Project on Prevalence, incidence, cost of diagnosis and treatment of dengue fever in Bangladesh.

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APPROVAL

This Project paper," Prevalence ,incidence, cost of diagnosis and treatment of dengue fever in Bangladesh.

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Author

Dedication

I dedicate my work firstly Almighty Allah and secondly to my family especially my parents

DECLARATION

I hereby declare that, this project report is done by me under the supervision of **Dr. Mohammed Shafikur Rahman**, Assistant Professor, Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University, impartial fulfillment of the requirement for the degree of Bachelor of Pharmacy. I am declaring that this project is my authentic and genuine work. I am also declaring that neither this project nor any part thereof has been submitted elsewhere for the award of Bachelor or any degree.

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ABSTRUCT

The World Health Organization (WHO) classifies dengue as a disease important in public health. The epidemiology and ecology of dengue infections are strongly associated with human habits and activities.The present study entitled "Knowledge Attitudes and Practices for Prevention of Dengue among Women in Mohammadpur Thana of Dhaka City"whichaimed to assess the knowledge, attitude and practice level of dengue prevention among women in Mohammadpur area. A cross sectional descriptive design was adopted to serve this purpose. A number of 300 participants were drawn from the study area as respondent of the study.

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ABBREVIATIONS

A	**:**	Attitude
BI	**:**	Bruteax Index
CFR	**:**	Case Fatality Rate
DCC	**:**	Dhaka City Corporation
DF	**:**	Dengue Fever
DHF	**:**	Dengue Hemorrhagic Fever
DSS	**:**	Dengue Shock Syndrome
ICDDRB	**:**	International Center for Diarrhoeal Disease Research, Bangladesh
K	**:**	Knowledge
P	**:**	Practices
SPSS	**:**	Statistical Package for Social Sciences
WHO	**:**	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Introduction

Dengue is the most common disease among all the arthropod borne viral diseases. Dengue is a mosquito borne infection those in recent decades has become a major international public health concern. Dengue causes a severe flu like illness and sometimes potentially lethal complications called as Dengue hemorrhagic fever and Dengue shock syndrome. Dengue is found in tropical and subtropical regions around the world, predominantly in urban and semi urban areas.[1]

DF/DHF is one of the important emerging tropical diseases at the beginning of the 21st century.[2] The incidence of dengue has grown dramatically around the world in recent decades. According to World Health Organization (WHO), some 2.5 billion people – two fifths of the world's population – are now at risk from dengue. As estimated, currently there may be 50 million dengue infections worldwide every year [1]. The disease is now endemic in more than 100 countries in Africa, the Americas, the Eastern Mediterranean, South-east Asia and the Western Pacific. South-east Asia and the Western Pacific are the most seriously affected.[1]

DF was first recognized in the 1950s during the dengue epidemics in the Philippines and Thailand. By 1970 nine countries had experienced epidemic DF and now, the number has increased more than fourfold and continues to rise. Today emerging DF cases are causing increased dengue epidemics in the Americas, and in Asia, where all four dengue viruses are endemic; DF has become a leading cause of hospitalization and death among children in several countries. [3]

Cases across the Americas, South-east Asia and Western Pacific have exceeded 1.2 million cases in 2008 and over 2.2 million in 2010 (based on official data submitted by Member States). Recently the number of reported cases has continued to increase. In 2010, 1.6 million cases of dengue were reported in the Americas alone, of which 49 000 cases were severe dengue. Not only is the number of cases increasing as the disease spreads to new areas, but explosive outbreaks are occurring. The threat of a possible outbreak of dengue fever now exists in Europe and local transmission of dengue was reported for the first time in France and Croatia in 2010 and imported cases were detected in three other European countries. An estimated 500 000

people with severe dengue require hospitalization each year, a large proportion of whom are children. About 2.5% of those affected die. [1]

Reported incidence of dengue has increased worldwide in recent decades, but little is known about its incidence in Africa. During 1960–2010, a total of 22 countries in Africa reported sporadic cases or outbreaks of dengue; 12 other countries in Africa reported dengue only in travelers. The presence of disease and high prevalence of antibody to dengue virus in limited serologic surveys suggest endemic dengue virus infection in all or many parts of Africa. Dengue is likely under recognized and underreported in Africa because of low awareness by health care providers, other prevalent febrile illnesses, and lack of diagnostic testing and systematic surveillance. Over the past 5 decades, cases of epidemic or sporadic dengue have been reported in many countries in sub-Saharan Africa although sporadic cases of dengue hemorrhagic fever (DHF) have been reported in a few countries in Africa, no outbreaks have been reported. However, when compared with the Asia–Pacific and Americas–Caribbean regions, the epidemiology and effect of dengue in Africa has not been defined. A dengue outbreak in Cape Verde was recently reported (>3,000 cases), and the reappearance of dengue in Senegal after 20 years was also reported. [5]

Dengue emerged as a public health burden in Southeast Asia following the Second World War, which led to significant ecological disruption and demographic changes. The movement of equipment and people during the war resulted in the transportation of vector mosquitoto new geographic areas. The use of containers to store water for domestic use and fire control following destruction of the then existing water systems, along with the presence of discarded war equipment and junk, all served as ideal breeding habitats for vector mosquito. Together, these factors contributed to the expanded geographic distribution and population densities of vector mosquito. The movement of Japanese and Allied troops in and out of the region also served to provide susceptible hosts for dengue virus. Although the Second World War served to expand the geographic distribution of the dengue viruses and their vector, it was the urbanization of Southeast Asia after the war that provided the ideal conditions for virus propagation. Millions of people moved to the cities seeking work, resulting in hurried but unplanned growth of urban centers in many parts of Southeast Asia. Housing, water supply and sewerage systems were

inadequate. This mixture of an ideal breeding habitat for the highly domesticated vector mosquitoas well as susceptible human hosts resulted in epidemic dengue. [6]

It was thus in this setting that dengue emerged as a leading public health burden in Southeast Asia. Manila, Philippines recorded the first dengue hemorrhagic fever outbreak in 1953-1954, with a second outbreak two years later in 1956. Bangkok had an epidemic in 1958 although sporadic cases of dengue hemorrhagic fever were identified in Thailand throughout the 1950s. [6]

In 1965 there was an outbreak of Dengue and 'Chikungunga' virus infection called 'Dhaka fever' which was the first documented out-break of Dengue in Bangladesh followed by few scattered cases of 'Dhaka fever' during 1977-78. In 1996-97 dengue infections were confirmed in 13.7% of 255 fever patients screened at Chittagong Medical College. The first epidemic of dengue hemorrhagic fever occurred in mid 2000, when   5551 dengue infections were reported from Dhaka, Chittagong and Khulna cities, occurring mainly among adults. Among the reported cases 4385 (62.4%) were dengue fever infections and 1186 (37.6%) cases were dengue hemorrhagic fever. The case fatality rate (CFR) was 1.7% with 93 deaths reported. Aedes aegypti was identified as the main vector responsible for the epidemic and Aedes albopictus was identified as a potential vector in Chittagong. The worst outbreak was in 2002 with 6,104 cases and 58 deaths. In 2005 there were 1048 reported cases and 4 deaths (CFR 0.38%). The number of cases and deaths reduction is about 73 % and 69% as compared to 2004. In 2006 the number of cases and deaths increased by 2 fold as compared to 2005. The maximum transmission period is July to September each year since 2000. A WHO sponsored small scale survey also detected Dengue Hemorrhagic fever cases in 1982. It is difficult to predict why this virus was reactivated in Bangladesh. Probably seasonal occurrence such as monsoon-rain is ideal for breeding. The best environment conditions for mosquitoes breeding prevail during pre and post monsoon periods in the tropical zones. [7]

A DCC survey found out that eight out of its 10 zones have an alarming concentration of Aedes mosquito. More to the point, the normal larvae presence of 20 per container on the Bruteax Index (BI) has been dangerously outstripped by 215 larvae found in a single container. Little wonder, the number of adult Aedes in the city has raised five to ten times the normal level. Unchecked

infestation of eggs and larvae has allowed zillions of adult mosquitoes to grow. If anything, the receding stagnant waters was only give them newer hang-outs. The Dhaka City Corporation is vociferous now in its expression of serious concern at the dengue situation. [8]

Justification of Study

During the 19th century, dengue was considered a sporadic disease that caused epidemics at long intervals, a reflection of the slow pace of transport and limited travel at that time. Today, dengue ranks as the most important mosquito-borne viral disease in the world. In the last 50 years, incidence has increased 30-fold. An estimated 2.5 billion people live in over 100 endemic countries and areas where dengue viruses can be transmitted. Up to 50 million infections occur annually with 500 000 cases of dengue hemorrhagic fever and 22,000 deaths mainly among children. Prior to 1970, only 9 countries had experienced cases of dengue hemorrhagic fever (DHF); since then the number has increased more than 4-fold and continues to rise. [3] Dengue fever has re-emerged as an increasingly significant global health threat amid diminishing resources pledged for its control in developing nations. Efforts to limit breeding of the dengue vector *Aedes aegypti* are often hampered by lack of community awareness of the disease. Improving community knowledge of dengue fever and *A. aegypti* breeding habits is an important step toward effective vector source reduction. [9]

1.2 Prevalence of Dengue Fever

The 2019 dengue fever eruption in Bangladesh may be a nationwide incidence of infectious disease in Bangladesh that began totally on Apr 2019 and continues to be in progress.

According to Directorate General of Health Services (DGHS), 14 people have died and 19,513 people have been affected as of 1 August 2019, majority of whom are children. Although other sources are reporting the death toll has already passed 50.

On one August 2019, DGHS confirmed the eruption moving all districts of the country .

Additionally, it reportable one,712 newly infected patients in the preceding 24 hours which is also the largest number of infected people on record in a single day.

According to official supply, roughly 71 more people were being infected in dengue fever every hour .

Dhaka is the worst-hit city in the country and the districts in Dhaka Division are among the most affected regions. Experts feared that the situation would deteriorate as a lot of people traveled from major cities to rural areas to celebrate Eid al-Adha holidays in August.

The Institute of medical specialty, illness management and analysis (IEDCR) expects the eruption to continue until December 2019 .

1.4 Incidence

Dengue could be a mosquito-borne virus infection inflicting a severe flu-like health problem and, typically inflicting a probably deadly complication known as severe infectious disease.

Approximately, half of the world's population is at risk and it affects infants, young children and adults.

The incidence of infectious disease has inflated 30-fold over the last fifty years.

Up to 50-100 million infections area unit currently calculable to occur annually in over one hundred endemic countries, putting almost half of the world's population at risk.

Bangladesh is one of the countries that are affected by dengue viruses.

The Aedes mosquito is that the main vector that transmits the virus that causes infectious disease.

The virus is passed to humans through the bites of Associate in Nursing infective feminine genus Aedes dipterous insect, which mainly acquires the virus while feeding on the blood of an infected person.

The full life cycle of dengue virus involves the role of mosquitoes as a transmitter (or vector) and humans because the main victim and supply of infection.

Once humans area unit infected, humans become the main carriers and multipliers of the virus; serve as a source of the virus for uninfected mosquitoes.

The virus circulates within the blood of Associate in Nursing infected person for two to seven days, at approximately the same time that the person develops a fever.

Patients World Health Organization area unit already infected with the infectious disease virus will transmit the infection via genus Aedes mosquitoes when the primary symptoms seem that unremarkably occur at intervals four to five days to maximum 12 days.

1.4 Operational Definitions

Knowledge

The knowledge that the respondent have regarding the cause, transmission, clinical manifestation and prevention of dengue.

Attitude

The feeling and belief of the respondents with regard to dengue fever and its prevention.

Practices

The actions intended to do in order to prevent from dengue.

Women

The female aged 18 to 65 year who is to some extent in charged with responsibilities of upkeep of the home.

Bruteax Index

The number of larvae presence per container, 0 to 20 per water stored container regarded as normal

1.1 Research Question

What is the Present Status of Knowledge, Attitudes and Practices for Prevention of Dengue among Women in Mohammadpur Thana of Dhaka .

CHAPTER II
REVIEW OF RELATED LITERATURE

Dengue fever (DF) is an acute febrile disease due to a viral infection and presents with severe headache, pain in the eyes, muscle and joint pain as well as rash. Dengue hemorrhagic fever (DHF) presents with dengue-like symptoms in addition to hemorrhagic manifestations; for example, petechial skin hemorrhage, hepatomegaly, and circulatory disturbances. Dengue is caused by the infection of dengue virus, a flavivirus in the family of Togaviridae. [11, 12, 13] There are four known virus serotypes (DEN 1, DEN 2, DEN 3, and DEN 4).[14] The virus is transmitted by the Aedes mosquito, of which *Aedes aegypti* is the most important vector.[11, 12, 13] The first reported epidemics of DF occurred in 1779–1780 in Asia, Africa, and North America. The near simultaneous occurrence of outbreaks on three continents indicates that these viruses andtheir mosquito vector have had a worldwide distribution in the tropics for more than 200 years.A pandemic of dengue began in Southeast Asia after World War II and has spread around theglobe since then.[15] The dengue virus infection is prevalent across the tropical belt in over 100countries, with 2.5 billion people at risk of acquiring the infection and an estimated 50 millioninfections and 500,000 cases of DHF, which is the severe subtype cases occurring annually.[16]Global trends in urbanization, substandard housing, intentional or unintentional water storage patterns,and population growth have created environments that favor transmission of DF. The globaldengue pandemic has intensified during the past two decades until it now affects all continentsexcept Antarctica. Dengue epidemics are increasing in frequency as well as in the severity ofillness they produce.[17] Over the past 20 years, there has been a dramatic increase in the incidenceand geographical distribution of DHF, and epidemics now occur each year in some SoutheastAsian countries.[14] Dengue virus infection causes significant morbidity and mortality worldwide.Although it is initially believed that an infection mainly afflicted the pediatric age group, thisinfection has been rapidly spreading across all age groups.

A cross-sectional study was carried in Muang district, Samut Sakhon province, Thailand. The objectives of the study were to identify the factors related to preventive behavior against dengue hemorrhagic fever (DHF) among migrants. A total of 176 migrant workers ranging from 15 to 50 years old were interviewed. Descriptive statistics and Chi-square test were applied for data

analysis. The results of the study revealed that the proportion of respondents in the moderate and high level of preventive behavior were nearly equal. Most of respondents (71.02%) had poor knowledge, but had high perception toward DHF with 64.77 percent. Furthermore, they highly received the information about DHF from health volunteers and announcements. Covering water containers was most common prevention. A significant correlation was found between duration of stay, advice from doctors or family members, experience which had dengue patients around the respondent and getting information from TV and preventive behavior against DHF (P-Value< 0.05). This study indicates that an attention is needed toward the migrants who stay long in this area to improve precautionary measures against DHF. Health volunteers and doctors would act as powerful encouragement to migrants to take countermeasures against DHF. [18]

A descriptive study was conducted to assess the knowledge, attitude, and practice (KAP) survey and an extensive entomologic survey were conducted in two sub-districts of Kamphaeng Phet province, Thailand, to test the hypothesis that correct dengue knowledge and practice reduce dengue vector populations. A negative association was found between respondents' knowledge of preventive measures and the number of unprotected containers in and around their houses. Knowledge of development sites was positively associated with unprotected containers. No relationships existed between knowledge of dengue and adult mosquito reduction practices. A higher number of unprotected containers increased the likelihood of the house being infested with one or more adult Aedes aegypti. Surprisingly, houses of respondents that used mosquito coils or had screening on doors and windows were significantly more likely to be infested (odds ratio =2.0) with adult A. aegypti. We conclude that there is a direct link between knowledge on dengue prevention and container protection practices, whereas measures against adult mosquitoes are used only when people experience a mosquito nuisance problem. [19]

A survey was conducted to assess the knowledge, attitude and practice of the prevention of dengue hemorrhagic fever in an urban community of Thailand. A total of 417 respondents from 417 households selected by a systematic-cluster sampling method were interviewed. More than 90% of them knew that the disease is transmitted by Aedes mosquitoes and indicated water jars and water retention in the houses as the common breeding places. However, the other two common breeding places, ant-traps and cement baths, were less frequently mentioned. This

finding was consistent with the greater proportion of respondents who reported no larval control methods for these two kinds of containers than for the others. Covering water containers was the most common practice to prevent mosquito breeding in drinking-water containers whereas addition of abate (sand granules) or changing stored water frequently was commonly used for non-drinking water storage. Larval control for ant-traps was mainly accomplished by the addition of chemicals, including abate, salt, oil or detergent. Health education efforts in this area could induce the majority of respondents to accept themselves as responsible for the Aedes control program. [20]

A study was conducted to assess the information, attitude, and follow of individuals relating to infectious {disease} disease in nine villages of the Pakse district of Laos from July to Sept 2006. Purposive sampling was done to gather information from 230 subjects. they'd a good information regarding the vector 163 (70.9%). For a hundred and one (43.9%) respondents, their main supply of knowledge regarding dengue fever was their friends or relatives. it's encouraging that 217 (94.3%) respondents had a positive angle that DF may be treated, which 222 (96.5%) knew they ought to visit a doctor after they suffer from it. regarding 196 (85.2%) folks keep water reception however sometimes modified it. The study indicated that the community was quite at home with dengue fever, however that there was some confusion regarding vaccination and water storage for domestic use. dengue fever awareness activity ought to be enclosed at the varsity and tier. Radio and tv ought to play a very important role in transfer health info to the general public, and regular visits of health personnel to the villagers ought to been sured.21

A cross sectional study was to work out the extent of information and follow of dengue fever management amongst the residents of Kualumpur town of Asian country.A structured form was accustomed collect information covering socio human ecology, information associated with dengue fever, information associated with Aedes dipteran and preventive measures against the sickness. For comparison of survey responses, chi-square take a look at was applied for categorical information. To explore the factors poignant the follow of dengue fever management, a regression toward the mean model was introduced. the majority of the respondents (95%) had detected regarding dengue fever.

Overall, misconceptions of dengue fever transmission were known and also the follow of dengue fever management within the study population was insufficient. Regarding [*fr1] (50.5%) had misconceptions that Aedes will breed in dirty water and also the most popular biting time is time of day or sunset (45.6%). Only 44.5% of the households surveyed had coated their water containers properly. Vital associations were found between information countless dengue fever and age (P = zero.001), education level (P = zero.001), legal status (P = zero.012), and occupation (P = zero.007). In multivariate analysis, solely the information of dengue fever was considerably and absolutely related to follow on dengue fever management. A future study with larger samples and a lot of variables to assess the information, attitudes and practices of dengue fever management is usually recommended. 22
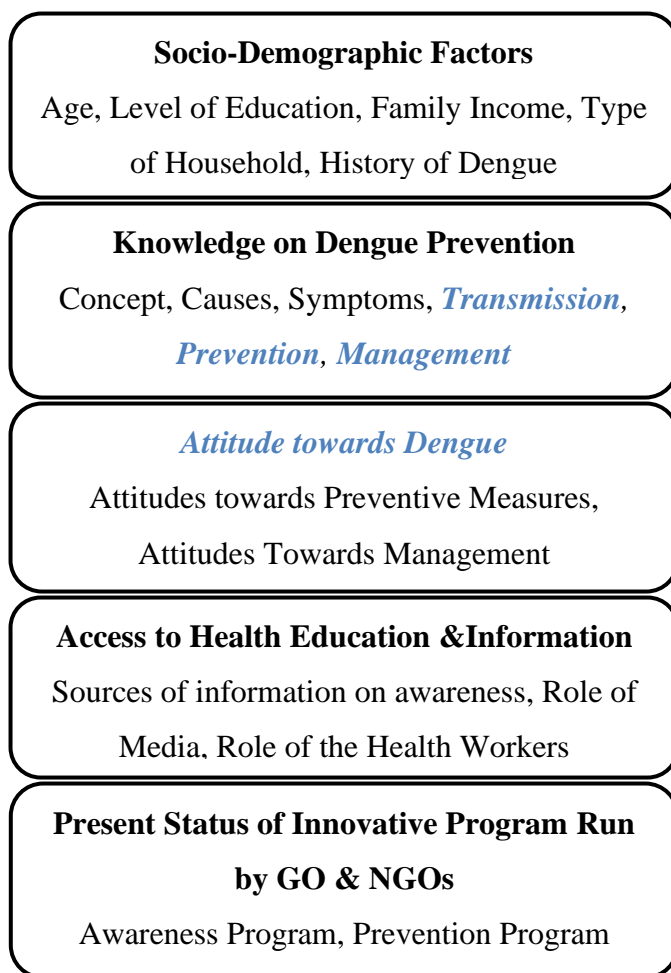
A cross sectional study aimed toward characteristic information, angle and follow of community members in respect to breakbone fever and global climate change Tien Giang and metallic element Chi Minh town of Vietnam. each qualitative and quantitative strategies were applied for this study. a complete of 405 households were indiscriminately elite by victimisation PPS techniques. The study found that general understanding of individuals regarding dengue fever was smart. 97.3% knew dipteran (Aedes Aegypti) as vector of DF transmission and descending was known together of the conditions contributive for a rise in dipteran breeding sites, so a rise in DF transmission. In term of gaps in understanding, 51.9% mistakenly thought that Aedes aegypti mosquitoes breed in stagnant, dirty water. the bulk of the respondents were awake to the common symptoms of DF whereas a smaller proportion knew of the a lot of dangerous symptoms. Most respondents knew a way to watch out of the person with DF; but, a high proportion rumored taking the person with DF to the health center on the third and fourth day of sickness (57.8% and ninety eight respectively). Community members rumored taking a variety of various measures like golf shot fish in tank and interference of dipteran bites etc. 23
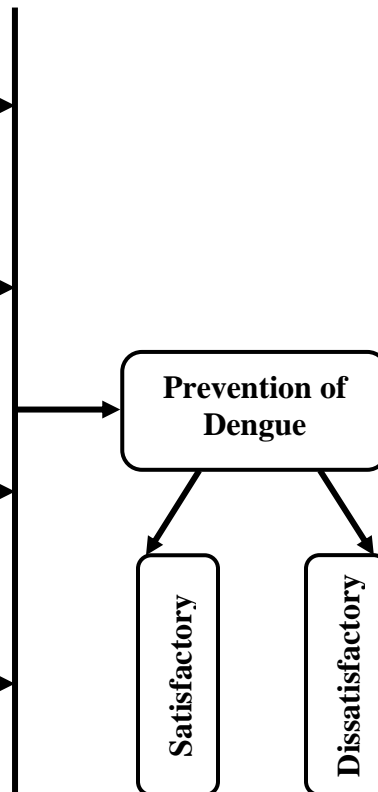
CHAPTER III

RESEARCH METHODOLOGY

3.1 Conceptual Framework

Independent Variables   **Dependent Variable**

Socio-Demographic Factors

Age, Level of Education, Family Income, Type of Household, History of Dengue

Knowledge on Dengue Prevention

Concept, Causes, Symptoms, *Transmission*, *Prevention*, *Management*

Attitude towards Dengue

Attitudes towards Preventive Measures, Attitudes Towards Management

Access to Health Education &Information

Sources of information on awareness, Role of Media, Role of the Health Workers

Present Status of Innovative Program Run by GO & NGOs

Awareness Program, Prevention Program

Prevention of Dengue

Satisfactory

Dissatisfactory

3.2 Study Objectives

3.2.1 General Objective
- o To explore the knowledge, attitude and practices for prevention of Dengue among women in Mohammadpur Thana of Dhaka.

3.2.2 Specific Objectives
- o To assess the socio-demographic characteristics of the respondents.
- o To examine the level of knowledge of dengue prevention among women in Mohammadpur Thana.
- o To evaluate their attitude for prevention of dengue.
- o To assess their level of practices on storing water, indoor & outdoor plantation among women.
- o To find out their access to sources of health education and information on dengue.
- o To find out the number of innovative programs run by GO and NGOs for prevention of dengue in the locality.
- o To observe the household environment.

3.3 Study Design

The study was Cross Sectional Descriptive Study with participants being drawn from the cross section of Mohammadpur Thana of Dhaka.

3.4 Study Population

The study population was the women aged between 18 to 65 years present at the household at the time of data collection, from Mohammadpur Thana.

3.5 Study Area

The study was conducted in the Mohammadpur Thana of Dhaka city.

3.6 Study Period

The Study was conducted during October 2012 to December 2012.

3.7 Sample Size

The following formula was used to calculate the anticipated sample size

$$n = \frac{Z^2\alpha \; p(1-p)}{d^2} \times (d_{ef}t)$$

Where,

n = Desired sample size

Z = Standard normal deviate usually set at 1.96 which is corresponds to 95% confidence interval

p = Proportion of anticipated population (prevalence of the diseases)

d_{eft}= Design effect of cluster sampling, usually set at 1.2 (As the primary sampling unit was Housing Complexes and the household was selected right after one stage, the design effect was 1 and for stratification of population, as the population of the study was homogeneous, stratified by two strata, the design effect was set at 1.2)

q = 1- p

d = Allowable error, usually set at 0.05 %

α = Level of significance

Therefore, in this study, the prevalence rate has been considered to be 19% (according to International Center for Diarrheal Disease Research, Bangladesh), [24]

Consequently the sample size has calculated as:

$$n = \frac{(1.96)^2 \times 0.19(1-0.19)}{(0.05)^2} \times (1.2) = 284.77 \approx 285$$

Considering 5% loss to interview and incomplete data during interview process the sample size was be increased. Hence, the sample size was 300.

3.8 Inclusion & Exclusion Criteria

Inclusion Criteria

  o   Women of the sampling homes aged 18 to 65 year who is to some extent in charged with responsibilities of upkeep of the home.

Exclusion Criteria

  o   Those who were refuse to give the written consent.

3.9 Sampling Techniques

An overall stratified cluster sampling technique was used for sampling purpose. As no reliable data on the housing cluster is available, purposive sampling technique was used to find out the desired housing complexes. There are more than 25 housing complexes and societies in the Mohammadpur Thana. The sample sites were divided into clusters according to the housing society and complexes by simply collecting and listing the names. Then 15 housing complexes or societies are randomly selected. Then using simple random sampling technique 20 households from each housing area was selected to find out the respondents. If the randomly selected household did not have any women who can respond to the questionnaire, the next household was selected to find out the respondent. If the random selection draws an independent house where several families' leaves, again using random selection a family were selected to find a respondent. A total number of 300 respondents from the corresponding sample site were drawn by simple random sampling from the selected study area.

RESULTS

This chapter provides a detailed description of the results obtained from the analysis of the survey and the observation. The variables are described as simple percentage, means and standard deviation as appropriate depending on the nature of variables. It presented the demographic data followed by the responses for each section of the questionnaire. The level of knowledge, attitude and practice score were than followed by the results.

4.1 Demographic Information

This study was conducted in Mohammadpur Thana of Dhaka district in Bangladesh. Three hundred (300) participants completed the survey questionnaire. The mean age of the participants was 36 years old with a standard deviation of 9.63. The age ranged from 20 to 62 years. Table 1 shows that the majority of the respondents (39%) were in the age range of 31- 40 years, 33% were younger than 31 years, 20% were older than 41 years and only 7% were older than 51 years. Most of them were educated both in secondary school (44%) to higher secondary and graduate level (44%) and most of them were employed (65%). Out of those who were employed and economically active, the common income was above Taka 10001-20000 /month (45%). 59 (20%) households had the history of dengue fever. The average family size of the respondents was 4.5 and the household was multistoried (6 to 7 storied) apartment buildings.

CHAPTER V

DISCUSSION, CONCLUSION AND RECOMMENDATION

In this chapter, a brief description of the major findings and their significance to practices is discussed with its' limitations.

5.1 Socio demographic characteristics of respondents

The result of this study showed that the respondents (females) have satisfactory level of knowledge (40%) and 34% had highly satisfactory knowledge of prevention of dengue. This might be because it is believed that the females are responsible for the responsibilities of household and the kids. Level of education status had no association with practice of dengue prevention. Although 56% of the respondents education level was above secondary level but this did not reflected in the practice score. This does not mean that education was not an important factor but their might be other factors which fall short to apply education into practice. One reason might be educated people have more of other responsibilities and have less time to practice prevention of dengue fever. People are acquainted with the correct way to do things but they are careless to put them into practice.

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