 46,171 cases which had been reported from all states in Malaysia (Ministry of Health, 2011).

1.2 Benefits of this study

The survey included the level of knowledge, attitude and preventive practices taken by patients at Outpatient Department, Hospital Kuala Lumpur. The finding of the study gave new information to the public about the disease and prevention methods which created awareness in dengue fever. The information or findings of the study could be used to enhance health education pertaining to dengue fever thus educating people about the disease and its consequences.

This study also acts as one of the campaigns to prevent the disease from spreading rapidly in Malaysia as it can increase the awareness of preventive practices of dengue fever. Through knowledge, attitude and preventive practices the number of patients of dengue fever can be decreased.

1.3 General Objective

To determine the level of knowledge, attitude and preventive practices of dengue fever cases among patients' at the Outpatient Department (OPD) at Hospital Kuala Lumpur.

1.4 Specific objective

1.4.1 To determine:-

- (i) Socio-demographic of dengue fever patients present at Outpatient Department (OPD).
- (ii) Level of knowledge of dengue fever (knowledge of symptoms, transmission, management and source of information).

(iii) Level of attitude towards dengue fever (dengue is a serious and high risk illness).

(iv) Preventive practices of dengue fever (preventing mosquito-man contact and eliminating mosquito breeding site).

1.4.2 To determine the relationship between socio-demographic characteristics and knowledge of dengue fever.

1.4.3 To determine the relationship between socio-demographic characteristics and attitude towards dengue fever.

1.4.4 To determine the relationship between socio-demographic characteristics and preventive practices of dengue fever.

1.5 Research hypothesis

Null Hypothesis

Ho- There is no relationship between the socio-demographic and knowledge of the dengue fever.

Ho- There is no relationship between the socio-demographic and attitude towards dengue fever.

Ho- There is no relationship between the socio-demographic and preventive practices of dengue fever.

1.6 Conceptual Framework

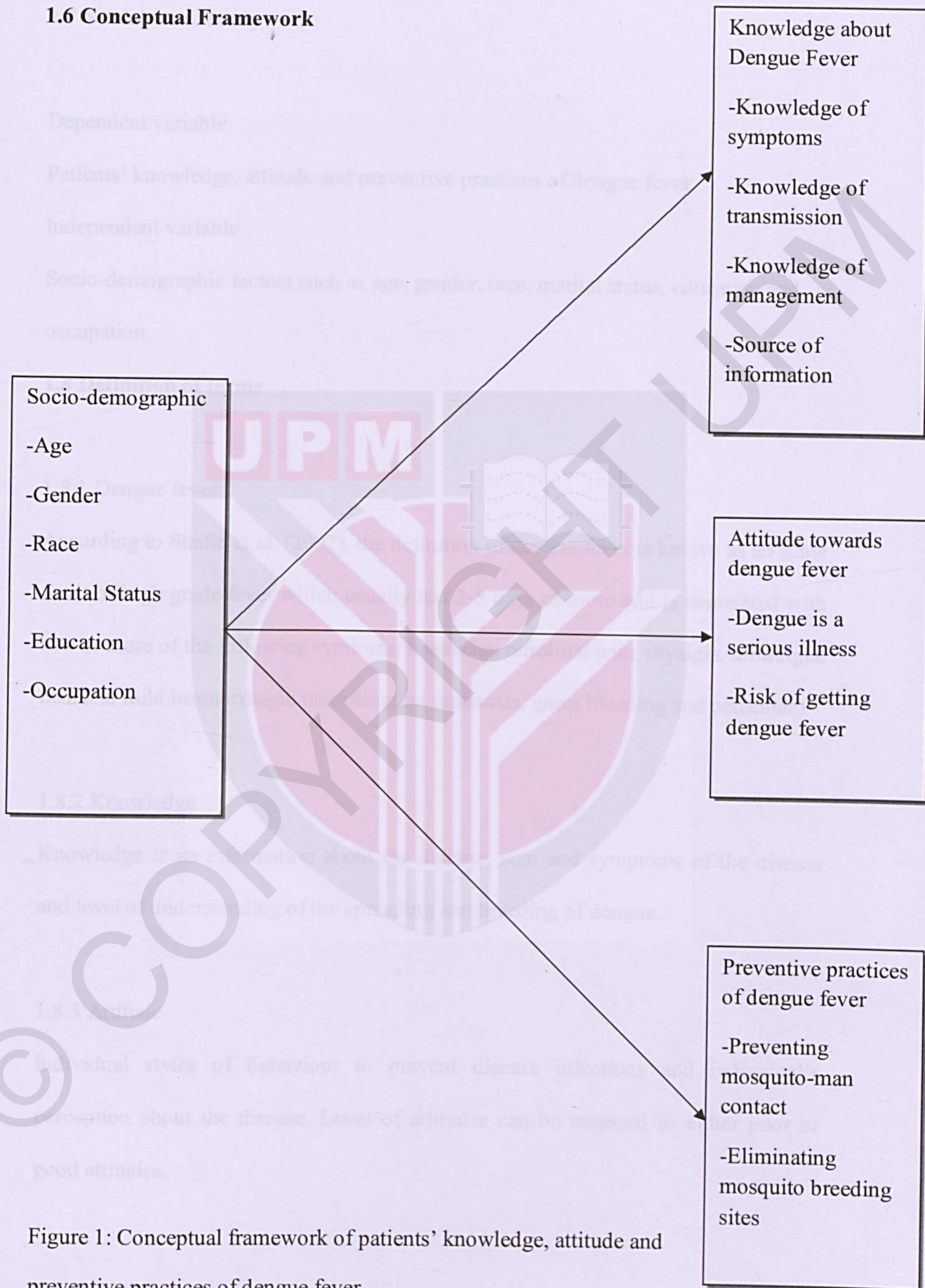


Figure 1: Conceptual framework of patients' knowledge, attitude and preventive practices of dengue fever

1.7 Variables of study

Dependent variable

Patients' knowledge, attitude and preventive practices of dengue fever.

Independent variable

Socio-demographic factors such as age, gender, race, marital status, education and occupation.

1.8 Definition of terms

1.8.1 Dengue fever

According to Shafie et al. (2002), the definition of dengue fever is known as an acute onset of high grade fever which usually last 2-5 days or more and is associated with two or more of the following symptoms: headache, retrobital pain, myalgia, arthralgia, rash and mild haemorrhagic manifestation (epistaxis, gums bleeding and petechiae).

1.8.2 Knowledge

Knowledge is an information about the disease, sign and symptoms of the disease and level of understanding of the spreading and breeding of dengue.

1.8.3 Attitude

Individual styles of behaviour to prevent disease infections and individual's perception about the disease. Level of attitudes can be assessed as either poor or good attitudes.

1.8.4 Practice

Preventive practices means doing something regularly to avoid the disease from becoming severe. Preventive practices can also be categorized in either poor or good levels against dengue fever.

LITERATURE REVIEW

2.1 Dengue Fever in Worldwide

Dengue fever is one of the most infectious diseases in the world. In addition, the World Health Organization (WHO) declares dengue and dengue hemorrhagic fever to be an endemic in South East Asia. In 1779-1780, the first few cases of the epidemic occurred in Asia, Africa and North America (Gubler & Clark, 1955). Moreover, the dengue pandemic started in South East Asia after World War II. *Flavivirus* is one of the dengue viruses in the family of *Flaviviridae* and is a major concern in the world today.

There are two types of mosquitoes that transmit the dengue viruses to humans and these types are known as *Aedes aegypti* and *Aedes albopictus* (Shuaib et al., 2010). According to Nathan (2006), there are many countries or areas that are at risk of dengue transmission especially countries in South East Asia, America, Africa and the Caribbean Islands.

In America, the number of people infected increased to about 40 million people amongst the urban population followed by India with an increase of 34 million people infected in urban areas. According to World Health Organization (WHO), the number of reported dengue cases increased to about 968,564 cases from the years 2000 to 2007.

For instance, dengue haemorrhagic fever (DHF) is the main cause of hospitalization and death. According to World Health Organization (WHO) 2009, the mortality rates worldwide increased about 22,000 deaths every year in dengue fever cases. In the 1990s, dengue epidemics were occurring in Singapore and there were co-morbidities present in 75% of dengue fever cases (Leo et al., 2011).

2.2 Dengue fever in Malaysia

The Dengue fever (DF) and dengue hemorrhagic fever (DHF) cases in Malaysia has been increasing year after year. Moreover, in Malaysia from the year 1995 until 2007 there has been a total number of 6,543 deaths due to dengue fever and about 49,173 cases of infection (Ministry of Health, 2010). In 1997, Malaysia recorded 19,544 cases of dengue fever which increased to 37.4% and it was the highest cases reported since 1973 Ligon, (2004). The number of cases increased to about 42,630 cases within the twelve years period. In 1999, there were 44.3 cases for every 100,000 people and by the year 2007, that number has increased to 181 cases for every 100,000 people (Ministry of Health, 2010). The demographic with the highest risk of infection in Malaysia is people who are working and school children. The number of cases of dengue among those who are of 15 years of age or older is about 210 cases per 100,000 currently as compared to only 55 cases per 100,000 in the year of 1999 (Ministry of Health, 2010).

In addition, Kuala Lumpur is located in the Western Region of Malaysia. In the year 2000, the population in Kuala Lumpur was approximately 1,423,900 people, which consisted of 541,082 Malays, 612,277 Chinese, 142,390 Indians and 14,239 of others (Department of Statistics, Malaysia). The prevalence of dengue in Kuala Lumpur in week seventeen of 2010 is about 1896 cases and four of which resulted in death (Ministry of Health, 2010). Kuala Lumpur is one of the hot spots of the dengue pandemic. About 70% - 80% of the dengue cases are reported in urban areas where there are crowds of people and growth in activities which contribute to the dengue transmission (Management of dengue infection in adults, 2010).

2.3 Pathophysiology of dengue fever

Dengue fever has an incubation period of about 4-7 days (range 3-14). It presents itself as an asymptomatic symptom with mild febrile illness to severe complication of diseases such as a plasma leakage and organ dysfunctions. In the critical phase of dengue, the changes of plasma leakage will occur in a matter of hours or minutes. According to Cohen et al. (1996) the beginning of pathophysiology of plasma leakage in dengue hemorrhagic fever (DHF) or dengue shock syndrome (DSS) is an acute increase in vascular permeability which contributes to the leakage of plasma into the extravascular compartment which will result in haemoconcentration, hypovolaemia or shock. The complication of hypovolaemia is reflex tachycardia and vasoconstriction which leads to an increase of sympathetic output.

2.4 Mode of transmission, symptoms and treatment

According to Beasley 2008, the dengue virus is a single stranded RNA virus classified into four groups of serotype in the Flaviridae family which are DENV-1, DENV-2, DENV-3, and DENV-4. *Aedes aegypti* mosquito is the main vector of transmission in the dengue virus and urban environments is the most common place of transmission for dengue virus Teixeira et al. (2009). The relationship between the vector and the host increases the attractiveness of transmission Monath, 1997. Clinical features of dengue fever among children are usually symptomless and are commonly presented with acute pyrexia, which is a common sign of illness caused by a virus or bacteria. In the event of an acute infection of the dengue virus, the disease can bear severe consequences and can result in death at the end stage of infection. In the result of a study in Thailand from year 1962-1964, it is important in treating the dengue fever cases (WHO, 1975, 1997). In dengue hemorrhagic fever,

clinical manifestation are commonly present with changes and weak pulse rates and small pulse pressure less than 20mm Hg (2.7kPa) (WHO, 1997).

There are many signs and symptoms of dengue fevers due to prolonged febrile periods such as headache, myalgia, arthralgia, skin rash and low in platelet count. During the third to seventh day of infection, warning signs of dengue fever can occur such as vomiting, abdominal discomfort, breathing discomfort, lethargy and bleeding spontaneously. According to Kittigul et al. (2007), there are differences in clinical features among adults and children. In adults, the signs and symptoms commonly are headache, myalgia, nausea and vomiting. However in children, epistaxis, oliguria and hepatomegaly are also common.

The treatment for the dengue fever cases are usually fluid replacement therapy specifically in dengue hemorrhagic fever and dengue shock syndrome. According to Nimmannitya 1987, therapeutic treatments are suggested in early clinical stages of dengue fever. Treatment for dengue fever in out patient clinics includes antipyretic which is given to control fever.

Management of dengue fever in ward specifically includes intravenous crystalloid and plasma replacement in third space plasma leakage Wills et al. (2005). In severe cases with pulse rate less than 10 mmHg, patient is admitted to the intensive care unit for close monitoring treatment with rapid intravenous colloids solution Smart et al. (2009).

2.5 Knowledge of dengue fever

Aedes aegypti and *Aedes albopictus* are vectors related to the group of flaviviruses and to the transmission of dengue fever (Hawley, 1988). Commonly two groups of dengue mosquitos are known to bite humans during indoor activities. According to Kouri et al. (1987), there are high percentages of dengue cases when there is a high population of vectors especially in crowded places with people. The place for mosquito dengue breeding is usually inside the home (Hamady Dieng et al., 2010). Dengue fever can occur a second time when people get the first infection from dengue virus. The second time of infection is more severe. Educating people with health education and encouraging public to participate in prevention of dengue are important roles among government and all people of Malaysian in all the programmes about dengue (Wan Rozita et al., 2006). Vectors of dengue fever usually can stay alive in clear water from the growth of larvae to a matured female mosquito.

Time management in prevention of mosquito bites must be considered especially in detecting the active period of these insects because people must not be alert during the night time only as they can get dengue fever at any time (Nadiha Ahmed et al., 2008). A lot of sources of information regarding dengue fever are derived from television, newspaper, radio, poster, internet, books and campaign. All people can get fast and easy information through all the right sources about dengue fever.

One study was done to explore the relationship between dengue fever knowledge and *Aedes eagypti* breeding in St Catherine Parish, Jamaica: a pilot study of enhanced low-cost surveillance was done by Stoler et al. (2011), found that respondents have good knowledge in this study.

2.6 Attitude towards dengue fever

Attitude is one of the important roles to prevent dengue cases from increasing. There are many types of attitudes among people in Malaysia such as positive, negative and neutral feelings about dengue fever. Negative attitude can leave a big impact in dengue fever cases when people cannot give full commitment and co-operation in destroying dengue transmission. All people in Malaysia have an important role in managing the disease and avoiding the outbreak. In Malaysia's situation today, ignorance about the disease is one of the normal attitudes amongst people who live in Malaysia especially in urban and crowded areas. A study done by Nalongsack et al. 2009, found that majority of the respondents in this study had a good attitude and believed that dengue fever can be treated and sought medical consultation when diagnosed with dengue fever.

2.7 Preventive practices of dengue fever

A preventive practice of dengue fever is one of the important aspects in controlling the dengue pandemic. Practices of dengue control among people in Malaysia are by using mosquito spray, cleaning garbage bins, parents requesting their children to wear long sleeves or pants. According to Wan Norafikah Othman et al. (2010), preventive practices by using various chemical insecticides such as pyrethroids is one of the steps to control the vector of dengue from spreading. In Kuala Lumpur, pyrethroids are used broadly in dengue vector control. Vaccine in dengue fever is one of the alternatives to prevent the dengue virus among patients who are diagnosed with dengue fever.

According to Halsted 2008, clinical trials of dengue vaccine took place in phase II or III. Phase II assessment of dengue vaccine showed that the vaccine must be followed up for two to three years to prevent dengue fever. Phase III is still in the developing process. Ministry of Health launched a campaign, “Communication For Behavioural Impact” (COMBI) to increase practices among people in Malaysia and decrease total number of dengue fever cases in Malaysia.

3.2 Study design

The study of knowledge and use of prevention measures related to dengue in northern Thailand was done by Benthem et al. (2002), found that majority of the respondents was knowledgeable but some respondents have insufficient knowledge. In this study, it suggested that the group with insufficient knowledge must have a health education programme regarding dengue fever. According to Wangroongsarb 1997, the effectiveness of the preventive measures to control dengue fever cases is magnified by encouraging people to join in the controlling dengue programme.

According to Phuanukoonmoon et al. (2006), a similar study done in Malaysia and Northeast Thailand found that there was a deficiency between knowledge and practice among their people.

RESEARCH METHODOLOGY

3.1 Study location

This study was conducted at the Outpatient Department (OPD), Hospital Kuala Lumpur (HKL).

3.2 Study design

Study design was a cross-sectional study. A cross-sectional study was done to assess the level of knowledge, attitude and preventive practices amongst out patients at the Outpatient Department (OPD). Most patients were coming to the Outpatient Department (OPD) for their first time visiting.

3.3 Sampling Frame

Respondents who were suspected in having dengue fever came for the medical consultation and were able to give full co-operation for this study from 16 January 2012 until 31 March 2012.

3.4 Study population

Respondents who were having fever symptoms at the Outpatient Department were the population of the study.

3.5 Sampling unit

One respondent at the Outpatient Department (OPD), Hospital Kuala Lumpur.

3.6 Sampling technique

Universal sampling was used in this study.

3.7 Sample size calculation

The Rubinson and Neuten 1987 formula, for estimation of sample size.

$$N = (z/e)^2(p)(1-p)$$

$$N = \text{Sample size}$$

$$Z = \text{Standard score corresponding to a given confidence level}$$

$$e = \text{The promotion of sampling error in a given situation}$$

$$p = \text{Prevalence of dengue fever cases in Malaysia in 2010 is}$$

46.1% (Disease Control Division, Ministry of Health, 2010).

In this study, 95% confidence level of $z = 1.68$ is use, and 5% sampling error ($e = 0.05$).

$$N = (z/e)^2(p)(1-p)$$

$$N = (1.68/0.05)^2 (0.461) (1 - 0.461\%)$$

$$= (33.6)^2 (0.461) (1 - 0.461)$$

$$= (1128.96) (0.461) (0.539)$$

$$= (1128.96) (0.248479)$$

$$= 280 \text{ respondents with the allowance of 10\% from 280 respondents}$$

Therefore, the estimate sample size required for this study was 308 respondents

3.8 Inclusion criteria

All respondents with fever symptoms who were suspected of having dengue fever attended the Outpatient Department (OPD), Hospital Kuala Lumpur from 16 January 2012 until 31 March 2012. Respondents were co-operative in this study. Respondents were able to answer the questions in Malay and English.

3.8.1 Exclusion criteria

Respondents in critical ill conditions who were coming in for second time for medical treatment and having difficulty to read the questions.

3.9 Instruments and data collection

A structured questionnaire was used in this study. A structured questionnaire adapted from KAP Study on Dengue Fever & *Aedes* Mosquito among Selected Rural Communities in Kuala Kangsar, *Asia-Pacific Journal of Public Health*, and Farizah et al. (2003). A structured questionnaire consists of four parts. Section A has socio-demographic characteristics, section B is on knowledge about dengue fever and *Aedes* mosquito, section C is on attitudes towards dengue fever and section D is on preventive practices of dengue fever.

Sections B there were 9 questions in this part and will be asked to know the knowledge about dengue fever which includes knowledge on dengue fever, and knowledge on *Aedes*. Each questions had two or three choices.

Section C includes the attitude of the patients towards dengue fever. Each question had two or three choices.

Section D includes the preventive practices of dengue fever. Each question had two or three choices.

Every question was analysed individually. The questions were assessed by using a scoring system based on the knowledge, attitude and preventive practices of dengue fever. For each question, a point would be given and the points for each section were totaled up and with arbitrary cut-off point from knowledge scores, attitude scores and preventive practices scores. Therefore different cut-off points were obtained for knowledge, attitude and preventive practices to indicate whether the level is good or poor.

3.9.1 Validity and Reliability

3.9.2 Validity

Validity is the test which measures the desired performance and appropriate inferences which can be drawn from the result.

3.9.3 Reliability

Reliability is the measurement tool for an assessment instrument. The instrument should yield similar results overtime with similar population circumstances.

3.9.4 Data collection

Data collection was conducted at the Outpatient Department, HKL. The data collection started at 16 January 2012 until 31 March 2012. Respondents were provided with an information sheet regarding the study title, introduction, what will respondents have to do, who should not enter in this study, what will be the benefits of the study to the respondents and the investigator, risk, confidential information and person's contact if respondents have additional questions during this study.

3.9.5 Data analysis

Data was analysed using the Statistical Package for Social Science (SPSS). Descriptive statistics was used to synthesize and describe the data on socio-demographic characteristics (age, gender, race, marital status, education and occupation). Descriptive statistics was also used to describe data of knowledge, attitude and preventive practices of dengue fever.

3.9.6 Ethical consideration

Permission of this study was obtained from Medical Research Ethics Committee, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia and from Medical Research Ethics Committee, Ministry of Health, Malaysia. In confidentiality, the questionnaire was analysed in anonymity, name of respondents will not be revealed and answered questionnaires will be kept safely in the drawer at the supervisor's office.

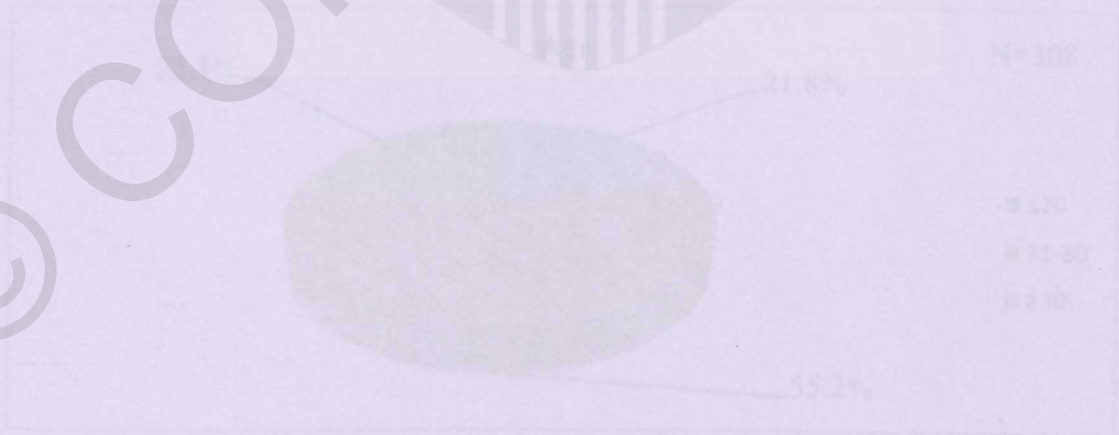


Figure 7: Distribution of respondents according to age in years

3.9.5 Data analysis

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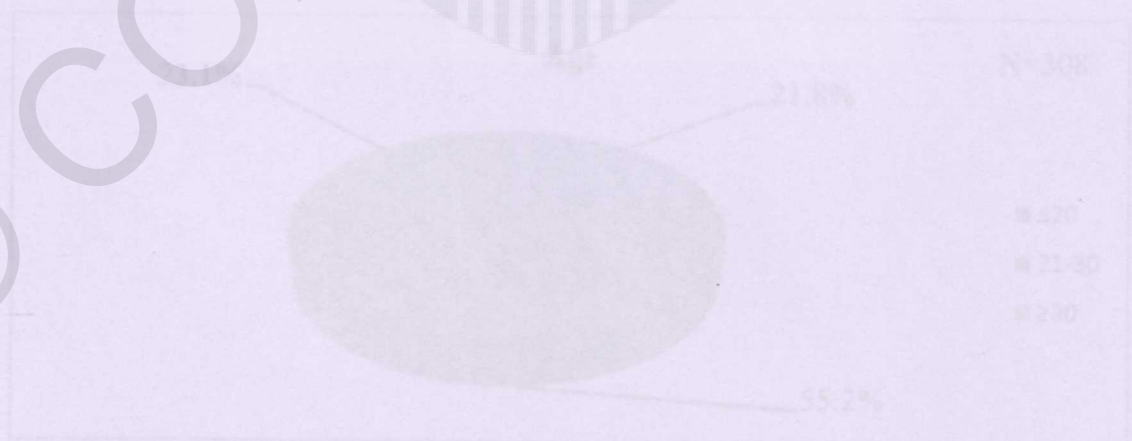


Figure 1: Distribution of respondents according to age in years

CHAPTER IV

RESULTS

4.0 RESULTS

There was a total number of 308 respondents who were attending Outpatient Department at Hospital Kuala Lumpur. The 308 number of respondents were able to fully participate in the process of data collection.

4.1 Socio-demographic Characteristics

4.1.1 Age

The mean age of the 308 respondents was 27 years (SD= 9.83, Range = 21-30). The age was grouped into three groups. The groups are less than 20 years, 21-30 years and more than 30 years. Figure 1 shows that the majority of the participants, 170 (55.2%) fall into the group of 21-30 years, 67 (21.8%) of them in the group less than 20 years and more than 30 years was 71 (23.1%).

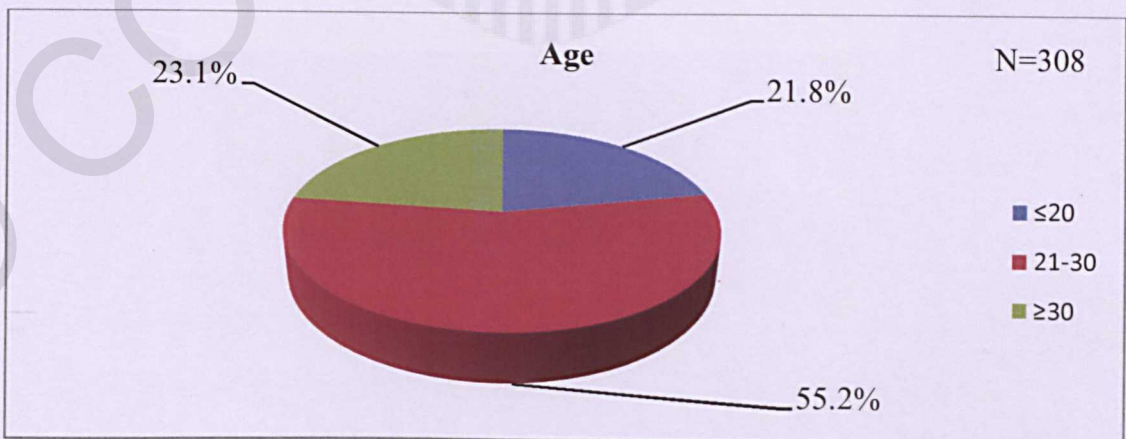


Figure 1: Distribution of respondents according to age in years

4.1.2 Gender

Figure 2 shows that the male respondents were 141 (45.8%) and female was 167 (54.2%).

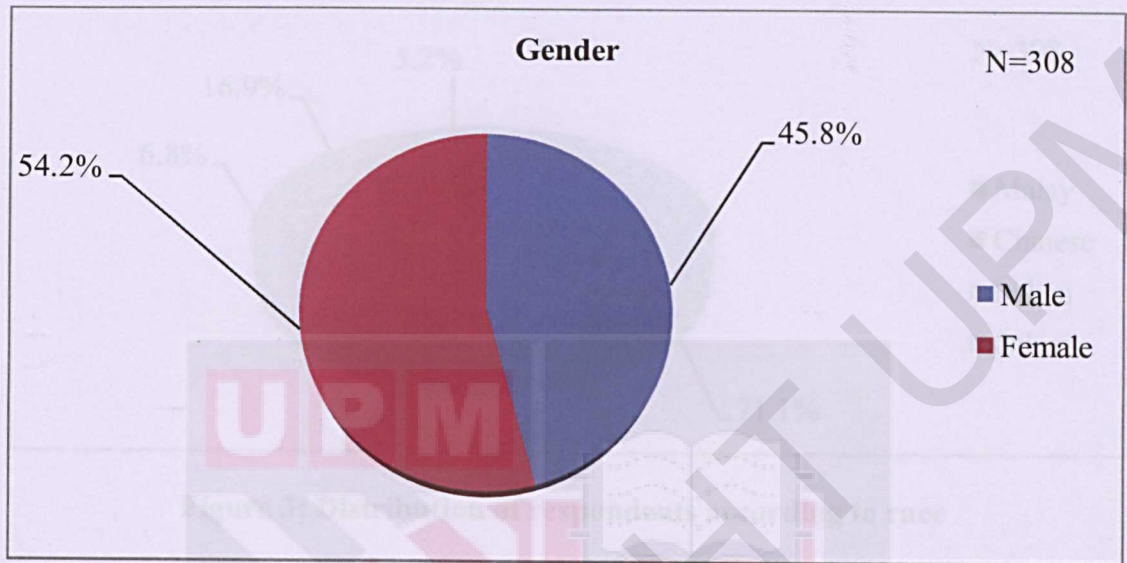


Figure 2: Distribution of respondents according to gender

4.1.4 Marital Status

Figure 4 shows that majority of respondents showed that 199 (64.6%) were non-married individuals and married was 109 (35.4%).

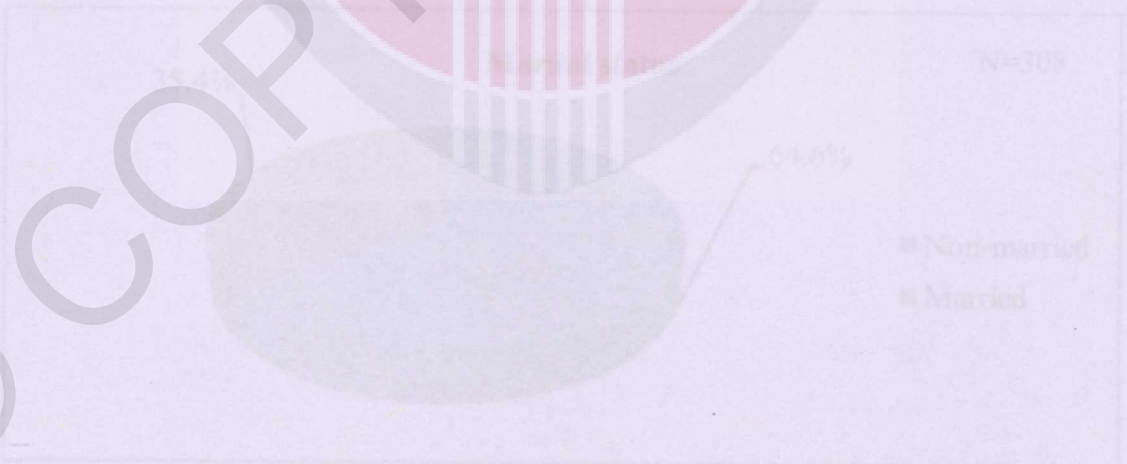


Figure 4: Distribution of respondents according to marital status

4.1.3 Race

Figure 3 shows that the majority of respondents were Malay 219 (71.1%), followed by Indian 52 (16.9%), Chinese 21 (6.8%) and others 16 (5.2%).

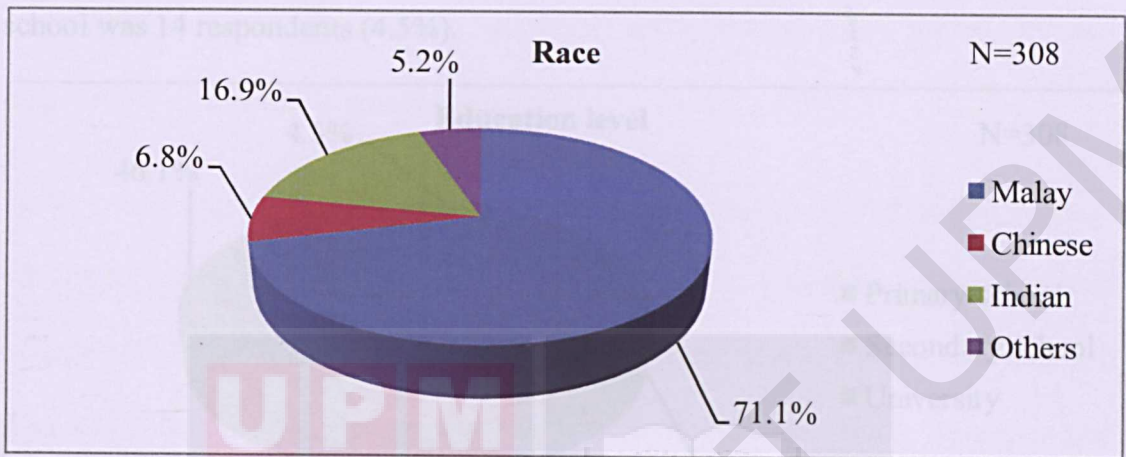


Figure 3: Distribution of respondents according to race

4.1.4 Marital Status

Figure 4 shows that majority of the respondents showed that 199 (64.6%) were non-married individuals and married individuals was 109 (35.4%).

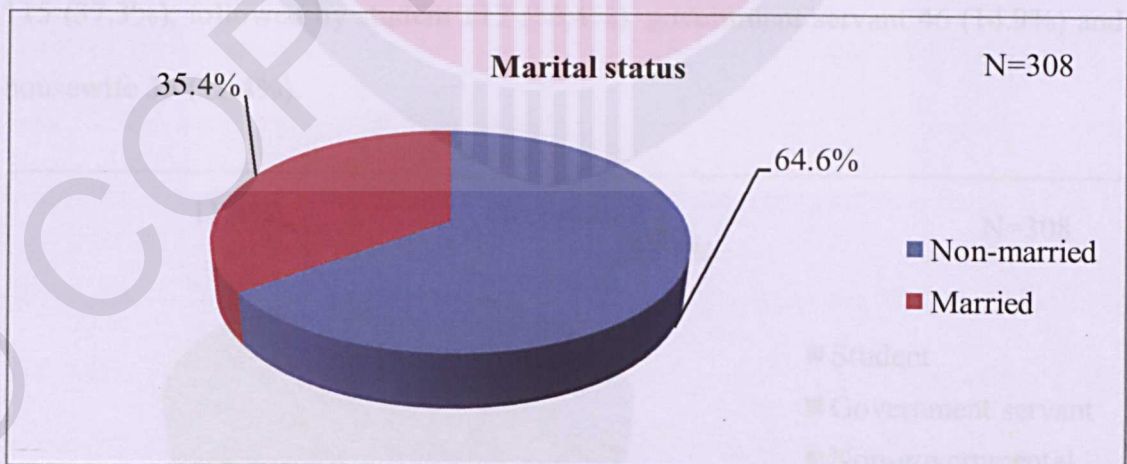


Figure 4: Distribution of respondents according to marital status

4.1.5 Education level

Figure 5 shows that 152 respondents (49.4%) had obtained secondary level of education, followed by university education which was 142 (46.1%) and primary school was 14 respondents (4.5%).

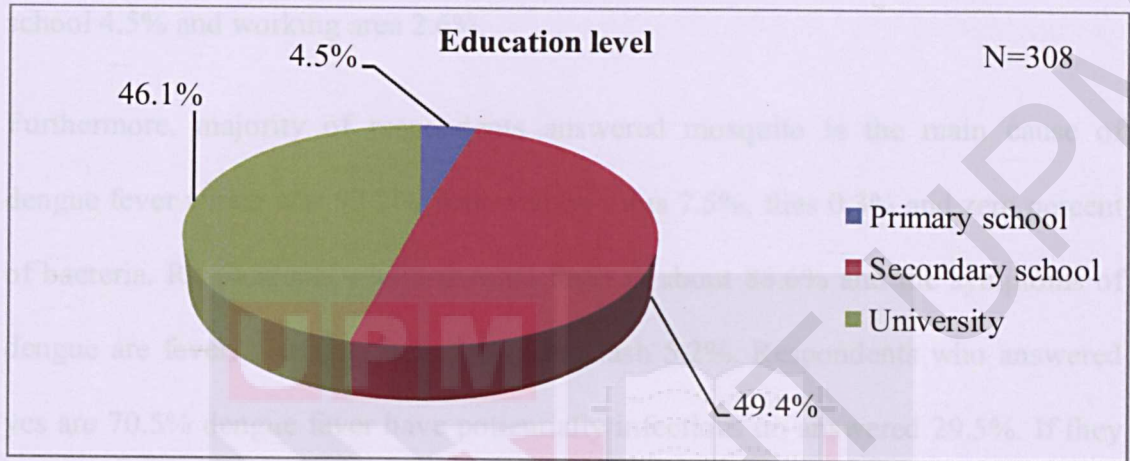


Figure 5: Distribution of respondents according to education level

4.1.6 Occupation

Figure 6 shows that the majority of respondents are non-governmental employees 115 (37.3%), followed by student 112 (36.4%), government servant 46 (14.9%) and housewife 35 (11.4%).

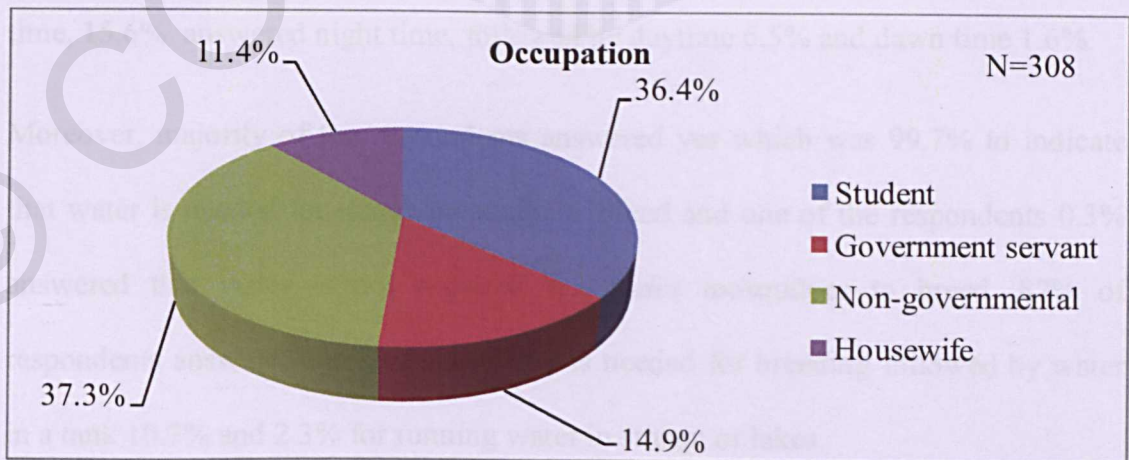


Figure 6: Distribution of respondents according to occupation

Table I shows that majority of respondents which is 66.9% have received information regarding dengue and 33.1% of respondents have not received any information regarding dengue fever. The main source of information is television 35.1%, followed by hospital 7.8%, newspaper 6.8%, internet 5.2%, poster 4.9% and school 4.5% and working area 2.6%.

Furthermore, majority of respondents answered mosquito is the main cause of dengue fever which was 92.2%, followed by virus 7.5%, flies 0.3% and zero percent of bacteria. Respondents who answered fever is about 88.6% and the symptoms of dengue are fever, bleeding gums 6.2% and rash 5.2%. Respondents who answered yes are 70.5% dengue fever have potentially infectious no answered 29.5%. If they answered yes by respondents, they should answer how the dengue fever was transmitted. *Aedes* mosquitoes 58.4%, mosquitoes 8.4%, airborne 1.9%, water borne 1.6% and flies zero percent.

There are six questions in the section of knowledge on *Aedes* mosquitoes. 95.8% of respondents answered that they heard about *Aedes* mosquito and 4.2 % have not heard of *Aedes* mosquito. Respondents who answered dusk and dawn is at 41.2% which is the time *Aedes* mosquito came out to feed and bite, 35.1% answered dusk time, 15.6% answered night time, followed by daytime 6.5% and dawn time 1.6%.

Moreover, majority of the respondents answered yes which was 99.7% to indicate that water is needed for *Aedes* mosquito to breed and one of the respondents 0.3% answered that water is not required for *Aedes* mosquitoes to breed. 87% of respondents answered that stagnant water is needed for breeding followed by water in a tank 10.7% and 2.3% for running water in stream or lakes.

There were several ways which were answered by respondents in preventing of *Aedes* breeding. Cleaning the compound of water holding items 62.7%, covering stored water 16.9%, not storing water in home compound 11.4% and regularly changing stored water 9.1%. Majority of the respondents have knowledge of having *Aedes* larvae in the compound which is against the law while 11.4% gave an opposite view.

Question	Frequency (n)	Percentage (%)
1. Have you received any information regarding <i>Aedes</i> larvae in the compound which is against the law	108	35.1
Yes	102	33.3
No	6	1.9
1. A) If yes, please state your main source of information		
Television	105	34.1
Working area	6	1.9
Hospital	24	7.8
Newspaper	21	6.8
Internet	16	5.2
Poster	1	0.3
School	1	0.3
2. What causes of dengue fever		
Virus	10	3.3
Mosquitoes	274	89.2
Bacteria	0	0.0
Flier	0	0.0
3. What are the symptoms of dengue fever		
Fever	273	88.6
Bleeding gums	19	6.2
Rash	16	5.2
4. Is dengue fever potentially infectious		
Yes	217	70.5
No	91	29.5
4. A) If yes, how is it transmitted		
Mosquitoes	26	8.4
<i>Aedes</i> mosquitoes	150	48.4
Airborne	6	1.9
flies	0	0.0
Waterborne	5	1.6
5. Have you heard of <i>Aedes</i> mosquito		
Yes	295	95.5
No	11	3.5

4.2 Table I: Distribution of knowledge about dengue fever of respondents (n=308)

Question	Frequency (n)	%
1. Have you received any information regarding dengue fever		
Yes	206	66.9
No	102	33.1
1. A) If yes, please state your main source of information		
Televisyen	108	35.1
Working area	8	2.6
Hospital	24	7.8
Newspaper	21	6.8
Internet	16	5.2
Poster	15	4.9
School	14	4.5
2. What causes of dengue fever		
Virus	23	7.5
Mosquitoes	284	92.2
Bacteria	0	0.0
Files	1	0.3
3. What are the symptoms of dengue		
Fever	273	88.6
Bleeding gums	19	6.2
Rash	16	5.2
4. Is dengue fever potentially infectious		
Yes	217	70.5
No	91	29.5
4.A) If yes, how is it transmitted		
Mosquitoes	26	8.4
Aedes mosquitoes	180	58.4
Airbone	6	1.9
Flies	0	0.0
Water borne	5	1.6
5. Have you heard of Aedes mosquito		
Yes	295	95.8
No	13	4.2

6. Do you know what time of the day does Aedes mosquito come out to feed/bite

Dusk	108	35.1
Dawn	5	1.6
Dusk & dawn	127	41.2
Daytime	20	6.5
Night time	48	15.6

7. Is water needed for Aedes mosquito to breed

Yes	307	99.7
No	1	0.3

7. A) If yes, what kind of water

In a tank	33	10.7
Stagnant water	268	87
Running water (streams/lakes)	7	2.3

8. What are the ways to prevent Aedes breeding

Not storing water in home compound	35	11.4
Cleaning the compound of water holding items	193	62.7
Covering stored water	52	16.9
Regularly changing stored water	28	9.1

9. Do you know that having an Aedes larvae in your compound is against law

Yes	273	88.6
No	35	11.4

Table II shows that the Distribution of attitude towards dengue fever of respondents. Majority of respondents which was 97.4% considered dengue fever as a serious illness. 2.6% did not consider dengue fever as a serious illness. 98.1% of the respondents decided to have medical consultation and treatment if they had symptoms of dengue fever while 1.9% answered it was not necessary to seek treatment.

In a statement of prevention and treatment of dengue fever, majority of the respondents which was 85.7% answered that prevention is better than treatment and 14.3% answered that treatment is better than prevention. 30.5% of the respondents choose refusal disposal or cleanliness to control *Aedes*, followed by changing stored water 27.9%, no water storage 25.6%, covering store water 8.1%, insecticide use 5.5% and 2.3% using abate.

Self responsibilities have higher percentage which was 50.3% in controlling and preventing *Aedes* breeding or dengue fever, sharing responsibilities 46.8% and 2.9% solely government. Majority of the respondents which was 97.4% were able to support activities by the health authorities to eradicate *Aedes* mosquitoes and a minority of 2.6% respondents were unable to give any support to any activities. 89.6% of the respondents think that legal punishment is suitable for people who breed larvae within their compound and minority of the respondents think that illegal punishment is not suitable.

4.3 Table II: Distribution of attitude towards dengue fever of respondents (n=

308)

Question	Frequency (N)	%
1. Do you consider dengue fever as a serious illness		
Yes	300	97.4
No	8	2.6
2. Do you think you should seek treatment if you have symptoms of dengue fever		
Yes	302	98.1
No	6	1.9
3. Which is better, prevention or treatment of dengue fever		
Prevention	264	85.7
Treatment	44	14.3
4. Out of all the method that were employed to control <i>Aedes</i> , which is the most effective		
Refusal disposal/cleanliness	94	30.5
Insecticide use	17	5.5
Changing stored water	86	27.9
No water storage	79	25.6
Use abate	7	2.3
Covering stored water	25	8.1
5. Who is responsible to control/prevent <i>Aedes</i> breeding/dengue fever		
Self	155	50.3
Solely government	9	2.9
Shared	144	46.8
6. Would you support any activities organised by the health authorities to eradicate <i>Aedes</i>		
Yes	300	97.4
No	8	2.6
7. Do you think is appropriate to legally punish those who were found to breed larvae within their compound		
Yes	276	89.6
No	32	10.4

Table III shows the distribution of preventive practices of dengue fever of respondents. All respondents 100% have not stored water in their compound. 45.5% of respondents change water frequently to prevent breeding of larvae, 31.2% use cover storage tanks and 23.4% were using abate.

Majority of the respondents 45.5% were using mosquito coils to prevent mosquito breeding of larvae bite, followed by spraying insecticide 31.8%, use window netting 24% and use repellants 10.4%. All of the respondents who answered local authorities took measures to prevent mosquito breeding such as fogging 44.5%, house to house inspection 31.2%, awareness campaign 16.6% and providing appropriate waste disposal facilities or services 7.8%.

4. Did the local authorities take measures to prevent mosquito breeding?		
Yes	0	100
No	0	0
5. What are the measures taken by local authorities to prevent mosquito breeding?		
Fogging	44.5	
House to house inspection	31.2	
Awareness campaign	16.6	
Providing appropriate waste disposal facilities or services	7.8	

4.4 Table III: Distribution of preventive practices of dengue fever of respondents (n= 308)

Question	Frequency (n)	%
1. Do you store water in your compound		
Yes	0	0
No	308	100
2. What are the ways you have employed to prevent breeding of larvae		
Changing water frequently	140	45.5
Using abate	72	23.4
Cover storage tanks	96	31.2
3. What are the measures taken to prevent mosquito bites		
Mosquito coils	104	33.8
Spraying insecticides	98	31.8
Window netting	74	24.0
Repellants	32	10.4
4. Did the local authorities take measures to prevent mosquito breeding		
Yes	308	100
No	0	0
5. What are the measures employed		
Fogging	137	44.5
House to house inspection	96	31.2
Awareness campaign	51	16.6
Providing appropriate waste disposal facilities or services	24	7.8

Table IV shows that the 233 (75.6%) respondents had good knowledge and 75(24.4%) had poor knowledge. The mean level of knowledge is 7.11 and standard deviation is 1.30. Level of attitude had 79 (25.6%) respondents poor attitude and 229 (74.4%) had good attitude. The mean level of attitude is 6.62 and standard deviation is 0.76. The level of preventive practices of respondents was 281 (91.2%) good and 27 (8.8%) was poor. The mean of preventive practices is 4.37 and the standard deviation is 0.64.

4.5 Table IV: Level of knowledge, attitude and preventive practices of dengue fever (n=308)

Variables	N	%	Mean	SD
Knowledge			7.11	1.30
Poor (2-6)	75	24.4		
Good (7-9)	233	75.6		
Attitude			6.62	0.76
Poor (2-6)	79	25.6		
Good (7)	229	74.4		
Preventive Practices			4.37	0.64
Poor (3)	27	8.8		
Good (4-5)	281	91.2		

Table V shows the relationship between socio-demographic and knowledge of dengue fever. The Chi²-square test was performed to analyze the relationship between socio-demographic and knowledge of dengue fever. There is a significant difference between gender and knowledge of dengue fever ($p = 0.041$). Female had good knowledge 134 (80.2%) compared with male 99 (70.2%). Male had poor knowledge 42 (29.8%) and female 33 (19.8%).

There is a significant relationship between race and knowledge of dengue fever ($p = 0.000$). Malay have a good knowledge 180 (82.2%), Indian 26 (50.0%), Chinese 15 (71.4%), and Others 12 (75.0%). Malays represents the majorities who have poor knowlegde 39 (17.8%), followed by Indians 26 (50.0%), Chinese 6 (28.6%), and Others 12 (25.0%). Education levels have significant relationship with the knowledge of dengue fever ($p = 0.042$). Majority of the respondents have good education level compared with poor levels of knowledge.

4.6 Table V: Relationship between socio-demographic and knowledge of dengue

fever (n=308)

Variables	Level of Knowledge		x ²	p
	Poor n (%)	Good n (%)		
Age			0.986	0.681
≤20	17(5.5)	50(16.2)		
21-30	38(12.3)	132(42.8)		
≥31	20(6.5)	51(16.5)		
Gender			4.172	0.041*
Male	42(13.6)	99(32.1)		
Female	33(10.7)	134(43.5)		
Race			23.867	0.000*
Malay	39(12.6)	180(58.4)		
Chinese	6(1.9)	15(4.8)		
Indian	26(8.4)	26(8.4)		
Others	4(1.2)	12(3.8)		
Marital status			0.000	0.999
Non-married	47(15.2)	146(47.4)		
Married	28(9.1)	87(28.2)		
Education level			6.330	0.042*
Primary school	7(2.2)	7(2.2)		
Secondary school	39(12.6)	113(36.6)		
University	29(9.4)	113(36.6)		
Occupation			2.345	0.504
Student	30(9.7)	82(26.6)		
Government servant	8(2.5)	38(12.3)		
Non-governmental	30(9.7)	85(27.5)		
Housewife	11(3.5)	24(7.7)		

* p < 0.05

Table VI shows the relationship between socio-demographic factors and attitudes towards dengue fever. The Chi – square test was performed to analyze the relationship between socio-demographic factors and attitude towards dengue fever. There is a significant relationship between age in years and attitude towards dengue fever ($p = 0.038$). Those age between twenty one to thirty years had a good attitude 134 (78.8%) compare with those aged below twenty 42 (62.7%).

Majority of those among twenty one to thirty years had poor attitude 36 (21.2%) and a small quantity of them had poor attitude 18 (25.4%) among those aged more than thirty years. There is a significant relationship between race and attitude towards dengue fever ($p = 0.000$). Malays who have good attitude are 183 (83.6%), Indians 19 (36.5%), Chinese 14 (66.7%), and Others 13 (81.3%). The Malay race is among the majority of races to have poor attitude 36 (16.4%), followed by Indians 33 (63.5%), Chinese 7 (33.3%), and Others 3 (18.8.0%). Education level have a significant relationship with knowledge of dengue fever ($p = 0.001$). Majority of respondents have university education level compared to primary school education level.

4.7 Table VI: Relationship between socio-demographic and attitude towards

dengue fever (n=308)

Variables	Level of Attitude of dengue fever		x ²	p
	Poor n (%)	Good n (%)		
Age			6.567	0.038*
≤20	25(8.1)	42(13.6)		
21-30	36(11.6)	134(43.5)		
≥31	18(5.8)	53(17.2)		
Gender			0.002	0.965
Male	36(11.6)	105(34.1)		
Female	43(13.9)	124(40.2)		
Race			49.778	0.000*
Malay	36(11.6)	183(59.4)		
Chinese	7(2.2)	14(4.5)		
Indian	33(10.7)	19(6.1)		
Others	3(0.9)	13(4.2)		
Marital status			0.893	0.0345
Non-married	46(14.9)	147(47.7)		
Married	33(10.7)	82(26.6)		
Education level			14.266	0.001*
Primary school	5(1.6)	9(2.9)		
Secondary school	52(16.8)	100(32.4)		
University	22(7.1)	120(38.9)		
Occupation			2.345	0.504
Student	30(9.7)	82(26.6)		
Government servant	8(2.5)	38(12.3)		
Non-governmental	30(9.7)	85(27.5)		
Housewife	11(3.5)	24(7.7)		

*p < 0.05

Table VII shows the results of relationship between socio-demographic and preventive practices of dengue fever among the respondents which found out that there was no significant relationship between socio-demographic and age in years ($p = 0.858$), no significant relationship between socio-demographic and gender ($p = 0.884$), no significant relationship between socio-demographic and race ($p = 0.458$), no significant relationship between socio-demographic characteristics and marital status, no significant relationship between socio-demographic and education level ($p = 0.365$), and no significant relationship between socio-demographic factors and occupation ($p = 0.571$).

Variables	Preventive practices	Chi-Square	P-Value
Age	129(41.8)	152(49.3)	0.858
Gender	129(41.8)	152(49.3)	0.884
Female	129(41.8)	152(49.3)	
Race	129(41.8)	152(49.3)	0.458
Malay	129(41.8)	152(49.3)	
Chinese	129(41.8)	152(49.3)	
Indian	129(41.8)	152(49.3)	
Others	129(41.8)	152(49.3)	
Marital status	129(41.8)	152(49.3)	0.399
Non-married	129(41.8)	152(49.3)	
Married	129(41.8)	152(49.3)	
Education level	129(41.8)	152(49.3)	0.365
Primary school	129(41.8)	152(49.3)	
Secondary school	129(41.8)	152(49.3)	
University	129(41.8)	152(49.3)	
Occupation	129(41.8)	152(49.3)	0.571
Student	129(41.8)	152(49.3)	
Government	129(41.8)	152(49.3)	
Non-governmental	129(41.8)	152(49.3)	
Housewife	129(41.8)	152(49.3)	

4.8 Table VII: Relationship between socio-demographic and preventive practices of dengue fever (n=308)

Variables	Level of preventive practices of dengue fever		χ^2	p
	Poor n (%)	Good n (%)		
Age			0.306	0.858
≤ 20	7(2.2)	60(19.4)		
21-30	14(4.5)	156(50.6)		
≥ 31	6(1.9)	65(21.1)		
Gender			0.021	0.884
Male	12(3.8)	129(41.8)		
Female	15(4.8)	152(49.3)		
Race			2.595	0.458
Malay	19(6.1)	200(64.9)		
Chinese	2(0.6)	19(6.1)		
Indian	3(0.9)	49(15.9)		
Others	3(0.9)	13(4.2)		
Marital status			1.647	0.199
Non-married	20(6.4)	173(56.1)		
Married	7(2.2)	108(35.1)		
Education level				
Primary school	2(0.6)	12(3.8)		
Secondary school	10(3.2)	142(46.1)		
University	15(4.8)	127(41.2)		
Occupation			2.009	0.571
Student	13(4.2)	99(32.1)		
Government servant	4(1.2)	42(13.6)		
Non-governmental	8(2.5)	107(34.7)		
Housewife	2(0.6)	33(10.7)		

*p < 0.05

CHAPTER V

DISCUSSION AND CONCLUSION

5.1 Discussion

In this chapter, the findings of the study are discussed. In this discussion, it includes the descriptive findings of socio-demographic characteristics (age, gender, race, marital status, education level, occupation and level of knowledge, attitude, and preventive practices of dengue fever.) The relationship between socio-demographic characteristics with knowledge, attitude and preventive practices of dengue fever will be discussed in relation with its major findings and their significant. The conclusion and recommendation will be also included in this chapter.

5.2 Characteristics of socio-demographic

In this study, the mean age of respondents was 27 years old with (SD±9.83). In addition, this study noted that majority of the respondents were in similar age groups according to Kyu et al. (2005) which the majority of them were 21 to 30 years old. Majority of the respondents in this study were female 54.2% and 45.8% were males. This study also found that 71.1% were Malays who encompassed the majority of the respondents who participated followed by Indian 16.9%, Chinese 6.8%, and Others 5.2%. It is a contrast compared to a study by Naing et al. (2011) Chinese were the majority of the respondents followed by Indian, Malays and Others.

Furthermore, in terms of marital status, majority of the respondents were non-married 64.6% and married were 35.4%. It contrasts compared to a study by Shuaib et al. (2010) majority of the respondents were married 57.2% and single 42.8%. This is because many cases of dengue fever happened in young people and single individuals.

In addition, in terms of education levels, majority of the respondents finished secondary school 49.4% followed by respondents who were graduates 46.1%, and primary school with 4.5%. In contrast, a study done by Itrat et al. (2008) found that majority of respondents were graduates 21%.

In this study, 37.3% of the respondents were private sector workers followed by students 36.4%, government servants 14.9%, and housewives 11.4%. This is similar to the study by Madiha et al. (2010) the majority of respondents were non-governmental employees 28.5%.

5.3 Level of knowledge, attitude and preventive practices of dengue fever

In this study, 75.6% of the respondents had good knowledge about dengue fever. This might be because people well absorb all the information they got and remembered most of the information. The result of this study is similar to a study done by Farizah et al. (2003) which found that 68.5% of the respondents had good knowledge of dengue fever. The minority of the respondents had poor knowledge 24.4% which is similar with a study done by Nahida & Taneepanichskul (2008) that found that 46% had low levels of knowledge of dengue fever.

Furthermore, majority of the respondents who participated in this study had good attitude 74.4% and 25.6% had poor attitude. The findings indicate that majority of the respondents gave full co-operation to the health authorities in any programme in destroying dengue fever. The result of this study is similar to a study done by Farizah et al. (2003) found that 91.5% had a good attitude towards dengue control.

In this study, it found that majority of the respondents had good preventive practices of dengue fever which was 91.2% and 8.8% were poor. This may be because more respondents had adequate health education programmes for the prevention and control of dengue in their home. The study done by Nantawong & Talungpetch (2000) in a primary school in Muang District, NakhonSrihammarat Province showed that the experimental group of the students had improved their knowledge regarding preventive practices at their home and school with the result of ($p \leq 0.01$).

5.4 Relationship between socio-demographic and knowledge of dengue fever

In this study, the relationship between socio-demographic characteristics and knowledge of dengue fever was found and this includes age, gender, race, marital status, education level and occupation and there is a significant relationship between the two variables. The findings of this study show that there were statistically significant differences in the male gender that had 29.8% poor levels of knowledge and 70.2% who had good levels of knowledge and females who had 19.8% poor levels of knowledge.

This study found that Malays who had good levels of knowledge was 82.2% and a poor level of knowledge was 17.8% compared with other races. Indians who had 50% of good levels of knowledge and those with poor knowledge was 50% followed by the Chinese race who had 71.4% good levels of knowledge compared with those with poor levels of knowledge at 28.6% and Others had 75% good levels of knowledge and 25% had poor levels of knowledge. In addition, the similarity was seen in a study by Tram et al. (2003) post impact of health education on mother's knowledge, attitude and practice of dengue haemorrhagic fever significantly improve their knowledge.

In this study, majority of the respondents attending to the study area have good levels of education. Respondents who had secondary school background contributed to the good levels of knowledge 79.6% and poor levels 25.7% and similarly with respondents who graduated from university who had 79.6% good level of knowledge and 20.4% poor level.

Furthermore, primary schools have an equal result in good and poor level of knowledge at 50%. This is because majority of the respondents have high levels of knowledge regarding dengue fever in terms of education status.

5.5 Relationship between socio-demographic and attitude towards dengue fever

From this study, the results showed a significant relationship between age, gender, race, marital status, education level, occupation and attitude towards dengue fever. In this study, it shows that the respondents in the higher age category have good attitudes from twenty one to thirty years old which was 78.8%. Meanwhile, those aged of more than thirty years old had 74.6% good attitude and less than twenty years old had 62.7% good levels of attitude. In the poor levels of attitude, it

comprimeses of those aged among twenty one to thirty years old who had 21.2% followed by 37.3% in age of less than twenty years old and 25.4% in more than thirty years old.

Moreover, there was a similarity found in races and levels of attitude towards dengue fever. Majority of the Malays had high levels of attitude at 83.6% and 16.4% had poor levels of attitude, Indians had 36.5% of good levels of attitude and 63.5% had poor levels of attitude, Chinese had 66.7% of good levels of attitude and 33.3% had poor levels of attitude, and Others had 81.3% of good levels of attitude and 18.8% had poor levels of attitude towards dengue fever.

In education levels, most of the respondents in this study had good education backgrounds and had good levels of attitude. Majority of them graduated from universities. For that reason, a good level of education gave an impact on the attitude performance regarding dengue fever. Malay populations which had good levels of attitude were 83.6%. This was because majority of the Malay populations had past experiences being diagnosed with dengue fever.

In this study, many respondents who have qualifications from universities had good levels of education which was 84%. In contrast, the study done by Wiwatwarapong (1994) found that majority of the students in primary schools in Muang District, NakhonRachatsima Province had modest levels of attitudes towards the prevention and control of dengue fever. The similarity was found in a study done by Suwanna (1998) where attitude was signifanctly related to the health behaviours.

5.6 Relationship between socio-demographic characteristics and preventive practices of dengue fever

This study showed that socio-demographic characteristics did not have any relationship with preventive practices of dengue fever. In this study finding, it shows that there was no significant relationship between age and level of preventive practices of dengue fever. In addition, gender also has no significant relationship with the level of preventive practices. Race, marital status and education levels have shown no significant relationship with levels of preventive practices. The study done by Faizah et al. (2003) found that gender, age and occupation do not have any significant relationship with the practice of dengue fever.

5.7 Conclusion

This study was done successfully with 308 of the respondents who were able to participate during the data collection. The results of this study found that majority of the participants were Malay respondents because they were living in hot spot dengue areas which had increased number of hospitalizations related to dengue fever. This study also found that there is a strong significant relationship between socio-demographic characteristics (age, gender, race, marital status, education level and occupation) and knowledge of dengue fever. There is also a significant relationship between socio-demographic characteristics (age, gender, race, marital status, education level and occupation) and attitude towards dengue fever.

In addition, there are no significant relationship between socio-demographic characteristics and preventive practices of dengue fever in this study. In this study, it found that majority of the single respondents have experience and knowledge regarding dengue fever. Majority of respondents have good knowledge, attitude and preventive practices should also be aware and alert about the consequences of the dengue fever diseases.

5.1 LIMITATION AND RECOMMENDATION

5.1.1 Limitation

There are several limitations in this study. In this study, the attempt to obtain permission from Faculty Research Ethics Committee and Medical Research Ethics Committee, Ministry of Health took several days for approval. Delay of the approval did have an effect to the process of research. During the process of data collection, some respondents did not give their full commitment to participate in this study.

5.1.2 Recommendation

The results of this study found that majority of the respondents attended the Outpatient Department, Hospital Kuala Lumpur have good knowledge, attitude, and preventive practices of dengue fever. There are some recommendations for the respondents who have good and poor knowledge, attitude and preventive practices of dengue fever which is to take constructive efforts in lowering the total number of dengue cases in our populations.

Moreover, this study is important to enhance the health education on providing the awareness of dengue fever. Based on this study, people have good knowledge but do not implement the knowledge in their daily practices. Health education should be delivered in proper methods. For example, the knowledge from this study will be used to evaluate the effectiveness of the campaign programme of prevention in dengue fever.

In addition, enforcement of the law by the government should be done to reduce the incidences of dengue fever cases in the Malaysian populations. People in society should have awareness and give full co-operation to notify the health authorities if anyone has done a legal offense in their area. This legal enforcement would leave a good impact to society in decreasing the number of dengue cases.

Nevertheless, the health care workers should play their roles in a proactive way and be responsible to carry out the regular home visit in delivering health information and monitoring the hot spot area in controlling the spreading of dengue cases. Collaboration between health care workers such as nurses, assistant medical officers and health inspectors should be implemented in planning more programmes in prevention and combating dengue cases in our society.

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APPENDICES

Appendix I

Approval letter from Medical Research Committee Universiti Putra Malaysia

Kepada Sesiapa yang Berkaitan

Tuan/Puan,

PROJEK PENYELIDIKAN:

PATIENTS KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES OF DENGUE FEVER AT OUTPATIENT DEPARTMENT, HOSPITAL KUALA LUMPUR

PENYELIDIK: MOHD ALIF BIN ABD HALIM

PENYELIA: HAJI HUSNAH BINTI ABU RAMAH

Jawatankuasa Etik Penyelidikan Universiti Putra Malaysia, Fakulti Perubatan dan Sains Kesihatan telah meneliti cadangan penyelidikan ini dan mendapati bahawa penyelidikan ini tidak terdapat sebarang isu berkaitan aspek etika.

Fakulti tidak akan mengemukakan sebarang bantahan terhadap projek penyelidikan ini dan akan menyediakan semua maklumat yang diperlukan untuk projek ini.

Sekian, terima kasih.

BERILMU BERBAKTI

Yang benar,



PROFESOR DR. HAJIYAH YUSOFF
Pengerusi
Jawatankuasa Etik Penyelidikan Perubatan
Fakulti Perubatan dan Sains Kesihatan
Universiti Putra Malaysia

41, Jalan Putra - Ertida



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Appendix II

Letter to Hospital Kuala Lumpur

No. Bilangan : (MUR/PER/600-311/6-157187)
Tarikh : 7/12/2011

Y. Bng. Dato' Dr. Zariah bt. Mohd Zam
Pengerah,
Hospital Kuala Lumpur,
50586, Jalan Pahang,
Wilayah Persekutuan,
Kuala Lumpur.

Maklul,

Prof. Dr. Norliyah Osman
Dekan,
Fakulti Perubatan dan Sains Kesihatan,
Universiti Putra Malaysia,
43400 Serdang,
Selangor.

Y. Bng. Dato',

PERMOHONAN UNTUK MENJALANKAN PENYELIDIKAN DI HOSPITAL KUALA LUMPUR

Dengan segala hormatnya merujuk kepada perkara di atas.

Sukacitanya dimaklumkan bahawa saya adalah seorang pelajar Sarjana Muda Sains Kesihatan, Fakulti Perubatan dan Sains Kesihatan, Universiti Putra Malaysia yang menjalankan projek penyelidikan (MUR3004) sebagai syarat tamat belajar untuk memperoleh ijazah sarjana muda. Saya memohon pihak Y. Bng. Dato' agar dapat membolehkan projek penyelidikan yang dijalankan ini dijalankan di hospital bawah pengurusan Y. Bng. Dato' bagi tujuan penyelidikan.

Name : ROSNA ABYLA HANIFFA
No. matric : 157187
Tarikh : 7/12/2011
Tarikh : 7/12/2011

Sebagai penanda projek penyelidikan, saya akan menjalankan projek penyelidikan perkhidmatan di Hospital Y. Bng. Dato' yang akan dijalankan di Hospital Kuala Lumpur. Saya amat bawabesar hati sekiranya, pihak Y. Bng. Dato' dapat membolehkan projek penyelidikan yang dijalankan ini. Sebagai tanda terima kasih, saya akan menghantar surat ucapan terima kasih kepada pihak Y. Bng. Dato', apabila diizinkan dan diizinkan dengan ucapan terima kasih.

Seben,

ROSNA ABYLA HANIFFA

Penyelia Projek Penyelidikan (MUR3004),
Fakulti Perubatan dan Sains Kesihatan,
Universiti Putra Malaysia,
43400 Serdang, Selangor.

S.A. Ketua sebagai Pengerah Hospital Kuala Lumpur
Penyelia Projek Penyelidikan (MUR3004)

Appendix III

Investigator's Agreement, Head of Department and Institutional Approval

Project Research ID / Nombor Penyelidikan	10540
Research Title / Judul	PATENTS KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES OF GENUINE FLU QUIRRENT DEPARTMENT, HOSPITAL, KUALA LUMPUR
Project Number if available / Nombor Projek jika ada	
Investigator agreement / Istiafak Penyelidik	I, the undersigned, do hereby agree to participate in the research titled "Investigator's Agreement, Head of Department and Institutional Approval" as a project leader.
Name of Investigator / Nama Penyelidik	
Signature / Tandatangan	
Name of Institution / Nama Institusi	
Signature & Official stamp / Tandatangan dan Cap	
Name of Head of Department / Nama Ketua Jabatan	
Signature & Official stamp / Tandatangan dan Cap	
Name of Department and Institution / Nama Jabatan dan Institusi	
Signature & Official stamp / Tandatangan dan Cap	
Name of Director / Nama Pengerusi	
Signature & Official stamp / Tandatangan dan Cap	



Research Submission

Appendix IV

Date Printed : 28-12-2011 08:45:36

Research Submission

Project Title	PATIENTS' KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES OF DENGUE FEVER AT OUTPATIENT DEPARTMENT, HOSPITAL KUALA LUMPUR
Research Address	PATIENT'S KAP OF DENGUE FEVER AT OPD, HKL
Approval Type	Research Registration & Notification
Built PDF By :	MCHD ALIF BIN ABD HALIM
Built PDF Date :	28-12-2011 08:45:36



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Research Submission

28-12-2011 08:45:38

ResearchID: 10540

Correspondence:

Date Printed : 28-12-2011 08:45:38

ResearchID :	10540
Research Title :	PATIENTS' KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES OF DENGUE FEVER AT OUTPATIENT DEPARTMENT, HOSPITAL KUALA LUMPUR
Research Abbreviation :	PATIENT'S KAP OF DENGUE FEVER AT OPD, HKL
Approval Type :	Research Registration & Notification
Built PDF By :	MOHD ALIF BIN ABD HALIM
Built PDF Date :	28-12-2011 08:45:38

1.4. Submission purpose:

2.1. Protocol ID :

2.2.1. Student Academic Project :

2.2.2. Student Academic Project :

2.3. Research Type :

2.4. Clinical Research Sub Type :

Clinical Research

3.0.1. Research Purpose : The purpose of this study is to determine the knowledge, attitude and preventive practices of

3.0.2. Research Description : This study is a cross-sectional study on the Knowledge, Attitude and Preventive Practices of Dengue Fever among patients attending the Outpatient Department, Hospital Kuala Lumpur. The research is a cross-sectional study on the knowledge, attitude and preventive practices of dengue fever among patients attending at the Outpatient Department, Hospital Kuala Lumpur.

3.0.3. Keyword : Knowledge, attitude and preventive practices of dengue fever at Outpatient Department, Hospital Kuala Lumpur.

3.0.4. Research Date Start : 15/03/2012

3.0.5. Research Date Completed : 05/05/2012

3.0.6. Research Duration (month) : 4.0



3.0.7. Research Site : HKL

3.0.8. Age Limit : 3.0.8.1 Age Available : Not Applicable 3.0.8.2 Age Limit Min : 3.0.8.3 Age Limit Max :

3.0.9. Gender : Both

3.0.10. Eligibility : All patients attending at dengue fever clinic at the Outpatient Department, Hospital Kuala Lumpur.

ResearchID : 10540

Correspondence Person : MOHD ALIF BIN ABD HALIM

PATIENTS' KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES OF DENGUE FEVER AT
OUTPATIENT DEPARTMENT, HOSPITAL KUALA LUMPUR

1.2. Title abbreviate : PATIENT'S KAP OF DENGUE FEVER AT OPD, HKL

1.3. Collaborative research : This is NOT a collaborative work with any of the NIH institutes

- Clinical Research Centre (CRC)
- Institute for Medical Research (IMR)
- Institute of Public Health (IPH)
- Institute for Health Management (IHM)
- Institute for Health Systems Research (IHSR)
- Institute for Health Behavioural Research (IHBR)

1.4. Submission purpose :

- Institute of Public Health (IPH)
- IRB/IEC Medical Research Ethics Committee (MREC)
- IRB/IEC Jawatankuasa Etika Penyelidikan Perubatan (UPM)
- Research Registration

2.1. Protocol ID :

2.2.1. Student Academic Project : Bachelor

2.2.2. Student Academic Project Specify :

2.3. Research Type : Public Health / Epidemiology

2.4. Clinical Research Sub Type :

Clinical Research

3.0.1. Research Purpose : The purpose of this study to determine of knowledge, attitude and preventive practices of dengue fever among patients

3.0.2. Research Description : Research about Patients Knowledge, Attitude and Preventive Practices of Dengue Fever at Outpatient Department, Hospital Kuala Lumpur. This research is a cross sectional study will assess the level of knowledge, attitude and preventive practices amongst outpatients for their first time visiting at the Outpatient Department, Hospital Kuala Lumpur.

3.0.3. Keywords : Knowledge, attitude and preventive practices of dengue fever at Outpatient Department, Hospital Kuala Lumpur.

3.0.4. Research Date Start : 15/01/2012

3.0.5. Research Date Completed : 05/05/2012

3.0.6. Research Duration (months) : 4.0

3.0.7. LinkURL :

3.0.8. Recruitment Status : Not applicable

All of the patients with suspected in dengue fever cases at Outpatient Department, Hospital Kuala Lumpur.

3.0.10. Age Limit : **3.0.10.1. Not Available - Not Applicable** **3.0.10.2. Age Limit Min :**

3.0.10.3. Age Limit Max

3.0.11. Gender : Both

3.0.12. Eligibility : All of the patients with suspected in dengue fever for their first time visiting to the Outpatient Department, Hospital Kuala Lumpur.

3.0.13. Acceptable Participant : Yes

3.0.14. Target No Subject - All / Msian : 308 / 308

3.0.15. Target Number 1.Total in number : 308

Subject in Malaysia : 2.Number by site in text:

Supporting Research in Conducting Research in Ministry of Health Malaysia

Clinical Trial

3.1.1. Study Phase :

3.1.2. Purpose :

3.1.3. Allocation :

3.1.4. Masking :

3.1.5. Control :

3.1.6. Assignment :

3.1.7. Endpoint :

3.1.8.1. OutcomeMeasure Primary :

3.1.8.2. OutcomeMeasure Secondary :

3.1.9.1. Name of intervention under investigation :

3.1.9.2 Intervention Type :

3.1.10. Therapy Area :

Observational Study

3.2.1.1. Disease Area :

3.2.1.2. Disease Area Specific Disease :

3.2.1.3. Disease Area Other Specify :

3.2.2. Purpose :

3.2.3. Selection :

3.2.4. Duration :

3.2.5. Timing :

Appendix V

National Institutes of Health for Conducting Research in Ministry of Health Malaysia

This is an auto-generated document. National Institutes of Health (NIH): These are the Institute for Medical Research (IMR), Clinical Research Centre (CRC), Institute of Public Health (IPH), Institute for Health Management (IHM), Institute for Health Systems Research (IHSR), and Institute for Health Behavioural Research (IHDR).
Dokumen ini adalah cetakan berkomputer. Borang ini dikeluarkan oleh salah satu institusi dibawah National Institutes of Health (NIH) iaitu Institut Penyelidikan Perubatan (IMP), Pusat Penyelidikan Klinikal (CPC), Institut Kesihatan Umum (IKU), Institut Pengurusan Kesihatan (IPK), Institut Pengurusan Sistem Kesihatan (IPSK), Institut Penyelidikan Tingkah laku Kesihatan (IPTK)

Unique NMRR Registration ID : (Nombor Pendaftaran)	NMRR-11-888-10540
Research Title : (Tajuk)	PATIENT'S KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES ON DENGUE FEVER AT OUTPATIENT DEPARTMENT, HOSPITAL KUALA LUMPUR
Protocol Number if available : (Nombor Protokol jika ada)	
Investigator Name (Name Penyelidik)	MOHD ALIF BIN ABD HALIM
I have reviewed the above form and approved it for submission. Saya telah menyetujui borang yang tertera di atas dan telah menyetujui untuk periksa dan menyahkannya.	
Name of Director : (Nama Pengerusi)	
NIH Institute IMR, CRC, IPH, IHM, IHSR and IHDR (Nama Institut di bawah NIH)	
Signature & Official stamp (Tandatangan dan cap rasmi)	This is computer generated document, therefore no signature is required.
Date (Tarikh)	16-01-2012



**NATIONAL INSTITUTES OF HEALTH APPROVAL FOR CONDUCTING RESEARCH
IN THE MINISTRY OF HEALTH MALAYSIA**

**PENGESAHAN INSTITUSI PENYELIDIKAN NEGARA UNTUK MENJALANKAN
PENYELIDIKAN DI KEMENTERIAN KESIHATAN**

This is an auto computer - generated document. It is issued by one of the research institute under the National Institutes of Health (NIH). These are the Institute for Medical Research (IMR), Clinical Research Centre (CRC), Institute of Public Health (IPH), Institute for Health Management (IHM), Institute for Health Systems Research (IHSR), and Institute for Health Behavioural Research (IHBR)

Dokumen ini adalah cetakan berkomputer. Borang ini dikeluarkan oleh salah satu institusi dibawah National Institutes of Health (NIH) iaitu Institut Penyelidikan Perubatan (IMR), Pusat Penyelidikan Klinikal (CRC), Institut Kesihatan Umum (IKU), Institut Pengurusan Kesihatan (IPK), Institut Pengurusan Sistem Kesihatan (IPSK), Institut Penyelidikan Tingkahlaku Kesihatan (IPTK)

Unique NMRR Registration ID : [Nombor Pendaftaran]	NMRR-11-866-10540
Research Title : [Tajuk]	PATIENTS' KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES OF DENGUE FEVER AT OUTPATIENT DEPARTMENT, HOSPITAL KUALA LUMPUR
Protocol Number if available : [Nombor Protokol jika ada]	

#	Investigator Name [Name Penyelidik]	Institution Name [Nama Institusi]
1	MOHD ALIF BIN ABD HALIM	Kuala Lumpur Hospital

I have reviewed the above titled research, and approve of its design and conduct.

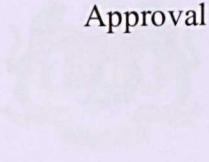
Saya telah menyemak kajian yang bertajuk seperti di atas dan meluluskan rekabentuk dan perlaksanaannya.

Name of Director : [Nama Pengarah]	Dr. Tahir Aris
NIH Institute (IMR, CRC, IPH, IHM, IHSR and IHBR) [Nama Institusi di bawah NIH]	Institute of Public Health (IPH)
Signature & Official stamp : [Tandatangan dan Cop Rasmi]	This is computer generated document, therefore no signature is required.
Date : [Tarikh]	16-01-2012

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Appendix VI

Approval Letter from Medical Ethical the Ministry of Health Malaysia



REKABENTUKAN ETIKA & PERSEKUTUAN
KEMENTERIAN KESEHATAN MALAYSIA
JAWA TANGGA ETIKA & PERSEKUTUAN
KEMENTERIAN KESEHATAN MALAYSIA
JAWA TANGGA ETIKA & PERSEKUTUAN
KEMENTERIAN KESEHATAN MALAYSIA

JAWA TANGGA ETIKA & PERSEKUTUAN
KEMENTERIAN KESEHATAN MALAYSIA
JAWA TANGGA ETIKA & PERSEKUTUAN
KEMENTERIAN KESEHATAN MALAYSIA

27 Januari 2012



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DAFTAR ISI

Appendix VII

Information Sheet (English & Malay)

RESPONDENT'S INFORMATION SHEET

Please read the following information carefully, do not hesitate to discuss questions you may have with your researcher.

STUDY TITLE

PATIENTS' KNOWLEDGE AND PERCEPTIVE PRACTICES OF DENGUE FEVER IN GEMILANG HOSPITAL, KUALA LUMPUR

INTRODUCTION

Dengue fever is one of the most common problems in world wide today. The World Health Organization (WHO) defines dengue and dengue hemorrhagic fever to be endemic in tropical and subtropical areas. The World Health Organization (WHO) 2009, the dengue fever is now a global health issue about 22000 death every year in dengue fever cases. In Malaysia, the first case of dengue was reported in 1901 in Klang and then spread to all the states in Malaysia. In 1973, dengue hemorrhagic fever occurred in major outbreaks in Malaysia. The important precautions for the prevention of infection of the dengue virus are vector control and self protection from mosquito bites.



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FACULTY OF MEDICINE AND HEALTH SCIENCES

UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,

RESPONDENT'S INFORMATION SHEET

Please read the following information carefully, do not hesitate to discuss any questions you may have with your researcher.

STUDY TITLE

PATIENTS' KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES OF DENGUE FEVER AT OUT PATIENT DEPARTMENT, HOSPITAL KUALA LUMPUR.

INTRODUCTION

Dengue fever is one of the serious health problems in world wide today. The World Health Organization (WHO) declares dengue and dengue hemorrhagic fever to be endemic in South East Asia. According to World Health Organization (WHO) 2009, the mortality rate in world wide were increase about 22000 death every year in dengue fever cases. In Malaysia, the first case of dengue was reported in 1901 in Penang and then spread to all the states in Malaysia. In 1973, dengue hemorrhagic fever occurred in major outbreaks in Malaysia. The important precautions for the prevention of infection of the dengue virus are vector control and self protection from mosquito bites.

WHAT WILL YOU HAVE TO DO?

In this study, the respondents should answer all the questions in the questionnaire will take a few minutes.

WHO SHOULD NOT ENTER THE STUDY?

Patient unable to read and not giving a co-operation in this study.

WHAT WILL BE BENEFITS OF THE STUDY:

(a) TO YOU AS THE SUBJECT?: Able to assess level of knowledge, attitude and preventive practices of dengue fever among respondents.

(b) TO THE INVESTIGATOR? : Investigator especially researcher can evaluate respondents understanding about the disease and consequences.

ARE THERE ANY RISKS?

No risks in this research.

WILL THE INFORMATION AND MY IDENTITY REMAIN CONFIDENTIAL?

All the answers and information from the respondents are strictly confidential. The results are only used for analysis and further evidence based for the guidelines.

WHO SHOULD I CONTACT IF I HAVE ADDITIONAL QUESTIONS DURING THE COURSE OF THE RESEARCH?

Researcher,

Mohd Alif Bin Abd Halim,

Unit Kejururawatan,

Jabatan Perubatan, Fakulti Perubatan dan Sains Kesihatan,

43400 Universiti Putra Malaysia,

Serdang, Selangor.

Phone Number: 012-4221958.

Supervisor,

Puan Rosna Binti Abdul Raman,

Unit Kejururawatan,

Jabatan Perubatan, Fakulti Perubatan dan Sains Kesihatan,

43400 Universiti Putra Malaysia,

Serdang, Selangor.

Phone Number: 019-3883844.

Co. Supervisor,

Dr. Syafinaz Binti Amin Nordin,

Unit Mikrobiologi dan Parasitologi,

Jabatan Mikrobiologi dan Parasitologi,

Fakulti Perubatan dan Sains Kesihatan,

43400 Universiti Putra Malaysia,

Serdang, Selangor.

Phone Number: 019-3377247



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FACULTY OF MEDICINE AND HEALTH SCIENCES

**UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,
SELANGOR, MALAYSIA**

BORANG PENERANGAN PENYELIDIKAN

Sila baca maklumat di bawah dengan teliti dan fahami isi kandungannya, jika ada sebarang kemusykilan, anda boleh berhubung dan bertanya dengan penyelidik tentang kajian ini.

Tajuk Penyelidikan: Menilai tahap pengetahuan, sikap dan amalan pencegahan pesakit terhadap demam denggi di Jabatan Pesakit Luar Hospital Kuala Lumpur.

Penyelidik: Mohd Alif Bin Abd Halim

Pn. Rosna Bt Abdul Raman

Dr. Syafinaz Bt Amin Nordin

1. Pendahuluan

Demam denggi adalah salah satu masalah kesihatan yang serius di dunia pada hari ini. Pertubuhan Kesihatan Sedunia (WHO) mengisytiharkan demam denggi dan demam denggi berdarah adalah endemik di rantau Asia Tenggara. Menurut Pertubuhan Kesihatan Sedunia (WHO), pada tahun 2009 kadar kematian diseluruh dunia telah meningkat sebanyak 22,000 kematian pada setiap tahun dalam kes-kes demam denggi. Di Malaysia, kes pertama demam denggi telah dilaporkan iaitu pada tahun 1901 di Pulau Pinang dan kemudian merebak ke semua negeri-negeri di Malaysia. Pada tahun 1973, demam denggi berdarah adalah wabak utama yang berlaku di Malaysia. Langkah-langkah pencegahan yang penting untuk mengelakkan

virus denggi adalah melalui kawalan vektor dan perlindungan diri daripada gigitan nyamuk *Aedes*.

2. Tujuan penyelidikan ini dijalankan

Penyelidikan ini dilakukan adalah bertujuan menilai tahap kefahaman, sikap dan amalan orang ramai terhadap penyakit demam denggi.

3. Anda adalah orang yang dipilih didalam kajian ini dan bertujuan:

- i. anda adalah pesakit yang belum disahkan dijangkiti demam denggi.
- ii. anda adalah pesakit yang telah disahkan secara klinikal menghidapi penyakit denggi.

4. Adakah anda perlu mengambil bahagian?

Keputusan terletak ditangan anda untuk meyertainya ataupun tidak. Jika anda telah mengambil bahagian, anda masih bebas membuat keputusan untuk tidak mengambil bahagian dalam penyelidikan ini tanpa halangan dari mana-mana pihak.

5. Apa yang perlu saya lakukan jika saya mengambil bahagian?

Anda akan di tanya berdasarkan soalan-soalan yang akan diajukan didalam satu set soalan yang mana ia hanya mengambil masa selama lebih kurang lima atau sepuluh minit. Anda akan diberi set soalan tersebut semasa anda membuat pendaftaran dikaunter dan juga semasa menunggu untuk kembangkan rawatan.

6. Adakah penyelidikan ini terdapat sebarang risiko?

Penyelidikan ini tidak mendatangkan sebarang risiko kepada anda.

7. Apakah kebaikan penyelidikan ini?

Anda akan memperolehi kebaikan dan sedikit ilmu tambahan mengenai penyelidikan ini. Tetapi, jasa anda mengambil bahagian dalam penyelidikan amatlah berharga bagi meningkatkan kesedaran orang ramai tentang penyakit demam denggi.

43400 Universiti Putra Malaysia,

8. Adakah maklumat anda dalam penyelidikan ini akan dirahsiakan?

Segala maklumat yang tercatat di dalam penyelidikan ini akan dirahsiakan dari mana-mana pihak dan segala maklumat hanyalah akan digunakan untuk tujuan penyelidikan sahaja.

Dr. Syafiqat Binti Mohd Yusoff,

10. Sebarang penerangan lanjut,

Jika berminat dan timbul sebarang keraguan mengenai kajian ini bolehlah menghubungi penyelidik di alamat berikut:

43400 Universiti Putra Malaysia,

Penyelidik,

Mohd Alif Bin Abd Halim

Pelajar Penyelidik, Program Bachelo Kejururawatan,

Fakulti Perubatan dan Sains Kesihatan,

University Putra Malaysia,

43400 UPM Serdang,

Tel Nombor : 012-4221958



Penyelia, VIII

Puan Rosna Binti Abdul Raman,

Penyelia Penyelidik, Unit Kejururawatan,

Jabatan Perubatan, Fakulti Perubatan dan Sains Kesihatan,

43400 Universiti Putra Malaysia,

Serdang, Selangor.

Phone Number: 019-3883844.

Pembantu Penyelia,

Dr. Syafinaz Binti Amin Nordin,

Penyelia Penyelidik Bersama, Unit Mikrobiologi dan Parasitologi,

Jabatan Mikrobiologi dan Parasitologi,

Fakulti Perubatan dan Sains Kesihatan,

43400 Universiti Putra Malaysia,

Serdang, Selangor.

Phone Number: 019-3377247.

Appendix VIII

Questionnaire (English & Malay)

FAKULTI PERUBATAN DAN SAINS KESEHATAN
MEDICINE AND HEALTH SCIENCES
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,
SELANGOR, MALAYSIA

Questionnaire

**PATIENTS' KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES ON
DENGUE FEVER AT OUT PATIENT DEPARTMENT, HOSPITAL AMAL,
KUALA LUMPUR**

Consent:

I agree to participate in this study for research purposes only. I am made
known that all information in this study is confidential.

Signature:

Answer ALL questions to the best of your knowledge and ability.



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SELANGOR, MALAYSIA

Questionnaire

**PATIENTS' KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES OF
DENGUE FEVER AT OUT PATIENT DEPARTMENT, HOSPITAL KUALA
LUMPUR**

Consent:

I agree to participate in this study and allow all the particulars for research only. I am made known that all information in this study is confidential.

Signature:.....

Date:.....

Answer ALL question with (✓) or write your opinion at the available place.



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Section A: Socio-demographic Data

1) Age

2) Sex Male
 Female

3) Race Malay
 Chinese
 Indian
 Others

4) Marital Status
 Single
 Married
 Widowed
 Divorced

5) Level of education
 Primary school
 Secondary school
 College
 University

Section B: Knowledge about dengue fever

Knowledge on dengue fever

1) Have you received any information regarding dengue fever ?

Yes

No

If yes, please state your main source of information

2) What causes of dengue fever?

Virus

Mosquitoes

Bacteria

Flies

3) What are the symptoms of dengue fever?

Fever

Bleeding gums

Rash

4) Is dengue fever potentially infectious?

Yes

No

5) If yes, how is it transmitted?

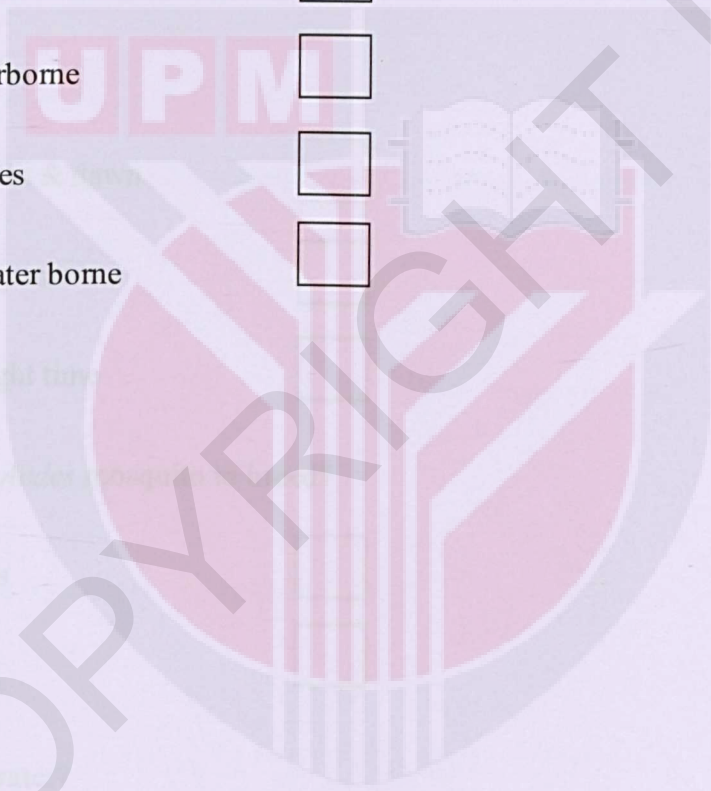
Mosquitoes

Aedes mosquitoes

Airborne

Flies

Water borne



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Knowledge on *Aedes*

1) Have you heard of *Aedes* mosquito?

Yes

No

2) Do you know what time of the day does *Aedes* mosquito come out to feed/bite?

Dusk

Dawn

Dusk & dawn

Daytime

Night time

3) Is water needed for *Aedes* mosquito to breed?

Yes

No

What kind of clean water?

In a tank

Stagnant water

Running water (stream/lakes)

4) What are the ways to prevent *Aedes* breeding?

Not storing water in home compound

Cleaning the compound of water holding items

Using abate

Covering stored water

Regularly changing stored water

5) Do you know that having an *Aedes* larvae in your compound is against law?

Yes

No

Attitude towards Dengue Fever

1) Do you consider dengue fever as a serious illness?

Yes

No

2) Do you think you should seek treatment if you have symptoms of dengue fever?

Yes

No

3) Which is better, prevention or treatment of dengue fever?

Prevention

Treatment

4) Out of all the method that were employed to control *Aedes*, which is the most effective?

Refusal disposal/cleanliness

Insecticide use

Changing stored water

No water storage

Use abate

Covering stored water

5) Who is responsible to control/prevent *Aedes* breeding/dengue fever?

Self

Solely government

Shared

6) Would you support any activities organised by the health authorities to eridicate *Aedes*?

Yes

No

7) Do you think is appropriate to legally punish those who were found to breed larvae within their compound?

Yes

No

Section D: Preventive Practices of Dengue Fever

1) Do you store water in your compound?

Yes

No

2) What are the ways you have employed to prevent breeding of larvae?

Changing water frequently

Using abate

Cover storage tanks

3) What are the measures taken to prevent mosquito bites?

Mosquito coils

Spraying insecticides

Window netting

Repellants

4) Did the local authorities take measures to prevent mosquito breeding?

Yes

No

5) What are the measures employed?

Fogging

House to house insection

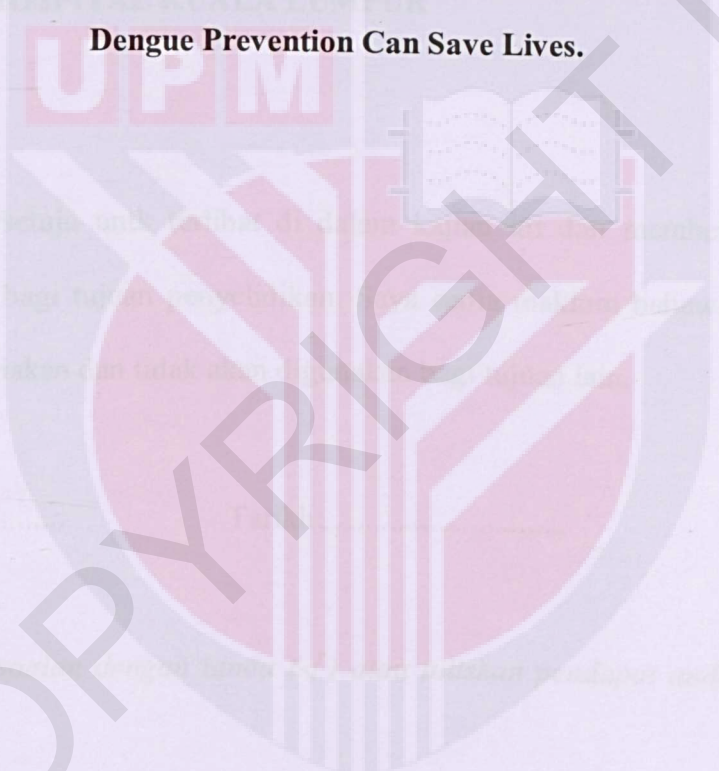
Awareness campaign

Providing appropriate waste disposal facilities or sevicees

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Thank you for your attention and cooperation.

Dengue Prevention Can Save Lives.



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SELANGOR, MALAYSIA

Borang Soal Selidik

**BORANG KAJI SELIDIK MENGENAI TAHAP PENGETAHUAN, SIKAP DAN
AMALAN PENCEGAHAN PESAKIT TERHADAP DEMAM DENGGI DI JABATAN
PESAKIT LUAR, HOSPITAL KUALA LUMPUR**

Persetujuan:

Saya dengan ini bersetuju untk terlibat di dalam kajian ini dan membenarkan maklumat berkaitan digunakan bagi tujuan penyelidikan. Saya sedia maklum bahawa maklumat yang diperoleh akan dirahsiakan dan tidak akan digunakan bagi tujuan lain.

Tandatangan:.....

Tarikh:.....

Sila jawab SEMUA soalan dengan tanda (✓) atau tuliskan pendapat anda di tempat yang disediakan..



Bahagian B: Pengetahuan Responden Terhadap Demam Denggi

Pengetahuan tentang demam denggi

1) Adakah anda telah menerima sebarang maklumat berkaitan demam denggi?

Ya

Tidak

Jika Ya, sila nyatakan sumber utama anda mendapatkan maklumat

2) Apakah punca-punca demam denggi?

Virus

Nyamuk

Bakteria

Lalat

3) Apakah tanda-tanda demam denggi?

Demam

Gusi berdarah

Ruam

Siang

Malam

4) Adakah demam denggi berpotensi untuk berjangkit?

Ya

Tidak

Jika Ya, bagaimanakah ia berjangkit?

Nyamuk

Nyamuk *Aedes*

Bawaan udara

Lalat

Bawaan air

Pengetahuan tentang nyamuk *Aedes*

1) Pernahkah anda mendengar tentang nyamuk *Aedes*?

Ya

Tidak

2) Adakah anda tahu bilakah nyamuk *Aedes* datang untuk menggigit?

Senja

Subuh

Senja dan subuh

Siang

Malam

3) Adakah air diperlukan untuk nyamuk *Aedes* membiak?

Ya

Tidak

Air jernih yang jenis bagaimanakah?

Air jernih seperti didalam tangki

Air bertakung

Air mengalir seperti sungai atau tasik

4) Apakah cara-cara untuk mencegah pembiakan nyamuk *Aedes*?

Tidak menyimpan air dikawasan rumah

Membersihkan kawasan penyimpanan air

Menutup air yang disimpan

Menukar air yang disimpan

5) Adakah anda tahu bahawa menyimpan telur (larva) nyamuk *Aedes* dikawasan anda melanggar undang-undang?

Ya

Tidak

Bahagian C: Sikap terhadap demam denggi

1) Adakah anda menganggap demam denggi adalah penyakit yang serius?

Ya

Tidak

2) Adakah anda berpendapat bahawa anda perlu mendapatkan rawatan jika anda mempunyai tanda-tanda demam denggi?

Ya

Tidak

3) Yang manakah lebih baik, pencegahan atau rawatan demam denggi?

Pencegahan

Rawatan

4) Kaedah yang manakah yang paling berkesan untuk mengawal nyamuk *Aedes*?

Tidak membuang sampah/menjaga kebersihan

Penggunaan racun serangga

Menukar air takungan

Tidak menakung air

Penggunaan abate

Menutup air yang ditakung

5) Siapakah yang terlibat untuk mengawal atau mencegah pembiakan nyamuk *Aedes* atau demam denggi?

1) Adakah anda ... Diri sendiri

Pihak kerajaan

Berkongsi tanggungjawab

6) Adakah anda menyokong sebarang aktiviti-aktiviti yang dijalankan oleh pihak berkuasa kesihatan untuk membanteras nyamuk *Aedes*?

Ya

Tidak

7) Adakah anda berpandangan bahawa mengenakan hukuman kepada sesiapa yang didapati membiak telur (larva) dikawasan masing-masing adalah sesuai?

Ya

Tidak



Bahagian D: Amalan Pencegahan Demam Denggi

1) Adakah anda menyimpan air dikawasan rumah anda?

Ya

Tidak

2) Apakah langkah-langkah yang anda ambil untuk mencegah pembiakan telur (larva) nyamuk *Aedes*?

Menukar air dengan kerap

Menggunakan abate

Menutup tangki simpanan air

3) Apakah langkah-langkah yang diambil untuk mencegah gigitan nyamuk?

Lingkar ubat nyamuk

Semburan racun perosak

Pemasangan jaring pada tingkap

Bahan kimia yang mencegah serangga

4) Adakah pihak berkuasa tempatan telah mengambil tindakan yang sewajarnya untuk mencegah pembiakan nyamuk?

Ya

Tidak

5) Apakah langkah-langkah yang telah diambil?

Pengasapan

Pemeriksaan dari rumah ke rumah

Kempen kesedaran

Menyediakan kemudahan atau perkhidmatan pembuangan sampah yang sesuai

Terima kasih di atas perhatian dan kerjasama anda.

Langkan Pencegahan Denggi Boleh Menyelamatkan Nyawa.

