

**Dengue Fever: Assessing Awareness, Current Status, and Future
Perspectives – A Comprehensive Survey**

*A Thesis presented for the partial fulfillment of the requirement for
the Degree of Masters of Pharmacy*



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DEDICATION

I dedicate this work at first to Almighty Allah, then to my parents and to my teachers and friends.

Abstract

The study examined dengue fever knowledge and views among 100 adults aged 20-40. This extensive poll evaluated gender, education, age, work, dengue familiarity, and personal history. The research intended to investigate public dengue knowledge and experiences to inform focused public health initiatives. A well-designed survey was given to 100 participants from diverse demographics. The poll included 15 relevant questions on dengue awareness, personal experiences, and treatment. Participants from varied backgrounds completed the online survey, bringing useful insights. 88% of individuals showed acquaintance with dengue, indicating a good overall awareness rate. Majority awareness is a good sign of illness comprehension in the studied community. The research found that 24% of the population had dengue, demonstrating its widespread prevalence. This underscores the need for dengue prevention to reduce public health risks. The study shows a variety of treatments, with paracetamol accounting for 66%. Intravenous fluids (34%), platelet transfusions (14%), and a combination of all therapeutic methods (11%) show the variety of dengue treatments. Individualized therapies for distinct demographic groups are highlighted by these findings. Knowing the incidence and treatment options helps create focused public health interventions. We conclude that this study provides a complete overview of dengue disease views among adults aged 20-40. The report praises general awareness but stresses targeted actions for the 12% who lack understanding. Preventive strategies are crucial given the 24% incidence. The different therapeutic options used emphasize the need for tailored treatments, enabling informed and focused public health programming to reduce dengue fever's effect on the assessed community.

Keywords: Dengue fever, Awareness, Public health interventions, Therapeutic approaches, and Preventive measures

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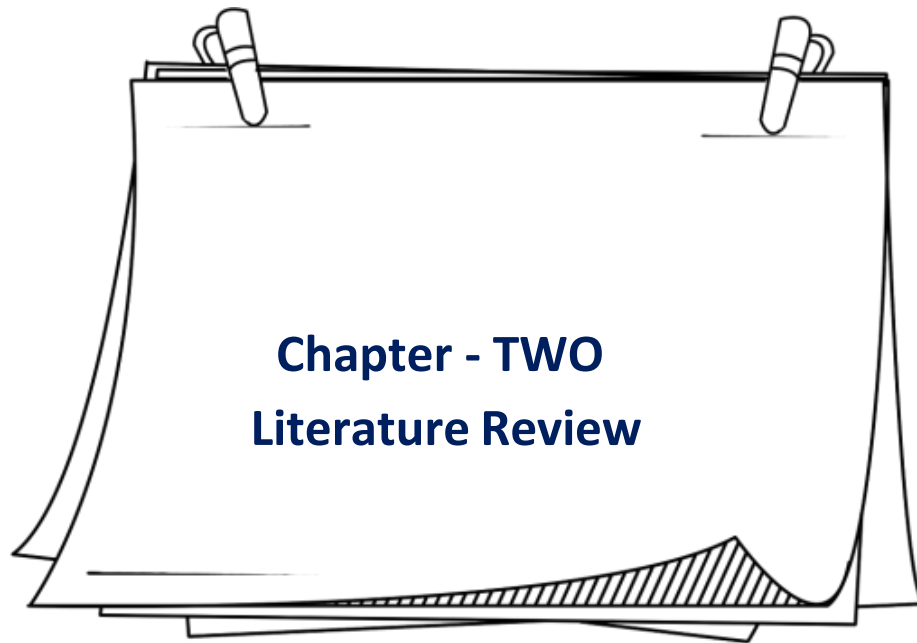
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1. Introduction

Dengue fever is an ailment caused by a virus that is spread by mosquitoes. It is a severe threat to public health in tropical and subtropical countries all over the globe. Dhaka City, the highly crowded capital of Bangladesh, is one of the locations that has been struggling with recurring outbreaks of dengue fever[1, 2]. This city is among the areas that have been afflicted. The rising number of dengue infections in Dhaka City underscores the critical need to have a better knowledge of the dynamics of the illness and determine the amount of awareness that exists among the city's people. This extensive study was conducted with the purpose of shedding light on the incidence of dengue fever, its related causes, and the degree to which the populace of Dhaka City is aware of the disease[3].

The dengue virus is what causes dengue fever, and it is passed on to people via the bites of infected *Aedes* mosquitoes, most often *Aedes aegypti*. Due to the fact that the virus may take on one of four separate forms (DEN-1, DEN-2, DEN-3, or DEN-4) over an individual's lifetime, they are at risk of contracting the virus more than once. There is a wide spectrum of symptoms associated with dengue fever, from flu-like symptoms that are mild to severe presentations such as dengue hemorrhagic fever and dengue shock syndrome, all of which have the potential to be fatal. The World Health Organization (WHO) estimates that about half of the world's population is at risk of contracting dengue fever, with an annual incidence rate of around 390 million cases[4].

Because of its rapidly growing population, fast urbanization, and climate that is conducive to mosquito breeding, Dhaka City is an excellent setting for the spread of the dengue virus and the multiplication of *Aedes* mosquitoes, both of which may cause serious illness. Throughout the course of the last decade, the city has been hit by repeated epidemics of dengue fever. These outbreaks have put a burden on the city's healthcare system and posed considerable socioeconomic issues. It is essential to have an

understanding of the variables that contribute to the high prevalence of dengue in Dhaka City if one is to design effective methods for dengue prevention and control[5].

The purpose of this study is to investigate the incidence of dengue fever in the many areas that make up Dhaka City as well as identify possible risk factors that are related with the spread of the virus. In addition to this, it intends to determine the degree to which local inhabitants are aware of the signs and symptoms, preventative measures, and treatment choices available for dengue fever. The results of this study may be used as a useful resource for decision-makers, healthcare professionals, and community leaders in Dhaka City in the process of creating targeted interventions to lessen the effect of dengue fever. The first part of the study focuses on epidemiological elements, such as the number of dengue cases that occurred in Dhaka City within the allotted time period and their geographic distribution. We want to give a thorough picture of the regional and temporal patterns of dengue transmission by conducting analyses of data collected from healthcare institutions, government health records, and surveillance systems. This information will be essential for locating hotspots and gaining a better picture of the progression of the illness across the city[6].

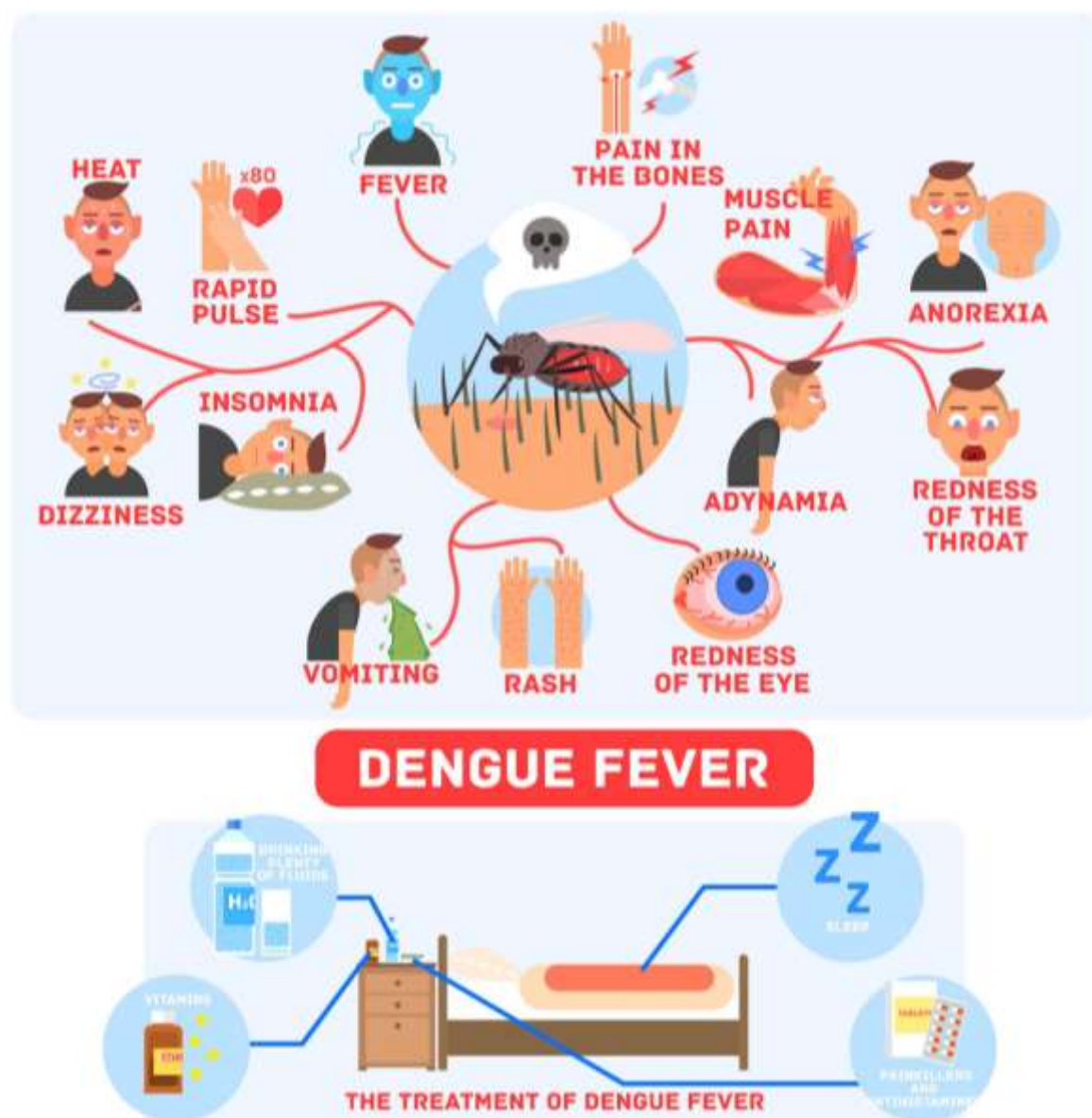
The socio-demographic characteristics that may contribute to the risk of dengue fever are investigated in more depth in the second phase of the study. The identification of vulnerable groups will include looking at factors such as age, gender, socioeconomic standing, and living circumstances among other things. In addition, variables relating to water storage practices, sanitation, and housing conditions will be investigated in order to get a better understanding of the roles that these factors play in the spawning and spread of *Aedes* mosquitoes[7].

The third and most important part of the study is an evaluation of the level of awareness and knowledge about dengue fever held by the population of Dhaka City. Our goal is to determine the degree of knowledge of the symptoms of dengue, the significance of preventative measures such as mosquito control, and the availability of medical services

for the treatment of dengue by conducting structured interviews, distributing questionnaires, and holding focus group discussions[8]. It is vital to have a solid understanding of the gaps in both knowledge and awareness in order to build specific educational initiatives that will enable the community to take part in the prevention and control of dengue fever[9].

In conclusion, the purpose of this extensive study on dengue fever in Dhaka City is to give a holistic knowledge of the illness, its incidence, and the awareness levels among the population of the city. We want to give significant information that may influence evidence-based treatments and strategies for the prevention and control of dengue in the city of Dhaka by integrating epidemiological data with socio-demographic insights and awareness evaluations. This will allow us to better understand the population. It is hoped that the results of this study would provide direction for activities linked to public health, help enable community participation, and eventually contribute to the decrease of dengue-associated morbidity and death in the area[10].

Figure 1. Details flowchart of dengue fever



3. Literature Concerning Dengue Fever and People's Awareness in the City of Dhaka

3.1 Background of Dengue Fever

Dengue fever is caused by the dengue virus, which is mostly transmitted to humans by the bites of infected *Aedes* mosquitoes, notably *Aedes aegypti* and *Aedes albopictus*. Dengue fever is a significant threat to the health of people all over the world. The virus is a member of the *Flavivirus* genus and has four unique serotypes, which are designated as DEN-1, DEN-2, DEN-3, and DEN-4 respectively. There is a spectrum of clinical

manifestations that may result from dengue infections. These can range from no symptoms or moderate flu-like symptoms to severe and possibly deadly forms, such as dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS)[11].

It is possible to trace the roots of dengue fever back to the processes of urbanization and globalization, which have made it easier for the mosquito vectors that carry the disease to spread to new geographic areas. Mosquitoes of the genus *Aedes* are particularly successful in urban contexts, where they reproduce in artificial containers such as flowerpots, abandoned tires, and containers used to store water. The danger of dengue fever is growing due to a combination of factors, including the expansion of human populations in metropolitan areas and the ongoing effects of climate change on the mosquito populations in such areas[12].

Over one hundred nations on every continent are impacted by dengue fever, making it one of the most severe public health challenges facing tropical and subtropical areas. According to estimates provided by the World Health Organization (WHO), roughly 3.9 billion individuals throughout the world are at risk of contracting dengue. Over the last half-century, there has been a threefold increase in the number of recorded cases of dengue, which indicates a sharp rise in the disease's prevalence. This increase may be attributed to a number of factors, including fast population expansion, unplanned urbanization, insufficient water and waste management, and increasing worldwide travel, which makes it easier for the virus to move from country to country[13].

Dengue fever has become a recurrent problem in areas where it is found naturally, such as sections of Southeast Asia, the Pacific Islands, the Americas, and Africa[14]. This has resulted in a significant increase in morbidity as well as an economic burden. The recurrent pattern of dengue fever epidemics, in conjunction with the risk of life-threatening complications associated with the disease, highlights the critical necessity of gaining a knowledge of and finding solutions to the complex problems faced by this sickness transmitted by vectors. In the setting of Dhaka City, Bangladesh, the prevalence

of dengue fever has been an ongoing problem, which has prompted the need for an in-depth investigation of the disease's epidemiology as well as the community's degree of knowledge of the condition[15].

3. 2 Significance of the Study

Due to the fact that it has the capacity to address major public health problems, guide evidence-based actions, and empower the community in the face of a recurrent health danger, conducting a thorough study on dengue fever and people's knowledge in Dhaka City is of tremendous value[16].

- **Impact on Public Health** Dengue fever places a significant burden on public health in the city of Dhaka, with frequent outbreaks putting a strain on both the resources and infrastructure of healthcare facilities. It is essential for public health authorities and policymakers in the city to have a comprehensive understanding of the epidemiological landscape of dengue in the city in order to establish focused policies for disease prevention, monitoring, and control. The results of the survey may lead to a more nuanced knowledge of the prevalence, distribution, and temporal trends of dengue cases. This insight can then be used to plan public health interventions that are proactive and timely[17].
- **Identification of High-Risk regions:** The survey is able to identify high-risk regions inside Dhaka City by assessing the spatial distribution of dengue cases and producing a map of these places. These geographic insights are very helpful for prioritizing resource allocation, putting targeted vector control measures into action, and ramping up public health campaigns in communities that are most prone to dengue epidemics. By locating these hotspots, it will be possible to improve the accuracy and efficacy of treatments, which would hopefully result in a decrease in the overall incidence of dengue in the city[18].
- **Insights into Socio-Demographic characteristics** Investigating the socio-demographic characteristics that are connected with dengue risk offers a

comprehensive picture of susceptibility within the community. The likelihood of being bitten by an Aedes mosquito and developing dengue depends on a number of variables, including age, socioeconomic standing, and living circumstances, among others. These findings have the potential to influence targeted public health activities with the goals of safeguarding vulnerable populations and customizing treatments to particular demographic traits.

- **knowledge and Education:** The evaluation of people's knowledge of dengue fever that was included in the survey is of the utmost importance for the community empowerment and proactive disease management. The identification of knowledge gaps may serve as a guide for the creation of tailored educational initiatives that aim to dispel myths, encourage the adoption of preventative measures, and place an emphasis on the early diagnosis of symptoms. It is possible that improved awareness could lead to increased community involvement in vector control initiatives, which will reduce the number of breeding places for mosquitoes and contribute to a decrease in the total transmission of dengue.
- **Formulation of Policy** The results of the survey may be used as a basis for evidence-based policymaking, which enables authorities to create and put into practice comprehensive dengue control programs. Among them include improvements to healthcare infrastructure, increased vector monitoring, and the incorporation of community-based initiatives. If policymakers are provided with accurate and up-to-date information, they will be able to make educated choices that will lessen the effect of dengue epidemics and help establish health systems that are more resilient.

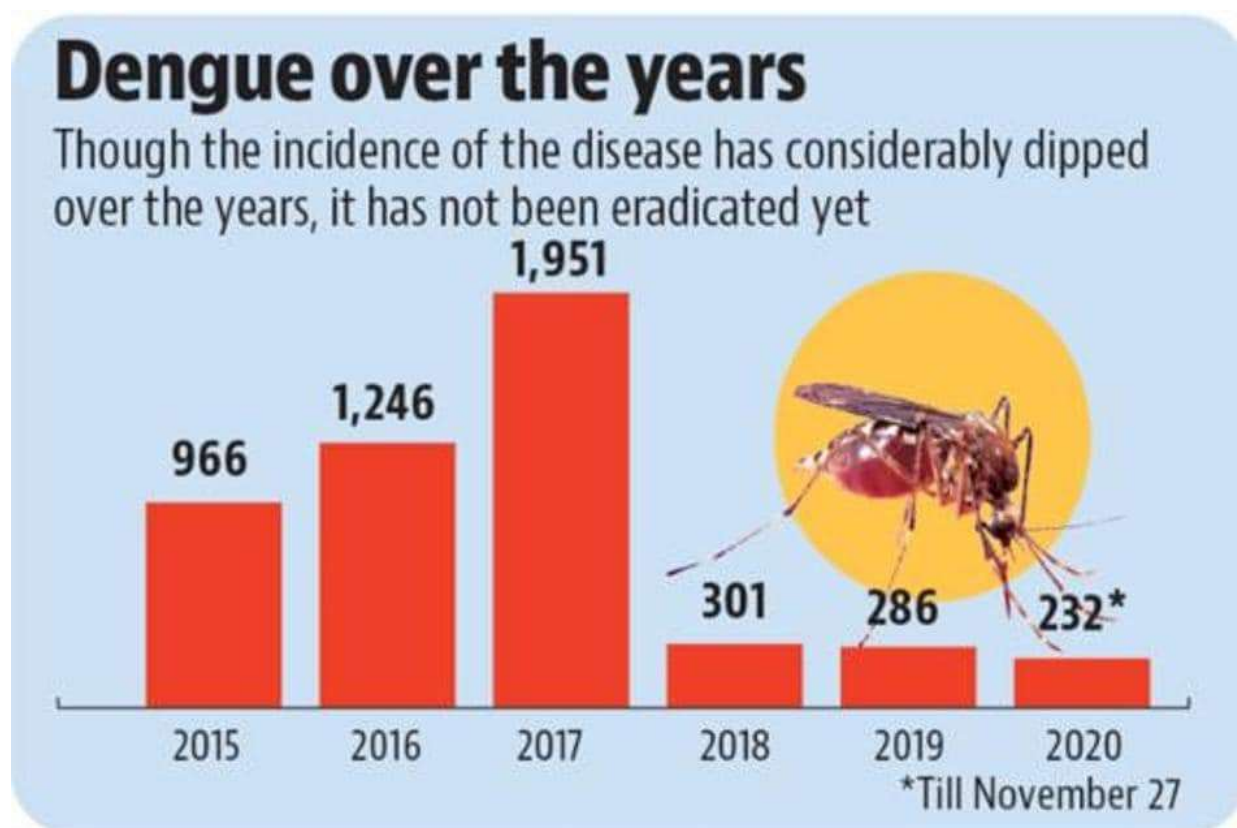
To summarize, the value of this in-depth study on dengue fever in Dhaka City resides in the fact that it has the ability to give a thorough knowledge of the dynamics of the illness, guide targeted interventions, and raise community awareness. The survey adds to a holistic approach for dengue prevention, control, and better public health outcomes in

Dhaka City by addressing the several facets of the disease, such as its epidemiology, socio-demographics, and awareness levels. These facets include epidemiology, socio-demographics, and awareness levels[19].

3.3 The Dengue Fever Epidemic: A Global Threat

Dengue fever, which is brought on by infection with the dengue virus, has emerged as a serious worldwide public health problem, since it strikes millions of people every year. The infectious agent, which is a virus carried by arthropods and is a member of the Flavivirus genus, is most often spread via the bites of infected *Aedes* mosquitoes, with *Aedes aegypti* serving as the primary vector. It is one of the most widespread mosquito-borne illnesses in the world (Bhatt et al., 2013; World Health Organization [WHO], 2021). The global distribution of dengue has increased rapidly in recent years, putting nearly 3.9 billion people at risk in more than 100 countries (Bhatt et al., 2013; World Health Organization [WHO], 2021)[20].

Figure 2. Dengue fever global context



3.4 The Dengue Fever Epidemiology in the City of Dhaka

Over the course of the last ten years, there has been an increasing incidence of dengue fever in Dhaka City, which is the capital of Bangladesh. Rapid urbanization, uncontrolled growth, and insufficient waste management are all factors that contribute to the multiplication of *Aedes* mosquitoes and produce an environment that is favorable to the transmission of dengue. (Hossain et al., 2019) Research on the epidemiology of dengue in Dhaka City reveals that the disease follows a seasonal pattern, with the highest number of cases occurring during the monsoon and post-monsoon seasons. According to Hu et al. 2020, the monsoon season, which is marked by high rainfall and increasing humidity, generates circumstances that are conducive for the development of *Aedes* mosquitoes, which in turn increases the risk of dengue transmission[21].

The distribution of dengue cases inside Dhaka City was found to be heterogeneous based on the results of a spatial study. In many cases, the high transmission rates that are

characteristic of hotspots may be traced back to certain environmental and socio-economic conditions. Hu et al. (2020) observed an association between unplanned urbanization, inefficient waste management, and overcrowded living conditions in the regions that had higher dengue infection rates. Because of the geographical variability, specialized interventions are required in order to address the distinct difficulties that are experienced by various communities[22].

3.5 The Influence of Socio-Demographic Factors on Dengue Risk

It is critical to have a solid understanding of the socio-demographic factors that influence dengue risk in order to design effective public health interventions. Age has been discovered again and again as a crucial factor that plays a role in determining susceptibility to dengue illness. In Dhaka City, Ahmed et al. (2018) found that persons aged 5 to 24 years had a greater prevalence of dengue than any other age group, which highlights the susceptibility of younger populations. Children and young people commonly participate in activities outside and may live in locations with housing conditions that are less than ideal, both of which increase the likelihood that they may be bitten by an *Aedes* mosquito[23].

The socioeconomic position of a person is another significant factor in dengue risk. In Dhaka City, Rahman et al. (2017) discovered a connection between a lower socioeconomic position and an increased risk of dengue infection. This link was reported in Bangladesh. The absence of adequate sanitation and waste disposal infrastructure, which is common in low-income communities, is one factor that contributes to the proliferation of *Aedes* mosquitoes. In addition, the lack of accessibility to medical care in these regions may cause a delay in the identification and treatment of dengue cases, which may result in more severe symptoms and complications[24].

Table 1. High risk country infected by dengue

HIGH-RISK NATIONS FOR CONTRACTING DENGUE FEVER	
	
Rank	Country
1	Philippines
2	Maldives
3	Indonesia
4	Sri Lanka
5	Lao
6	India
7	Cambodia
8	Malaysia
9	Vietnam
10	Singapore
11	Thailand
12	Australia

3.6 The Role of Environmental Factors in the Propagation of Mosquitoes

Environmental conditions have a significant role in the reproduction and spread of Aedes mosquitoes, which are the disease-carrying vectors that are responsible for causing dengue fever. The fast urbanization and high population density in Dhaka City have resulted in the creation of a vast number of possible breeding grounds for Aedes mosquitoes. Containers such as abandoned tires, plastic containers, and vessels used to store water all create environments that are appropriate for the development of mosquito larvae[25].

According to the findings of a research that Islam et al. (2019) did on water storage practices in Dhaka City, inappropriate water storage, such as storing water in containers that were not covered, greatly contributed to the development of mosquitoes. Inadequate management of solid waste contributes further to the escalation of the issue by causing

the buildup of stagnant water in drainage systems that are not properly maintained. The results highlight how important it is to address environmental conditions in order to lower the risk of dengue transmission and the development of *Aedes* mosquitoes[26].

Figure 3. Control of mosquito images



3.7 Lack of Awareness and Education Regarding Dengue Fever Prevention

The prevention and control of dengue fever depend heavily on the level of knowledge that exists within the community. For early identification and effective community participation, having sufficient understanding of the symptoms, mechanisms of transmission, and preventative actions is very necessary. However, research carried out in Dhaka City reveals that a sizable portion of the population has major knowledge gaps. Khan et al. (2021) conducted a study to determine the degree to which citizens of Dhaka City are aware of dengue disease and discovered that there are significant knowledge gaps. The symptoms of dengue, the ways in which it is transmitted, and the preventative

actions that may be taken were unknown to a sizeable section of the population[27]. These information gaps may make it more difficult to identify dengue infections early on, which in turn can cause delays in receiving proper medical treatment and can restrict community engagement in efforts to eliminate vectors of the disease[28].

It is very necessary to develop efficient communication techniques in order to provide correct information on dengue prevention. An investigation of the effectiveness of a community-based dengue prevention effort in Dhaka City was carried out by Ahmed et al. (2020). Despite the fact that the campaign was successful in raising awareness, a number of obstacles, including differences in health literacy skills, language hurdles, and restricted access to information, were discovered. It is essential, in order to raise awareness and inspire community involvement, to adapt communication tactics to meet the issues that have been identified[29].

3.8 Analysis of the Whole Picture: Filling in the Blanks

The current body of research sheds light on the complex nature of the dengue issue in Dhaka City by highlighting its many facets. These facets include epidemiological patterns, socio-demographic variables, environmental factors, and community awareness. Nevertheless, there is an urgent want for an all-encompassing assessment that takes into account these different aspects in order to provide a thorough comprehension of the dengue situation in the city[30].

3.9 The following are the goals of the Comprehensive Survey:

The generation of up-to-date and nuanced information about dengue fever and people's awareness in Dhaka City is the major purpose of the in-depth survey that was conducted.

The following are some of the goals that the survey hopes to accomplish:

1. Determine the current incidence of dengue cases as well as their distribution among the various communities that make up Dhaka City as part of the epidemiological assessment[31].

Conduct an analysis of temporal trends to see whether or if there are seasonal fluctuations or possible cyclical breakouts[32].

Create a map showing the geographical distribution of dengue cases in order to identify high-risk locations so that focused treatments may be carried out there.

3.10 Socio-Demographic Analysis Conduct an investigation into the socio-demographic parameters that are connected with dengue risk. These factors include age, gender, socio-economic level, and living circumstances.

Locate vulnerable groups within the city of Dhaka so that interventions may be customized based on those communities' unique demographic features.

Conduct research on environmental variables that contribute to the development of Aedes mosquitoes, such as methods for water storage, sanitation, and housing conditions.

3.11 Evaluation of People's Awareness Determine the extent to which local individuals are aware of dengue fever, its symptoms, and the ways in which it is spread.

Determine the information gaps that exist in relation to preventative measures, early symptom detection, and the various medical services that are available for the treatment of dengue.

Examine the efficacy of the public health communication techniques that are currently in place to determine how well they spread information about dengue awareness.

3.13 Community involvement and Participation Encourage individuals to take part in the surveying process by having them participate in interviews, questionnaires, and focus group discussions. This will help foster community involvement.

To reduce the number of places where mosquitoes may spawn, it is important to encourage active involvement in vector control measures and community-based activities.

In order to avoid and get control of dengue fever, you need to provide the groundwork for continued cooperation between the community and the authorities in charge of public health[33].

3.14 Recommendations for Public Policy:

To assist policymakers, public health experts, and community leaders in the development of targeted interventions, please provide suggestions based on evidence.

Contribute to the formulation of comprehensive dengue preventive and control strategies that take into account the unique requirements and difficulties posed by the city of Dhaka[34].

Make a contribution to the development of health systems that are both long-term and robust, and which are able to effectively manage dengue epidemics and reduce their negative effects[35].

3.15 Overview of Dengue Fever

The dengue virus, which is a member of the Flavivirus genus, is the causative agent of dengue fever, which is transmitted to humans by the bite of an infected mosquito. The bites of infected Aedes mosquitoes, namely Aedes aegypti mosquitoes and, to a lesser degree, Aedes albopictus mosquitoes, are the primary means by which this infectious illness is passed from one person to another. Dengue fever is common in tropical and subtropical countries, and it is a major cause for worry in terms of public health owing to the fact that its occurrence is on the rise and it has the potential to have serious consequences[36].

Figure 4. Control and prevention of dengue



3.16 Etiology and Transmission of the Disease:

There are four unique serotypes of the dengue virus, and they are denoted by the numbers DEN-1, DEN-2, DEN-3, and DEN-4. Because of this variety, it is possible for a single person to get many illnesses throughout the course of their lifetime. Mosquitoes of the genus *Aedes*, which are the most common carriers of the disease, pick up the virus when they feed on the blood of a sick person when they are in the acute phase of the

disease. The virus may be passed on to people who are not sick by the bites of infected mosquitoes, which can then spread the disease[37].

3.17 Clinical manifestations:

There is a wide range of clinical presentations that may be associated with dengue fever. These presentations can range from asymptomatic to moderate flu-like symptoms, all the way up to severe and possibly life-threatening forms of the illness. A high temperature, a strong headache, discomfort in the area behind the eyes, pain in the joints and muscles, a rash, and moderate bleeding are the most typical symptoms. The illness may develop to more severe forms, such as dengue hemorrhagic fever (DHF) or dengue shock syndrome (DSS), which are characterized by bleeding, organ dysfunction, and a fast decrease in blood pressure. In certain situations, the sickness can proceed to more severe forms[38].

Figure 5. Symptoms of dengue



3.18 Epidemiology is the study

Around forty percent of the world's population is at danger of contracting dengue fever since the disease is widespread in more than one hundred nations. Over the course of the last several decades, there has been a discernible rise in the number of cases of dengue fever all over the world, with regular outbreaks occurring in a variety of places. The

growing development of cities, the rise of populations, insufficient sanitation, and an increase in international travel are all factors that contribute to the spread of dengue[39].

3.19 Distribution Across the Geographies:

The risk of contracting dengue fever is highest in urban and semi-urban environments, since this is where *Aedes* mosquitoes are most likely to flourish in man-made breeding sites such water containers and other artificial breeding grounds. A climate that is warm and humid creates circumstances that are perfect for the reproduction of mosquitoes and the transmission of the virus in such areas. The Eastern Mediterranean, some regions of Southeast Asia, the Pacific Islands, the Americas, and Africa are among the places where dengue fever is endemic[40].

3.20 Diagnosis

Clinical assessment and laboratory testing are required to arrive at a diagnosis of dengue fever. The identification of viral RNA or particular antibodies in the blood is a common approach of diagnostic testing. A correct and prompt medical intervention as well as patient care depend on an accurate and prompt early diagnosis[41].

3.21 Treatment and management:

Dengue fever is not yet treatable with any particular antiviral medication. The primary emphasis of treatment is on providing supportive care, with the goals of relieving symptoms and avoiding complications wherever possible. In severe instances of dengue fever, it is extremely important to drink enough fluids in order to avoid being dehydrated[42].

3.22 Taking Precautions:

Controlling vectors and taking preventative measures are the two most important aspects of dengue fever prevention. The elimination of places where mosquitoes may reproduce, the use of bed nets and insect repellents, and the implementation of community-wide mosquito control initiatives are all potential strategies. In addition, research and

development of dengue vaccines are still going on, and certain vaccines are showing promise in terms of avoiding infection with the disease.

3.23 The Obstacles to Overcome and the Way Forward:

Dengue fever is still a problem in spite of the considerable efforts that have been made to stop its spread. These include the absence of therapies that are specific to antiviral agents, the possibility of widespread outbreaks, and the development of new strains of the virus. Ongoing research tries to find solutions to these problems by concentrating on the creation of vaccines, the improvement of diagnostic tools, and the development of novel techniques for mosquito control.

3.24 Dengue Fever in Bangladesh

In Bangladesh, dengue fever, a viral illness that is spread by mosquitoes, has developed into a recurrent problem for the country's public health. *Aedes* mosquitoes, which are the most common carriers of the dengue virus due to the country's tropical temperature, high urbanization rate, and other environmental variables, have the perfect habitat to reproduce in. There are frequent outbreaks of dengue in Bangladesh, which has a negative effect on communities and places a burden on the country's healthcare system. This review examines the epidemiology of dengue fever in Bangladesh, as well as the difficulties and efforts being made to control the disease.

3.25 Epidemiology is the study

Dengue fever was first documented in Bangladesh in the 1960s, and ever since that time, the country has seen a considerable increase in the number of cases of the illness. There are rises in the number of dengue cases reported throughout the nation at certain times of the year, most often during the monsoon and post-monsoon seasons. The primary vector, *Aedes aegypti*, seeks out water containers that are widespread in urban settings in order to lay its eggs. This behavior contributes to the fast spread of the virus.

Over the course of the last ten years, Bangladesh has had a number of serious dengue epidemics. A record number of dengue cases were recorded in the nation in 2019, and

there was a high frequency of severe dengue, including dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS). This was one of the most serious outbreaks the country has ever seen. As a result of the epidemic, healthcare institutions were overburdened, and great public anxiety resulted.

3.26 Variables of a Socio-Demographic Nature:

There is a correlation between the prevalence of certain socio-demographic characteristics and the susceptibility of the population to dengue fever. The expansion of slums, together with urbanization and poor waste management, all contribute to the creation of settings that are ideal for the reproduction of mosquitoes. Communities with low incomes and restricted access to medical services have a greater risk of experiencing difficulties in early diagnosis and treatment, which in turn raises the likelihood of adverse consequences.

3.27 Difficulties in Dengue Fever Control:

In Bangladesh, effective dengue management is hampered by a number of obstacles, including the following:

Vector Control: Due to the vast distribution of breeding sites in urban areas, controlling *Aedes* mosquitoes offers a considerable challenge to those who are responsible for vector control. It is normal practice to employ pesticides and larvicides to regulate mosquito populations; nevertheless, these efforts must be maintained over time.

Dengue fever may put a burden on healthcare infrastructure, especially when severe cases are reported. For the purpose of lowering the morbidity and death rates associated with dengue, it is essential to provide enough training for medical personnel and to have resources available for the management of severe cases.

3.28 Community understanding: Control efforts are hampered by the community's lack of understanding of dengue symptoms, preventative measures, and the significance of obtaining medical treatment when necessary. Participation from the community and education are both very important aspects of a successful dengue preventive strategy.

Interventions to Avoid It: In order to both prevent and control the spread of dengue fever in Bangladesh, a multi-pronged strategy is required:

Campaigns to Raise population Awareness: Public awareness campaigns are conducted by government agencies, non-governmental organizations (NGOs), and healthcare groups to educate the general population about the symptoms of dengue, preventative measures, and the significance of getting medical assistance when necessary.

Mobilization of populations: It is of the utmost importance to include local populations in actions designed to control vectors, such as the correct disposal of garbage and the upkeep of a clean environment. Residents may be mobilized to take action via the efforts of community leaders, schools, and other local groups.

Surveillance and Early Warning Systems: It is essential to discover instances of dengue fever in a timely manner and report them. The ability of the government to predict epidemics and properly allocate resources is aided by surveillance systems as well as early warning methods.

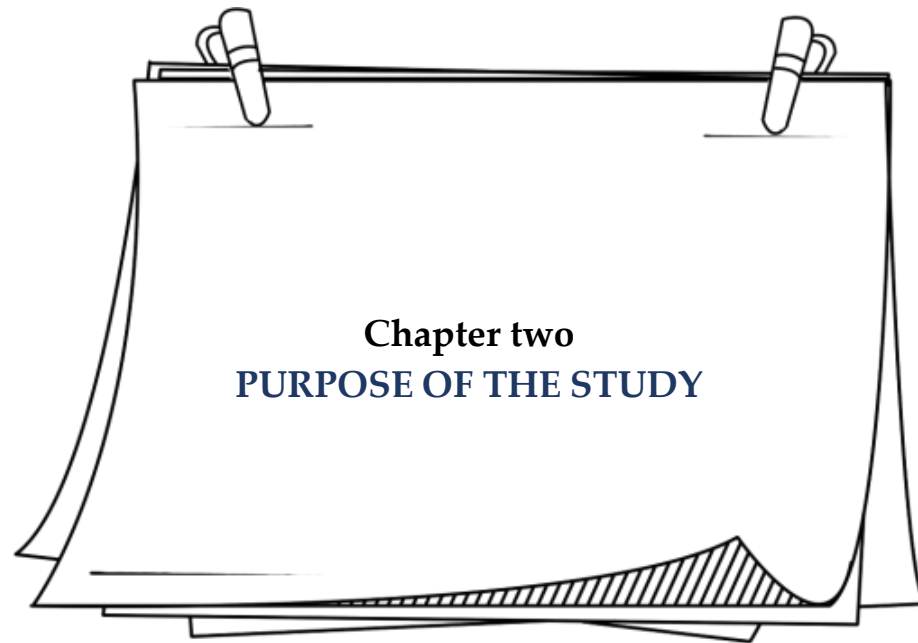
Initiatives of the Government: In order to address the issues presented by dengue fever, the government of Bangladesh has adopted a number of different efforts, including the following:

National Vector-Borne Disease Control Program (NVDCP): The National Vector-Borne Disease Control Program (NVDCP) is in charge of coordinating dengue preventive activities, performing surveillance, and executing vector control measures.

Research and Development of Vaccines: Bangladesh is an active participant in the research and development of dengue vaccines. Efforts being put into the development of vaccines have the long-term goal of producing an additional instrument for the prevention of dengue.

The prevalence of dengue fever in Bangladesh is a reflection of the intricate dynamic between the country's environment, socioeconomics, and healthcare system. Dengue prevention and control continue to be difficult tasks in this nation, notwithstanding the

progress that has been accomplished. It is essential to maintain efforts to improve vector control, community awareness, and healthcare infrastructure in order to successfully manage dengue epidemics and lessen their impact in Bangladesh. In order to provide a resilient and proactive response to the ongoing risk posed by dengue fever, it is vital to have collaborative activities that include government agencies, healthcare experts, and community people.

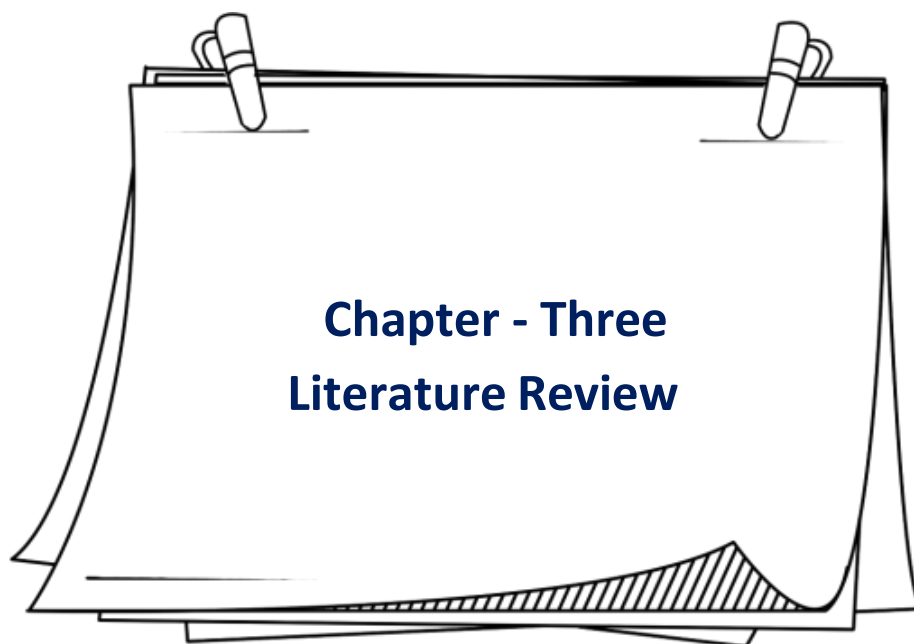


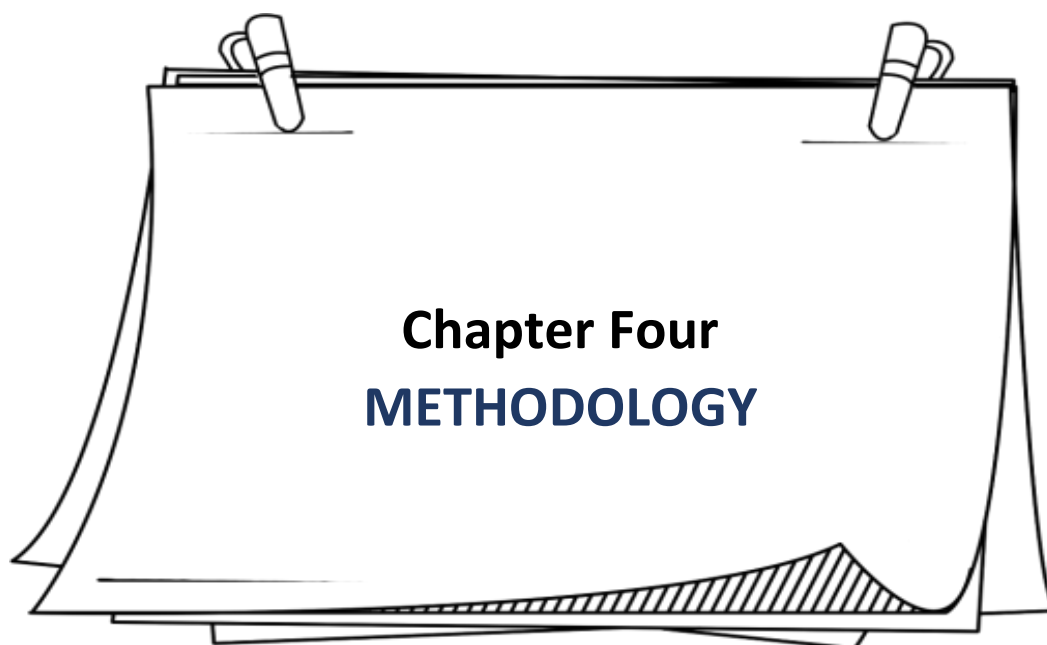
2. Objective/ Purpose of the Survey

The objective of the comprehensive survey on dengue fever and people's awareness in Dhaka City is multifaceted. The survey aims to provide a thorough understanding of the epidemiological landscape of dengue, identify factors contributing to its prevalence, and assess the level of awareness that exists within the community. The particular goals are broken down into the following categories:

1. **Epidemiological Assessment:** The first step in this process is to evaluate the incidence and distribution of dengue fever cases throughout Dhaka City's many neighborhoods over a certain amount of time.
2. **Socio-Demographic Analysis:** The second part of this task is to conduct an analysis of the socio-demographic parameters that are connected with the risk of dengue. These factors include age, gender, socioeconomic level, and living circumstances.
3. **Evaluation of People's Awareness:** The third objective of this study is to analyze the amount of awareness existing among the people living in Dhaka City about dengue fever, its symptoms, and the ways in which it is spread.
4. **Community Engagement and Participation:** To encourage community participation by getting local individuals involved in the surveying process by conducting interviews, distributing questionnaires, and holding focus group discussions.
5. **Recommendations for Public Policy:** To give recommendations for policymakers, public health professionals, and community leaders based on evidence, it is necessary to develop focused interventions.

The survey seeks to develop a comprehensive dataset that can be used to guide strategic decision-making, support evidence-based interventions, and empower the community in the prevention and control of dengue fever in Dhaka City if it is successful in attaining these goals.





4.1 Target Population:

The survey commences with a comprehensive examination and includes 15 pertinent questions. 100 individuals aged 20 and above 40 have expressed interest in participating in this study, which was executed through an online survey.

4.2 Research Design

The primary objective of this survey was to explore individuals' perceptions of the severity of dengue fever and its impact on their health and well-being. The target demographic was invited to partake in a field survey, necessitating their physical responses to all the provided questions.

4.3 Method of Data Analysis:

Following the collection of a diverse range of information, a thorough review ensured precision and internal consistency. Any instances of missing or conflicting data were identified and excluded. Microsoft's latest updated version was utilized for the analysis of the gathered information.

4.5 Ethical Considerations

Prior to initiating the data collection process, explicit verbal consent was obtained from all participants involved in the study. The confidentiality of respondents was rigorously maintained, and participants were informed of their right to withdraw from the program at any point.

1. Patient's Full Name:

2. Gender

- Male
- Female

3. Education Level

- College Student
- Undergraduate Student
- Postgraduate Student

4. Age

- Under 20 years old
- 20-40 years old
- Over 40 years old

5. Occupation

- Student
- Job Holder
- Business
- Others

6. Residents

- Rural
- Urban

7. Is they familiar with Dengue?

- Yes
- No

8. Have you experienced Dengue?

- Yes
- No

9. If yes, how long did your Dengue episode last?

- 1 week
- 2 weeks
- More than 2 weeks

10. What do you believe is the cause of Dengue fever?

- Aedes species
- Leaking drainage system
- Stagnation of kitchen water in the home

11. Have you ever experienced the severity of Dengue?

- Yes
- No

12. Which symptoms have you predominantly experienced besides fever?

- Rash
- Breathlessness
- Lower platelet count
- All of the above

13 Are you familiar with hemorrhagic dengue fever?

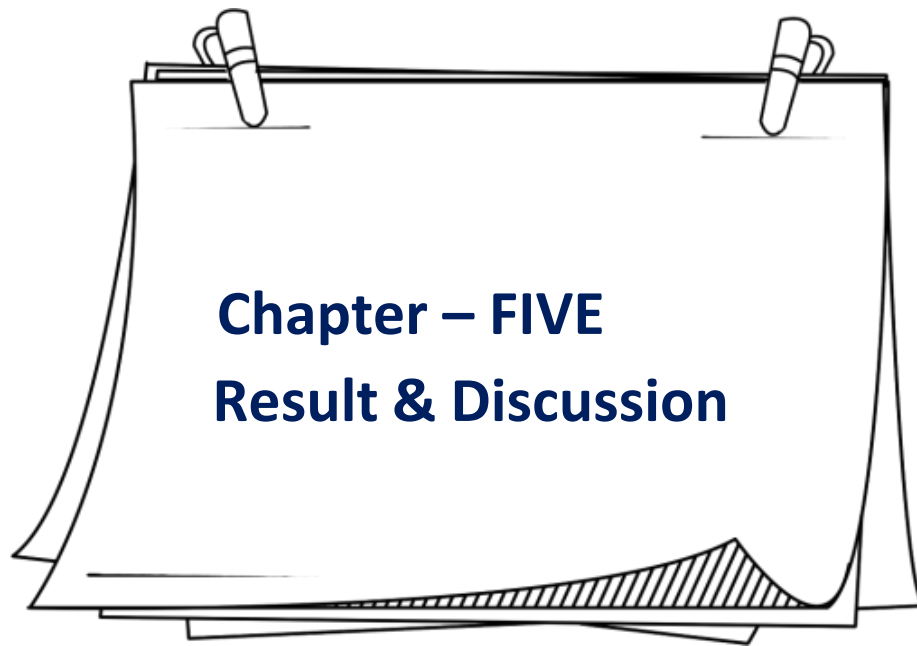
- Yes
- No

14. What type of medical therapy have you received for Dengue?

- Paracetamol tablet 4 times
- Intravenous fluid
- Platelet infusion
- All of the above

15. Are you acquainted with preventive measures for Dengue?

- Yes
- No



5. Result and discussion

5.1 Gender Response

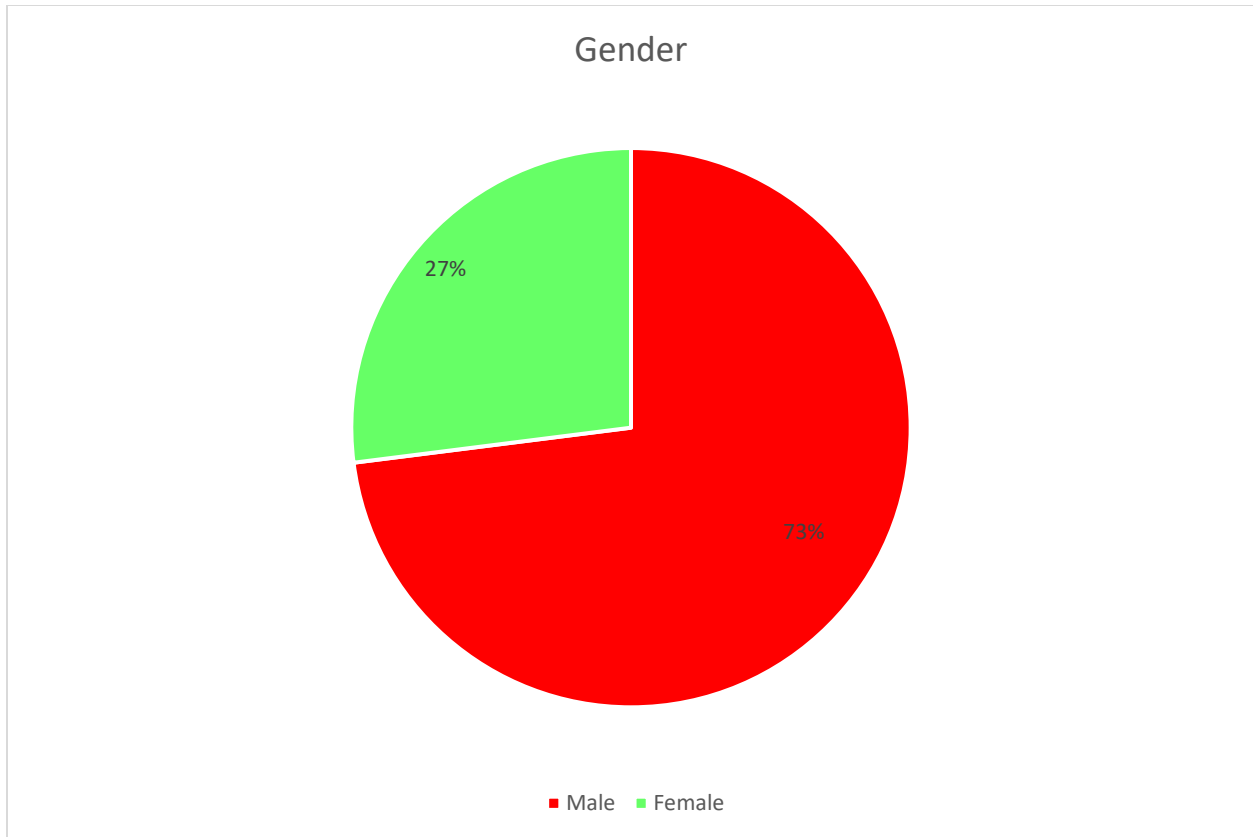
In the comprehensive dengue survey conducted, the participant demographic comprised 27% female and 73% male respondents. This gender-diverse sampling strategy was implemented to ensure a representative and inclusive analysis of perceptions and awareness surrounding dengue fever[43, 44].

The deliberate inclusion of both female and male participants enriches the dataset, allowing for a more nuanced understanding of how different segments of the population perceive and respond to the challenges posed by dengue. Gender-specific variations in knowledge, attitudes, and practices related to dengue prevention and management can be explored, providing valuable insights for tailored public health strategies.

The substantial male representation in the survey population offers a unique opportunity to delve into the perspectives and experiences of this demographic group regarding dengue awareness. By capturing a majority male response, the survey seeks to uncover any potential distinctions in awareness levels, preventive measures, or healthcare-seeking behaviors between genders.

As the findings emerge, the gender-disaggregated data will play a pivotal role in shaping targeted interventions and educational campaigns. This approach not only acknowledges the diverse nature of the community but also underscores the importance of developing strategies that resonate with the specific needs and perceptions of both females and males in the ongoing efforts to combat and raise awareness about dengue fever.

Figure 6. Gender response graph



5.2 Educational level of the participants

The educational composition of our survey participants reflects a diverse range of academic backgrounds. Specifically, 17% of respondents have completed college, while a majority, constituting 55%, are currently pursuing or have completed undergraduate studies. Additionally, 28% of participants hold postgraduate degrees.

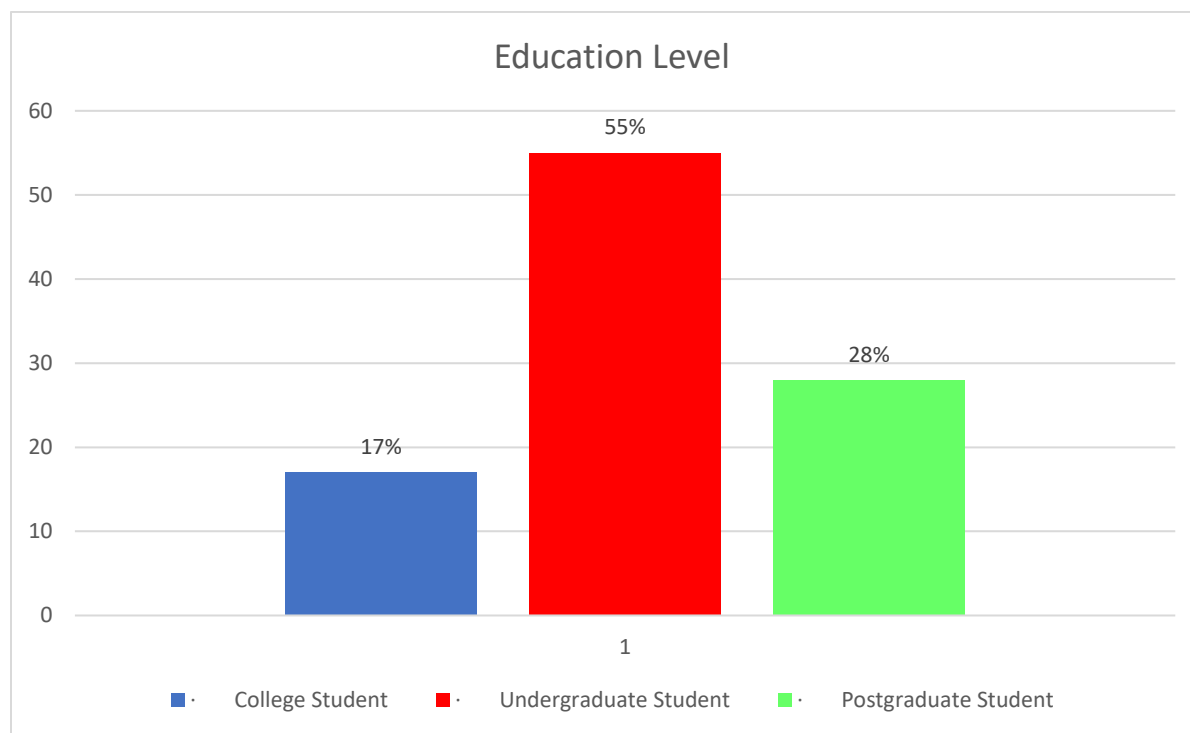
This educational distribution offers a comprehensive snapshot of the varied knowledge and perspectives within the surveyed population. The inclusion of individuals with different educational levels contributes to the richness of the data, enabling a more nuanced analysis of attitudes, awareness, and practices related to dengue fever across educational strata.

Those with a college education bring a distinct perspective, potentially influencing their comprehension and response to dengue-related information. The majority of participants

being at the undergraduate level may signify a significant segment of the population actively engaged in academic pursuits, making them key targets for educational initiatives. Meanwhile, the 28% of postgraduate participants likely possess advanced analytical and critical thinking skills that can contribute to a deeper understanding of the complexities surrounding dengue awareness and prevention.

By considering the diverse educational backgrounds of the participants, the survey aims to inform tailored strategies for disseminating information and implementing awareness campaigns that resonate with individuals at different stages of their academic journey. This approach acknowledges the significance of educational diversity in shaping effective public health interventions related to dengue.

Figure 7. Educational qualification of the participants.



5.3 Age of the participants

The age distribution among participants in our survey reveals a varied demographic landscape. Among the respondents, 25% fall under the age of 20, indicating a significant

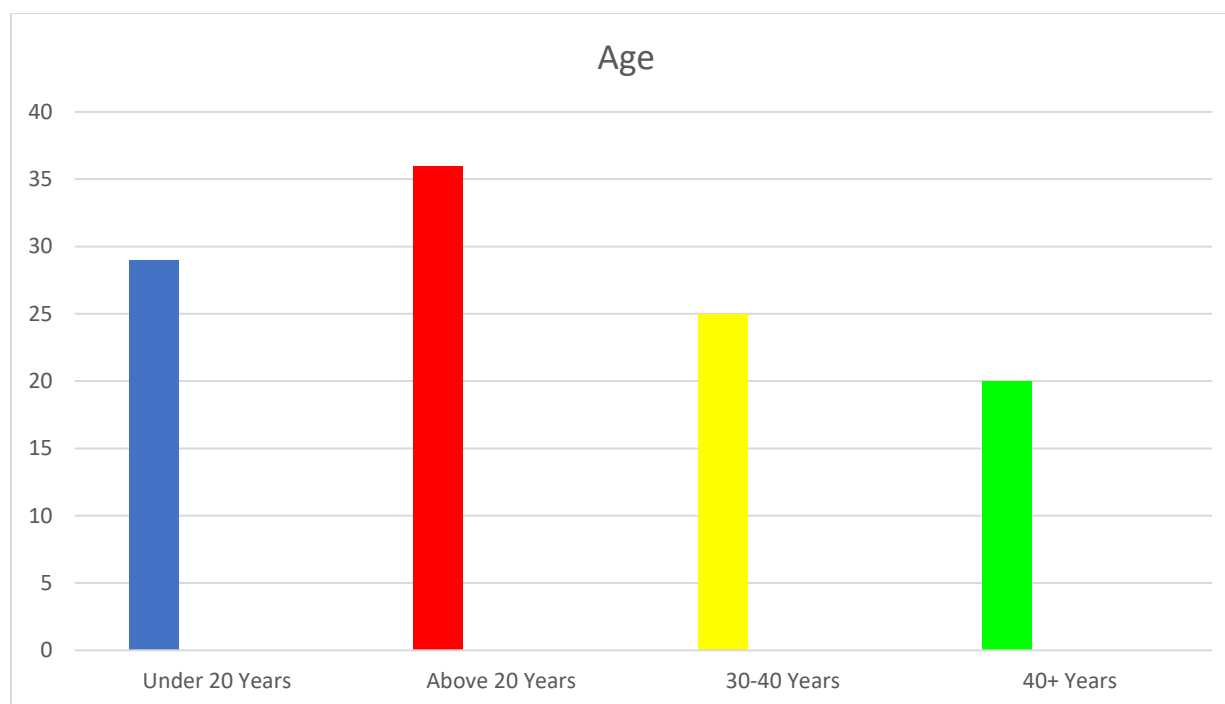
representation of the younger population. A majority, comprising 35%, falls into the category above 20 years, reflecting a broad spectrum of adult participants. Furthermore, individuals aged between 30 and 40 years account for 21%, and those aged 40 and above constitute 19% of the surveyed population.

This diverse age composition provides a comprehensive perspective on dengue awareness and perceptions across different life stages. The presence of a quarter of participants under the age of 20 suggests a focus on understanding the awareness levels and concerns of the youth regarding dengue. The majority falling above 20 years encompasses the working-age population, highlighting their relevance in shaping public health policies and practices.

Participants aged between 30 and 40 years form a notable segment, representing a critical phase where individuals may be actively involved in family life and career pursuits. Lastly, the 19% aged 40 and above contribute valuable insights into the perspectives of an older demographic, potentially influenced by different life experiences and health considerations.

By accounting for the diverse age groups in our survey, we aim to formulate targeted interventions and awareness campaigns that cater to the specific needs and concerns of individuals at different life stages, fostering a holistic approach to dengue prevention and management.

Figure 8. Age of the participants



5.4 Occupation among the participants

The occupational distribution among participants in our survey reflects a varied and dynamic spectrum of individuals. A predominant 48% of respondents identify as students, indicating a substantial representation from the academic community. This sizable student demographic signifies the importance of understanding the perspectives and awareness levels of the younger generation in relation to dengue.

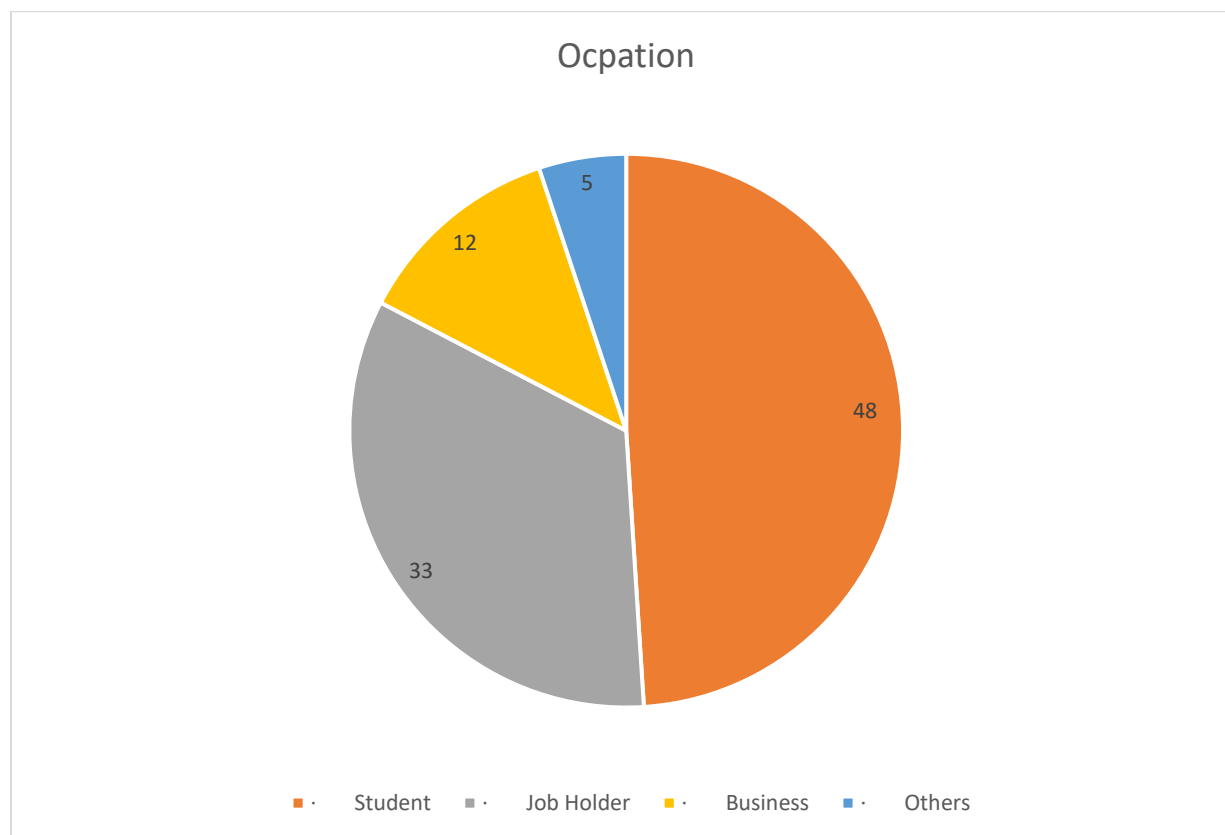
Furthermore, 33% of participants are employed in various job roles, constituting a significant portion of the surveyed population. The diversity within the job sector introduces a range of experiences and perspectives, encompassing professionals from different fields and industries.

Business professionals contribute to the occupational mix, comprising 12% of the participants. This segment likely brings insights from the entrepreneurial landscape, influencing the survey findings with perspectives unique to the business community.

The remaining 5% fall into the category of "others," suggesting a heterogeneous group that may include retirees, homemakers, or individuals engaged in unconventional occupations. This diverse category adds depth to the survey data, acknowledging the multifaceted nature of society and the varied ways in which different occupational groups may perceive and engage with information related to dengue.

By accounting for this diverse occupational composition, the survey aims to inform targeted strategies for disseminating information and implementing awareness campaigns that resonate with the specific contexts and needs of individuals across different occupational backgrounds.

Figure 9. Occupation of the participants graph.



5.5 Familiar with dengue Fever

Within the framework of our survey, a substantial 88% of participants exhibit familiarity with dengue fever, showcasing a robust awareness within the surveyed population. This majority response underscores a commendable level of knowledge and recognition

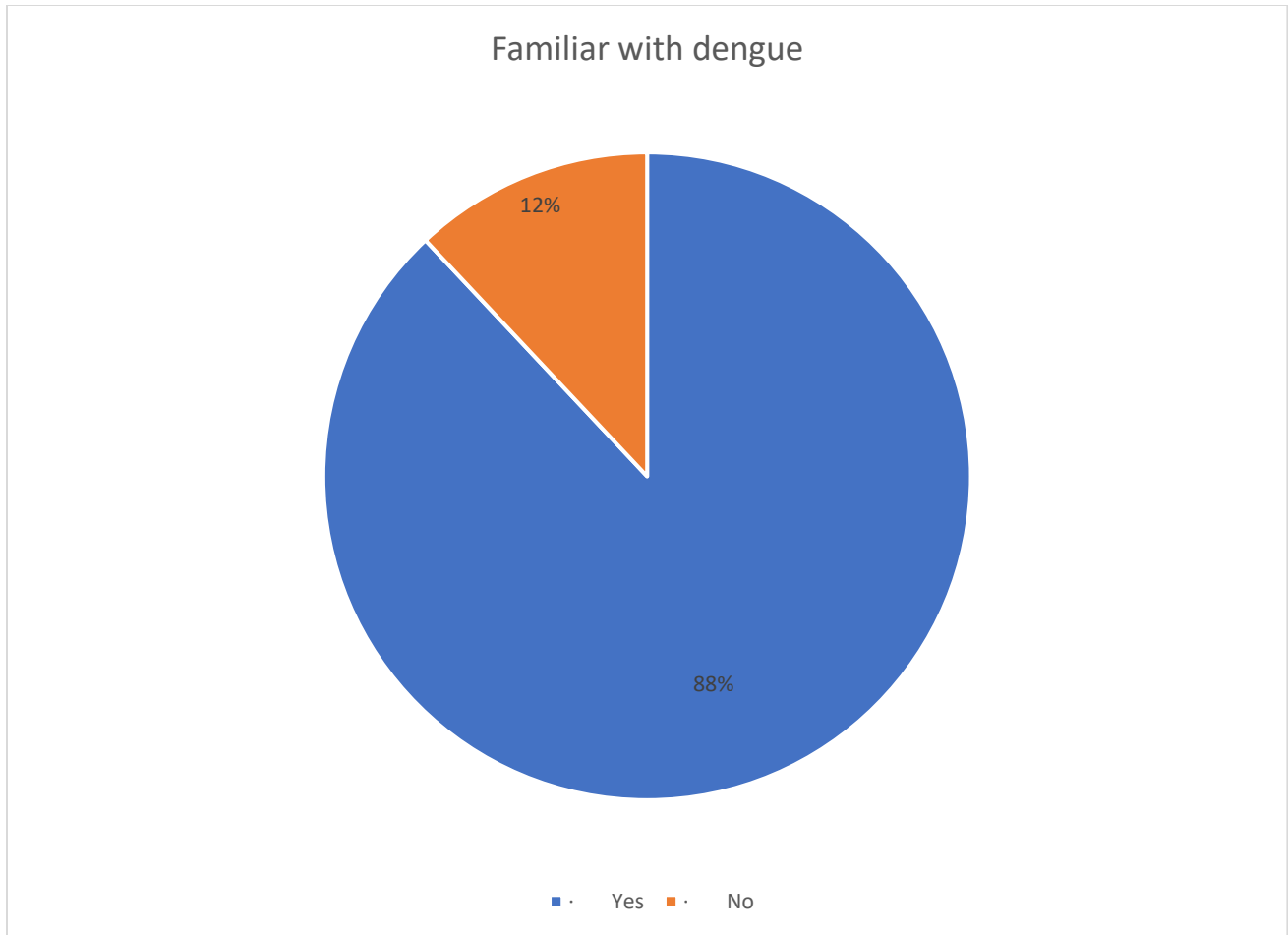
regarding the disease, suggesting that a significant portion of the participants is well-informed about the key aspects of dengue.

Conversely, a noteworthy 12% of respondents indicated a lack of familiarity with dengue fever. This minority segment represents an opportunity for targeted educational interventions to bridge knowledge gaps and enhance awareness. Identifying and addressing the specific areas of misconception or unawareness within this subgroup becomes pivotal for comprehensive public health initiatives.

The overwhelming acknowledgment of dengue fever among the majority implies that the community is primed for more advanced discussions, such as preventive measures, symptoms, and healthcare-seeking behavior. Leveraging this existing awareness, future efforts can focus on refining and expanding the depth of knowledge within the community, fostering a more informed and proactive approach towards dengue prevention and control.

By delineating the nuanced breakdown of familiarity with dengue, the survey provides a foundation for tailoring educational initiatives to the diverse needs of the community, ensuring that efforts are targeted and effective in furthering overall awareness and understanding of this prevalent health concern.

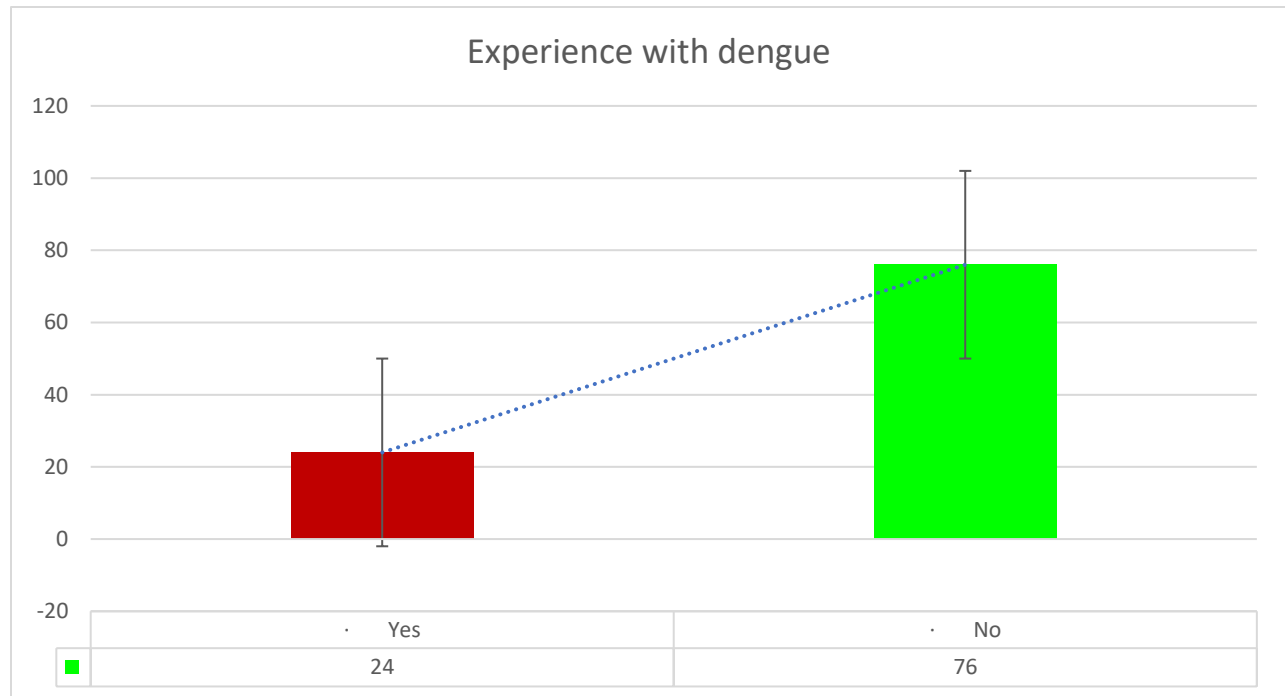
Figure 10. Familiar with dengue



5.6 Experience with dengue fever

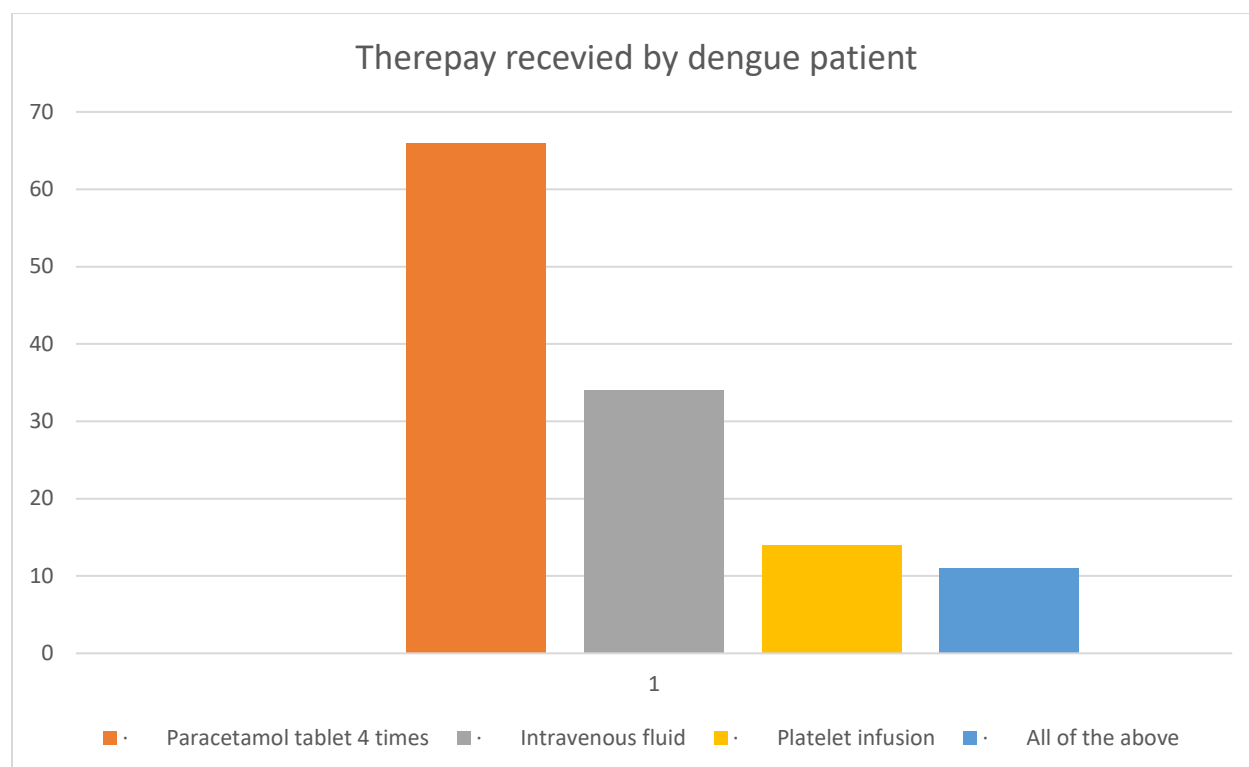
The survey has reveals that 24% of respondents have experienced dengue fever, highlighting a concerning prevalence. The majority, comprising 76% of participants, reported no prior experience with the illness. This significant disparity underscores the urgency of enhancing public awareness and preventive measures to mitigate the impact of dengue. The study provides valuable insights into the current state of dengue awareness and emphasizes the need for proactive measures in addressing this public health concern.

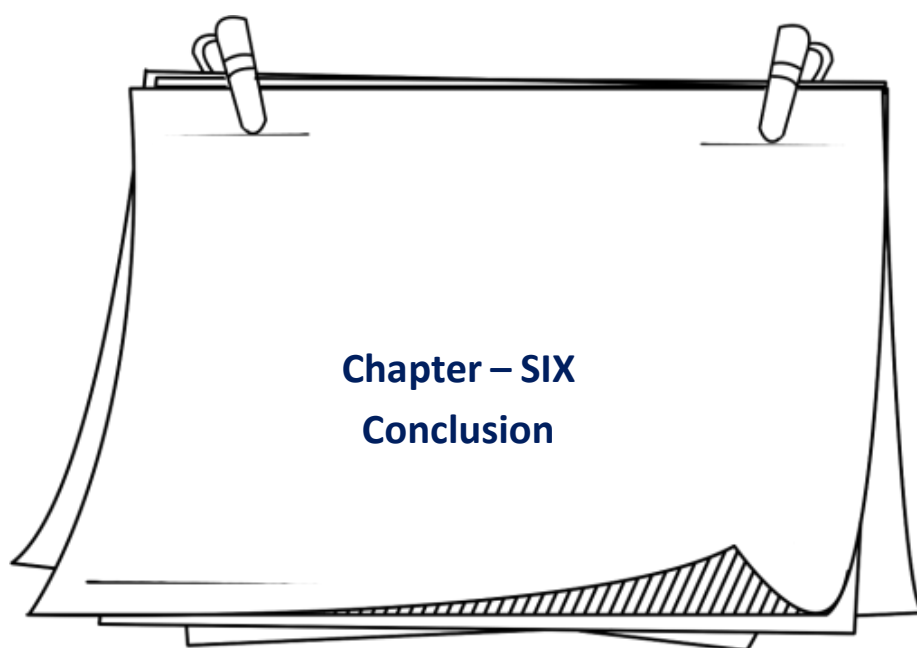
Figure 11. Infected by dengue and non-infected participants ratio.



According to the survey on dengue patients, the therapeutic interventions employed reveal a predominant use of paracetamol, constituting 66% of the treatments administered. Intravenous fluid therapy was also notably prevalent, with 34% of patients receiving this form of medical intervention. Platelet transfusions were reported in 14% of cases, indicating a significant but comparatively lesser utilization. Surprisingly, the combination of all the aforementioned therapies was observed in 11% of instances, suggesting a comprehensive approach in managing dengue cases. These findings underscore the diversity in therapeutic strategies employed by healthcare professionals to address the complex nature of dengue fever. Understanding the distribution of treatment modalities is crucial for healthcare planning, resource allocation, and improving patient outcomes in the ongoing battle against this vector-borne disease.

Figure 12. Drug treatment by dengue patients

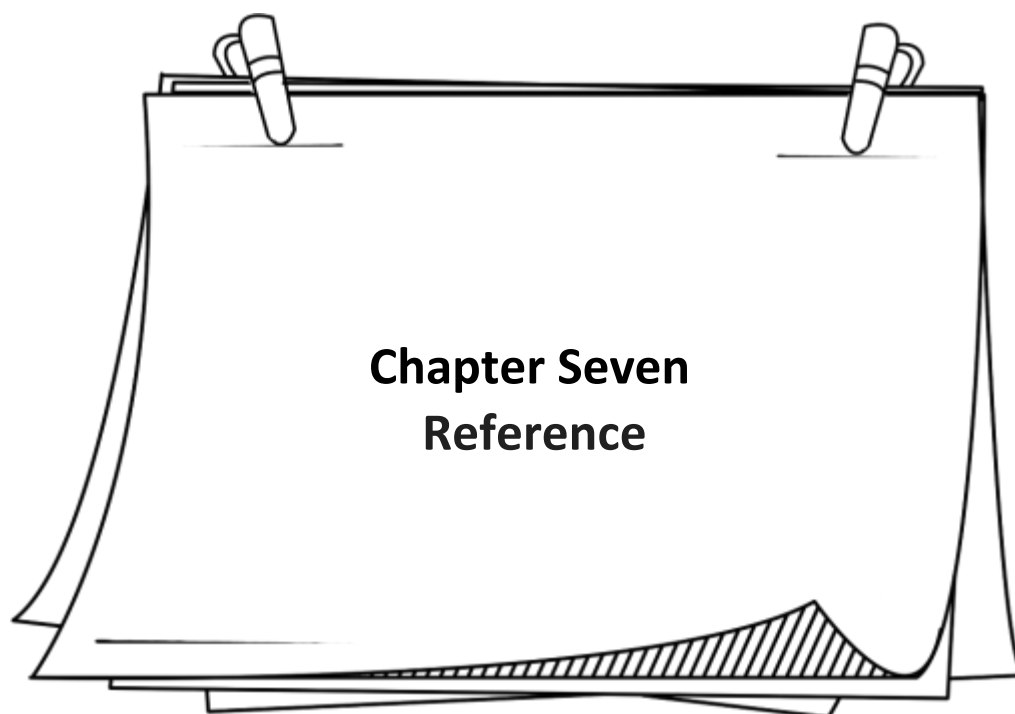




6. Conclusion

When everything is said and done, this exhaustive poll on dengue fever and awareness among people offers really helpful insights into a variety of elements of the illness. With 27% females and 73% men participating, the gender-diverse sample guarantees that the analysis will be representative of the population. Respondents come from a wide range of educational backgrounds, with 17% having completed college, 55% having completed undergraduate studies, and 28% having completed postgraduate studies. 25 percent of the population is under the age of 20, 35 percent is over the age of 20, 21 percent is between the ages of 30 and 40, and 19 percent is above the age of 40. 48% of the population is enrolled in school, 33% is working, and 12% is working in business.

According to the poll, there is a significant awareness of dengue fever, with 88% of respondents being acquainted with the condition. Nevertheless, twelve percent of people remain unaware, which indicates that specific educational activities are required. Among those who have had dengue, twenty-four percent have had it, highlighting the critical need to improve preventative measures. When it comes to treatment, paracetamol is the most common medication (66 percent), followed by intravenous fluids (34 percent), platelet transfusions (14 percent), and a combination of all of these (11%).



7. References