"Eight to ten years ago, dengue was a killer disease…but it is not a killer disease anymore:" A Qualitative Approach to Dengue in Dhaka, Bangladesh

By

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A thesis submitted to the Faculty of Graduate Studies of the University of Manitoba
in partial fulfilment of the requirements of the degree of

MASTER OF ARTS

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Abstract

Dengue is a mosquito borne disease. *Aedes* mosquitoes, *Aedes aegypti and Aedes albopictus* in particular, are the vectors for dengue disease. *Aedes* mosquitoes feed mainly on humans, live in close proximity to humans, and breed in water containers. Although classical dengue is not considered harmful, dengue hemorrhagic fever may cause severe harm to individual health, including death. Every year, 100 millions dengue cases are reported globally along with 250,000 dengue hemorrhagic cases. Bangladesh has experienced several outbreaks of dengue since 2000, and most dengue cases were reported in Dhaka city. After realizing the ineffectiveness of the top-down approaches, community participations has been given importance and acknowledged by many as necessary for an effective dengue prevention program. This qualitative research explores community perceptions (knowledge, attitudes, and practice) of dengue fever with a special emphasis on the concepts of risk, power, and responsibility for dengue transmission and prevention. The research utilized survey questionnaires, in-depth interviews, focus group discussions, and informal field observations. Findings suggest that respondents do have knowledge that dengue is transmitted by mosquitoes, but they do not recognize the *Aedes* dengue mosquito or their breeding habits, associating dirty water rather than cleaned stored water with dengue risk. Moreover, respondents tend to underestimate dengue risk for various reasons, including daily stressors, a confidence in medical treatments, media silence, and publicity of dengue as a 'virus jor.' However, the respondents do believe that dengue prevention is possible with shared responsibility and collective action.

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Chapter One: Introduction

Dengue is a rapidly spreading disease mainly affecting tropical and sub tropical areas, but now spreading all over the world due to migration and international tourism (Lueng-Chen 2008). Dengue causes more deaths than any other abroviral disease (Dung et al., 1999). More than 2 billion people are at risk for dengue fever (Dung et al., 1999). Although classical dengue is not that harmful, dengue hemorrhagic fever (DHF) and dengue shock syndrome, which typically occur after first dengue infection, might cause severe harm to people's health including death. The major symptoms of dengue include abdominal pain, headaches, rash-like flashes, vomiting and nausea. Hemorrhagic fever takes its name from the additional symptoms of bleeding from the gums, nose, and internal organs (Crabtree, Wong and Mas'ud, 2001). Dengue therefore represents a significant health risk in affected countries. Every year 100 million dengue cases are reported globally along with 250,000 cases of dengue hemorrhagic fever (Monath, 1994). A vaccine for dengue disease has yet to be developed. In this situation prevention of dengue disease is very important to ensure population health and to save lives. *Aedes* mosquitoes are the vector for dengue. As *Aedes* mosquitoes mainly feed on human beings, live in close proximity to humans, and breed in water containers, people's participation in dengue prevention is highly important. To encourage effective community participation in dengue prevention programs, it is important to understand perceptions and practices related to both dengue disease and mosquito control. If these are not explored, prevention programs are not likely to be effective (Kendall, 1998; Crabtree et al., 2001).

Although human populations have been aware of dengue since the 1700s, Bangladesh has been experiencing dengue since the 1960s, and from 2000 it has seen several outbreaks. Most dengue cases and deaths are reported in Dhaka city, a rapidly urbanizing city

(Yunus et al., 2001). Several entomological and epidemiological studies have been done, but little in-depth study has yet been carried out in Bangladesh to grasp community perceptions and practices that are important to prevent dengue transmission. This research intends to fill the gap by undertaking an in-depth study of community knowledge and practices related to dengue fever using anthropological research methods. This qualitative research is a part of a larger project, "Climate Variability, Social-Ecological Changes, and Dengue Disease in Bangladesh: Development of an Integrated Ecohealth and Adaptive Management (IEAM) approach," funded by the International Development Research Center (IDRC), and involving collaborative research by entomologists, epidemiologists, clinicians, and anthropologists.

Objectives: There are three main objectives to this research, described as follows:

1. To explore community knowledge about dengue disease and its relation to other social, economic, and political contexts. It is important to investigate the perceived 'risk' of dengue disease among community members within the context of other concerns in daily life, and how their perceptions of risk influence their attitudes and practices related to dengue disease and its transmission.

2. To examine social structural aspects, both within the family and within the community, that influence daily life and possible exposure to dengue. This dimension will help to understand not only the 'inside-outside dichotomy' but also how aspects of 'power' (both within the family and in the community) may influence dengue prevention and/or transmission

3. To explore issues of perceived 'responsibility' in dengue transmission and prevention. Who do community members hold accountable for dengue prevention and transmission, and how do they allocate responsibilities? These questions lead to a comparative analysis of dengue perception, from government and the general community, to people of different income groups. This objective explores community

members' understandings of the state or government role in dengue prevention, and how they differentiate the government's role from their own roles.

Key Questions to be Explored Include:

1. What is the existing knowledge of, and practices related to, dengue in the community?
2. How risky is dengue to the community in the context of their social, economic, and political lives?
3. Who does the community think should be accountable for dengue transmission?
4. How important does the community think the concept of power is in dengue prevention?

Rationale of the Research in Dhaka, Bangladesh:

Bangladesh has recorded dengue outbreaks since 2000 (Yunus et al., 2001). Most cases and deaths were reported in connection with the city of Dhaka. Dhaka is a metropolitan city defined by rapid urbanization. Dhaka occupies an area of some 360 square kilometers, and the population density of this city is 22,222 people per square kilometer (Parvin and Shaw, 2011). An estimated 55% of people live below the poverty line in Dhaka (Huda, 2001). Half of these poor people live in 'slums' (as the areas are known locally) and in other scattered settlements with limited water, sanitation, and waste management facilities (Huda, 2001: 8). Residents of Dhaka city experience frequent electricity disruptions due to low electricity production and high demand. Almost in every summer, some areas of Dhaka city receive very limited supplies of water to fulfill basic needs[1]. In some areas, such as Rupnagar, Mirpur, a whole day may go by before water is supplied. Almost every year people march in protest to demand a better water supply[2]. In 2010, the government distributed water with the help of the army to cope with this situation. As a result, it is perhaps not surprising that

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[1] The Daily Star, April 27, 2009; bdnews24.com, April 10, 2010.
[2] Bangladesh News, April 28, 2008; Bangladesh News, April 24, 2008.

people rely on storing water in containers in anticipation of a potential day or two without water. This feature alone establishes a potential connection with *Aedes* mosquitoes, and is therefore a risk for dengue.

It is important to note that the water shortage is not homogenous in all areas of Dhaka city. Generally, it is the areas where middle class or poor people live that experience extreme water shortages. Therefore, these people come to the street with empty water containers to protest their water deprivation. Understanding this complex situation is critical in dengue research because *Aedes* mosquitoes breed in water containers. Therefore, how people understand and perceive dengue living in an inextricable situation will provide important information both about dengue transmission and prevention. In addition, no in-depth research has yet been published, even after eleven years of outbreaks, even though research has demonstrated that community participation in dengue prevention is critical (Kendall 1998). Community perceptions and practices, and the connections of dengue to broader socio-economic and political contexts will be explored in this research.

Analytical Tools

According to Kleinman (1978), sickness is experienced and treated in three social arenas of health care systems: the professional (biomedicine) sector, the popular sector, and the folk sector. The popular sector is the individual, familial, social nexus, and is community based; and the folk sector consists of non-professional specialists, sometimes classified as sacred or secular groups. Each sector perceives and treats sickness differently and provides different explanations about sickness, which Kleinman calls the explanatory model (EM). Regardless of the sector, every EM provides explanations of issues like etiology, onset of symptoms, pathology, course of sickness, and treatment (Kleinman, 1978:88). EMs may conflict as they may create different realities for the same sickness that result in poor clinical

care. For example, EMs of biomedicine or the professional sector see 'sickness' only located in the body of the sick person and 'care' is perceived as the disease organ treated by the doctor; on the other hand, the popular sector may locate 'sickness' in the family and may consider the whole family as 'sick.' Therefore, the target of treatment may extend past the body of the sick person. The doctor may be viewed as but one, and not the most important agent of treatment. In my research, I will be dealing mainly with the EMs of the popular sector. Beyond the professional or biomedical explanations, community explanations are the area of focus in this research. Therefore, I will be dealing with notions of 'illness,' not 'disease.'

Theoretically, disease and illness are not the same. Disease refers to "a malfunctioning in, or maladaptation of, biological and/or psychological process;" Illness, on the other hand, indicates the experience of, and the social relation to, disease (Kleinman 1978: 88). According to Kleinman (1978: 88), "Illness is the way the sick person, his family, and his social network perceive, label, explain, valuate, and respond to disease." In modern medicine, disease is considered as "abnormalities of the structure and function of body organs and systems" (Eisenberg, 1977, cited in Heilman, 1981:548). Modern medicine quantifies measures of body normality. For example, modern medicine has numerical ranges for the measurement of weight, height, hemoglobin levels, heart rate, and blood pressure (Heilman, 1981: 548). Both personality and intelligence can also be quantified. Diseases and their signs, symptoms, and treatments are all considered to be universal in modern medicine (Helman, 1981: 548). Therefore, dengue as a disease would be standardized all over the world, but the meaning that people associate with dengue disease and the way they deal with it may vary significantly and may depend on their social and cultural backgrounds, as well as their personality traits (Helman, 1981). Kleinman (1978:252) claims that illness or illness experiences are culturally constructed because the way that people explain their sickness,

how they attach meaning to it and communicate about their health problems, and how they deal with it is influenced by systems of cultural meanings.

Disease is associated with EMs of professionals, modern or indigenous, and sickness is perceived as an abstract, highly technical, and impersonal idiom; illness, however, is associated with the EMs of popular culture and sickness is perceived as a non-technical and highly personal idiom (Kleinman, 1978). Research reveals that people have their own explanations about what has happened, why it has happened, and what to do about it (Helman, 1981:549). When it comes to dealing with disease or what to do about it, most individuals may first self medicate rather than seek prescribed medication; in one British study, for example, it was estimated that 75 percent of signs and symptoms of disease were treated by the sufferers themselves (Levitt, 1976). Kleinman (1978:251) suggests that 70 to 90 percent of self recognized episodes of sickness are managed outside of the formal health care system. Sufferers are also likely to take advice from friends and family before they consult with any medical professionals. Decisions about when to seek medical care, how long to remain in medical care, and how to evaluate the treatments occur in the context of the family (Kleinman, 1978:254). Whether or not to seek health care treatment or when to seek health care treatment ultimately depends on perceptions of health and illness. For example, family perceptions of illness may be different from that of sufferers and may result in delay in seeking out professional healthcare treatments. Moreover, overall perceptions of health and illness may vary from culture to culture. For example, in Aberdeen, Scotland, 'health' is defined as the ability to carry on the daily activities despite the experience of illness. Therefore, ear infections are not considered an 'illness' (Blaxter and Peterson 1980, cited in Helman 1981:550). Community perceptions of health, illness, and disease further influence health seeking behavior. Differing community orientations to illness and disease and cultural beliefs shape explanatory models (Kleinman, 1978). In this research, importance has been

placed on exploring community members' socio-economic, cultural, and political contexts in order to understand how attitudes and practices toward dengue may be shaped. Understanding community perceptions of dengue infection and prevention is one of the main objectives of this research, and Kleinman's (1978) Explanatory Models (EMs) will help to understand those perceptions.

Since it is important to contextualize community knowledge and practices within larger social, economic, and political contexts, this study is framed by Paul Farmer's concept of 'structural violence' (Farmer, 2002). According to Farmer, the concept of structural violence was first introduced by Galtung and by liberation theologians in 1960s, where they defined structural violence as "social structures —economic, political, legal, religious, and cultural—that stop individuals, groups, and societies from reaching their full potential" (Gultang, 1969, cited in Farmer et al., 2006: 1686). Farmer et al. (2006: 1686) define structural violence as social arrangements that "put individuals and populations in harm's way." According to Farmer et al. (2006), structural violence is responsible for all kind of sufferings, including health and illness. Personal distress and disease are not separated from larger scale socio-economic and political forces. Drawing on examples from Haiti, Farmer (2002) argues that structural violence always puts certain groups of people at risk by default. Farmer (2002) notes that economically poor or class oppressed people are located at the bottom of the social hierarchal ladders, and regardless of their ethnic or gender identity, they are at the risk of extreme sufferings. Structural violence not only leaves poor people at risk, it also constrains their agency, leaving them with limited life choices. In order to understand people's sufferings and vulnerabilities, Farmer (2002) suggests that we need to understand the influence of structural violence and that, in order to understand structural violence, we need to delve into historical forces. He urges systematic analyses of those structures, mechanisms and systems that result in the rich becoming richer and the poor

becoming poorer. As Farmer (2002:9) argues, by analyzing of these mechanisms of power, it is possible to understand who is likely to suffer and why and how (Farmer, 2002:9). Farmer (2002) suggests examining history and political economy to better understand contemporary sufferings. He argues that underlying economic and political forces, even if shaped in history structure the risks for individual suffering disease, and death in the present. This study has tried to understand community vulnerability to dengue through the lens of structural violence, focusing on both the historical and socio-economic contexts that shape dengue suffering.

Dissertation Outline and Chapter Summaries

There are seven chapters in this dissertation. In this first chapter a brief discussion of dengue disease has been provided along with the discussion of Kleinman's (1978) explanatory models and Farmer's (2002) structural violence which have been adopted as analytical tools for the thesis. In chapter two, literature on dengue disease has been reviewed, and provides important comparative and contextual perspectives relevant to my research. Chapter three provides a detailed description of the methodological tools that were adopted in this research and the challenges I faced in using those tools. Chapter four situates Dhaka in its history in order to better understand issues of present. Chapter five explores ward 69's perceptions of dengue with a particular emphasis on the concept of 'risk.' In this chapter the importance of dengue in relation to everyday life is explored. Chapter six explores the concept of 'responsibility' and 'power' in community perceptions of dengue prevention. Chapter seven provides a final discussion and presents the conclusion of the research.

Chapter Two: Situating Dengue

Dengue

Dengue fever, also known as "break bone fever" due to its symptoms of immense pain, is a mosquito borne viral disease (Lueng-Chen 2008; Iqbal and Munir, 2011). The dengue virus is of the genus Flavivirus, family Flaviviridae (Gubler, 199;, Ferguson et al. 1999; Ligon, 2004). In 1901, Graham first demonstrated that dengue is transmitted by mosquitoes (Armstrong, 1923). In recent years, it has been demonstrated that both *Aedes aegypti* and *Aedes albopictus* can be vectors of dengue disease. Before that, it was believed that only *Aedes aegypti* was responsible for transmission of dengue viruses (Armstrong, 1923). *Aedes aegypti* is generally known as the "yellow fever mosquito" (because of its role in yellow fever transmission) and *Aedes albopictus* as the "Asian tiger mosquito" (Lueng-Chen, 2008: 26). Although dengue disease attracted attention in the 1950s, dengue has a far longer history in human populations. For example, studies have demonstrated that dengue was present in the 1770s in Jakarta, Cairo, and Philadelphia (United States Health Report, 1906; Armstrong, 1923; Ligon, 2004). Nonetheless, the gaining momentum of dengue in terms of infected persons has earned it attention as an important 'emerging' infectious disease.

In South Asia, the Chin Dynasty first recorded illness compatible with dengue (Gubler 1998). The disease was called "water poison" because it was thought that flying insects associated with water were responsible for this disease (Gubler, 1998: 480). According to Gubler's (1998) review of the recent history of dengue, the ecological disruption that occurred in the Southeast Asia and Pacific theaters during and following World War II played an important role in increasing transmission of this mosquito born disease. Between 1953 and 1954, the first known epidemic of dengue hemorrhagic fever (DHF) occurred in Manila, Philippines and then spread throughout Southeast Asia. Even though dengue hemorrhagic

fever was first reported in Thailand and the Philippines in the 1950s, it is now quite common in other parts of Asia (Compans et al., 2010). In the 1970s, there was a resurgence of dengue disease in the Pacific Islands. In the 1980s and in the 1990s there was intensive dengue disease in the Pacific Islands and also in the Americas (Gubler, 1998). Epidemiological changes in the Americas have been dramatic in the sense that epidemic dengue was very rare in the Americas in the 1950s, 1960s and most of the 1970s. This may have been because the principle mosquito vector, *Aedes aegypti,* was eradicated from most regions of the Americas during that time period (Gubler, 1998) . In the early 1970s, however, mosquito eradication programs were discontinued and by the 1980s even countries in the Americas that had been free from dengue disease experienced a major resurgence of epidemic dengue disease (Gubler, 1998). From the 1980s onward, sporadic cases of dengue disease were reported in both Africa and in the Middle East. By 1997, both dengue viruses and *Aedes aegypti* achieved a worldwide distribution. Broadly speaking, there are five factors responsible for the dramatic resurgence and emergence of dengue disease: global population growth, unplanned and uncontrolled urbanization, lack of effective mosquito control, increased air travel, and the decay of public health infrastructure (Gubler, 1998: 482).

Areas near the sea-shore or large rivers are suitable environments for *Aedes* mosquito species. *Aedes aegypti* is well adapted to humans co-existence, whereas *Aedes albopictus* tends to be found outside of domestic areas, on grass and in association with agricultural fields (Armstrong 1923, Gubler, 1998). *Aedes aegypti* are able to lay eggs in artificial water containers such as jugs, water barrels, flower vases, discarded containers, discarded tires and so forth. According to Armstrong's (1923) review, early research determined that as many as 26,000 different water containers could serve as *Aedes aegypti* breeding sites. Importantly, eggs of A*edes aegypti* can survive even in dry seasons for more than six months (Armstrong,

1923). These mosquitoes prefer to bite in the day though they may bite at night as well (Armstrong, 1923).

When infected *A. aegypti* or *A. albopictus* mosquitoes bite susceptible persons, the virus may remain in incubation for a period of 3 to 14 days, and after that incubation period individuals typically experience an acute fever and other nonspecific symptoms lasting 2 to 10 days (Gubler, 1997). In this febrile stage, if *A. albopictus* or *A. aegypti* mosquitoes bite the ill person, those mosquitoes can be infected and consequently transmit the virus to other uninfected persons (Armstrong 1923; Kendal, Hudelson, Leontsini et al., 1991; Gubler, 1997, 1998).

The symptoms of dengue fever are very mild in character including a chilly feeling, headache, back pain, and loss of appetite (Armstrong, 1923; Kendal, Hudelson, Leontsini et al., 1991). Sometimes, people suffering from dengue disease may have "red, hot and puffy" rashes on their head, chest and neck skin (Armstrong, 1923). These rashes generally disappear after a day or two, or might merge and persist with secondary symptoms. Headache, backache, and fever are generally always present in dengue disease. Although pains are not usually severe, in some cases they may be extremely severe for some people. Fever remains mild for the first several hours during dengue disease, but it rises rapidly and could reach to its peak of 105º Fahrenheit or higher (Armstrong, 1923). Within three or four days temperature returns to normal. The nervous system may also be affected in dengue disease. Patients can feel restlessness and suffer from insomnia; they may experience a bad taste and also photophobia, mental confusion during high fever, depression, and asthenia (loss of strength and energy) are documented during dengue fever (Armstrong, 1923; Ligon 2004; Lupi, 2011).

These above mentioned symptoms are general symptoms that are not complicated, but in some cases dengue might be complicated. The symptoms that indicate complexity are

eye paralysis, "abducens" paralysis (cranial nerve paralysis), and acute glaucoma from which patients could recover by taking rest for several days (Armstrong, 1923). A hemorrhagic tendency can be severe and very complex in dengue fever. This is also known as dengue hemorrhagic fever (DHF) or dengue shock syndrome (DSS). Dengue shock syndrome may lead to shock or even death (Lueng-Chen, 2008). About one percent of dengue infected patients can develop dengue hemorrhagic fever, and it has been demonstrated that, particularly with a second infection, dengue affected people are more prone to be affected by dengue hemorrhagic fever than patients infected for the first time (or even third or fourth time) (Lueng-Chen, 2008).

One hundred million cases of dengue are reported annually worldwide and up to 2 billion people are at risk of dengue infection in tropical and subtropical areas of Asia, Africa, and the Americas (Dung et al., 1999). Yet dengue has also spread worldwide in the last 20 years (Lueng-Chen, 2008). The major factors behind the worldwide spread of dengue virus include international travel and trade, urbanization, and migration (Lueng-Chen, 2008). Ferguson et al. (1999) have argued that human population growth and the increased aggregation associated with urbanization are also responsible for dengue disease. It is believed that dengue spreads easily in overcrowded areas because of increased contacts between people or mosquitoes.

The most effective way of preventing and controlling dengue disease is to prevent and control the mosquito vector which can be done by reducing breeding sites such as stagnant water (Gubler, 1998). Gubler (1998) describes two approaches to effective larval reduction. One is a vertical approach that excludes community participation in policy/ decision making. The vertical approach, with rare exception, typically has no long-term sustainability due to lack of community participation. For example, in Cuba, *A. aegypti* and dengue transmission had been effectively controlled by the vertical approach since 1981, but

because of lack of community support this country experienced a major dengue epidemic in 1997 (Gubler, 1998:493). Recently, emphasis has been given to community based approaches, which is Gubler's (1998) second approach, for it is believed that sustainable *A. aegypti* control is only possible when people who help to create mosquito larval habitats by their life style are involved. The community-based approach is a lengthy process; therefore, a combination of both approaches has been proposed in order to gain successful and sustainable control of *A. aegypti, A. albopictus* and dengue disease. As the mosquito is the main vector of dengue transmission, proper waste disposal and proper management of water containers can help to reduce dengue disease transmission. As a result, inevitably, dengue control is linked to both environmental and health concerns.

Studies of Dengue Control:

In undertaking a bio-social approach to dengue research, Caprara et al. (2009) demonstrated that socio-economic inequality affects dengue disease and control. They discovered, for example, that irregular water supply in the under-privileged area of Fortaleza, Northeast Brazil forced people to store water in containers which, in turn, created a suitable breeding habitat for the dengue vector, *Aedes aegypti*. They have also tried to demonstrate the intermixed and complex social, ecological, and political factors can influence dengue prevalence. For example, climate, migration, water supply, and garbage disposal are all related factors responsible for dengue disease.

By using mostly qualitative methodologies and a case study approach, Caprara et al. (2009) demonstrated that unprivileged people, by virtue of their inadequate housing and their pattern of water usage and storage, provide suitable breeding sites for *Aedes aegypti*. For instance, according to Caprara et al. (2009), homes were constructed with un-plastered walls, and cement floors, which provided suitable humidity for *Aedes* mosquitoes. Also, because of the irregularity in the water supply, they stored water in different containers; they were

"careless" (Caprara et al., 2009: 131), forgetting to clean their containers by throwing out stagnant water and, because of this, they contributed to reproduction of *Aedes aegypti* and created threats not only to themselves but also to people living in surrounding privileged areas (Caprara et al., 2009). People in more affluent areas, on the other hand, according to Caprara et al. (2009) were not held responsible for the creation of mosquito breeding sites, even though some practices related to their enjoyment such as making fountains, and using flower pots might offer suitable mosquito breeding sites (Caprara et al., 2009: 134-135).

The research by Caprara et al. (2009) provides important insights about complex socio-economic and political factors that work behind dengue risks. In my study in Bangladesh, I will concentrate on socio-economic and political factors in order to better understand community knowledge, attitudes, and practices towards dengue. For example, in Dhaka, Bangladesh, very frequent disruptions of electricity and inadequate water supply in particular areas of the city create a situation where water storage is required. In Dhaka, it is not uncommon to boil piped water and then store it for several days in different containers, particularly where there is a scarcity of pure drinking water and buying water is too expensive. Mahbub et al. (2011) and Haq (2006) note that there are often contaminating pathogens in water supplied by the Water and Sewerage Authority (WASA), and people can become ill with diseases like diarrhea, cholera, and hepatitis. Haq (2006) reports that 30% of water contaminations occur in the WASA's distribution systems and the remaining 70% occur in the consumers' reservoirs. Haq (2006) also emphasized WASA's consumers' inattention to cleaning their reservoirs on a regular basis. Therefore, research advises not drinking WASA water without it first being treated or boiled (Haq, 2006; Mahbub et al., 2011). Moreover, waste disposal is also an important dengue risk. Therefore, if we only look at poverty and the use of water containers by people living in poverty, we might overlook

some other underlying structural factors, such as the un-affordability of a commoditized clean water supply, that ultimately shape dengue risks.

Caprara et al. (2009) also focused specifically on women's relationships "with family and neighbors, water storage, and garbage disposal" (2009:128). The gender aspect of dengue disease will be another important aspect of my research because, even though it has been said that *Aedes aegypti* indiscriminately bites people regardless of their age or gender, some groups may in fact be more vulnerable to infection by virtue of their greater proximity to mosquitoes. For example, in Bangladesh, mostly women and children live at home during the day- time, and *Aedes aegypti* prefer to bite during the day; as a result, from the perspective of dengue, women and children may be more affected by localized risks in their home environment. On the other hand, it is mainly women who store and use stored water for their household chores; thus, they become more vulnerable than men. Therefore, it is important to explore women's perceptions and practices, in particular, about both dengue and water resources.

Whiteford (1997) has demonstrated how typical understandings of gendered divisions of labour, such as household chores are associated with women, can impact on understandings of dengue transmission. He pointed out that in order to completely understand dengue transmission, we should go beyond the typical ideas of gender roles and should consider "mala union" (Whiteford, 1997: 203) or a lack of will of the community and of the responsible government. Whiteford (1997) noted that even though women were mostly responsible for water storage and usages, many men in the Dominican Republic stored water in large gallon containers to help their families. These containers remained uncovered or semi-covered, thereby providing suitable breeding sites for *Aedes aegypti.* Because women, not men, were mainly targeted in a previous dengue prevention program in Villa Franciscans, Whiteford's research area, a key source of dengue risk that centered on men's activities was

overlooked. Moreover, Whiteford (1997) demonstrated that even though people had adequate knowledge about dengue fever and its transmission, because of "mala union" or lack of political will, they did not always cover their water containers. People felt powerless and resigned to the belief that they were unable to change their environment. Because their government was not cooperative enough in helping them to change their environment, they remained careless even after having adequate knowledge about dengue and its transmission. Therefore, Whiteford (1997) argues that dengue can be transmitted not because of inadequate knowledge but because of overwhelming sense of powerlessness. According to one of his respondents, "When we do not have the power to get rid of the garbage, to kill the rats, or keep out the flies, why should we think we can stop the mosquitoes?" (Whiteford, 1997: 218). For Whiteford, powerlessness impacts negatively on the ability to coordinate effective community level involvement in dengue control.

Whiteford (1997) has argued that people's perceptions of dengue and practices in disease prevention cannot be separated from deeper historical and political contexts. He has also argued that perceptions need to be contextualized within wider socio-cultural frameworks. In order to address these issues, he has used an "ethnoecology" model as his analytic framework, expanding it to include community history and politics. He argues that qualitative descriptions of people's experience of illness should not be kept separated from ecological descriptions of nonhuman influences on disease because they are ultimately interdependent (Whiteford, 1997: 207).

Whiteford's (1997) insights are particularly relevant to my research. I also intend to incorporate political and historical aspects in order to understand people's perceptions on dengue in Bangladesh today. Whiteford's (1997) study area of Villa Franciscans is quite similar to that of Dhaka, Bangladesh. For example, people in Dhaka are also critical of the government for not being cooperative enough; they also boil supplied water to make it

drinkable. In Dhaka, the loss of electricity is often associated with loss of water; and whereas some areas suffer water shortages, there are some areas where water runs all the time due to leakages in the pipes thereby wasting water. As a result, the problems of dengue in Dhaka will ultimately be associated with the larger economic and political forces impacting on the water supply.

Similar work elsewhere is insightful for my research. Perez- Guerra et al. (2009) undertook research in Puerto Rico to explore attitudes toward dengue, finding differences in perception and attitudes toward dengue based on gender and previous histories of dengue infection. Their research shows that whereas women think dengue is a widespread societal problem, men think of dengue as harmful to the individual. For women, dengue is, more broadly, responsible for social, economic, job, family, and emotional problems (Perez-Guerra et al., 2009: 220). Regardless of gender, individuals who had experienced a previous dengue infection were more careful about dengue prevention and were more knowledgeable about dengue disease. Focus group discussions defined strategies for preventing dengue, such as the distribution of educational materials in public places, developing laws to impose fees for tire recycling, creating a telephone hotline for dengue related services, and educating school children about dengue disease (Perez-Guerra et al., 2009: 220-221).

Perez-Guerra et al. (2009: 222-223) outlined three key themes that impeded dengue prevention, including: "misconception about dengue and its vector," the "invisibility" of dengue", and "responsibility for dengue prevention." Perez-Guerra et al. (2009) note that even though people in Puerto Rico have adequate knowledge about dengue disease, its symptoms, and potential mosquito-breeding sites, they do not have adequate knowledge to specifically identify *Aedes aegypti* (Perez-Guerra et al., 2009: 222). Therefore, they do not recognize *Aedes aegypti* in their houses and, as a result, overlook the risks. Many people associate *Aedes aegypti* only with dirty water and are less concerned with eliminating fresh

water from containers. Perez-Guerra et al. (2009) determined that both lay people and health professionals alike had difficulty in differentiating between the common cold and dengue disease due to the similarities of symptoms; thus, dengue disease can be overlooked because people are unlikely to seek health services for common colds.

What is worth noting and what coincides with the argument made by Whiteford (1997), is that people in Puerto Rico find themselves incapable of controlling mosquitoes, for they find "mosquitoes are everywhere and are difficult to control" (Perez-Guerra et al., 2009: 222) inspiring a sense of futility or helplessness. Perez-Guerra et al. (2009: 222) have demonstrated that even though people are aware enough that community participation in eliminating uncovered and stagnant water can prevent dengue, some of them find this a "useless effort" and many participants described mosquitoes quite simply as a part of their lives. In addition, they associate *Aedes aegepti* with "high vegetation and humid places," finding it difficult to fight against dengue because high vegetation and humid places are ubiquitous (Perez-Guerra et al., 2009: 222). Like the Villa Franciscans studied by Whiteford (1997), Puerto Ricans wanted "active participation by the government" (Perez-Guerra et al., 2009: 222) in dengue prevention. They believe that besides fumigation, government improvements to infrastructure and health services could contribute to dengue prevention. They think that by "improving potable water services, enhancing waste and rubbish collection services, and [by] establishing better strategies for tire collection and recycling" dengue disease could be prevented (Perez-Guerra et al., 2009: 222). Participants also suggested that government should inform people about any localized dengue outbreaks by electronic or print media and should not hide this information from the people for political reasons (Perez-Guerra et al., 2009: 222). Consequently, people place the responsibility for dengue prevention on the government. Because they felt that dengue receives very little attention and publicity compared to other diseases, dengue remained "invisible" most of the

year and people tended to underestimate its risk. People believe that dengue disease does not get enough publicity; consequently, people and communities do not get interested in eliminating *Aedes aegypti* breeding sites (Perez-Guerra et al., 2009: 222). Overall, Perez-Guerra et al. (2009) argue that these factors create a community unwillingness to participate in dengue prevention. Community members did not think dengue was a great risk in their life; they cannot recognize *Aedes aegypti* and the type of water where *Aedes aegypti* breeds, and they cannot differentiate dengue symptoms from the symptoms caused by other common colds or viral diseases (Perez-Guerra et al., 2009: 224).

Another study in India sheds important insights as well. By using a multi-sited qualitative approach in the case of Delhi, India, Renu Addlakha (2001) has argued that state legitimacy can be threatened by public health emergencies such as dengue epidemics because the state's weaknesses is often revealed during periods of crisis (Addlakha, 2001: 152). As a result, the state may hesitate to declare an emergency, as was the case in a dengue epidemic in Delhi, India. Addlakha (2001) argues that "epidemic" is not only a medical category, it is also a political category and that is why the state, not the medical professionals, has the sole power to declare epidemics. Declaring an epidemic goes beyond an administrative decision, and becomes a political decision (Addlakha, 2001: 153). There are several factors influencing the state's unwillingness to declare an epidemic. If a state declares an epidemic, it has to isolate suspected cases. Moreover, it has to undertake the "screening" of travelers and, as a result, tourism and international trade could be affected. The image of the state could be damaged in the international sphere. In addition, the ruling party's position can be challenged and blamed by opposition parties (Addlakha, 2001: 168-169).

According to Addlakha (2001), this reluctance of the state in declaring epidemics creates a tension between government, health professionals, and other agencies of the state. Whereas health professionals call the situation an "epidemic," the government may prefer not

to. Media plays an important role, becoming commentator and information provider, though media may have its own political motives (Addlakha, 2001: 162). In Delhi, Addlakha (2001) demonstrates how the judiciary becomes prominent as the mediator of this conflict between the people and the government, specifically requesting the government to intervene in dengue prevention. Consequently, Addlakha (2001) notes how the state reinforces its power by blaming the people, particularly by blaming middle class people, and health professionals. People blame the government for water logging and inadequate health services in their areas, but after the judiciary decision, the government started blaming people for creating the epidemic situation. Government pointed to the responsibility of common people for controlling the dengue epidemic. Delhi residents were blamed for not being cooperative with the dengue prevention activities instituted by the government, and for not taking personal precautions, such as eliminating stagnant water. Thus, government shifted responsibility to its citizens. This action empowered the government to take legal action against its citizens, for purportedly creating the sites for dengue transmission (Addlakha, 2001: 173-176). Consequently, responsibility and blame were redirected. As Addlakha (2001: 165-166) notes, "In the case of outbreaks of infectious diseases, communities and the media try to assign blame to the state. The latter, in turn, tries to deflect blame back to the source of accusation and also to dislocate the focus of blame from one set of issues to another."

While in some cases, people may demand active participation by the government in dengue prevention, Addlakha's (2001) research shows that government can in return, impose responsibilities on the people and blame the people for dengue transmission. Consequently, what I see happening is not only decentralization of blame but also decentralization of responsibilities. Therefore, there is a conflict or gap in understanding regarding who exactly is responsible for dengue prevention. This gap might impede sustained dengue prevention. As a result, one important objective of my research will be to investigate

community members' understanding of the state or government role in dengue prevention, and how they differentiate the government's role from their own roles.

Suarez et al. (2009) have demonstrated how people underestimate the risk of dengue disease by accepting it as part of everyday life. With ecosystem and multidisciplinary approaches they have argued that dengue is a "bio-anthroposocial" event because biological, epidemiological, social, and cultural factors are all linked to dengue transmission (Suarez et al., 2009: 105). They have also demonstrated that social and cultural contexts shape people's perceptions about dengue disease in Girardo and Melgar, two towns in Colombia. In this study, people did not think of dengue, classical dengue in particular, as a health crisis or as a disease to be worried about; rather, they perceived classical dengue as a type of "folk flu" and simply part of their environment (Suarez et al., 2009: 108). They did, however, worry about dengue hemorrhagic fever. Otherwise, they do not seek help from health professionals unless their daily activities are interrupted or they could not tolerate the fever any longer. For the people of Girardo and Melgar, *Aedes aegypti* is nothing more than yet another insect of their everyday environment. They believe that both dengue and mosquitoes are realities they have to live with (Suarez et al., 2009: 108-109). They become a little more aware when dengue disease occurs among their neighbours because then the "neighbor becomes a dangerous 'other'" who can be harmful to the health of their own households (Suarez et al., 2009: 109).

Suarez et al. (2009) note that irregular water supply increases risk among those living in poverty because they must collect and store water in plastic or metal containers (Suarez et al., 2009: 110). Moreover, Suarez et al. found that people's perceptions on discarded containers are not related to the concept of risk; rather, their perceptions on containers are related to conceptions of tidiness and usefulness. For example, some people do not keep containers because they make the house untidy; on the other hand, some people keep containers for various purposes, using them as flower pots or selling them for money (Suarez

et al., 2009: 110-111). Interestingly, even though people's perceptions that classical dengue is not 'risky' coincides with the perception of health professionals, their perceptions about containers do not, because for health professionals discarded containers are highly risky for dengue transmission.

This issue of the place of the mosquito in daily life will be explored in the Bangladesh research. Mosquitoes are almost everywhere in Bangladesh, and community residents have to deal with mosquitoes as a part of their everyday life. The most common species of mosquito in Bangladesh is *Culex quinquefasciatus,* a mosquito that breeds in drains (Hossain et al., 2000: 34). What is their extent of knowledge and level of understandings about mosquitoes? How do they differentiate dengue-carrying *Aedes aegepti* and *Aedes albopictus* from *Culex quinquefasciatus*? Do they find mosquitoes risky in term of their health and lives? In addition, the role and value of discarded containers in the lives of local people will be explored.

Dengue and Research on Dengue in Bangladesh

Dengue fever in Bangladesh was first reported as "Dacca fever" in 1964 (Aziz et al., 1967). Since then, there have been sporadic dengue outbreaks in Bangladesh. In 1996-97, a sero-epidemiological survey was undertaken by the Integrated Control of Vector-Borne Diseases (ICOVED) in collaboration with the World Health Organization (WHO) confirming dengue disease and the presence of *Aedes aegypti* in this country (Yunus et al., 2001). In 2000, Bangladesh experienced its first dengue fever outbreak along with its severe form of dengue hemorrhagic fever. A total of 5,551 dengue cases were reported in 2000 and, among those, 4,385 (78.9%) were classical dengue cases and 1,166 (21.1%) were dengue hemorrhagic fever cases. Ninety three deaths were reported (Yunus et al., 2001; Ahmed et al., 2001; Ali et al., 2003). In Dhaka city alone, 3,964 dengue cases were reported, including

3,383 dengue classical cases, 581 dengue hemorrhagic cases, and 51 deaths (Yunus et al., 2001). According to the WHO report (2006), 6,104 dengue cases and 58 deaths were reported in 2002 in Bangladesh and, in 2004, 3,934 cases and 13 deaths were reported. Among these cases, 98% were from Dhaka, clearly indicating that dengue is an urban problem in Bangladesh. In 2005, 1,048 cases and 4 deaths were reported; both the cases and deaths increased two fold in the year 2006 (WHO, 2006).

The research that has been done so far on dengue disease in Bangladesh is mostly from an entomological and epidemiological perspective (see Amin et al., 1999; Ahmed et al., 2001; Yunus et al., 2001; Aziz et al., 2002; Rahman et al., 2002; Fatimil et al., 2003; Bashar et al., 2005; Islam et al., 2006; Podder et al., 2006). This research has confirmed the presence of the dengue virus as well as the presence of *Aedes aegypti* and *Aedes albopictus* mosquitoes (Rahman et al., 2002; Wagatsuma et al., 2004; Bashar et al., 2005; Islam et al., 2006). Major findings from these serological, entomological, and epidemiological research projects indicate that males are affected more often by dengue virus than females (Amin et al., 1999: 31; Yunus et al., 2001). Malnourished children are also more vulnerable to dengue disease (Ahmed et al., 2001). A 1997 sero-prevalence survey reported that children in the 5 to 9 age group were the predominant age group affected by dengue fever, whereas more recent studies have demonstrated a predominant age group of 9 to 12 years (Amin et al., 1999; Ahmed et al., 2001). Younus et al. (2001:19) have described the improper management of the first dengue outbreak in Bangladesh due to lack of adequate knowledge, skill, and resources. Government committees disseminated information about dengue disease and developed "National Guidelines for the Clinical Management of Dengue Syndrome," though community participation and measures for control and prevention had yet to be undertaken (Yunus et al., 2001: 19).

A zoological research team explored people's perceptions and behaviours relating to dengue in Bangladesh in 2000, after the first outbreak occurred in Bangladesh. Hossain et al. (2000) conducted a KAB (knowledge, attitude, and behaviour) survey in Dhaka from August, 2000 to October, 2000. They randomly selected 9000 houses from all 90 wards of Dhaka city as their sample and administered questionnaires. The questionnaire was divided into two major parts. The first part was about household type and general information about respondents, and the second part was about knowledge, attitude, and behaviours. Their data demonstrated that most people (99%) were acquainted with the term "dengue." About 95% of people knew that dengue fever was transmitted by mosquitoes and about 94% of people knew about the preferred biting times (day time) of the mosquitoes responsible for dengue transmission. However, many people (47.9%) did not have a good idea about the breeding sites of dengue-transmitting mosquitoes. Hossain et al. (2000) also noticed that, given their poor economic conditions, slum[3] dwellers could not afford the cost of mosquito control measures, such as buying aerosols or mosquito coils, whereas middle and upper class people could afford as much as $ 10 per month (Hossain et al., 2000: 36-37). They found that slum dwellers stored water in different types of earthen containers and in drums due to a shortage of water, both of which are suitable breeding sites for dengue mosquitoes. Hossain et al. (2000) also noted the use of concrete water tanks located on the roof tops of middle class houses as possible breeding sites for dengue mosquitoes. They argued that people's attitudes towards dengue prevention were based on their knowledge about dengue. For instance, people who knew that dengue mosquitoes breed in containers supported destroying containers as a preventive measure, but not among those who did not know. Hossain et al. (2000) argued that because *Aedes* mosquitoes breed in houses, and because government has limited access inside houses, people needed to work with government agencies to control

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[3] Even though 'slum' is a pejorative and problematic term, it is a commonly used term in Bangladesh.

mosquitoes. Their research demonstrated that most people understood this "dual responsibility" in dengue prevention (Hossain et al., 2000:40). Though this research covered 9000 houses from all 90 wards of Dhaka city, it was not an in-depth study. Furthermore, it did not consider gender issues in perceptions, attitudes and behaviour. My research seeks to explore this aspect of community perceptions of dengue and its connection with wider socio-economic and political contexts, particularly as structured by gender dimensions.

In existing dengue research in Bangladesh, community-specific case studies to better understand what needs to be done in order to prevent dengue are absent. Although Hossain et al.'s (2000) KAB study suggests a needed collaboration between community and government, it did not explore what specific communities had to say in terms of working together with the government, and how collaborations might be structured. The existing research provides important insights into dengue knowledge, but no detailed explorations into how serious dengue is perceived to be and the importance of dengue prevention. This in-depth study has tried to address some of those gaps by undertaking a case study in a single ward of Dhaka, and has not only explored community knowledge about dengue, but also perceptions of risk in relation to dengue and suggestions for dengue prevention.

The Gender Aspect in Bangladesh

The meaning of gender in Bangladesh varies based on contexts and time, (Chen, 1986). According to Hart (1997:19), gendered meanings are "multiple, contested, and changed over time." Women's situations vary in Bangladesh according to their economic and social status; as a result, the situation for rural women and urban women is not the same. Similarly, women from low-income groups experience different realities than women from middle and high income groups. However, despite these differences, it is possible to identify some similarities in experiences among women regardless of their economic or social status,

for every woman lives in a rigid patriarchal system in Bangladesh (Amin, 1995). In a patriarchal system, in general, women are subordinate to men, though women from different economic and social classes "are subject to different types of patriarchal controls" (Chen, 1986:220). Gender relations in Bangladesh are not static, and have been changing over time. Women are increasingly becoming academically educated and taking part in wage work alongside men and thus challenging normative gender roles. However, the important thing is that patriarchy is also reshaping or restructuring itself and adapting to a changing situation. Gender discrimination is still present in Bangladesh and some tasks are still recognized as 'womanly' tasks, such as most household chores (Salway et al., 2005). The gender divisions of labour and public–private distinctions are still there in a changing form, and marriage is still an important event for adult women (Salway et al., 2005). Nevertheless, changing gender relations cannot be ignored in Bangladesh, but those changes should be examined rigorously to grasp the full implications of the patriarchal system and women's situations within it (Harun and Naher, 2000; Salway et al. 2005).

In his research, Marty Chen (1986) argued that, in a broader sense, women's condition in Bangladesh can be described by two notions, patriarchy and *purdah* (figuratively used to describe women's exclusion from public sphere). These two elements allow men to exercise power over women and also to control property and income (Chen, 1986: 217). Traditionally, women are expected to stay at home though they are permitted to move outside of the home at prescribed times for prescribed purposes (Chen, 1986: 218). There is a predominant gendered division of labour in Bangladesh. Women are mainly responsible for household maintenance including water collection, and cleaning utensils, etc. (Chen, 1986:218). Whereas men are involved in the construction of homes, women are involved in household maintenance. Even though children spend most of their time under women's

supervision for their feeding, bathing, and care, it is men who make major decisions for them, such as their schooling and marriage prospects.

On the other hand, Hossain and Tisdell (2005) demonstrated in their research that the gender gap is growing smaller and women's status is improving in Bangladesh. They argue that women's education, their participation in workforce, and their earnings are indicators of their improved status (Hossain and Tidsell, 2005:440). They also argue that earning an income has given women greater control over resources, as well as enhancing their bargaining power. Moreover, women now have better access to health care because of their enhanced bargaining power and a greater tendency to be physically fit in order to be productive in the workforce (Hossain and Tisdell, 2005: 440). Harun and Naher (2000:66) criticize the ways women's empowerment is represented in development discourses. They argue that even though notable numbers of women are now involved in the production market, it has little to do with women's empowerment in the private sector. This is because it is mostly men who make major decisions in households, including how to spend money, including the money earned by employed women. They argue that the notion of women's empowerment needs rigorous investigation. Salway et al. (2005) offer similar arguments.

Salway et al. (2005) argue that gendered differences are still embedded in socio-cultural structures in Bangladesh, even though women are increasingly joining in the production market and thus challenging traditional gendered norms and ideologies, as they manage money, shop, and move outside of the home and accumulate personal assets to secure their future. Earning an income is not sufficient to fundamentally alter women's positions, however, because both families and employers may equally be exploitative of women (Desai and Jain, 1992; Greenhalgh, 1991; Shami, 1990). Therefore, the outcomes of employment for women cannot be easily predicted. In order to understand gendered meanings clearly, we need to understand "the ways in which gendered rules are constructed and maintained over

time, and … the sets of circumstances under which such rules can be challenged and renegotiated" (Salway et al., 2005: 319).

The above discussion on gender in Bangladesh tell us that even though women are becoming more educated, involved in wage earning, and managing money and material resources, household chores are still considered women's work. Therefore, it is women who are mainly responsible for collecting and storing water so that they can use that water for daily washing and cleaning. As stagnant, collected water is the perfect place for *Aedes aegypti* to breed, women's understandings, in particular, are important to investigate in dengue disease prevention efforts in Bangladesh. This research can also contribute by investigating if reduction or eradication of gendered division of labour, including material resource management and decision making power, has anything to do with eradication of dengue disease. Power in decision-making is very important not only in prevention of dengue vectors but also making decision about and receiving medical attention. Therefore, this research aims to investigate who makes decisions regarding water storage and cleaning, who makes decisions about health seeking behaviour, and what roles are played by men and women regarding waste disposal management.

Women's health-seeking behaviour is complex and influenced by their knowledge, cultural beliefs, and economic condition (Mahbub, 2000:167). First and foremost, women try to determine the cause of a particular disease based on their own, and often other older people's knowledge, and then they select and seek particular medical systems to receive care (Mahbub, 2000: 167-168). Therefore, it is also very important in this research to understand women's perceptions of and practices related to dengue disease, for their actions may be influenced by pre-existing beliefs.

Chapter Three: Methodology and Materials

Every way of seeing is also a way of not seeing (Silverman, 2003:348).

Site and People

Silverman's (2003:348) quote above indicates that by selecting a way of seeing, and thus explaining something (e.g. an issue of dengue), we also choose not to see or explain that thing alternative ways. The lens, e.g. research tools and techniques, we select to see through, shapes what we see and how we explain. This research also has tried to understand community perceptions of dengue by adopting certain kind of research tools and techniques, and thus limit in seeing the issues only in a certain way. To address the objectives of this research, a three-month qualitative research project was undertaken in ward No. 69 (presently, ward No. 33 of the Dhaka South City Corporation), adopting a medical anthropological perspective. Ward No. 69 was one of the three wards of Dhaka city selected for inclusion in the broader study by project members, along with Ward No. 20 and Ward No. 26. These three wards were selected by the research team based on socio-economic status (SES) where 20, 26, and 69 represent high, middle, and low SES zones respectively. Ward No. 69 consists of eleven '*mohollas*' or the neighbourhoods. After proceeding on to a detailed description of the techniques and tools of qualitative research that I used in gathering data in the field, I would like to introduce the community of ward 69. For convenience of discussion, I divide ward 69 into two communities: the community of 'Mironzullah City Colony', and the community of the larger 69 ward.

Participants and Recruitment

Prior to beginning field research, I met with a member of the PSTC (Population Services and Training Center), a non- profit local NGO in Dhaka that has been involved in

community development in this area for several years. PSTC was recruited by the larger

IDRC research project. In an informal meeting I gathered some general information about the

ward 69, especially about Mironzullah City Colony, as PSTC had been working in this

colony for several years. PSTC mainly focuses on "health, social security, and physical living

conditions of the poor and socially disadvantaged" (Das, 2010). To assist with the field

research, I recruited four M.A. students in the Department of Anthropology, Jahangirnagar

University. We met two days prior to going to the field to discuss the research project and the

survey questionnaire. Research assistants gave me valuable suggestions and feedback as to

how the survey could be accomplished most effectively. For example, they suggested going

in pairs, with one male member and one female member, so that we would have wider access

to both male and female respondents, and so that we will feel more secure in an unknown

place and in unknown households. While one concentrated on asking questions, the other

could fill in the survey questionnaire with additional field observations. The PSTC member

suggested that it would be most effective meet with the Mironzullah City Colony members on

weekends after 10 a.m. as everybody would be at home at this time.

       Getting access to the Mironzullah City Colony was facilitated because the

colony's Club[4] members knew about me and the research in their community as other IDRC

project members had visited them and informed them about my plan of conducting research

in their community beforehand. As a result, I was cordially accepted by them. Since the work

of the PSTC is limited to the Mironzullah City Colony, we met with an officer in ward 69's

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[4]In every *mohalla* or neighbourhood there is a *Panchayet* and a Club. Panchayet and Club are the social organization with political activities.The *Panchayet* is generally made up of elderly people with high social and economic status; Clubs, on the other hand, are formed by the younger generation of community members. The age of the members of *Panchayet* on average is forty five and up, whereas the age of the members of the Club is twenty to thirty five years. Theoretically, these *Panchayets* and Clubs are supposed to take care of their communities, including dispute settlement, organizing the community in order to achieve common goals such as cleaning the environment; but practically, as the respondents reported, not much is done.

local commissioner's office with the hope that this meeting might facilitate our work in the larger community. Meeting with acceptance, we had an informal interview with that officer on that day. We learned that ward 69 (presently ward 33) consists of eleven *mohollas* (neighbourhoods) and that a map of the ward could be and was obtained from the central commissioner's office at Nagar Bhaban, Dhaka. We also met with medical health professionals at the ward's local urban health center and they agreed to provide any needed assistance. In addition to a ward map, the office at Nagar Bhaban also provided a poster and a leaflet that the Dhaka City Corporation (DCC) had published for building public awareness about dengue disease. While at Nagar Bhaban, I had the opportunity to have a short conversation with an officer about government initiatives in eliminating dengue disease. The following week, we started working in ward 69 with a goal of completing 100 surveys.

We ended up conducting a survey questionnaire in 116 randomly selected households in Ward 69. The surveys concerned community members' attitudes, knowledge of, and practices related to dengue disease, along with some demographic information about occupation, age, and education. This questionnaire facilitated initial introductions with ward 69's local community and provided an outline of the objectives of the research in their community. This survey questionnaire was also used to recruit informants for in-depth interviews. Travelling door to door, we completed 23 questionnaires in Mironzullah City Colony and the remaining, 93 surveys in the larger ward. Some agreed to participate in the 15 minute survey, and some did not. We also conducted 4 focus group discussions (FGDs) in the ward; two of which were conducted in Mironzullah City Colony and the other two in the larger ward. One of my male respondents arranged participants for a focus group discussion with male members in the larger ward, and with the help of health professionals at the urban health center, the PSTC arranged a focus group discussion with female members in the larger

ward. PSTC also arranged for two focus group discussions in Mironzullah City Colony, one with men and the other one with women living in the colony.

	Response (total n=116)	Percent (%)
Gender		
Male	61	52.6
Female	55	47.4
Age		
18 to 29 years	44	38.3
30 to 39 years	28	24.3
40 to 49 years	27	23.5
50 to 59 years	10	8.7
60 to 73 years	6	5.2
Missing	1	
Religion		
Islam	92	79.3
Hindu	24	20.7
Residential status		
Resident of the colony	23	19.8
Resident of the larger ward	93	80.2
Source of water		
Tube well	7	6.0
Piped or supplied water	109	93.9
Outdoor space		
Yes	20	17.2
No	96	82.8

Table 3.1: Demographic and Residential Information of Survey Participants in Ward 69

	Response (total *n*=116)	Percent (%)
Education		
No education	21	18.3
Primary education	22	19.1
Secondary education	29	25.2
Completed secondary education	30	26.1
University education	13	11.3
Missing	1	
Profession		
Government employment	26	22.4
Business	25	21.6
Housewives	49	42.2
Unemployed or retired	5	4.3
Student	9	7.8
Private employment	2	1.7

Table 3.2: Educational and Professional Information of Survey Participants in Ward 69

Given time constraints, 20 in-depth interviews were conducted in the ward. Among randomly selected survey respondents, 20 respondents or households were purposely selected for in-depth interviews. Respondents who completed the survey were sorted based on their responses, most broadly, those agreed for a further interview, and those who did not. Among those who agreed to an in-depth interview, there were those with a previous history of dengue infection and those without a previous history or experience with dengue infection. Those two categories were then sorted by gender. Respondents were selected with an eye towards achieving both a gender balance and a balance of those with or without previous history of dengue infection. All respondents in my research project were above eighteen years of age. Figure 3.1 highlights the selection of in-depth interview participants at a glance.
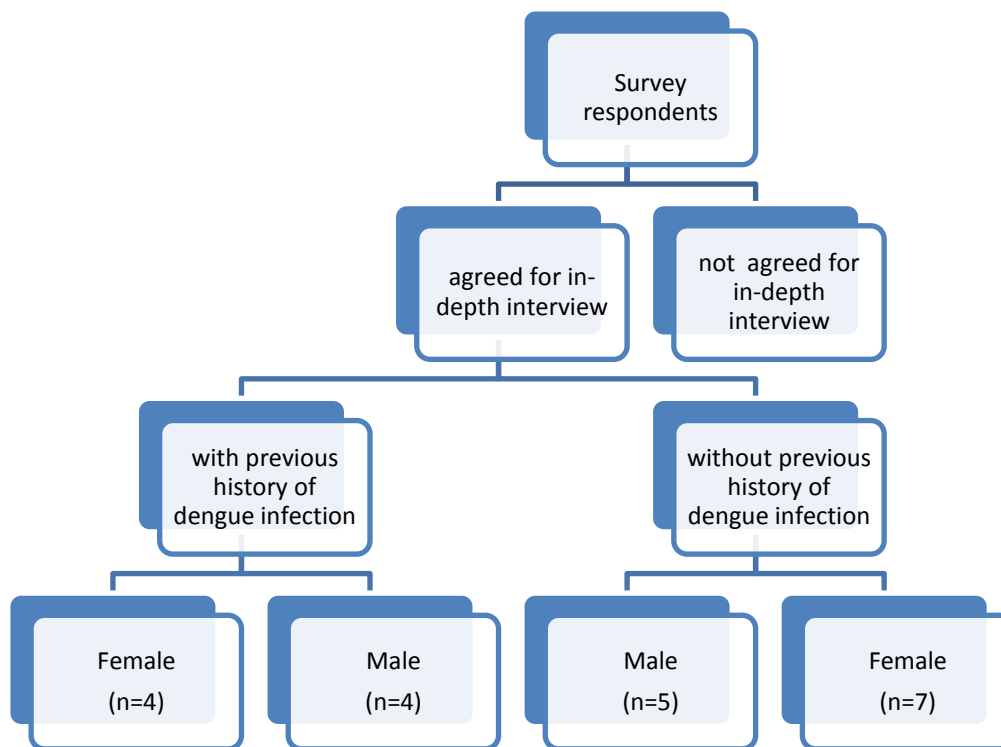
Figure 3.1: Selection Procedure of Participants for In-Depth Interviews

Respondents, selected for an in-depth interview, were contacted over the telephone in order to set a time and place for the interview based on the respondent's preference. Most respondents chose to give me their telephone numbers, and in certain cases asked for my telephone number, for further communication on the research. It was not possible to contact all respondents who had agreed to an interview; it sometimes happened that a respondent who agreed to an interview subsequently changed her or his mind, and some were not available or were out of the city, while others never answered their telephones. One respondent agreed to a further interview while I was doing the survey questionnaire and provided her telephone number so that I could call her to make arrangements for an interview. After answering my telephone call, she said she could not sit for an interview as her husband did not want her to. In that case, we went to the next available person on the list

and tried to fulfill the desired number, twenty interviews, and to balance the selection of interviewees based on gender and previous history of dengue infection.

Interviews are very common tools in data collecting based on interactions between two or more people "leading to negotiated, contextually based results" (Fontana and Frey, 2003:64). Acquiring information by asking questions is so common and extensive that Atkinson has referred to today's society as the "interview society" (Atkinson and Silverman, 1997; Fontana and Frey, 2003: 62). We try to understand other people by interviewing them (Fontana and Frey, 2003). Interviews are also described as "a negotiated text or site where power, gender, race, and class intersect" (Denzin and Lincoln, 2003:48). Denzin and Lincoln (2003:48) also see the interview as a "conversation" and as "the art of asking questions and listening." We understand social interaction through conversation (Silverman, 2003). Interview, as Fontana and Frey (2003: 64) put it, "has become a routine, almost unnoticed part of everyday life," where "interview participants actively construct knowledge around questions and responses." Interviews gave me "access to the opinions, viewpoints, attitudes, and experiences of individuals" (Madriz, 2003: 371). Interview, thus, helped me to gather data about participants' knowledge, practices, and attitudes concerning dengue disease. In this study, interviews were in-depth, each approximately one hour in duration. Boyce and Neal (2006) define in-depth interviews as intensive individual interviews that are conducted in the respondent's natural surroundings. A semi structured questionnaire was followed in the in-depth interviews in this research; the semi structured interview technique designed to explore a number of questions in a systematic and consistent order (Berg, 1989: 17). The interviews were conducted in the local language (Bengali) and included questions about individuals' understandings of dengue disease, and their perceptions about issues of risk, power, and responsibility related to dengue transmission and prevention. Additional questions focused on practices related to water storage and waste disposal, attitudes toward the

prevention of dengue, and general health-seeking behaviour. Most questions were open ended which helped to "understand the complex behavior of members of society without imposing any prior categorization that may limit the field inquiry" (Fontana and Frey, 2003:75). The approach helped to provide a detailed picture of participant's perspectives on dengue disease, while also allowing for flexibility in the subject matter of the interview.

One research assistant always accompanied me and assisted in note taking while I was interviewing. All of my research assistants signed a confidentiality agreement indicating that they would protect the confidential nature of all data from the field research. The respondents also signed a form of consent before we proceeded with any interview. I explained the purpose of the interview and the research, and explained how the information they provided would be used in the research and in future prevention planning. Before signing the consent form, I also explained how their identities would be kept confidential. I prefer to have eye contact while I listen as a way of showing interest and respect to respondents. I recorded the interviews and only took notes about key important phrases, enough to remind me about the whole conversation. Every night, regardless how tired I was, I always transcribed my field notes and my experiences in detail. I asked my research assistant to write up her field notes as well so that I might access further information that I might have failed to notice.

I tape-recorded all interviews with prior permission of the respondents. The recordings allowed me to replay and restudy the interviews again and again. They refreshed my memories about the interview setting, and the process. It is often hard to rely on our memories of conversations (Silverman, 2003). As Silverman (2003:354) correctly points out "… it is simply impossible to remember (or even to note at the time) such matters as pauses, overlaps and in-breaths." Recordings can be replayed and restudied whenever necessary, and transcripts also can be improved (Silverman, 2003:354-355). Reviewing the recordings also

helped me to improve my ways of asking questions. After I conducted and recorded my first

in-depth interview, I planned to listen to my interview and review it before conducting

another in-depth interview. I self-evaluated based on the way I conducted my first interview.

After listening to the recorded interview, I discovered a little nervousness in my voice while

asking questions, perhaps the reason that I was talking too fast and seemed over concerned

about my specific word choices, often using several synonyms for the same word. I also

noticed that I interrupted the respondent couple of times while he was talking. Taking note of

these problems, I tried to revise my technique. In the second interview, I felt my technique

had improved. However, I figured out that I was not comfortable in looking at the

questionnaire after each question. It constrained the flow of the discussion. Therefore, I

memorized the question guide and themes; e.g. questions about dengue, questions about

water storage, questions about garbage disposal, questions about the issue of risk, one after

another, and asked questions based on these themes and information that came out of the

discussion with the respondents. Nevertheless, I always carried the questionnaire with me and

took a quick look whenever it was needed. I tried never to confine the respondents'

discussion, rather I allowed them to say whatever they had to say about my research project

and about the questions they were asked. Some respondents had much to talk about on one

theme, less on another; thus the information I gathered from the respondents varied in depth

on the selected themes. This technique, however, served to inform me about what issues they

were more concerned with.

In terms of selecting places and times for the interview, all of the women that I

interviewed preferred their home and the afternoon for their interviews. They preferred

afternoon because they were typically busy in the mornings and at noon with making

breakfast and with doing other household chores, including laundry (a manual chore),

cleaning houses, and taking care of children. After taking lunch around 2:00 p.m., they had

about one and half or two hours to themselves for either taking rest or for their hobbies. In most cases, their hobbies are related to their household chores, such as sewing dresses for children or embroidering bed sheets. Sometimes they visit their neighbours. In the evening they get busy again as their husbands return home from work. They make evening snacks and cook for dinner. Cooking in Bangladesh typically demands significant time because of the spices and preparation of food takes time as almost everything, including chopping, grinding, and mixing is done manually. The women who work outside must balance their jobs and their household chores. On weekends women are even busier as weekends are considered days for special cooking as either husbands are home or they have guests, or both. In addition, if there is any religious or cultural festival, women are even busier in taking care of their households and their guests. So, it is not surprising that they all chose their home for the interviews as their homes demand their full time involvement. They get some 'free time' in the afternoon when lunch is done, children take naps, and their husbands, generally, are not home. Some women, however, preferred to have their interviews on weekend afternoons when their husbands were home. This was because, I assume, we were almost strangers to them, only meeting and speaking briefly during the survey questionnaire. They likely did not want to be blamed by their husbands if anything bad possibly happened. Many told us that they let their husbands and other family members know in advance that we would be coming over. When husbands were present, they could influence the interview dynamic. In one interview, a respondent's husband indirectly asked his wife to end the conversation by asking "Hey this is prayer time, won't you pray?" Another respondent who was a single mother with three adult children living with her younger brother asked me to pause the interview for about half an hour when her brother came home for supper during his work break. She hid my little digital recorder with a pillow in an attempt to hide the fact that she had agreed to be interviewed. In other cases, if the husbands were home, they tried to eavesdrop on our conversation or came

into the room during the interviews. They were, I think, curious about the purpose of us coming and about the nature of the questions being asked. Since the questions were all related to dengue, and they did not sense anything political, they let us carry on in our interviews. Sometimes they also felt impelled to make short comments on the questions they had overheard, or just to add additional comments on my questions. In general, I noticed that other family members were curious about our research; therefore, it was very common for other family members to sit in the same room, listening to our conversation, and making comments whenever they felt like it. This also happened in interviews with male members when female members of the family listening to and commenting on the discussion.

In selecting the time and place of interviews with men, the workers preferred weekends and their home for the interview as they were busy on weekdays. They typically asked us to come anytime to their homes on weekends. Weekends for them, as opposed to women, were time for relaxing, spending time with friends and family, and for social networking. Respondents who were business persons, students, or unemployed typically preferred to be interviewed outside of their homes, at their work place, by a busy street, or in a public park. This is because these men spend most of their time outside of their homes, and preferred talking to us in tea stalls, restaurants, and their work places. They chose their home for the interview only after learning that the interview would be private and confidential, and tape recorded. One respondent still wanted to have his interview in a public park, as he said: "you will always find me in this park". He found a 'quiet' place for the interview to be recorded. Thus, we had one in-depth interview in a public park. Both men and women respondents allowed us in their homes because, I believe, they did not sense any harm from two young women who were students.

We undertook four focus group discussions (FGDs) in total. Two FGDs were with residents of the Mironzullah City Colony and two were with the residents of the larger

ward. With the help of PSTC, we gathered community members for three of the FGDs, and one that was with the male members of the larger ward, made possible by the keen interest of one of the male respondents as mentioned earlier. The focus group discussions gave me access to both individual and collective life stories (Madriz, 2003). Many researchers believe that the FGD dynamic reduces the power imbalances between researchers and the researched since FGD participants take the lead and decide on the direction of the discussion (e.g. Griffin, 1986; Fine, 1994; Madriz, 1998 and 2003). Madriz (2003: 371) points out that the "multivocality" and "the unstructured character of the focus group interview guide" limits the control of the researcher over the focus group discussion process. However, conducting FGDs are challenging, and it was indeed very challenging for me as a young researcher, as described in detail below. For, as Merton et al. (1956, quoted in Fontana and Frey, 2003: 72-73) note, the FGD requires the researcher or moderator to be apt enough at saving the group discussion from being dominated by a person or a small coalition of persons, balancing the role of researcher with the role of moderator, and making sure that every participant participates in the discussion. Fontana and Frey (2003: 73) argue that interviewers have to have greater skills to conduct FGDs than conduct individual interview "because of the group dynamics that are present."

We conducted the first FGD with male residents of Mironzullah City Colony. My intention was to explore their historical and cultural background, and therefore, I wanted to include some elderly persons in that discussion. I informed PSTC in detail about my plan, purpose, and the approximate numbers, six to ten people, that I would like to have at the FGD. In the end, only four men were able to attend the FGD. The FGD was tape recorded, with permission, and field notes were taken by my research assistant while I facilitated the discussion. The respondents' ages ranged from 50 to 70 years. I faced challenges ensuring that everyone contribute to the discussion since some personalities were more dominant than

others and there was a difference shown to the more dominant personalities. One of them barely talked and if I requested he say something every time he replied to me "whatever [so and so] said is my say" and another said "it's enough to have your answer from one and [so and so] is explaining everything to you." I sensed that there were personality dynamics influencing the FGD; nevertheless, with each question, I repeated my request for everybody's comments. Given these problems, I wanted to conduct another FGD with the male members of the colony, but unfortunately time did not permit.

In order to undertake an FGD with the female residents of Mironzullah City Colony, we all met one afternoon at a participant's home. In that discussion, the ages of women ranged from 18 to 60 years. Three women under eighteen were present. I requested that they not participate in the discussion, but since they were interested in listening to the discussion, they were allowed to do so. I found this discussion comparatively more fruitful than the one with male members of the colony. Yet, group dynamics also appeared to influence the discussion; some participants were hesitant to discuss their colony-related concerns. There were others, however, who candidly talked about their concerns, problems, and issues. In answer to my question about their top five concerns, their discussion typically went somewhere else than dengue. They included dengue because, I think, they were aware that we were there to undertake research on dengue. Particularly, one respondent reminded the other participants by saying "now we should talk about dengue as this sister (indicating me) is here to listen about dengue from us."

Since the FGD with the male members of larger ward was arranged by one of my survey respondents, he gathered his friends from all eleven neighbourhoods of ward 69 as I had requested. There were ten participants in that FGD, ranging in age from 28 to 40 years. Most of them were business men, and many were active in political parties in Bangladesh. We sat by the Dhaka University at around four in the afternoon as per their preference. We

recorded the whole interview, and because they were very enthusiastic in discussion, the FGD continued for more than one and half hours and with daylight fading it became too dark to transcribe notes. While my assistant was taking notes one of the participants sitting beside her was curiously looking at her field notes, and at one point he suggested modifying what she wrote concerning his comments, so she did. They were very emphatic that they wanted their voice to be recorded properly. One or two of them lifted the recorder that I had put in the center of the group, close to their mouths, so that their comments would be recorded properly.

PSTC arranged for a FGD with female members of the larger ward, with the help of the urban health care centre. A member of health centre gathered together some of the female clients of the health service. We sat for the FGD in a meeting room at the health centre as it was convenient for the women to come to that location. There were 15 participants present for the FGD, ranging in age from 18 to 40 years. We recorded the whole discussion while also taking some field notes.

Some of my respondents from Mironzullah City Colony seemed to expect an economic contribution from me or the research team. All these expectations became more obvious when I asked questions about their concerns, or about their health problems. For example, their gestures, their eyes, their way of looking or speaking all seemed to reflect their expectations that I, with the research, was going to solve their problems. In one FGD, a woman directly said "we are living a measurable life here with limited sanitation, congested rooms, please do something for us;" another woman asked me if I could help organize work opportunities through the Plan, Bangladesh, an NGO. My research assistants reported that some respondents felt "everybody comes here; write down everything, but nothing happen to us, nothing changes." Several NGOs work in this colony, addressing economic and health problems. I was told that Plan Bangladesh provided sewing machines to help some women

earn some money. PSTC helped building two common toilets and to get better drainage systems.

Expectations or frustrations from the larger ward were different. Respondents who took my research positively expected that I, with my research, would help with bureaucratic concerns and would find a way to get rid of dengue, if not mosquitoes. One respondent from the larger community asked me if I could help her sons to immigrate in Canada. Another respondent asked if I could help to establish her business in Canada; another respondent saw me as a possible help if they sent their son to Canada for higher studies. Some, on the other hand, thought no matter how much research I did, nothing would change. Even though all respondents live in the same ward, the specific expectations and frustrations differed.

There were some challenges I faced with my identity as a woman because it matters in research. Denzin (1989:116) has said that "… The sex of the interviewer and that of the respondent do make a difference, as the interview takes place within the cultural boundaries of a paternalistic social system in which masculine identities are differentiated from feminine ones." I am a woman from Dhaka (New Dhaka) but have been living in Canada for three years. Nevertheless, to my respondents, I was still a woman from Dhaka; therefore, they expected that I would know the common issues in Dhaka. Some replied to my questions saying "well, you are also from Dhaka, you know how it is to live in Dhaka, you know about the traffic, mosquitoes, garbage, and every other thing in Dhaka, don't you?" Since they viewed me as a resident of the Dhaka City, they thought that I did not need any detailed information that I would know by default as resident of Dhaka. Conversation on the issues proceeded only after I explained to them that I had not been in Bangladesh for three years. I had to pay attention how I dressed. While it is true that many women in Dhaka wear jeans, and shirts, it is not widely accepted, or considered as "men's dress." A Salwer-Kameez with a scarf, and Sharees are generally considered as "women's dress." Even though I

travelled from Canada to Bangladesh wearing jeans and a shirt, I never wore them in my three months in Dhaka. I bought few Salwer-Kameezes for me since wearing Sharee and managing it was difficult, and a Salwer-Kameez is more comfortable, and easy to wear. After couple of days working with the larger community I realized that gender conformity for women were based on notions that 'decent women' do not go in public unveiled, meaning they cover their head if not their face whenever they go outside of their homes; in New Dhaka women enjoy comparatively more flexibility in terms of choosing their clothes. I covered my head while I worked in the larger ward, but when I entered to the Colony, I consciously unveiled my head because I did not want to highlighted my Muslim identity in a community that was not Muslim (a detailed description of Mironzullah City Colony has been included later of this chapter). I did not want to create any physical barriers between them and I, since covering the head typically identify women as Muslim. I noticed, however, that women in the Colony cover their heads too when they need to walk around the Colony, and in front of men. This is because regardless of religions, women are expected to veil themselves around men in the culture. They veil themselves very carefully when they need to walk amongst men; otherwise, they would not be considered 'decent women.' My gender identity in the context of Dhaka, Bangladesh made me extra concerned how I dressed; on the other hand, my female identity certainly made our access to respondents and in their homes easier, for female researchers may be viewed as harmless or invisible (Warren, 1988). So I, along with my female research assistant, was seen as low risk to invite into homes.

Another unavoidable challenge I faced during my research was the Hartals or strikes. On a Hartal day going outside of the home means putting your life at risk as Hartal supporters may set fire to cars and buses, block roads, and throw stones at running vehicles. People can also be killed on extreme Hartal days. For safety reasons, we did not do any kind of field work on Hartal days. I faced several Hartal days in my three months of field work.

Other than Hartals, there were also several cultural and religious festivals such as Eid, Puja, and Victory Day; these festivals definitely constrained my time and I had to rethink or rearrange my schedule accordingly.

Mironzullah City Colony:

Residents of Mironzullah City Colony are Hindu in religion and mainly sweepers by occupation. In their words they are "jaat sweeper," or sweeper by caste. The area where the "sweeper" community is located is walled and gated which symbolically represents their social separation from the larger ward, but it is walled and gated also to prevent their horizontal territorial expansion. The ancestors of the members of the colony migrated from India to Bangladesh (then East Pakistan) under British colonial rule. Even though they speak Bengali with the larger community, they do have their own language, very similar to Hindi, to communicate within their group. They speak of the language as "our language."

The area where the colony members live has two five storey buildings and one six storey building. While I was in the field the construction of another six- storey building and the construction of a modern temple were underway. There is a primary school inside of the colony where the children of colony members study. This school is a four storey building. The first two floors of the building are used for the school (class rooms, and offices) and the top two floors are used for different purposes by community members as meeting rooms, guest rooms, and a work station. The community members have the key to the school building so that they can use the school building according to their needs. I facilitated a group discussion on the top floor of the school building. I also observed that religious music groups, which came from another part of the country to participate in a religious festival in the colony, were using the top floor of the school building as their break rooms. I also heard that

women used to use the third floor as a work station for their sewing machines. This is partly because there are no empty rooms other than those in school building.

Other than these multi-storey buildings there are many small one storey houses in the colony which are made of brick and cement with tin roofs. Whether a multi-or one-storey building there is typically only one room allotted to each family consisting four to eleven members. Most families have cots to sleep on, though there are some who do not. They sleep on the floor. Even with cots, in big families some may sleep on the cot, while others sleep on the floors and in the kitchens. There are some who cannot even sleep in their own home and sleep over at the homes of their friends or relatives. Members who live in the multi-story buildings, however, enjoy more facilities than those who live in one storey buildings or one room houses. For example, in the multi-story buildings there are bathrooms and kitchens attached to their one all purpose rooms (e.g. bed room, living room and so forth). On the other hand, members in one storey homes most often do not enjoy the facilities associated with an attached bathroom or kitchen. Instead, they share common toilets and two common bath places for men and women. It is evident that the numbers of toilets are not adequate to meet the needs of people. At rush hours, especially in the mornings, it becomes a struggle to get access to the toilet and to the bath places. It was not uncommon to see children urinate and defecate by the walk way. The women's bath place is covered and women are expected to remain in veiled but the space for men is open. Generally as many as ten people shower together in each bath place. However, the inhabitants of some one-storey houses spent money to make it a little better. They manage to make some room for an attached bath, and some have both attached bath rooms and kitchens. There are some who have constructed one or two more rooms on top of their one-storey room, so it looks like a tiny two-storey house. They do this because they cannot make their rooms expand horizontally. Many community members renovate their rooms with tiles as these are very old houses and,

according to many respondents, can become very difficult to live in. One of my respondents had just one room for four members and that is it. The mother of one respondent was cooking in the same room while I was interviewing. A colony member was accompanying me, and it was very hard for four people to be seated let alone function and sleep in the same room. Not only do community members differ from each other in terms of enjoying amenities or facilities, they also differ in terms of their economic condition and social position. I noticed that there were families with almost everything necessary for a more relaxed and easy life, such as a refrigerator, a colour TV, a sofa set, and a cot; but there were some who did not have even basic necessities. Some families are able to send their children to luxury private schools and universities, but there are others who cannot even dream about it.

The biggest room in Mironzullah City Colony is the Club room, known as "the club," the political and administrative center of the colony. It is the governing body of the colony. The governing body is elected every two years. There were mainly two parties ruling the colony until the year before I did my fieldwork, when a new party emerged and won the election; they are the current ruling party of the colony. Not only are women excluded from the club political parties, but women also do not have any voting rights. However, a member of the current ruling party informed me that they have an agenda to give voting rights to the colony women, but not to include them in the parties. The club room is situated by the school building. It consists of two rooms, one big and one smaller. The big room is used for public meetings, and serves as a meeting place for male members of the colony; the small room is for private meetings with the head of the club. There are several chairs, bench and tables in the big room. The room is generally open on Fridays and Saturdays as these are weekends and men are at home, so they use it as a meeting place. In between the club and the school there is a little yard which becomes very busy and noisy on weekends as the men are home and kids have no school. There is a small tea stall right across from the school. This little yard

is used as both a children's playground and as a men's gathering place. There is a small monument by the tea stall to remember martyred colony members who took part in the Bangladesh liberation war. There is a common water tank in front of the club room that fulfills emergency water needs. I observed one or two women in this yard area while they were collecting water from that water tank, but other than that this area is mainly a men's area.

The scenario of the yard area on weekdays is different from that on weekends. On weekdays women's presence is noticeable in this area. Some women use this area as a place for washing clothes and utensils as there is a water pipe by the school, and some women use this area to dry their utensils and clothes in the sun. During the day it is comparatively quiet as children are in school, and most men are at work. Only some elderly men were observed sitting and chatting with others in the sun, or just passing their leisure time.

The place where the colony members live can be understood as government employee quarters; one of the main conditions for living in the colony is employment in government jobs, and most residents are government employees. The government not only built the buildings and rooms in which the colony members live, it also subsidizes the maintenance and amenities costs such as water, electricity, and gas. But the fact is that these measures are not enough to fulfill the needs of the people living in the colony considering the number of the people living in the colony, the relatively small number of rooms and the lacking amenities (including water and toilet facilities).

This community has been established in the area for generations. However, as the population size grew, the land area did not. Now the government is building high rise structures to accommodate the growing population. As the colony cannot spread horizontally,

it is expanding vertically with the high rise buildings. There is a fear in the community of losing the colony altogether. The way to reduce the anxieties of losing the colony is to maintain government employment, as mentioned above; employment as sweepers is, however, becoming more competitive day-by-day as many Muslims are more willing to do this job. Government jobs tend to be very lucrative in Bangladesh as they provide accommodation, subsidize living expenses, and a handy premium on retirement. Accommodation and subsidy vary based on the ranking of the government job; some, for example, may get a fully furnished luxury apartment to live, while others, like the colony members, only receive a tiny room for a whole family. Having a roof above your head means a lot for many because of the fact that thousands of people live on the street in Dhaka city. The tension among colony members is that their opportunities in the government job sector are narrowing due to Muslim's involvement in "their jobs." They are concerned that Muslims give bribes to get the sweeper jobs. One colony member spoke about the issue: "We are *jaat* sweeper [sweeper by caste], they [Muslims] are not. But now they are taking the jobs away from us. They are doing our jobs! If they do our jobs, what jobs would we do?" What is important to notice here is that their anxiety about losing the wider opportunities of having the job as a sweeper does not come from their dedication and attachment to their caste or jobs; rather it comes from their fear of losing a place to live and a certain source of income. Getting a job is not easy in Bangladesh, where millions are unemployed even after obtaining university degrees. Most colony members told me that they do not want the same life for their children. As one respondent said: "I do not want my children to become sweepers. I want them to have a 'good' job and have a prestigious life. Life in here as a sweeper is very hard."

In the colony having a government job as a sweeper ensures a place to live and a source of income. Even though colony residents believe that government would never evict them from the colony because they have been living there for generations, having a

government job would make their beliefs stronger. They said that the land they are living on was actually donated to them by a *Baiji* (a royal prostitute/ dancer), but it was never documented. Nonetheless, they believe that this is their land and only the buildings and utilities are provided by the government. In response to my question about why they choose not to live outside of the colony, given the fact that they do not have enough room for all of them, one respondent replied:

You know how expensive Dhaka City is! And do you have any idea about the price of a piece of land in Dhaka city? They are sold in corers [more than millions]. Our land will be very expensive too. To have a piece of land in Dhaka city means a lot. If the government gives us other land to live on it will surely be outside of Dhaka, and we are not ready to move from Dhaka.

When a building is constructed in the colony, the Club, the ruling party of the colony, makes a decision on how to distribute it to the colony members. Generally the families, whose houses are torn down to make way for the new building, get priority for room distribution in the new building. On average 30 to 40 rooms are built in a five or six storey building, which means 30 to 40 families live in a building. If the land for the new building destroys twenty one-storey rooms or houses, those twenty families get priority on the distribution list. The rest of the rooms are distributed based on needs, mainly based on family size. If a large family shares only one room, that family gets priority. Of course, suspicions are that bribes get rooms. According to one respondent:

You see we four people live, sleep, cook in this one tiny room. My sons cannot get married because we cannot accommodate new members. We need a room very bad. We asked for a room … but did not get one…. Now a new building is being built but I do not see any hope.

Another respondent spoke to concerns over the amount of money asked every time a new building is built:

Last time they [the club] demanded 100,000 BDT for a room, but this time, I heard, they are demanding 200,000 BDT for a room. We are poor, where would we get this large amount of money? I don't know what my husband and brother in law would decide finally. They may make another room up on our roof instead other than giving any money to the club.

The Club is a very important institution in this community, making major economic and political decisions for the community and taking their demands to the government representatives, presenting their problems and requesting solutions. The Club arranges religious festivals in the community, collecting money both within the community and from other (often institutional) sources. The Club invites government minister to their religious festivals at least once a year and talks about their problems and demands. Once a promise is made, the Club tries to get them implemented by periodically reminding ministers and by following up with them. The Club is also connected with the larger Harijan or Dalit organization in Bangladesh.

Besides the ruling party of the Club, the opposition parties also arrange different programs for religious festivals to win the heart of community members, and especially the voters who are exclusively men. I observed members of the main opposition party cooking food and heard that all male members were invited to eat. When cooking is political, it is the men who cook. They cook in a corner of their yard, play music, and distribute food. While women are not invited, men are allowed to take food home for their family members (women and children) if there is any leftover food. They argue that it is impossible or out of their capacity to cook for all the members of the community.

The Hindu religion has many festivals and rituals. There is a saying that Hindus have more festivals than months in a year: "13 festivals in 12 months." Therefore, all year round they are very busy with religious festivals. Most of them try to paint their houses before Durga Puja, and Kali/Shyama Puja, the biggest worship festivals for Hindus in the

Bengali region. They also keep themselves busy in arranging and observing other religious festivals. January, February, and March are considered the wedding season, and I was told that around 50 marriages take place each year in the community during the wedding season. This season keeps them very busy as well.

The Larger Ward 69:

This ward, as mentioned earlier, is part of Old Dhaka. Inhabitants of old Dhaka, popularly known as *Dhakiya*, is unique in the language they use, which is known as *Dhakiya Vasha* or "Dhakiya language." The residents of Old Dhaka consider themselves the original inhabitants of Dhaka or "real Dhakiya," and the rest of the city's inhabitants as migrants to Dhaka. One respondent called migrants "village people." They have concerns that the "village people" and the *Dhakiya* are different in their cultures. She characterizes the "village people" as follows:

They are very private, and do not share their things or problems with others. They do not care about others' problems. Do not talk or respond to strangers. We are not like them. We do not mind talking to or even sharing tensions with others. We do care if we see people in trouble or have problems. The village people just like to live in their own world.

Many people in Old Dhaka prefer to be in business because it is their family tradition and also because business makes more money than employment. Unlike the larger city of Dhaka, where there is a general tendency for people to get university degrees in order to qualify themselves for better jobs (prestigious and better paid jobs), people in Old Dhaka are more interested in business than university degrees. Some, however, are now getting degrees, mostly from private universities, as a way to build their social status. Generally businesses stay in families for generations. New generations follow, carry on, and expand their family businesses. Because of political unrest and social insecurity, some believe employment would be a better idea as doing business is becoming risky in the present

political situation in Bangladesh; however, many find business is the way to make money and live an economically secure life. One young man explained his preference in doing business:

I am a university graduate. I did my BBA and then started my career in a bank, but I didn't like it. You cannot make enough money being an employee. How much can you make when you do a job: fifteen thousand or eighteen thousand [taka] maximum? But you can make as much as eighteen thousand per day if you are in a business. For example, a share market business. Another important thing is you have flexibility in your business. You decide your office hours for yourself which you cannot do if you are doing a job. You are free in your own business!

Not everyone has 'big business;' many instead are involved in comparatively small scale businesses such as operating tailoring stores, or tea stalls, or small shoe stores, photocopy and printing stores, and so forth. The idea is that most of them prefer doing business over doing a job. Some mentioned that they prefer doing business because getting a job is very competitive and it is generally very hard to get one.

Women in Old Dhaka are mostly housewives. A gendered division of labour is very prominent in Old Dhaka. While men are involved in earning wages, women are mainly involved in household chores, though they are not always involved in making household decisions. Sometimes they cannot make decisions on their own. Girls in this community are sent to school; some get university degrees, but the main idea behind a girl's education is to prepare her well so she can be a good bride and they can marry her off to a well established family. Regardless of how educated or qualified the bride is the tradition to give a dowry to the groom and groom's family is still practiced. The groom is also expected to give ornaments, mainly gold, to the bride, and the bride's family gives everything possible to the groom's family. One respondent spoke about this issue with his sister's marriage: "We remembered every smallest thing possible to give to the grooms' family with my sister. We

even didn't forget to give a bed sheet. And they gave gold to my sister which was good enough."

After marriage, a *Dhakiya maiya* or 'Dhakiya girl' becomes *Dhakiya bou* or 'Dhkaiya wife'. The new status imposes more responsibilities and restricts the freedom that a *Dhkiya* girl would typically enjoy. For example, *Dhakiaya bou* generally do not go out without the permission of their husbands or the elderly persons in their families. One respondent indicated that female members of her family do not go out shopping without being accompanied by male members of their family, unless it is really necessary. With permission from their husbands or family, women may go shopping in a group with proper veil. One male respondent commented: "Why do they [female members] need to go for shopping? We always stay out and we can bring them whatever they need."

One female respondent indicated that because she was the wife of the eldest son in the family, she gets special respect from, and responsibility within, the family. For example, wives of other younger sons in the family always inform her if they need to go out, even with their husbands. She said that this is a way of showing respect to persons in the family who are elderly by age or by status. Here relationships indicate status, such as the mother-in-law status, or the wife of the oldest son status. So based on relationships, women show respect to one another. The respondent also said she takes major responsibilities of cooking for the whole family, while the other wives help her with the cooking. For example, some help chopping vegetables, some help by grinding spices, but it is always she who cooks. This is because, as she said, everyone, especially male members of the family, like and appreciate her cooking. Other family wives are unwilling to cook because their cooking often is not appreciated by male members. Old Dhaka is famous for its food. *Biriyani* (spicy rice) is one of the famous foods, and is very spicy and tasty. *Dhakiya bou* culturally learn about the spices and their uses including making different traditional food.

These are some examples that indicate the different lives of men and women in Old Dhaka. However, I met one woman who completed her M.A. degree and was a school teacher. She reported that times were changing, and that education was becoming more important in Old Dhaka; she did not have to worry about being a *Dhakiya bou* or going through all the traditions. She said some areas in Old Dhaka were becoming highly educated and, as a result, cared less about *Dhakiya* traditions. Nonetheless, she said she does not feel safe if she travels alone, preferring to travel with her husband or other family members.

The culture of Old Dhaka is generally very friendly. Residents are very hospitable, and I was offered food from almost every family. Even though I was a complete stranger to them, they cordially accepted me and agreed to participate in interviews about dengue.

Chapter Four

Dhaka: A Historical Overview

You cannot make sense of contemporary Bangladesh unless you understand its history long before those last few decades (Schendel, 2009: xxv).

Schendel (2009) emphasizes the need to look back at the history of Dhaka and its citizens in order to better understand its contemporary present. Considering the history of Dhaka helps us to understand not only its importance as a rapid industrializing and urbanizing city, but its unique social organization. Physician-anthropologist Paul Farmer (2002) emphasizes the importance of looking to the past to understand present-day sufferings. If we can carefully delve into historical forces, we may understand who is most likely to be suffering, and why and how, regardless their ethnic or gendered identity. Drawing on examples from Haiti, Farmer (2002) suggests that it is always those at the bottom of social hierarchical ladder who fall victim to structural violence. Farmer (2002) argues that a careful analysis of history and political economy helps us to understand the political, physical, or health-related violence observed in the present. Thus, exploring some aspects of the history of Dhaka will allow us to understand the historical forces and systems that have positioned certain groups of people, particularly the economically poor, with limited life choices and a vulnerability to dengue.

Throughout its history, Dhaka has always been the center of Bangladesh's economic, political, and administrative activities. Dhaka went through a massive modernization process under British rule. Dhaka not only got a new look administratively, but the British influence also created a new class of citizens who were educated in English language, art and literature. After the end of the British regime and after being separated from Pakistan, Dhaka is still at the center of all economic, political, and administrative activities. Many people migrate to Dhaka each year in search of a better living; but ironically Dhaka is

one of the most unlivable cities in the world due to its unplanned, rapid urbanization and industrialization. This chapter will consider present day Dhaka and the overall living conditions of its citizens by looking back its history. At the end of the chapter, I will provide a brief description of my research in ward 69.

The crucial question in introducing Dhaka is how to frame its introduction. Consider what the ruling government parties say, that Dhaka is developing day by day, or consider what national newspapers report about Dhaka, that it is a city becoming more unlivable day by day. I will rather start with some questions: 1. Why is Dhaka more important than any other cities in the country, 2. Why do most people choose to live and work in Dhaka, and 3. How is life in general in Dhaka?

Dhaka has recently been officially divided into two parts: the Dhaka North City Corporation, and the Dhaka South City Corporation, but unofficially, and more popularly, Dhaka is also divided into two: Old Dhaka, and New Dhaka. The differences defining Dhaka North City Corporation and Dhaka South City Corporation may relate to different administrational authorities, but there are cultural differences between Old Dhaka and New Dhaka. Even though we cannot homogenize the culture of Old Dhaka or the culture of New Dhaka, in a broader sense, some visible lines can be drawn in order to understand the differences between Old and New Dhaka; language provides an excellent example. Most of the local inhabitants of Old Dhaka use Urdu in their communications, and which inhabitants of New Dhaka or other Bengali people in the country do not use. This is because in historic Dhaka, Hindustani, not Bengali, was the main language which was a mixture of Hindi, Urdu, Persian and Arabic (Ahmed, 1986:14). My research is in Old Dhaka, a part of Dhaka South City Corporation, so Old Dhaka demands special attention in this discussion.

Little research has been done to describe the cultures of Old Dhaka, other than some blogs and tourist feedback on the foods and archaeological sites of Old Dhaka. The

research that concentrates on the history of Dhaka focuses mainly on the political, economic, and administrative importance of Dhaka in different periods of history: from Sultans, to Mughal, to the British regime. Ahmed (1986), for example, explores how Dhaka went through a process of modernization to reach a new urban order, along with a description of the political, economic, and administrative importance of the city from 1840 to 1885. He focuses on the urban problems and living conditions of the people of Dhaka, most of which are still relevant in Dhaka today.

Dhaka has had its ups and downs, but it has retained its importance throughout history. One obvious importance is its geographical location, and also its surroundings. Dhaka is situated by the river *Buriganga* which connects it to other regions. Mughals used Dhaka for political and economic purposes, encouraging settlement in Dhaka by providing rent-free lands which increased population size in Dhaka (Ahmed, 1986). They also encouraged the textile industry by establishing muslin, a famous textile that was responsible for huge revenue. According to Ahmed's (1986) history, it was Dhaka's geographical location which helped the city to regain its status that started to decline when the British took military control over Bengal in 1757. With the exchange of powers from Mughal to British, Dhaka lost its previous economic and political roles as British rulers adopted new strategies to govern and collect revenues. By 1829 Dhaka started to regain its status as British returned attention to Dhaka in order to make it politically and economically more effective. Dhaka went through a process of modernization, and a new urban order under British rule. According to Ahmed (1986), for example, in 1829 a system of divisional commissioners was created to provide more supervision and control over revenue, and Dhaka was chosen as the headquarters for the commissioners. In 1835 the first government educational institution was established in Dhaka. In the 1850s several bridges, roads, and culverts were constructed. In 1854 telegraph was installed and, in 1858, Mitford Hospital was established in Dhaka. In the

1860s and in the 1870s Dhaka became the headquarters of the Deputy-Inspector General of

Hospitals and Superintendent of Vaccination for East Bengal respectively. By 1861, the

Chaukidari police force was transformed into a municipal police force and, in 1885, rail ways

connected Dhaka with Narayanganj and Mymensingh (Ahmed, 1986: 25-58).

Along with new administrative and structural forms, British rule also helped to

create a new urban class by establishing formal education. Students not only learned English,

but they were also exposed to Western liberal arts, science, and philosophy. Needless to say

this new urban English educated class was interested in transforming their society in light of

their new learning (Ahmed, 1986: 58). English educated people were also given preference in

public appointments (Ahmed, 1986: 33-34). It is interesting that even though, in Dhaka,

Muslims were the largest community and Hindus were the second largest community, it was

Hindus who responded largely to this new English educational system (Ahmed, 1986: 59).

The first female school opened in 1863 with 16 students from the Hindu and Christian

communities (Ahmed, 1986: 71). English education opened the doors of employment in

different government services including specialty areas such as medicine, law, and

engineering (Ahmed, 1986: 73). Aloofness of Muslims in English education was due to their

cultural and religious beliefs with an increased importance put on Arabic and Persian

language in learning Islamic principles (Ahmed, 1986: 77). It was not until the realization of

Nawab Abdul Latif, a prominent leader in the Muslim community that an isolation of

Muslims in New India was emerging through British contact, that Muslims were encouraged

to take part in the process of making new India. English education was also important to take

the leadership of the community in which Hindus were clearly ahead. According to Ahmed

(1986) the new learning had a significant effect on cultural and religious reforms, such as

encouraging female education, widow remarriage, discouraging child marriage, and

polygamy. Educational institutions, newspapers, and literature helped to spread these new colonial thoughts (Ahmed, 1986: 82).

Leadership of the community became crucial, and by the time the British handed over ruling power to the people of India, several religious riots had occurred between the Hindu and Muslim communities (Ahmed, 1986). According Stewart (1951) review, conflict between Hindus and Muslims was nothing but the impact of 'Divide and Rule' policy implemented by British rulers. As the Muslim League and Congress could not come to agreement, the British Parliament declared independence of two different countries, India and Pakistan, on the 15th August 1947.

In 1947, India and Pakistan separated when Bangladesh was a part of Pakistan, known as East Pakistan at that time. During this separation, many Muslims migrated to Pakistan from India and many Hindus migrated from Pakistan to India. The population of Dhaka increased rapidly as it received a large number of migrants at this time. Dhaka received the largest number of migrants after it achieved independence from Pakistan on the 16th of December, 1971 (Hossain, 2006). Pakistan treated Bangladesh (then East Pakistan) as its colony, imposing the same type of colonial dictatorship on East Pakistan (Schendel, 2009:116, 119). For example, Urdu was the official language, and Bengali language was neglected even though only 3 percent people were Urdu speaking and 55 percent were Bengali speaking (Schendel, 2009: 110). The exploitation, domination, and deprivation continued and was reflected in the national election where the Awami League led by Sheikh Mujibur Rahman won, but the ruling government was reluctant to hand over power to the Awami League, a party which represented East Pakistan; rather a number of intellectuals were killed on the 25th of March, 1971 (Schendel, 2009). An armed conflict resulted known as liberation war, where young male and female freedom fighters took part. During this war many ethnic minorities, mainly Hindus, migrated to India leaving their homeland as they

were feeling unprotected as their homes were looted and burnt by invaders (Schendel, 2009). Many were killed because of hatred and hostility. After nine months of liberation war, Bangladesh achieved its independence from Pakistan on 16 December 1971 with aspiration of revolutionary change.

Bangladesh, as Schendel (2009) reviews, went through economic and political challenges even after independence. The popularity of Awami League started to decline because the standard of living of the majority did not improve. Agricultural and industrial production declined, as did the income of labourers, whereas the reverse was expected (Schendel, 2009:177). Schendel (2009:178) argues that these crises with the result of inexperience in running a government, and rapid changes in economic circumstances in the country. As the popularity of the Awami League, lead by Sheikh Mujibur Rahman, declined in early 1975, Sheikh Mujibur Rahman introduced a single party presidential system. He named the new party BAKSHAL (Bangladesh Krishok, Sromik, Awami League; Bangladesh Peasant's, Worker's, and People's League). A plot began to take shape against Mujib, and on 15 August, 1975, after midnight, Sheikh Mujibur Rahman and more than forty members of his family were killed (Schendel, 2009: 181-182).

According to Schendel's (2009) review, after Mujib, a military-backed government was established. On 7 November 1975, Major General Ziaur Rahman became the President of Bangladesh. Soon after, he banned political parties. He formed his own party, named the Bangladesh National Party (BNP). Ziaur Rahman ruled the country until he was killed during a visit to Chittagong in 1981. After Ziaur Rahman, another general, General Hussain Muhammad Ershad, became the president of Bangladesh. He also cancelled basic rights and banned political parties (Schendel, 2009: 195). Ershad ruled Bangladesh from 1982 to 1990. He was forced to leave his power by a popular uprising in 1990 and thereafter a parliamentary democracy was initiated (Schendel, 2009: 195). Since then, the two parties

have ruled the country in turns: the Awami League, lead by Sheikh Mujib's elder daughter Sheikh Hasina, and the BNP, lead by Ziaur Rahman's widow Begum Khaleda Zia. The present ruling party is the Awami League, which has been in power since 2009. Bangladesh achieved independence from Pakistan with a dream of creating a society based on democracy, socialism, secularism, and nationalism, but by the mid 1970s, socialism and secularism were abandoned, and democracy had been interrupted; only nationalism survived through time (Schendel, 2009: 251). Bangladesh is officially, as Schendel (2009:251) describes it, "a 'people's republic,' but to most citizens the old ideals sound pretty hollow" (Schendel, 2009:251).

An extreme example of deprivation of basic rights could be the Mironzullah City Colony[5], locally known as 'Methar potri.' This colony gives a glimpse of life for economically poor people who live in Dhaka city. However, the deprivation of basic rights of the inhabitants of this colony is even deeper, rooted in their caste system and in history. The inhabitants of Mironzullah City (Sweeper) Colony are Hindu by religion, but their position or situation in the society cannot be merely understood by the overall situation of Hindus in Bangladesh as described earlier in this chapter. They deserve special attention due to their position in the hierarchical Hindu caste systems. There are mainly four castes arranged in hierarchical order in the caste system, and they are arranged by occupation. The Brahmins, or the priests, are at the top of the Hindu caste system, then the *Kshatriya* or the militaries, the *Vaishya* or the merchants, and the *Shudra* or the artisans or menials (Ambedkar, 2004). The sweepers (who mainly sweep and clean streets and toilets) are

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[5] There are two colonies across from the local commissioner's office: one is officially known as "Mironzullah City (Sweeper) Colony," and the other is "Dhaka Muslim City Colony," But, they are locally known as 'Methar patti,' or the sweeper colony. These two colonies are situated side by side and they are separated with a big brick wall or boundary. Due to limited time and scope, I undertook my research only in the Miranzullah City (Sweeper) Colony.

considered to be outcastes. There was a belief that caste people could get polluted if they are

touched, even by the shadow, of the outcaste people (Mines, 2009). They were not only

discriminated against, but were also excluded from mainstream Hindu society. Their access

to temples, schools, and public wells can be denied by caste Hindus (Ambedkar, 2004). The

British government in the colonial period named them the 'untouchables.' They have been

given different names throughout history such as the Scheduled caste, Harijan (son of God or

people of God), and the Dalit (oppressed, crushed under foot, or broken into pieces)

(Mendelsohn and Vicziany, 1998; Mines, 2009; Ovichegan, 2013). The hierarchical order in

the caste system is justified by a Hindu religious belief that people are born in a caste in

accordance with deeds in their previous lives. So the people who committed sins in their

previous lives were born into the lower caste (Mohanty, 2004: 21). Some theorists see the

Hindu caste system in India as an outcome of colonial practices and policies (e.g. Cohen,

1987). One example of such practices and policies is the census by which the colonial

government collected and recorded peoples' information about religion, caste, family sizes,

and village boundaries. Cohen (1987) argues that this census changed Indians' way of

thinking about cultural realities, including caste. He argues that this census "… created a new

kind of cultural reality in India, a reality in which Indians began to see themselves at least

partly through British-made categories" (Cohen, 1987 cited in Mines, 2009:39).

However, Ambedkar, a prominent leader of the 'Dalit' community, sees the Hindu

caste system as a Brahmin ideological and social construction (Mohanty, 2004: 34).

Ambedkar (2004) argues that Brahmins, *Kshatriya*, *Vaishya,* and *Shudra* these all were class,

not caste, systems; as a result, anyone could change their class when qualified, which is not

possible in the caste system. He argues that the caste system and the idea of pollution related

to the caste system is not natural, rather it has been attached to the caste system by the

Brahmins so that they can enjoy all social services and benefits through exploiting others. He

also argues that the means by which upper caste Hindus, Brahmins in particular, sustain their superiority is endogamy, an idea which, according to Ambedkar (2004), was totally foreign to India. He argued that Brahmins purposively selected to be endogamous which became a fashion that other castes imitated, but this imitation was not always voluntary as some people were bound to adopt the idea of endogamy because, as Ambedkar describes it, " some closed the door, others found it closed against them" (Ambedkar, 2004:147). In describing the amount of social status Brahmins enjoy, he says "Brahmin is semi-god and very nearly a demi-god… His prestige is unquestionable and is the fountainhead of bliss and good" (Ambedkar, 2004:149).

Due to huge social inequalities and discrimination in Hindu society, Untouchables, like Muslims, lead by B.R. Ambedkar, demanded a separate electorate, but Mahatma Gandhi and his Congress party strongly protested their demands for a separate electorate (Mine, 2009). According to Mine (2009: 54), although Untouchables were granted separate voting status in 1932, it did not last long as Gandhi launched a "fast unto death" in protest. Gandhi feared that this separate voting status would maintain the divisions among Hindus established by the British and consequently lead to bloodshed. Consequently, Congress leader Gandhi and Untouchable leader Ambedkar reached a compromise where Untouchables left the separate voting status but received the right to certain reserved seats (Mines, 2009: 54). Their access to temples, schools, and public wells were allowed, and they were named "Harijans" by Gandhi (Mines, 2009: 52). Yet, inequalities in economy, education, and employment were still present. Therefore, Ambedkar called it a "myth of solutions to untouchables' right" (Mines, 2009:54). Even though the term "Dalit" (oppressed) has been adopted recently by untouchable activists, leaders, and theorists and is spreading widely, "Harijan" is still the widely accepted term by many. Respondents in Mironzullah City Colony used both terms, "Dalit" and "Harijan" in introducing themselves. Some

introduced themselves as "jaat sweeper" (sweeper by caste or sweeper by default). They use this term "jaat sweeper" to differentiate themselves from other Muslim sweepers who choose to be sweepers by profession, not by caste or by default.

It is true that because of protests in different times against social discrimination, *Dalit* or *Harijans* were able to establish some of their rights and reserve some quota for themselves in the government sector, but not everybody enjoyed the fruit of success proportionately. This is because, as Ovichchean (2009) describes it, *Dalit* or *Harijan* is not a homogenous caste, nor are the experiences of discrimination and exploitation the same for all. Social discrimination is also maintained within the *Dalit* community itself (Ovichean, 2009: 9). *Dalit* with higher social status may discriminate against *Dalit* with lower social status. Though very limited, some *Dalit* have been able to take advantage of elite education and socio-economic privileges through the quota system, and thus improve their socio-economic status. Jenkins called these *Dalit* "creamy-layer Dalits" (Jenkins, 2003:82, cited in Ovichegan, 2009:10). "Creamy-layer Dalits" and their children, and grand children, may exploit the quota despite their wealth and status (Ovichegan, 2009). Therefore, the status of *Dalit* people varies based on whether they are "creamy-layer" or working class *Dalit*, rich or poor *Dalit,* educated or uneducated *Dalit*, rural or urban *Dalit*, male or female *Dalit* (Ovichegan, 2009:11). "Creamy-layer" *Dalit* still experience social discrimination, but due to their economic solvency, social status, and mobility they are more likely able to avoid the excess of oppression (Ovichegan, 2009:10).

History tells us that Bangladesh has been structured and restructured under the influence of different ruling parties. Some feel that there is no socialism and secularism left for its citizens, perhaps only a type of wrecked democracy to be found in the country. As a result, discrimination, inequality, exploitation, and violence are not uncommon. Minority social and religious groups, such as that of Mironzullah City Colony, are arguably even more

vulnerable to any manner of suffering, discrimination, or exploitation than others. Those who are either socially or religiously oppressed face limited life choices and must fight for basic human rights for their survival. Water, a necessity of life, captures this struggle. A huge shortage of water leaves citizens with no choice but to store water for daily use and this necessity provides the breeding sites suitable for the dengue mosquito. From overt violence (e.g. Biswajit murder in broad daylight) to corruption (e.g. Savar tragedy) and disease (e.g. cholera, diarrhea, or dengue), it is typically those with limited life choices who are the most likely victims.

The inhabitants of Mironzullah City Colony live a difficult life compared to residents of the larger ward, but the situation is not same for all. Mironzullah City Colony is home to both working class *Dalits,* and "creamy-layer" *Dalits*. There are families in the colony who are able to send and are sending their children to elite private schools and universities, and there are families who cannot even dream about it. Politics, discrimination, and conflict are present in this Colony. While I was working in this Colony, I sensed that as if there was a governing system within a governing system which follows its own rules and regulations. Mironzullah City Colony itself represents the general picture of Old Dhaka: overcrowded, lack of sanitation and pure drinking water, poor drainage and garbage disposal management, and over flowing garbage.

Rapid industrialization and urbanization are attracting even more people to Dhaka while it is not ready to adapt to such a large number of people. In consequence, large numbers of people are deprived of basic needs in Dhaka. Lack of shelter, food, water, and sanitation are creating a chaos in the city and placing people in a vulnerable position with respect to many epidemic and endemic diseases. Dhaka is the center of political and economic activities of Bangladesh. Every year, 300,000 to 400,000 new migrants arrive in Dhaka city from other parts of the country (World Bank, 2007). Migration to Dhaka city can

be described with 'push' and 'pull' factors (Hossain, 2008: 17). When people are forced to migrate it is known as push factors. In Bangladesh the examples of push factors are: natural disasters such as flood, drought, cyclone, rural conflict, and landlessness. Pull factors are those amenities in the city which attract people to immigrate. Examples of pull factors are: employment opportunities, health facilities, higher education, and access to modern life (Hossain, 2008:17-18). People find Dhaka a place of better opportunity as the "whole urbanization of the country is interlinked with the intensive development of the city" (Hossain, 2008:1). Both domestic and foreign investments concentrate on Dhaka and thus, make Dhaka a place of opportunity (Hossain, 2006: 16).

However, at the same time, Dhaka is also considered one of the most unlivable cities in the world[6]. Hossain (2006) tells us about recent Dhaka in his PhD research work. He describes Dhaka as a city of inequality and poverty. He estimates that 55% of Dhaka dwellers are poor and live a below standard life, whereas affluent areas enjoy high standard of living (Hossain, 2006:18). Hossain (2006) reports that Dhaka city has a serious shortage of housing facilities, in addition to problems with the supply of electricity, water and gas, and sewerage and solid waste management. Only 60% residents of Dhaka city have access to municipal piped water, 15% have an indirect supply of water, and the remaining 25% rely on private wells and surface water (Hossain, 2006:18-19). Water log is very common in the monsoon season in Dhaka city due to a poor drainage system (Hosaain, 2006:20). On the other hand, heavy traffic, crime and political violence have become common in Dhaka city (Hossain, 2006). "… social unrest, violence, theft, robbery, looting, murder, hijacking, arson, acid throwing on innocent females, the rape of young girls, possession and use of illegal fire arms, illegal rent/toll collection, and so on have phenomenally increased over the years and have now become a way of life in Dhaka city" (Siddiqi et al., 2000 cited in Hossain, 2006: 21).

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[6] The Daily Star, 15 august, 2012; Daily Sun, 15 September, 2012.

Hossain (2006) mentions inefficiency and corruption as extreme problems in the urban government. Besides the rigid control of central government over elected urban councils, Hossain (2006:22) believes that nepotism and bribes make urban government inefficient.

Given the fact that my reaserch is in a part of Dhaka, the overall situation of it is not different from rest of the Dhaka, arguably even worse. There are eleven mohollas or neighbourhoods in ward No.69 (presently ward 33): Agasadek Road, B.K. Ganguly Road, Agamasi Lane, Bongshal, Chankharpul, Nawab Katara, Sikkatuli, Nazimuddin Road, Kayertali, Kazi Alauddin Road, and Ali Neki Dewri Lane. This ward, like most of Dhaka, was not a planned area. Most buildings in this area are old and very congested with almost no outside yard. There are some new buildings in areas like B.K. Ganguly, but roads are very narrow almost everywhere in this ward; it can literaly take hours to travel what would typically be a five minute drive. Indeed it is very hard to drive through the narrow roads alongside the rikshaws. There are few pedestrian sidewalks. Pedestrians have no other option but to walk on the main roads which are busy with rikshaws and cars. Because of heavy traffic, especially on weekdays, walking amongst rikshwas and cars is very common. Stairs are so narrow and without side railings in some buildings that they are hazardous. Buildings are almost touching each other in a way that littile sunlight enters into buildings. I remember here especially a home of one of my respondents. We were following him to his home for an interview. It was only around 3 p.m. We went through a narrow tunnel that was made by two adjacent buildings. I literally could not see anything while I was walking through that tunnel and was unable to see for about one minute. We found some one storey or tin shed homes, but they were very few in number. Most homes are in three to five storey buildings and almost all buildings have made their first floors into business space and rent them. Common businesses are: restaurants (especially those which sell briyani, spicy cooked rice), bakeries, tailoring stores, grocery stores, shoe factories, paper and plastic factories, drug stores, fruit

stores, and many more. These numerous businesses keep this area very busy especially on weekdays. Moreover, the Dhaka central jail is located in this ward which further increases the high volume of traffic.

There is a local Commissioner's office located beside the central *maath* (play ground) known as *Bangladesh maath* but popularly known as *Pakistan maath*. This *maath* is open for all people and is used mainly by youths and adults to play games such as soccer/ football, cricket and racket, for pedestrians and vagabonds to take rest, and for visiting cars or trucks to park, as there are hardly any parking places for visiting vehicles. It is difficult to find parking space in this ward. Roads are so narrow that parking on the road will certainly cause traffic jams. Inhabitants of this ward note that fire service trucks or ambulances cannot get through these roads smoothly in times of emergency. Inhabitants recalled the fire tragedy known as the "Nimtoli tragedy" because it occurred at *Nimtoli*, one of the *mohollas* of old Dhaka, where 117 people were burnt to death[7]. Witnesses of that tragedy believe that if the fire truck and ambulance could have gotten through the road smoothly, the death toll would not have been so great. Overflowing garbage from garbage bins and drains is a common sight. Discarded containers along with garbage here and there indicate mismanagement of garbage disposal in the city. Figure 4.1 and 4.2 provide a sense of the garbage disposal issues in Dhaka city.

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[7] The Daily Star, 12 June, 2010.

Figure 4.1: Discarded Coconut Shells at Suhrawardy Udyan Park, Dhaka. Photo by Afroza Sultana.

Figure 4.2: Discarded Coconut Shells at Suhrawardy Udyan Park, Dhaka. Photo by Afroza

Sultana.

These photos above were taken at *Suhrawardy Udyan Park* in Dhaka, close to my research site. *Suhrawardy Udyan Park* is a public park. People come here almost all of the time, but it gets crowded generally in the mornings when people come for morning workouts, and to enjoy fresh air of the mornings, and in the afternoon and evenings for evening workouts, or for socializing with friends, or just for passing leisure times. There are some tea stalls in the park, street vendors also come here with different snack options such as *jhal muri* (spicy puffed rice), different kinds of local cakes, *chatpati/ fuchka*, and green coconut. The discarded coconut shells are dumped carelessly and never disposed of properly. Discarded coconut shells are considered one of the most problematic breeding sites for *Aedes aegypti* in Bangladesh. Rain water can easily collect in these shells, and if left for days, they provide suitable breeding sites for *Aedes* mosquitoes. The photos clearly indicate that these shells do remain undisturbed for days as many dry and old shells were observed. Indeed, many shells had collected rainwater. It seems that people who come and visit this park could easily be bitten by *Aedes* mosquitoes. There are not many options for the citizens of Dhaka in terms of avoiding poorly managed public parks such as the Suhrawardy Udyan Park. From morning to evening, the park is used for exercising, socializing, and entertainment. Dhaka residents have very few choices other than the public parks. The following chapter explores other types of life constraints that have also factored into perceptions of dengue risk.

Chapter Five: **"People would die before, but they do not die now:" Perceptions about Dengue Risk**

"It is not clear whether it is the risks that have been intensified, or our view of them" (Beck, 1992:55).

The meaning of "risk" has changed over the centuries. Risk was always there throughout the history, but what people considered risk and how risks are managed have changed (Lupton, 2012). For example, according to Lupton (2012), in medieval France the things that were considered as threats or dangers were hunger, cold, earthquakes, epidemic diseases such as plague, darkness, werewolves, and witches. A combination of magic and Christianity were used to deal with those perceived dangers. In modern societies, old perceptions of danger have transformed. Plague, for example, as a cause of death has vanished, and life expectancy has increased, instead people fear becoming victims of crime, diseases like cancer, and car accidents. In modern societies, people try to underestimate their risk differently, for instance, by installing burglar alarms (Lupton, 2012). In the Middle Ages, risks such as floods were perceived as God's activity and not considered the result of human fault or responsibility. By the nineteenth century, risk was not exclusively located in nature, but also "in human beings, in their conduct, in their liberty, in the relations between them, in the fact of their association, in society" (Ewald, 1993:226). At the end of the twentieth century risk has been used to relate only to negative or undesirable outcomes, not positive outcomes (Beck, 1992; Lupton, 2012). In economics, risks may be considered good in terms of making profit, but in everyday use risks typically mean threat, hazard, harm, and danger (Lupton, 2012).

There are some theoretical arguments around concepts of risk, as reviewed by Lupton (2012); for example, techno-scientific approaches see risk as "the product of the

probability and consequences (magnitude and severity) of an adverse event" (Bradbury 1989: 382). According to this perspective, risk is measurable, calculable, and controllable through scientific knowledge. Techo-scientific approaches portray lay people's response to risk as unscientific and irrational (Lupton, 2012). Douglas (1992) refutes these techno-scientific approaches and argues that the understanding of, and response to, risk is culturally relative. From shared experiences, beliefs, and values, people decide what should be considered as risk and how to deal with that risk (Douglas, 1992; Tulloch and Lupton, 2003). Douglas (1992) criticizes techno-scientific theories for nullifying lay people's knowledge as unscientific and irrational; in addition, she argues that risk is a Western political phenomenon that has been created to deal with an "Other." Socio-cultural contexts are important to understand risk because this is where risk is understood and negotiated (Douglas, 1992; Lupton and Tulloch, 2002; Tulloch and Lupton, 2003). Within their socio-cultural settings people configure their understandings about risk as a part of their interactions with others (Lupton and Tulloch, 2002; Tulloch and Lupton, 2003; Lupton, 2012; Lupton, 2013). Lupton (2013:630) argues that, like emotion, risk is also "shaped via social and cultural process and through interaction with other's bodies, material objects, space and place," and that the understanding of risk is not constant, but fluid.

A Foucauldian perspective, reviewed by Lupton (2012:26), explains risk as 'governmentality,' as a bio-political means of surveillance, discipline, and regulation of populations. Concepts or discourses of risk are constructed in a way that people voluntarily participate in self regulation process. The strategies of regulations are diverse and multi-centered which not only emerge from states but also from other agencies and institutions such as multi-media. Citizens are positioned in governmental discourse as an active subject of governance. Therefore, there is no need for coercive power, or force, or external policing

rather citizens exercise power upon themselves, police themselves, and that is how they voluntarily comply with the needs and interests of state (Lupton, 2012).

Identifying risk in any population is, according to Castel (1991), a new mode of surveillance. In this surveillance a person can be identified as risky if "he or she is identified as a member of a 'risky population,' based on calculations of demographic and other characteristics a 'risk profile' is developed" (Castel, 1991:288, cited in Lupton, 2012:93). In epidemiological concepts of risk factors, individuals are expected to engage in self regulation. If any population group is identified as at 'risk' or at 'high risk' based on statistical calculation, they are encouraged to deal with the risk factors themselves. According to Lupton (1995, cited in Lupton, 2012:97), "…it relies on individuals identifying themselves as being 'at risk' and taking steps voluntarily to reduce their exposure to risk." A Foucauldian perspective is important to understand risk as a discourse of governmentality, but this perspective is also criticized for not paying attention to how people respond to these discourses of governmentality in their everyday life. In this chapter, I will describe community members' perceptions of, and responses to risk related to dengue disease in specific socio-economic and political contexts.

In the survey of 116 households, about 92 percent of participants think dengue is a serious disease. However, the in-depth interviews (with twenty households) reveal that community members do not perceive dengue to be a matter of great concern, especially when they place dengue in their everyday socio-political and economic context. Examining the practices related to dengue, it appears that the community, as defined by the focus group participants who were outspoken during the focus groups, is not really very concerned about dengue.

	Response (total *n*=116)	Percent (%)
Attitude toward dengue		
Dengue is a serious disease	106	91.4
Dengue is not a serious disease	6	5.2
No idea	4	3.4
Water storing practices		
Store water	58	50.0
Don't store water	58	50.0
Uses of empty containers		
Save and sell them off	45	38.8
Toss them out	40	34.5
Reuse them	22	19.0
Save and give them away	7	6.0

Table: 5.1: Perception and Practices Related to Dengue

For example, Table 5.1 shows that fifty percent of those surveyed store water for their daily use, and fifty percent do not. Some of the participants who explicitly reported that they did not store water, in fact did store water in their bathrooms in a bucket or two[8]. They did not think that storing water in buckets in bathrooms was worth of mentioning. Rain water may be easily stored in empty containers, thus leaving them as easy breeding sites for dengue mosquitoes; many respondents (38.8 percent, n=45) save empty containers around their homes for several days until they have enough of them to sell. Participants indicated that they can get thirty to forty taka for one kilo gram of empty containers. Even 6 percent (n=7) of participants who do not care about making money from empty containers, still save them for

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[8] We observed stored water in a bucket or two in some respondents' bathrooms.

their housekeepers to make money from them, and 19 percent (n=22) reuse them. About 35 percent (n=40) of the participants reported that they throw away their empty containers.

Table 5.1 suggests that participants' practices do not correspond with their perception of dengue. When they were asked if they considered dengue a serious disease, most of them said 'yes,' partly because they think every disease brings suffering and financial costs, and partly because in the survey the participants were able to abstract dengue from their everyday life. Therefore, they thought dengue was a serious disease, but in the in-depth interviews they were able to place dengue in their wider socio-political and economic context and most of them, at that point, did not view dengue as their top concerns. Findings from the in-depth interviews discussed below suggest that whether people consider dengue as a risk or not is both relative and contextual.

"The poor will not survive if dengue mosquitoes bite:" Perceiving Dengue Risk

Research demonstrates that the poor encounter more risk than others (Chopra, 2005; Rutson, 2009). Poverty may not only put communities at risk, but it also restricts access to health care (Chopra, 2005; Rutson, 2009). Even though respondents believe that due to an unclean environment, unplanned and congested housing, and poor drainage and garbage disposal systems, they may get exposed to dengue, only the respondents with a previous dengue history considered dengue riskier than others. The respondents who have directly experienced dengue considered dengue risky for different reasons: the unknown sources of dengue, the lack of medicine or treatments, and the media's coverage on dengue, and poverty. Community members felt themselves at risk of dengue disease as they do not have a clear idea exactly where and when they could possibly be bitten by dengue mosquitoes.[9] None of

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[9] Mosquitoes responsible for dengue disease are commonly known as 'dengue mosquitoes' in Bangladesh.

the respondents with direct experience of dengue thought they were bitten in their own house. One respondent blamed a local public park for his infection:

I used to go to the local park and played cricket. Early on that day I felt high fever, I played cricket in that park. There was garbage here and there in that park. I believe that is where dengue mosquitoes got me. I might have stepped on dengue mosquitoes as there was a hole in my foot that was also bleeding a little. My experience with dengue disease made me so scared that I did not go to the park for a year and a half following my recovery from the disease. The park is the only one place where I go and sit quietly when I am sad.

Another respondent believed her daughter's school might have been the source for her daughter's dengue infection: "I don't see any reason that my daughter could get infected in our home. We try to keep everything clean here. I believe it is at her school where she got infected with dengue, since her school uses its garage as a wheat reserve. It's most likely that she got bitten by dengue mosquitoes over there." Another respondent blamed a doctor's office for her being infected with dengue:

I am positive that I was definitely bitten by the dengue mosquitoes at our family doctor's office. His office was all surrounded by mosquitoes. I went there in the evening to accompany my cousin who had been suffering from fever. I was all hale and hearty, but I was bitten by mosquitoes so badly that I knew I was going to get sick. And my intuition proved right; I got infected with dengue.

As there is no effective treatment for dengue, all respondents who experienced dengue infection reported that they were injected with a saline (solution) daily along with Paracetamol (Tylenol) and vitamins in order to keep the fever under control and to help them feel better. They were advised to eat healthy food and families were instructed to take care of the patients. With no specific medicine for dengue disease, patients and their families were left uncertain and anxious. They did not know whether they would survive or die: "All I was given at the hospital was saline. I had no idea if I was alive or dead. My family told me after that I was senseless for several days."

From diagnosis to treatment, every disease requires money. In Bangladesh, it is hard for those living in poverty to afford medical treatment. Admission to hospital and everything associated with treatment is an extra burden on the poor. They find it very challenging to find money for medical diagnosis and treatment for any disease. Since money is very important in disease treatment, one of the respondents found dengue disease a particular risk for the poor:

My condition was so alarming that my family decided to admit me to the hospital even though we did not have the ability to afford hospital treatments. My brother had to borrow money. It is not easy to manage money for the poor. Nobody helps the poor even with ten taka [eight cents]. We did not get any financial help from our community either. We were lucky that we somehow managed to borrow some money, but the [extreme] poor will not survive if dengue mosquitoes bite. They sleep under open sky and are unable to afford any medical treatment for them. Nobody would take care of them. They would die if they are bitten by dengue mosquitoes.

One respondent whose family was economically solvent, however, felt important to have been infected with dengue disease:

My family was scared, I was not; rather I felt that I was important, that I was special. There was 'dengue talk' everywhere. People were advised what to do and what not to do; they were advised to keep their households clean, throw away stagnant water; patients infected with dengue, their blood red eyes and all that were shown on TV. Whatever was showing on TV I felt I was a part of it. I felt special as I was infected with dengue. My family gave me extra care and extra effort to keep our household clean and keep mosquitoes away from me. I believe I was the first in Old Dhaka who got infected with dengue… I didn't think I would die even though people were dying at that time as it was a new disease, and even doctors didn't know how to deal with it. I became scared only when my doctor wanted to admit me in a hospital and have my blood changed, but I never agreed to any of that. I had a huge headache along with a high fever. I couldn't even tell if I was alive or dead, and that was the bad part of dengue!

The media has a significant influence over community perceptions of risk. Eight to ten years ago, as respondents recalled, there was huge media coverage on dengue disease. Almost every day there was news about more people getting infected with dengue and the

rising dengue death toll. There were visible government initiatives too, in building awareness of dengue thorough television plays and documentary. Through television announcements, posters, and newspapers people were made aware of the risk of stored water anywhere in their own houses. They were encouraged to look for and remove any stagnant water. Photos of dengue sufferers, particularly of those with dengue hemorrhagic syndrome, were published and broadcasted in print and electronic media. News about the new infections, the deaths, and the fact that there was no effective treatment for dengue, encouraged people to police themselves, or in Foucaldian terms to govern themselves (Foucault, 1991). One respondent shared the media's influence on him: "I read about dengue in the national newspapers. They had been publishing the eyes of dengue infected people, their eyes and skins, and lips with blood bumps for one year! The news of people's death every day, and all those photos… I got so scared!" Another respondent shared the kinds of common initiatives that people took at that time after being informed about dengue:

At that time people would do every possible thing to make sure that they are not bitten by mosquitoes. Having a mosquito net at home was common along with aerosol and mosquito killer coil. They made sure there was no stagnant water in their houses. Even if they had not food to eat, they made sure to buy something protective from mosquitoes.

"People died of dengue before, they do not die now:" Underestimating Dengue Risk

Media coverage encouraging dengue awareness is uncommon these days. The media only publishes or broadcasts about dengue if deaths have occurred; as a result, the community no longer thinks of dengue as so risky. Most respondents who discussed dengue were recalling dengue from seven to ten years ago. They were all remembering a time when dengue was or was represented as a severe killer disease. It seems they perceive dengue as a severe disease of the past, but now it represents no more than a kind of common fever. The reasons they underestimate dengue risk, which they would consider even as high risk in the

past, is they do not encounter any notable initiatives from the media or the government lately. Respondents appear to believe that a medicine has finally been invented that can cure dengue. As one respondent stated, "I think there is a medicine for dengue now. Otherwise, people wouldn't survive if infected with dengue as it was the case in the past." Another respondent shared his recovery from dengue benefitting from a specific cure:

I never thought I would get infected with dengue. I was so scared about the disease because people wouldn't survive once infected with dengue. There was no medicine for dengue at that time. I was lucky enough to survive because I got infected a year after that tumultuous time of dengue disease. And by that time there was already a medicine for dengue and I survived.

Some respondents believed that dengue patients were more likely to survive if taken to a "good doctor."

I was suffering from a high fever, and I was too weak to talk; but the doctor we went first couldn't even tell what disease I got. So we went to another doctor and he was a very good doctor that he didn't even need any diagnosis to let us know that I was suffering from dengue. He just looked at me and correctly identified my disease. He suggested my family to admit me in a hospital. We did accordingly, and I am alive. He was a fabulous doctor.

Another respondent indicated that her daughter survived dengue because she was taken to the doctor in time. Not only the experience of doctors, but also the experience of families could help in identifying dengue early. As one woman explained:

My niece-in-law suffered from the same disease as my daughter did. She had a high fever but nobody knew that she had been suffering from dengue. There was a wedding ceremony going on in their family at that time too. Everyone was too busy with that wedding ceremony to pay attention to her. At around midnight her health deteriorated, with blood red eyes and blood bumps on her skin. She started grimacing. She died that night on the way to her doctor.

When this respondent's daughter became ill, she acted quickly and believes that her daughter survived dengue because she was taken to the doctor in time:

A couple of years after my niece's death, my daughter got infected with the same disease. She had a high fever too. My sister-in-law checked her and found the same blood bumps on her body. My sister in law then asked me not to waste a second and take her to the hospital. I took her to the government hospital right away. She vomited in front of the doctors. The doctors immediately admitted her. She survived dengue after a few days in the hospital. She wouldn't have survived if I was late in taking her to the doctor. I was able to take her to the doctor within twenty four hours after she got high fever. You know, if you cannot take a patient to the doctor in twenty four hours after he/she get infected, the patient will die. There is a hope of survival if they are taken to the doctor only within twenty four hours of infection.

Another respondent, with two family members infected with dengue disease and recovered, believes that there is nothing to be worried about with dengue disease:

Dengue is not a matter of worry any more. Saline, glucose, Horlicks, green coconut water with some fresh fruits, and rest, that's all you need in dengue disease. In fact, it is better to be infected with dengue than the common fevers[10] because they can take rest, other family members take care of them, and they can eat 'good' food and fruits, which is even better.

Another respondent echoed the same sentiment:

There is no news of dengue deaths anymore. Eight to ten years back dengue was the headline of every newspaper. Now we hardly see mention in the news about people dying of dengue, and if we do, they are not even in our country. I heard that Yash Chopra, a famous film maker in India, died of dengue, but he was an old man too. I think eight to ten years ago, dengue was a killer disease in our country too, but it is at least not a killer disease any more.

Most participants in this research did not put dengue at the top of their concerns list. Along with their daily stressors, respondents put other life threatening diseases and the

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[10] Common fever is also known commonly as "virus jor" in Bangladesh, is considered as nothing to be worried about, which will be discussed in detail in the next chapter. It is believed that people can sporadically catch common fever, and that is typical.

diseases they or any of their family members may have suffered at the top of their priority list. Diseases without any preventive medicine, and diseases that often results in death are considered the most dangerous and serious diseases, such as cancer, HIV/AIDS, and stroke. This perception was expressed by respondents in the following ways:

I find cancer to be the most dangerous disease in the world. Not only because no medicine can treat cancer, but also because death is so certain! The doctor can even tell when a cancer patient will die!

I would consider TB [tuberculosis] and asthma as serious diseases after cancer. My husband suffered a lot and eventually died of TB, as there was no medicine at that time. I witnessed how dangerous TB could be! We could not save him even after trying our best. And now I have got asthma. Asthma gets so bad in the winter that I can hardly breathe, and I feel like I am dying. We often make fun of dengue as dengue cannot be as serious as those diseases. People hardly die of dengue.

I would rank dengue eight or nine if I am to point out ten diseases that need to be seriously considered on a scale of one to ten. To me cancer, HIV/AIDS, brain stroke are the most serious diseases. People don't die of dengue anymore! If the dengue patient is taken care of properly, sees the doctor in time, they will recover.

Interestingly, the respondents or families that had experienced dengue also put dengue at the end of their concerns list. Only one respondent put dengue at the very top of his priority list:

I will consider dengue as the top most priority. Jobs, accommodation, and other things can be managed later, but if I am sick and die, what is the point of getting all those jobs and a better life? People should be alive and healthy first, and they can always manage other necessities at later phase of their life, if not now.

"Forget about dengue; listen to our sufferings:" Daily Stressors that Undermine Dengue Risk

Respondents might not consider dengue of high importance or of high concern because of the daily stressors that they have been living through for years. These stressors are not same for all in the ward. For example, colony members are deprived of basic rights. While food, clothing, housing, health, and education are considered five basic human rights,

colony members have insufficient housing, and this insufficient housing is one of their main concerns; because of that dengue disease fades away. Respondents were more eager to speak about their immediate sufferings than the possibility of dengue. Among their concerns, housing, employment, and sanitation get top priority.

Social concerns are overwhelming. An extreme housing crisis in the colony does not allow many men to get married because they cannot accommodate any new members in their homes. On average, six to ten people live in a single room, and it is not easy to get extra rooms given the fact that there is such high demand. Theoretically, rooms are supposed to be allocated on a needs-based priority, but monetary influences may shift the priority list. As most families cannot accommodate a new member, many of them cannot get married.

My brother-in-law cannot get married as there is no room for a new member at our place. He himself sleeps in the school building. He is middle aged and still unmarried only because we cannot manage any room for a new member. We three families live in the same room. We are suffering, and there is no point in dragging someone else into our sufferings!

Another respondent expressed same concerns about her sons:

We are five members including my three adult sons living in this one tiny room. This room is so tiny that we five cannot sleep together. Two of my sons sleep over at their friend's houses. All of them have reached the age to get married, but unfortunately none of them can! We don't have money to bribe for additional rooms. Tell me, where will they live if they get married? I don't see any hope!

Given the fact that most of the colony members live in extreme poverty, having a job means hope for a better life. Even though they do not like to be introduced as '*methor*' or 'sweeper,' they do accept this identity if it comes to the matter of getting a job. Employment is very competitive in the context of Bangladesh, therefore, it is not surprising that even a job as a 'sweeper' has become competitive and increasingly people from other religions, especially Muslims, are entering into this job sector and working as 'sweepers.'

Muslim participation means that 'sweeper' positions are even more competitive for the colony members. Many respondents expressed their frustrations about Muslims taking their jobs away from them:

It is not easy to get a job. They want money for a job! Moreover, Muslims are doing our jobs. They even don't hesitate to bribe to get the job. Consequently, the ones who have money to bribe get the job. I have been looking for jobs for years but I don't get any because I don't have money to bribe and I don't have anybody who can help me by lending me money or getting me a job.

Another respondent expressed his frustration at not being able to find a job: "My parents have struggled a lot! I just want a job so I can change our situation and I can ensure a better life for my parents in their old age and for myself too."

Another respondent explained his suffering in this way:

They say they will give us a job if we can give them two hundred thousand to three hundred thousand taka. Where would we get this huge amount of money? My father and my three brothers are all unemployed. They are unemployed because we don't have money to get a job. Rooms and jobs should be allotted to those who need them most, but that never happened; rather those who have money get both rooms and jobs even if they don't need them as much as others do.

The overall living situation in the colony challenges a healthy life. For example, the colony members identified the problems of the limited numbers of toilets that exist for over a hundred families. In addition, the limited supply of water in the toilets makes the situation worse; moreover, the toilets are not cleaned regularly. This is partly because there is never enough water to clean the toilets properly. Participants expressed their concerns over living an unhealthy life with a limited number of toilets:

We have got only two toilets for so many people and that is never enough. We struggle every day to get access to the toilets, especially in the morning. There is always a line in front of the toilets. Moreover, there is no

security of water for the toilets! Kids cannot stand in line for long. They cannot hold the natural pressure, so we need to allow them to pee or poop around. Disease can spread from that as well, right?

Colony members are also concerned about the improper drainage system that they have in the colony. Whenever it rains, especially in rainy seasons, they experience water logging with both the toilets and their living spaces getting flooded with dirty and smelly water. They also suggest that a dustbin or two within the colony would help to keep the colony cleaner; however, some of them thought dustbins cannot help to keep the colony clean unless people actually took the responsibility to throw garbage into the dustbin, and not around it.

Water scarcity was another big concern among the colony members. Water supplied by the government is not sufficient; as a result, each household ends up buying water from a secondary source in order to fulfill their daily needs. Depending on family sizes, two hundred to five hundred taka must be reserved each month for water. They get that water supplied to them through pipes once a day, either in the morning or in the evening, and only for half an hour. They store water in as many containers as they can during that time, so they will not need to worry about water until the next supplies. They use this water for all purposes. Respondents reported that they clean their water containers every time they refill them, especially those used for drinking water.

Storing water is also a concern in the larger ward. Respondents in the larger ward also reported storing water in drums or buckets in case of emergency. The difference in the quantity of stored water and the number of containers used between the colony and the larger ward suggests a difference in degrees of water deprivation. Colony members, as mentioned above, do not get enough water to fulfill their daily needs, therefore, they need to store water in as many containers as they can; on the other hand, the larger ward stores water in case there is any electrical power outage for couple of hours or for a day. They need

electricity to have an undisrupted water supply. Having power outages several times a day, especially in the summer, is very common in Bangladesh. Residents of the larger ward linked their practice of storing water for emergency to the unpredictable power outages; whereas the colony members store water because they reliably never get enough water supplied to them. This practice of storing water could be considered as 'risky' behaviour in relation to dengue disease; but, as Douglas (1992) would argue, what is considered as 'risk' or 'risky' is culturally shaped and shared, and some cultures may choose preferentially to practice 'risky' behaviour. Douglas's (1992) argument coincides with the larger ward's practice of storing water as this is their preference to save some water for emergencies. In the case of the colony members, I would further argue that practicing 'risky water storing behaviour' might be the only option left for them, and is not merely a matter of preference.

"We demand a normal death, that's all:" Underestimating Dengue Risk

Like colony members, dengue was not at the top of the list among residents of the larger ward. However, there is a significant difference in the issues these two communities are concerned about. As the larger ward members do not have to struggle for the basic rights as much as the colony members, they are instead more concerned about general issues relating to their ward and city, such as unplanned urbanization, corruption, political violence, and mismanagement.

Respondents in the larger ward expressed their concerns about the uncertainty of having a 'normal death' when car accidents and murders have become daily incidents. Mismanagement and corruption result in fires and building collapses that may kill hundreds. All these national and city incidents make community members more anxious and unsettled about their lives. Some respondents were concerned about the uncertainty, corruption, and

violence in the business sector, while others were worried about unplanned urbanization and mismanagement of their ward:

There is no security in business; you can even lose your life. The hooligans demand money. Things could get worse if you report them to police. In some cases police are also involved in these crimes as they receive incentives from the hooligans. So, there is no point in reporting to police. If you do not meet their demands, they can either kidnap you or kill you, or can do both.

More than twenty people were burnt to death in the Nimtali tragedy in 2010. The death toll might have been reduced if the fire services truck arrived sooner. The narrow roads in Old Dhaka along with the curious public make it difficult for the fire services truck to get to places sooner. If there is any fire again, we are scared that we will not be rescued in time.

It is suggested that Dhaka is at risk of having an earthquake. Buildings, particularly in Old Dhaka, are built unplanned. If there is any medium earthquake, we are sure to die. Our life is at risk. Electricity, water, even mosquitoes can be postponed as an issue to be considered, but fire, and earthquake will not give you a chance for a second thought, you will be dead immediately.

The idea that "mosquitoes can be postponed" in comparison to immediate threats is significant because, it signifies that abundance of mosquitoes, and lack of electricity and water has become respondents' part of life such a way that, they do not count them as their top priority. Rather examples of accidents, like fire and building collapses, that resulted in sudden death of so many people that those incidents become respondents' top concerns.

"When our political leaders suck our blood so what if the mosquito sucks!:"
Contextualizing Mosquitoes

Mosquitoes are a common thing for the residents of Dhaka. The experiences of respondents with mosquitoes are not pleasant, and they think mosquitoes are irritating and uncontrollable. Even though most respondents thought mosquitoes were harmful, see Table 4.2 below, they did not connect mosquitoes with diseases. Most of the respondents are

irritated by the presence of mosquitoes and their bites. They are not worried that mosquito bites could give them disease as much as they are irritated by the pain that they get from mosquitoes bites. One respondent stated his irritations of mosquitoes: "Mosquitoes are very irritating. Their bites hurt. We cannot even sit, eat, or sleep in peace because of them." Another respondent shared one of her irritating experiences with mosquitoes:

I went to a restaurant with my fiancé and there were so many mosquitoes that even a fan up over our head could not make them go away. I was bound to ask for an electric bat from the restaurant manager, which is used to kill mosquitoes. I ate with my one hand and with other I continuously moved the bat around to kill mosquitoes, so at least we could finish our food.

	Response (total n=116)	Percent (%)
Attitude towards mosquitoes		
Mosquitoes are harmful	110	97.3
Mosquitoes are not harmful	3	2.7
Missing information	3	

Table 5.2: Attitudes toward Mosquitoes

A few respondents did connect mosquitoes to diseases; however, they too emphasized more the irritating than the disease spreading nature of mosquito.

Mosquitoes spread diseases like malaria, dengue etc., most importantly they bite all time and make us mad. It's becoming impossible day by day to sit somewhere and not be bitten by mosquitoes. They are increasing day by day and going out of control. We are so fed up with mosquitoes that we are even ready to pay from our pocket to eradicate mosquitoes.

Unsuccessful examples of eradicating mosquitoes by affluent countries also leave some respondents frustrated with the growing abundance of mosquitoes:

I don't think mosquitoes could be eradicated permanently. I saw on the Discovery Channel that rich countries were trying to eradicate mosquitoes by spreading medicine from airplanes, but they failed. I thought to myself after that, if even the rich countries cannot kill mosquitoes, how would we be able to do that?

Another respondent resonated to a similar idea: "It doesn't matter what you use, aerosol, mosquito coils, nothing can kill them. They are getting stronger and tolerant to those things." One respondent did not mind being bitten by mosquitoes. Comparing to political unrest, violence, corruption, and mismanagement, she described the mosquito as less risky: "when our political leaders suck our blood, what if mosquitoes suck! How much blood can mosquitoes suck after all!"

"There is no way that our houses could be a source of dengue diseases:" 'Outside' as a Source of Risk:

An interesting connection emerged between perceptions of risk and perceptions of dirty and clean. Both the colony members and the members of the larger ward think garbage and dirty environments are risky for their health. They think that diseases, mosquitoes, even dengue, grow from garbage, and uncovered and unmaintained drainages. They differentiate "dirty" and "clean" by the inside-outside dichotomy. None of the respondents thought that the inside of their homes could be a source of dengue disease, as discussed earlier in this chapter, but they believe that outside remains unattended, unmaintained, and unclean. According to a respondent, "We always keep our houses clean. There is no way that our houses could be a source of dengue diseases. It must be the outside."

Respondents blamed insufficient garbage containers and insufficient manpower provided by the city corporation and the government for the dirty state of their *mohollas*. They also targeted the inhabitants of their ward for not being responsible enough to put garbage inside the garbage containers, instead throwing garbage around containers, and thus

making the environment dirty. It is interesting when asked if they considered their ward or *mohollas* clean, most of the respondents said that, yes, they would consider their *mohollas* clean. They believe their *mohollas* are clean now even despite the overflow of rotten garbage by the roads and sidewalks. Only two respondents did not believe that their *mohllas* were clean enough.

Our moholla produces lots of garbage because ours is an overcrowded area. In addition, we have many small shoe factories. People do not throw garbage in the dustbins; they throw garbage here and there. Sometimes they do not even hesitate to throw garbage in front of others' houses. Furthermore, this garbage is not collected or managed timely. As a result we live day after day with the rotten garbage. We inhale the acrid smell of this rotten garbage which is not good for our health because this garbage spread diseases.

Respondents, thus, identified 'outside' as dirty, and 'other' (neighbours) as not responsible to keep the environment clean and healthy. As a result, the "outside" becomes a source of all kind of disease and thus, unsafe. "Inside," on the other hand, is considered safe, healthy, and responsible. And by pointing at 'others,' some respondents tend to withdraw their accountabilities for an unhealthy environment.

"Dengue is curable:" Government Publicity in Reducing Dengue Risk or Anxiety

As discussed in chapter two, research on dengue in Bangladesh has demonstrated that people do not have enough knowledge about dengue disease (Hossain et al., 2000). This research is in agreement with that previous research noting that community members can hardly differentiate dengue fever from dengue hemorrhagic fever, let alone identify the mosquitoes responsible for dengue transmission. As one respondent noted, "we wonder how we would even know that was a dengue mosquito, as mosquitoes are everywhere. And not every mosquito spreads dengue."

In a broad sense, there is only one term for dengue fever popular in the community and that is "Dengue Fever." Every other categorization, such as dengue hemorrhagic fever and dengue shock syndrome is included in to this one term, "dengue fever," and thus, underestimates the severity of other types of dengue fever into one. When respondents shared their experiences of dengue and explaining the symptoms, some of those symptoms appeared to resemble dengue hemorrhagic fever and dengue shock syndrome, but there was no other term used except "dengue fever." Therefore, it could suggest that community members have lack of knowledge about dengue disease, and that may contribute to their perception that dengue is not concerning.

The present silence of the media on dengue disease and government roles in dengue prevention and awareness building provide another explanation as to why people may underestimate dengue risk. During my fieldwork there were no public health posters or leaflets about dengue found in any public spaces, but leaflets and posters were available in public places five to eight years ago when, as understood by respondents, many people died of dengue. Two public health materials about dengue, a poster and a leaflet, published by the Dhaka City Corporation, were obtained from the Dhaka City Corporation Office, commonly known as Nagar Bhaban.

The leaflet emphasizes the role of community participation and awareness in dengue prevention. It describes what dengue is, the symptoms of dengue, management of dengue fever, and what to do to prevent dengue. It introduces dengue as a "virus jor" or a virus fever. The carriers of that virus are *Aedes* mosquitoes that bite during day time, generally at dawn and at dusk. The message that it provides about dengue is important to consider in interpreting community attitudes toward dengue. The use of the term "virus jor" itself nullifies the severity of any fever in the context of Bangladesh. "Virus jor" means nothing to be worried about because it will resolve after a certain period of time with or

without medicine. There is a saying about "virus jor" in Bangladesh: "with or without medicine, virus jor will be cured in seven days." People do not worry about virus jor because it happens once or twice in a year with changing seasons, and people get well without suffering long. The leaflet also suggests that the mosquitoes that bite in the evenings and overnight are generally not a problem, emphasizing that *Aedes* mosquitoes bite during the day. Community members reported that mosquitoes bite mostly at night; therefore, other than causing sleeping problems, and getting hurt by mosquito bites, they do not consider mosquitoes to be life threatening.

The leaflet's dengue management section resonates with the popular idea of "virus jor" suggesting that in most cases, dengue fever is curable in seven days without any treatment. It advises keeping dengue patients at rest, and to give them water and watery food, and paracetamol as medicine. So when the respondents stated that there was a medicine for dengue they actually meant paracetamol (and some vitamins). The leaflet advises taking dengue patients to doctors only if the dengue fever is serious, and in bracket it reads 'hemorrhagic,' but it does not provide any information that could help to differentiate typical dengue from hemorrhagic dengue. Therefore, the various forms of dengue fever remain as one entity. With respect to prevention, the leaflet advises against stored water anywhere in and around households for more than five consecutive days.

Alongside the leaflet, the poster advocates for active public participation in dengue prevention by suggesting what needs to be done. There are some photos in the poster, such as an earthen pot, a green coconut shell, a discarded and unattended tire, and a flower vase, which are warned to be potential dengue breeding sites. It also reads: "do not be terrified; dengue is curable if treatment is taken in time." Both the leaflet and poster help to understand how community perceptions on dengue are influenced and shaped by the representation of dengue by government agencies.

To understand why government wants to publicize dengue as a "virus jor," as "curable," rather than inform the public about the difference between dengue fever and dengue hemorrhagic fever we can turn to the argument Addlakha (2001) made about the case of India. Addlakha (2001) reminds us that governments generally do not want to declare epidemics because such declaration might cause damage to its image in the international sector, and because the ruling party could be put at blame. When national crises arise, citizens first look to the government, especially to the ruling party for solutions. If the problem is not solved or if the citizens are not calmed, national chaos can take place. As dengue is related to mosquitoes and since people generally cannot differentiate dengue mosquitoes from other mosquitoes, people may panic finding themselves surrounded by mosquitoes. In this reality, and since little is being done to control mosquitoes, publicizing dengue as something to be worried about could be threatening for the government, especially for the ruling party. Reducing the perceived risk of dengue may not only help the government to reduce the tension between the government and its citizens, but also delays its immediate responsibilities to its citizens. How the community sees government responsibility in controlling mosquitoes and dengue, and how they see their responsibilities as a community, and where they place "power" in those responsibilities will be explored in the following chapter.

Chapter Six

"Dengue prevention is possible if we all want:" combining power and responsibility as a way of dengue prevention

Since the twentieth century, life style choices have been getting more emphasis in relation to health status (Lupton, 1995). Epidemiological risk factors now engage individuals in self regulation. Individuals are encouraged to deal with risk factors themselves. Foucault suggests a useful concept that helps to understand neo-liberal goals of managing and controlling populations and individuals: 'Governmentality,' refers to a tool of social regulation and control (Foucault, 1991)   Mass-targeted media campaigns encourage individuals to identify themselves as being 'at risk,' and to take the steps necessary to reduce their exposure to risk (Lupton, 1995). Lupton (1999:97) calls this "government at a distance, for it relies upon voluntary participation in technologies of self-surveillance and a sense of self-responsibility rather than direct intervention." Individuals are increasingly expected to engage in practices that would underestimate risks to themselves. According to Lupton (1999 : 99) "new prudentialism, is a neo-conservative approach which progressively removes the responsibility for risk protection from state agencies…" As Dean (1997:218) argues, in neoliberal democracy we see "… the multiple responsibilization of individuals, families, households and communities, for their own risk of physical and mental ill health, of unemployment, of poverty in old age, of poor educational performance, of becoming victims of crime." In neo-liberal democracies individual responsibilities are celebrated as a practice of freedom where the role of government is to provide advice and assistance rather than providing large-scale financial support (Lupton, 1999). Victims are blamed for putting themselves at risk (O'Malley, 1992, cited in Lupton, 1999).

In terms of dealing with dengue in ward 69, the community does believe in self regulation and self management which can be understood via Foucault's (1991) concept of governmentality; but, at the same time, the community does not think any effective dengue prevention is possible without the active participation by state agencies or government. The community blames itself for making the environment dirty and allowing for suitable breeding sites for dengue mosquitoes, but also believes that the community alone cannot keep the environment clean and destroy all mosquito breeding sites without active and effective participation from state agencies. How the community sees and allocates government versus community responsibility in dengue prevention and how the community defines power and uses that power in getting those responsibilities carried out will be discussed in this chapter.

Community members have their own thoughts and suggestions on how they want to implement dengue prevention and mosquito control. As members of a particular city ward and community, they want everybody's active participation in order to guide an effective dengue and mosquito prevention program. According to Figure 6.1, the community structure is viewed as hierarchical, where the government is at the top and the community members are at the bottom:
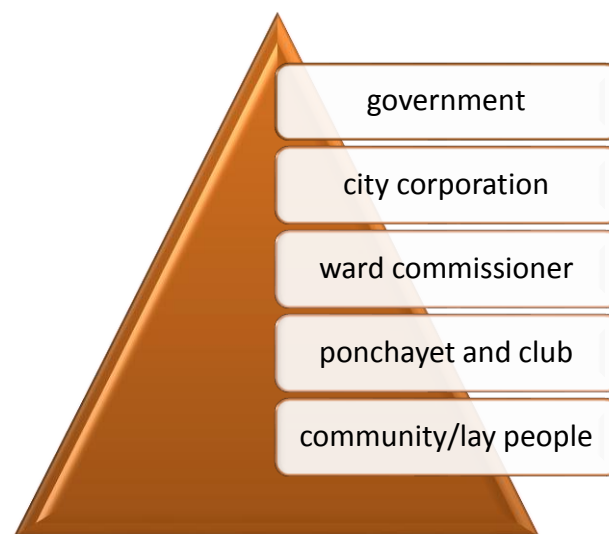

Figure: 6.1 Social Hierarchies in Ward 69.

At the top, the government, the city corporation, and the ward commissioner are commonly known collectively as 'government' because, as the respondents report, they are branches of the government. The *Panchayet* and the Club are community member organizations. In every *mohallah* there is a *Panchayet* and a Club. The *Panchayet* is generally made up of elderly people with high social and economic status; Clubs, on the other hand, are formed by the younger generation of community members. The age of the members of *Panchayet* on average is forty five and up, whereas the age of the members of the Club is twenty to thirty five years. Theoretically, these *Panchayets* and Clubs are supposed to take care of their communities, but practically, as the respondents reported, not much is done. The Ward Commissioner is responsible taking care of a particular ward, while the Mayor of the City Corporation is responsible for the whole city. As it mentioned in the previous chapter, the Dhaka City Corporation is now divided into two sections: Dhaka North City Corporation, and Dhaka South City Corporation. There are two Mayors responsible for these two City Corporations. During my field-work there was an elected Mayor for Dhaka South City Corporation but there was not yet an elected Ward Commissioner for ward 69, though an Acting Ward Commissioner was in place. Respondents mentioned that the lack of a Ward Commissioner explained why their ward was getting worse, especially in terms of cleanliness. Lack of initiatives and active participation were identified as major obstacles for controlling mosquitoes, controlling dengue, and environmental decay and dirtiness.

Most respondents think that dengue and mosquito control is possible if everybody shown in Figure 6.1 is serious about it. As noted in Table 6.1, most of the survey's respondents, 77.6% and 74.1% respectively, think that dengue and mosquito control is possible, but 96% of participants felt that there was little to any initiative taken by the government or the community in this regard. Respondents did identify some initiatives taken by the government, though they were skeptical about the effectiveness of those initiatives.

	Response (total n=116)	Percent (%)
Is dengue prevention possible?		
Yes	88	77.6
No	11	9.5
Maybe/ Not sure	15	12.9
Is mosquitoes control possible		
Yes	86	74.1
No	19	16.4
Don't know/no idea	11	9.5
Is there any initiative from the government and your community to control mosquitoes?		
Yes	8	6.9
No	96	82.8
Not Sure	12	10.3
Is there any initiative by your community to keep your moholla (locality) or ward clean?		
Yes[11]	38	33.0
No	63	54.8
Don't know/ not sure	15	13.0

Table: 6.1 Perceptions on Dengue Prevention

"The smoke or medicine that they spray hardly kills mosquitoes:" Perceptions of Government Initiatives of Controlling Mosquitoes:

As a government initiative in controlling mosquitoes, community members

recognize the spreading of smoke and mosquito larva killing medicines in the drains by the

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[11] Some respondents considered sweepers sweeping the road in the morning as a community effort, even though sweepers are assigned by the Dhaka City Corporation (DCC), a branch of the government.

roads and bushes; but they complained that these initiatives are not undertaken regularly. Moreover, they do not think the medicines that are used to kill mosquitoes are effective. Some respondents commented on their perceptions of these initiatives:

I doubt if there is any medicine used at all in that smoke. I think it's just a smoke and it cannot kill mosquitoes.

I can tell that they have come by because of the loud sound that the smoke gun makes. I doubt if that gun does anything other than making some noise pollution.

I don't like that smoke. It cannot kill mosquitoes but it can make the mosquitoes go away for a while. When they spread smoke in drains or bushes those mosquitoes take shelter inside of our houses, which is even worse.

That smoke takes mosquitoes away for a while; then they come back again.

Respondents remember the time, eight to ten years ago, when dengue was all over the news, and that mosquito killing medicine was spread two to three times per week. They believed the medicine that was used to kill mosquitoes at that time was more effective. There are rumors in the community that the medicine is not real but deceitful. Some believe that even this deceitful medicine or smoke would work if sprayed regularly.

"We see a community effort only in Eid-ul-Azha, and that's it:" Dialectic Relationships between the Community, the Club and the Panchayet:

Most of the respondents reported that they did not see any community efforts in making their environment clean and controlling mosquitoes. The *Panchayet* was criticized for not being active enough in community matters. According to one respondent, "All that the *Panchayet* does is gather and enjoy delicious food. They do not work for any betterment for the community." And according to another, "the *Panchayet* or the Club, none of them are so active. They are just in name."

However, a few respondents recalled community efforts to keep their *moholla* clean of blood when animals are slaughtered in the Muslim religious festival of Eid-ul-

Azha[12]. Initiatives are taken to keep the roads and walkways clean. Blood is washed away immediately after the slaughtering and, with the help of the City Corporation, garbage is taken away soon after the slaughtering. A couple of respondents also mentioned that they see community efforts when the situation gets worse and there is no way out. For example, two respondents in the in-depth interviews reported that when the roadside drains overflow with dirty, smelly water, not only making walking around impossible, but also flowing into houses, they do see community efforts to do something.

On the contrary, three respondents who were also the members of different Clubs from different *mohollahs*, reported that they did take initiatives to keep their *mohollas* clean but they did not get enough cooperation from the community. They said that, they took the initiative to collect garbage from each household so that *moholla* residents did not need to throw garbage away themselves. They thought this initiative would prevent residents from throwing away their garbage on the roadsides or around the dustbins, and would prevent the accumulation of rotting garbage. Residents were charged twenty to sixty taka per month per family based on the size and location of the family. The charge varies because they thought that big families would produce more garbage than small families; and also that the families that live at the top of the four or five storey buildings had to pay more as climbing stairs and carrying garbage is not easy. Many families, according to these Club members, denied paying the money on a monthly basis. Some families just could not afford the money and found it

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[12] Eid-ul-Azha is one of the biggest religious festivals for Muslims observed once a year. On Eid-ul-Azha, the ones who can afford to buy animals, usually goats, cows, and camels, slaughter them as a form of sacrifice. Since 90% of people in Bangladesh are Muslims, a huge quantity of animals is slaughtered in all over the country, including Dhaka. In Dhaka, most animals are slaughtered in or around their houses. Unattended animal blood for several days makes for an acrid smell and is difficult to live with. The community believes that unattended blood is also responsible for increasing mosquitoes. To make Dhaka City clean from blood and garbage related to the animal slaughtering, the City Corporation takes initiatives right after the day observed. Community is encouraged by the help of print and electronic media to keep the slaughtering places clean.

convenient to throw their garbage away themselves, and others found garbage bins, provided by the City Corporation, so close to their homes that they did not find any need for someone to take away their garbage, and to pay each month for that service. One Club member who was from the larger ward, said that his Club, in collaboration with an international agency, started this initiative of collecting garbage from families, but that their initiatives failed when they started to charge money for this. The Club member noted that many residents discouraged them from continuing their project: "the City Corporation's dustbin is two steps away from our house. We can reach it so easily. Then what is the point of giving you guys' money every month for something we do not really need."

One Club member indicated that his Club's initiative of collecting garbage from families was successful. They covered many families under their project, but he admitted that there are some families who do not give their garbage to the collectors and instead throw their garbage away randomly. As he stated: "Even after warning them that they might be sued for throwing out garbage here and there, there are always people who would look for the opportunity to throw the garbage away." From the survey results, an estimated 44 percent of families (n=51) are not under the Clubs' initiative of collecting garbage from their homes (Table 6.2).

	Response (total *n*=116)	Percent (%)
How do you dispose of your garbage?		
Garbage is collected from home	65	56
Garbage is thrown away or thrown in the dustbins provided by the DCC	51	44

Table: 6.2 Garbage Disposal Systems

Even the families under the garbage collecting initiative mentioned the irregularity of garbage collection: "They [the garbage collectors] do not show up some times. Sometimes they don't even come for two to three days straight. We have just two options in those situations: either to live with the garbage for three days or to throw them out." Another respondent explained that sometimes the timing of garbage collection is not appropriate:

They always come in between nine to ten in the morning. Not every family is done cooking by that time. What about the families who are not done cooking by that time? Sometimes some families may need to cook two times or three times in a day, especially when there are guests over. What would they do with their garbage then?

Most household garbage comes from the kitchen. The decomposing unwanted parts of vegetables, raw meat and left over food increases the urgency of removing this garbage. Most families, therefore, prefer not to wait until the next morning for the garbage collectors to come.

"I throw my garbage in the dustbin, not everybody else does:" Dialectic Relationships within the Community:

Garbage containers provided by the Dhaka City Corporation (DCC) are known locally as dustbins. These dustbins are always surrounded by perishable garbage that often blocks the walkways. This is not always because the dustbins are full and overflowing; there are some dustbins which are one third or even half empty but are still surrounded by piles of putrescent garbage. Community members think that their environment could be cleaner, perhaps with fewer mosquitoes, if these dustbins were managed properly. They think that not every member takes the responsibility to place their garbage inside the dustbin:

Some people just carelessly throw their garbage, spreading it here and there. Some do not even bother to throw their garbage into dustbins and leave the garbage outside of it. Now, when the next person goes to throw away their garbage, they see there is already garbage outside of the bin. He would think, why bother, there is already

garbage outside of the bin, so he too leaves his garbage outside of the bin. Thus, you see a pile of rotten garbage surrounding the dustbins every time.

What is important to mention here is that, it is male family members who generally take the garbage out to the dustbins, if their garbage is not collected by the garbage collectors, or if they just need to throw their garbage away. Cooking is exclusively a woman's job in the families of ward 69, but it is male members who take the responsibility to throw away the garbage, even the kitchen garbage. This is because women are not encouraged to go out. Going out in public, especially for throwing away garbage, is not considered prestigious for women. In the Colony women are also not encouraged to go out for throwing away garbage even though women in the Colony do work as sweepers and sweep roads. The difference is that women sweep for living and that is crucial. After sweeping roads for two to three hours, they come straight back to the Colony and do not go out for any other purposes unless they really need to. The women who work as sweepers are typically married or elderly widowed women; unmarried or young women are not permitted to work as sweepers. Therefore, the garbage produced in the colony's kitchens tends to be dumped outside of homes and along narrow walkways in the Colony. That garbage stays and rots beside the homes for days. One female respondent living in the Colony indicated that she chooses to take her garbage out to the garbage bin just outside the Colony but has been criticized for this: "They complained to my husband about me going out with garbage. I do not care if they think I am not a good woman."

Within the Colony there used to be two dustbins that women could use. The Colony Club managed two DCC dustbins, but now there are no dustbins inside the Colony. Respondents suggested that the dustbins were taken away for "unknown reasons." Some participants assumed that the dustbins were taken away as Colony members were not using them properly, leaving garbage here and there:

Not everybody put their garbage in the dustbins. Who should we blame? We are the cleaners, we clean roads and everything but we cannot keep our own colony clean. Many of us are not ready to do as much hard work as to throw the garbage into the dustbins, and would leave them just by the corner of their home and would wait until the cleaner who works here to clean them.

"So many people and so few dustbins:" Demanding Support from the DCC:

Some respondents in ward 69 blamed the inadequate numbers of dustbins for the scattered and overflowing garbage. They do not think they have enough dustbins for the whole community and, as a result, the garbage piles up. One respondent commented on having an inadequate number of dustbins in the locality: "There have never been enough dustbins in our locality. We need, say, dustbins for a hundred families, but we are provided only for ten. So it is obvious that the garbage would overflow."

Some respondents assumed that the DCC did not assign enough people for cleaning up the garbage and the surroundings. They were demanding more cleaners to be assigned to clean dustbins and garbage. Colony members also think that assigning one cleaner to clean the whole Colony is not enough considering the amount of garbage that is produced daily by each family. Many families, especially in the larger ward, throw their garbage into the drainage pits in front of their homes. Workers from the DCC clean the drains by pulling all the garbage out of the drainage and then piling it up alongside. Cleaning this drainage is important otherwise it would block water flow and water would overflow. When it rains, some respondents reported that their houses get flooded. Participants suggested that this drainage was not cleaned regularly and even when it is cleaned the garbage is never removed properly. According to one respondent, "they just take away the top of the pile of garbage. They never remove the whole thing. There is always some garbage at the bottom of the pile that stays permanently."

"Dengue or mosquito control is possible, if we all want it:" Collaboration between the Government and the Community:

Community members think that "will power" is crucial to keeping their environment clean and in controlling dengue and mosquitoes. None of the respondents thought that economic, political, or social power has anything to do with keeping the environment clean unless there is an underlying will to do so. However, they indicated that the people with social, economic, and political power should take the lead and guide the community by example as the community would listen to them. And, for the same reason, they need to take responsibility to increase community awareness about dengue, and to encourage the community to keep their surroundings clean. It is believed that this work needs to be done as a team, since one person's effort is more likely to be a failure. Community members' perceptions on power, in terms of dengue and mosquito prevention, align with the functionalist concept of power (Dowding, 2012). In the functionalist approach, power is a social resource that flows through political systems. Power, according to this approach, is a legitimate authority which is shared and accepted by members of a society to meet collective goals (Persons, 1963; Arendt, 2004; Lupton, 2012; Dowding, 2012). According to Dowding (2012:119), "… power is about people working together to accomplish aims that could not be accomplished alone hence increasing their collective power" (Dowding, 2012: 119). One respondent who suffered from dengue expressed his anxiety over his thoughts on personal effort: "I wanted to do something to make the community aware about dengue, such as wall-writing, or something like that. Then I just realized that people would just laugh at me, would call me crazy; so I didn't."

At the same time respondents believed that every community member has to be responsible for keeping their surroundings clean; because even one family's carelessness about garbage can put the whole community at risk for diseases like dengue:

If I keep my family clean, make sure there is no stagnant water in my house, and throw garbage into the dustbins, that does not mean that I would be able to save my family from dengue mosquitoes, unless everybody does the same. Mosquitoes fly and can travel anywhere; there is no guarantee that I would not be bitten by mosquitoes even after I do my job properly.

Respondents emphasized the word "we" for a successful and effective dengue and mosquito control program. To them, collectivity and a collective will power are crucial. Every respondent who thought dengue and mosquito control was possible added a proviso: "yes, if we want." And in this "we" they included everybody, even the government. The government is a very important part of the "we," respondents believe the government must play a part in ensuring a healthy life for them. The community, in turn, should cooperate with the government. It is the government that would supply everything necessary for the community to live a healthy life. Respondents think it is a government responsibility to inform its citizens about diseases and their prevention. They want the government to be regular in monitoring community safety and in fulfilling community needs. They suggested some ways that the government can ensure a healthy life for the community, as detailed in figure 6.2.

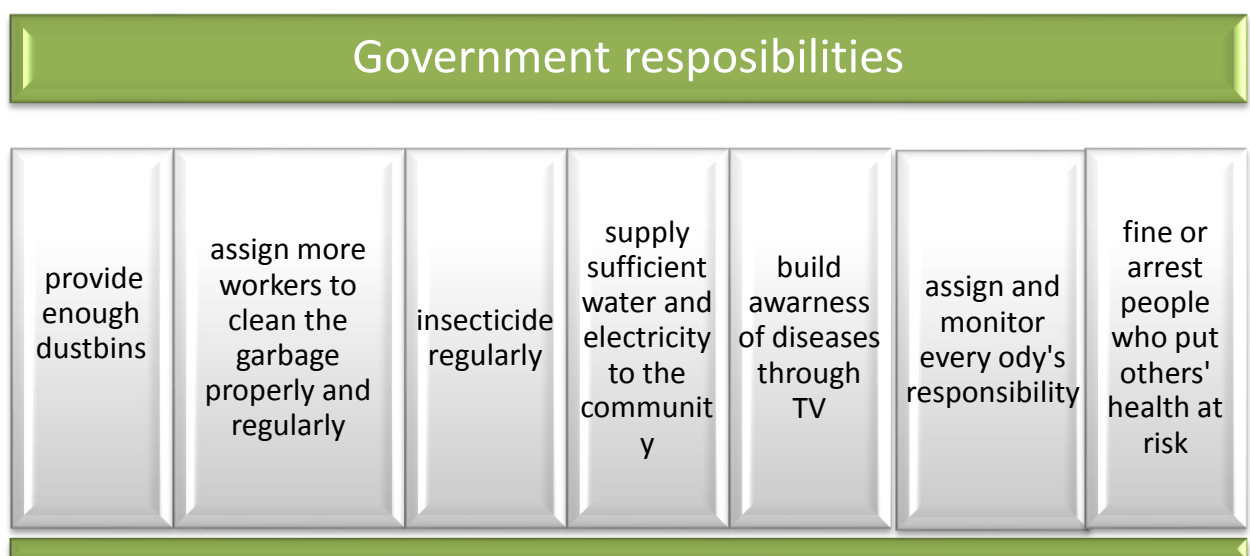| Government resposibilities						
provide enough dustbins	assign more workers to clean the garbage properly and regularly	insecticide regularly	supply sufficient water and electricity to the community	build awarness of diseases through TV	assign and monitor every ody's responsibility	fine or arrest people who put others' health at risk

Figure: 6.2 Government Responsibilities for Dengue Prevention

In terms of government responsibilities, community members want more dustbins. They also want the government to allot more money and use that money exclusively for environment cleaning projects. They do not think the labour currently assigned to collecting garbage is enough. They believe the workers assigned to collect the garbage cannot clean all dustbins properly, in part because this is too much work for too few people. In terms of controlling mosquitoes and preventing dengue, they think that insecticide should be used and sprayed on regular basis, though they are skeptical about the effectiveness and the quality of "mosquito killing medicine" and smoke that is currently sprayed to control mosquitoes. Some participants did, however, express their concerns about the environmental consequences of the chemicals that are used to control or kill mosquitoes. As one respondent stated, "If the chemicals or the medicine use to kill mosquitoes also kills the birds or animals, or is deadly some other way, then we do not want that medicine."

Some respondents sought scientific innovation to kill mosquitoes without destroying the environment. One participant understood how scientific development can harm useful species in the environment, so he expected that scientists could develop something to kill harmful creatures in the environment too, such as mosquitoes. As the respondent noted, "I heard, it was in the news, that the mobile phone towers that they have erected here and there are very harmful for the environment as not only do they cause cancer in humans but they are also disrupting the generative energy of sparrows. I wonder why they do not invent something that would destroy the generative power of mosquitoes[13]!"

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[13] On April 2014, the Daily Kaler Kantha, a Bangladeshi News Paper, published a report on *Bacillus thuringiensis israelensis* (BTI), a kind of bacteria, first discovered in Israel in 1976, that can kill mosquito larvae. It is reported that BTI is an environmentally friendly way to kill mosquitoes. BTI is not harmful to other animals such as fish or birds (http://www.kalerkantho.com/print-edition/last-page/2014/04/04/69044). Sri Lanka used locally-made BTI in an attempt to kill dengue mosquito larvae in 2013 (http://archives.dailynews.lk/2013/06/14/news22.asp; http://www.mri.gov.lk/en/news/dengue-epidemic-and-bti-hidden-facts/)

Some respondents mentioned that they first need a sufficient water and electricity supply in order to keep the environment clean. They think one of the reasons that their homes and surroundings remain dirty is the lack of water and electricity supplied to them. Water and electricity is connected since electricity is required to pump supplied water. A respondent expressed his frustration about not having enough water: "how would we keep ourselves clean if we do not have enough water?"

In order to build awareness, the respondents find television an easy and effective way to reach the community. They want information about dengue and its prevention broadcasted on television. They believe television would reach more people than anything else and thus people would get necessary information about dengue: how to identify dengue, what to do in case of dengue, and how to prevent dengue. As one respondent noted:

Not everybody is educated enough to read the newspapers; some just don't read newspapers, but everybody watches TV. Nowadays, each family has a TV. So if the government wants us to learn something, TV is the easiest way. If the government broadcasts on TV about what to do and what not to do to prevent dengue, everybody will get that information quick, and would learn quickly.

Many respondents, both in the in-depth interviews and in the focus group discussions, expressed their concerns and frustrations about not having enough information about dengue: "how could we know if that is a dengue fever? How can you even tell if that is a dengue mosquito? We are not sure if there is any medicine for dengue fever either. We have not seen anybody before you come and talk to us about dengue, so you tell us how could we tell?"

Community members want everybody to perform their own duties, especially those in management sectors. They want the Dhaka City Corporation (DCC), the Ward Commissioner, the *Panchayet* and the Clubs to actively participate in building a healthy society. They want them to take responsibility, to do their jobs, and to monitor the jobs of others especially those who are working under their supervision. The head of government

should then monitor everybody's work. Supervision is believed to be the key to success and encouraging responsibility.

Yet, the respondents also want active participation from the community members themselves. They think that without the cooperation of the community, the goal of a mosquito free and dengue free environment cannot be achieved. According to one respondent, "Nothing would change if we do not change our habits. Government can never be successful alone." Similarly some respondents think that nothing will change if they are not supported by the government: "our will and endeavour to have a clean and healthy society alone is not enough unless all the necessary things are provided by the government."

The community members identified community responsibilities in dengue prevention, as detailed in Figure 6.3.

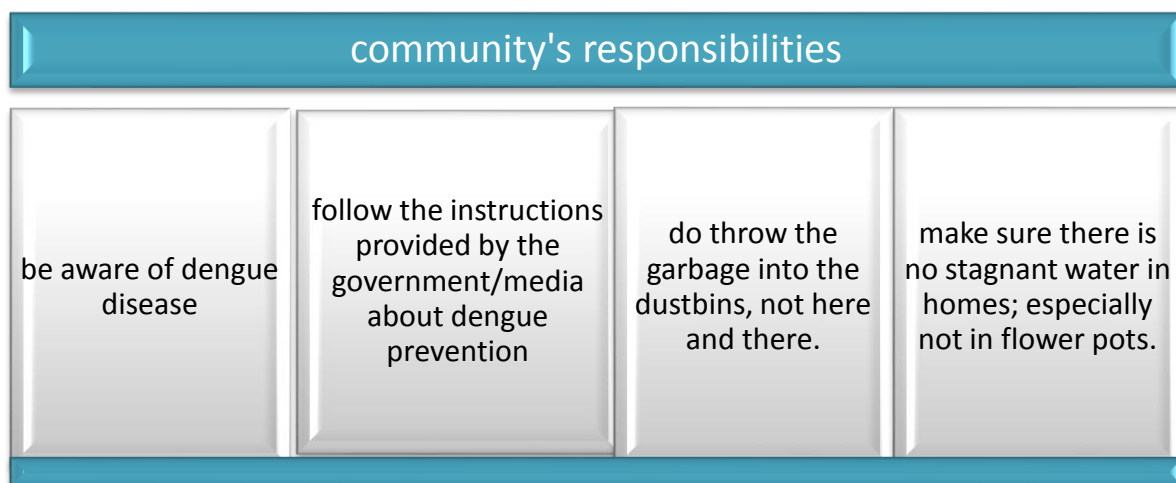| community's responsibilities			
be aware of dengue disease	follow the instructions provided by the government/media about dengue prevention	do throw the garbage into the dustbins, not here and there.	make sure there is no stagnant water in homes; especially not in flower pots.

Figure: 6.3: Community Responsibilities for Dengue prevention

The community believes that to prevent dengue they first and foremost need to be aware of dengue. They need to have the right information about dengue. In order to identify dengue fever they need to enrich their knowledge from various sources, such as television, posters, and leaflets. They feel they need to take the information about dengue seriously, and to follow the instructions provided from print and electronic media sources properly. They

believe they need to be aware of what sorts of consequences a disease like dengue can bring to their families. As to specifics, every member of the community needs to be responsible to ensure that no garbage is thrown carelessly, and that all garbage is thrown into the dustbins, if not collected by the garbage collectors on time. Also, they think every family should monitor that there is no stagnant water in their homes, especially in flower pots or other vessels. They do not find the water stored for everyday purposes or for emergency use very risky because, as they said, it is used up daily. Should they store water for several days, then they try to ensure that the water containers are covered. They believe that the unattended containers of stagnant waters, such as flower pots and coconut shells, are suitable sites for dengue mosquito breeding, but not the containers such as buckets, drums, or jars that they use daily.

Community members think that dengue prevention and mosquito control is possible only if there is a combination of government responsibility (Figure 6.2) and community responsibility (Figure 6.3). In terms of power, they believe that the will power for disease control needs to come from all sectors of the social hierarchy (Figure 6.1).

Chapter Seven

Discussion and Conclusions

Bangladesh has experienced dengue since the 1960s, but from 2000 several outbreaks have occurred (Yunus et al., 2001). In Dhaka city alone, 3,964 dengue cases were reported, including 3,383 classical dengue cases, 581 dengue hemorrhagic fever cases, and 51 dengue related deaths (Yunus et al., 2001). Dengue therefore, represents a significant and ongoing health risk. As *Aedes* mosquitoes, the vector for dengue, mainly feed on human beings, live in close proximity to humans, and breed in water containers, people's participation in dengue prevention is very important. In order to achieve effective participation, it is important to understand community knowledge, attitudes, and practices toward dengue disease. This research focuses on a single ward in Dhaka (ward 69) to explore community perceptions on dengue and situate the disease perceptions in wider social, economic and political realities. The concepts of risk, responsibility, and power are highlighted in order to explore the meaning of dengue to the community in everyday life. The research suggests that the meaning of dengue is constructed through experiences, media and government representation, and sharing and talking to others.

This research overlaps with some findings from other qualitative studies. For example, similar to Fortaleza, Northeast Brazil, studied by Caprara et al. (2009) and the Suarez et al. (2009) study of Girardo and Meglar, Columbia, this research finds that due to shortages of water and an irregular water supply, the local community is left with no other choice but to store water. Consequently, the environment is suitable for creating breeding sites for the dengue mosquito vector. Therefore, it is further argued, the community activity of storing water can not merely be explained by ignorance to dengue risk, nor as merely preference, as Douglas (1992) would argue. Whiteford's (1997) study of Villa Franciscans

suggests that gendered divisions of labour and "lack of will" may affect dengue prevention. Like Whiteford's (1997) study, this research also reveals that a gendered division of labour, in collaboration with a patriarchal ideology, may leave the community vulnerable to dengue breeding sites. For example, because women are not supposed to go out in public with garbage, it is the men who are responsible for throwing away garbage in the dustbins. The findings suggest that this responsibility is not always carried out regularly and properly, leaving the community with piles of rotting garbage. The issue of garbage disposal is but one risk creating possible breeding sites for the dengue vector. According to the respondents, it is believed that a lack of will is one of the main causes for both uncontrolled mosquitoes and dengue infection.

This research also reveals that the community tends to underestimate dengue risk. This finding coincides with the work of Perez-Guerra et al. (2009) in Puerto Rico, where they argue that "misconception about dengue and its vector," and the "invisibility" of dengue tends to result in a underestimating of dengue risk. They report that many people associate *Aedes aegypti* with only dirty water and are less concerned with eliminating fresh water from containers. They also reported that people in Puerto Rico do not recognize *Aedes aegypti* in their homes. Similarly, the ward 69 community does not recognize *Aedes aegypti*. These findings coincide with Hossain et al.'s (2000) study in Dhaka, where they reported that 47.9%, of 9000 randomly selected houses from all 90 wards in Dhaka did not have a good idea about breeding sites for dengue-transmitting mosquitoes. The respondents also associate dengue with dirty water, and more generally dirty environments, and garbage, and they do not consider clean water and empty containers, such as plastic bottles, as suitable sites for dengue mosquito breeding. In terms of storing water, respondents explicitly do not associate dengue risk with their water storage practices. They do not believe that dengue mosquitoes are associated with the containers used to store water for daily use. They claim that the

stored water is used on daily basis and that every day they store new water after throwing out the old water; they also report that they clean the water containers properly before they store water in covered containers. However, field observations suggest it is not an uncommon practice for families to store water in big blue drums to ensure that they have enough water in times of emergency. Respondents did acknowledge that the big drums are not emptied or cleaned regularly, but they claimed that they always keep the drums covered. Some drums, however, were observed to be uncovered or only half covered. Further, respondents reported that when these big drums are about half empty, they pour in more water to fill the drum so there is little opportunity to actually clean the drum. Respondents appear more concerned about cleaning the containers that they use to store drinking water than those storing water for other daily uses.

Because of the "invisibility" of dengue, respondents tend to underestimate its overall risk to daily life. In this study, this "invisibility" occurs, in part because of the media's and government's silence on dengue disease since the last major outbreak (it appears dengue only receives attention when there is a crisis). Community members frame a particular time period as "dengue time." They recalled specifically that dengue was severe eight to ten years ago, the time, as they indicated, when news about dengue was broadcasted in electronic and print media, and posters and leaflets were available to inform people, and initiatives for controlling mosquitoes were evident. Therefore, though community members thought that dengue had been a crisis in the past, it was not believed to be a concern in the present. The reasons that they think dengue is not risky anymore are, as they reported, the lack of news in media about dengue, the absence of a 'dengue prevention' awareness campaign, and the Dhaka City corporation's irregular project of controlling mosquitoes.

Another important reason, as this research argues, that the community underestimates dengue risk is that there is no other local term used to differentiate between

classical dengue and dengue hemorrhagic fever. There is only a single term, *dengue jor* used generally for all forms of dengue. Every other categorization, such as dengue hemorrhagic fever and dengue shock syndrome, all are included in this single term *dengue jor* and thus, underestimates the severity of other types of dengue. It would be simplistic to conclude that community members have lack of knowledge about dengue disease since the very language does not even suggest that there can be variations in the severity of dengue.

This research reveals that concerns about dengue vary based on past experiences with dengue. The respondents with a previous history of dengue did not think dengue should receive less attention because of the pain and suffering they experienced with the illness. Some, the economically poor in particular, associate dengue risk with their economic insolvency and perceive dengue as a risk because it requires money for diagnosis and hospital treatment. But they also did not think dengue should get as much attention as it had in the past, because, they felt, people did not die of dengue now, and because there was a belief that a medicine had been invented for dengue disease, which was not the case in the past, and therefore underestimated its risk.

There were other reasons why, as this research demonstrated, that the community underestimates dengue risk, particularly the complex reality that defines everyday life. Struggling for basic human rights may occupy their thoughts in such a way that there is little room for having concerns about the possibility of dengue. For instance, the reality is that the Mironzullah City Colony advocates for housing, sanitation, and water, and as a result, dengue does not count as a priority. Even those who do not have to strive for basic rights as much as the residents of Mironzullah City Colony, allocate their concerns to wider socio-political and economic issues such as uncertainty in business, corruption, traffic, accidental deaths, violence, and fires, and earthquakes. Farmer (2002) would frame these as issue of "structural violence." Structural violence results in putting "individuals and populations in harm's way,"

and it leaves the economically poor or oppressed class at risk, constraining their agency, and leaving them with limited life choices (Farmer, 2002; Farmer et al., 2006:186). The poor economic position of the ward in general can be seen through the lens of "structural violence." Poor garbage disposal infrastructure, poor drainage systems, water shortages, and unplanned housing leave the community in a vulnerable position, in relation to dengue, but also in relation to other health risks. The economically poor are more vulnerable to dengue in that they are unable to buy mosquito killing-measures, as explored by Hossain et al. (2000), and they are also more likely to suffer water shortages and have to store water. Mironzullah City Colony, for example, suffers more from water shortages than the larger ward. This issue alone leaves the community with no other option but to store water for daily use, providing locales for mosquito breeding, and leaving them prone to dengue infection. Poor drainage and a problematic garbage disposal system leave the community surrounded not only by rotten garbage, but also by other dengue breeding sites.

Identifying risk with the 'outside' not the 'inside' of household is another way of underestimating dengue risk. The ward 69 community believes it is 'outside' where mosquitoes breed. They identified 'outside' as dirty, uncared for, and unattended, while the 'inside' of households were clean and attended. Therefore, respondents do not view the inside of households as mosquitoes breeding sites, and thus dengue breeding sites. Respondents who had experiences with dengue infection identified places like public parks, schools, and doctors offices as the locales where dengue infection occurred. None of them thought they could have possibly been bitten by dengue mosquitoes in their own homes. This perception of getting infected with dengue is understandable with Kleinman's (1978) Explanatory Models (EMs), and particularly Explanatory Models of the popular sector, where people have their own explanation about what has happened, why it has happened, and what to do about it (Helman, 1981:549). Moreover, the community finds mosquitoes more irritating and

disturbing than actually risky or life threatening. This finding coincides with the Suarez et al. (2009) study in Girardo and Melgar, Colombia, and the Perez-Guerra et al. (2009) study in Puerto Rico, where they report that people do not consider mosquitoes as "risky." This research in ward 69 reveals that residents are more irritated with mosquito bites, but are less worried about the possible consequences of those bites. In addition the ward 69 community does not associate dengue risk with discarded plastic containers such as empty beverage bottles. Like the Suarez et al. (2009) study, this research also finds that the community perceptions on discarded containers are hardly related to concepts of "risk." Rather, they value those containers and use them for various purposes, such as storing water or selling them for money.

This research also suggests that another reason the community may underestimate dengue risk is owing to the messages they get from Dhaka City Corporation's posters, leaflets, and advertising about dengue. Those messages communicate dengue as a *virus jor*/ simple fever, that dengue fever can be overcome without medicines after a certain period of time, and that dengue fever is curable if treatment is taken on time. This research argues that community misconceptions about dengue are not borne out of a lack of information, but from the type of information they receive. Community members think dengue fever is not "risky" anymore, as it was in the past, because there is now a medicine for dengue, and that people will not die if they see doctors in time. This perception of dengue is constructed through both the electronic and print media's representation, individual experiences, and in talking the community members, as also described by Lupton (2012). As community members had not experienced any recent deaths due to dengue, and knew that doctors could diagnose dengue and prescribe medicine (paracetamol, vitamins, and saline), they believe that dengue is curable. Like the Puerto Rican community, studied by Perez-

Guerra et al. (2009), the ward 69 community also did not rate dengue as a high risk in daily life.

Respondents in the community did, however, want their life dengue free and mosquito free along with addressing the other daily stressors that they face in their everyday lives. They think dengue and mosquitoes are controllable as long as everyone accepts responsibility; whereas Whiteford's (1997) study in villa Francisca, and Perez-Guerra et al.'s (2009) study in Puerto Rico indicate that people find themselves "incapable" and see it is a "useless effort" to control mosquitoes. The "everyone," however, also includes the media and government to carry out their responsibilities properly. Similar findings are revealed by Whiteford (1997) and Perez-Guerra et al. (2009), where they report that people want active participation from the government in order to control mosquitoes and prevent dengue. Respondents believe that collaboration between the government and the community can ensure a healthy environment for all. Respondents pointed out that government and community responsibilities need to be combined in order to control and prevent dengue. For example, they want the government to provide them with enough water and electricity, dustbins, enough labour for garbage disposal, regular insecticide spraying for mosquitoes, increased community awareness via the media, to assign and monitor responsibilities, and like Puerto Ricans (Perez-Guerra, 2009), they want the government to take people into the custody or fine them for putting the health and life of others at risk. And they think the community's responsibilities are to make them aware of dengue, to follow the instructions that the government and media suggest for dengue prevention, to take responsibility for garbage, and to make sure that there is no stagnant water in or around their households. The community thinks that an unwillingness of accepting those responsibilities would impede dengue prevention. In a case of India, Addlakha (2001) demonstrates how responsibilities and blame bounced back and forth between the government of India and its citizens and impeded

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any sustainable dengue transmission prevention project. Respondents believe that pointing fingers at each other will not help, but that active participation from all parties and taking responsibility will help effective dengue prevention.

According to a Focauldian perspective, as reviewd by Lupton (2012), 'risk' is a form of "governmentality," the purpose of which is to control and manage populations without coercive power or direct interventions. The discourse of risk is arranged in a way that populations manage and control themselves and therefore, there is no need for coercive power. Thus discourses of risk withdraw government responsibility or direct intervention. This research, however, reveals that the community does not agree with the idea of government not having any responsibility for effective dengue prevention. Moreover, respondents demand the government to implement coercive power for the sake of a better and healthier life, such as fining those putting themselves and other individuals at risk.

The community does not think that economic and political power has anything to do with dengue transmission or prevention. Nevertheless, they think there are those who have high social status, who could easily mobilize the community, it is significant that often the people who get high social status have significant economic and political power. Therefore, respondents think the Clubs and the *Panchyaets* should take initiatives to make a healthy environment by encouraging the whole community. Respondents emphasize achieving collective goals with collective endeavour which comply with the functionalist concept of power. According to the functionalist approach, as Dowding (2012: 119) express it, "… power is about people working together to accomplish aims that could not be accomplished alone hence increasing their collective power." The community does not think that the goal of controlling mosquitoes or preventing dengue is possible to accomplish alone, and wants a collaboration of community, government, and media.

There are some limitations associated with this research that must be acknowledged. Given the fact that the ward 69 is such a large ward and includes a 'sweeper' colony, three months of fieldwork was not enough time to study the whole ward properly. The sweeper colony alone, I felt, would require three months of intensive study in order to better understand the both the community and its relation to dengue. The social, economic, and political context of the colony is very complex, embedded with an equally complex and diverse larger ward consisting of eleven *mohollas*. Concentrating only on one *moholla* or only on the 'sweeper' colony for the three months of fieldwork could have enriched the insights and the depth of the research. Realistically, I could not study all *mohollas* comprehensively given the time constraints. The day long observations of households that I had originally planned were also not possible in the end. As I came to discover, accessing individuals for the in-depth interviews was challenging enough, let alone a day-long commitment. Household observations, in my opinion, would have certainly enriched the study, particularly with respect to insights into water storage and water handling practices. As a result of the in-depth interviews, I already had a sense that what respondents report with respect to water storage and handling may not equal exactly what is actually practiced. For any future qualitative research on dengue, I believe that intensive study of one particular research site (with its social, economic, political, and historical contexts) and incorporation of household observations might offer the best detailed and contextualized community perspectives on dengue.

Appendix A

Informed Consent for In-depth Interview[14]

Introduction

My name is……………………… I am conducting research on people's knowledge and practices related to dengue disease in this community. The title of my research project is An Ethnographic Approach to Dengue Disease in Dhaka, Bangladesh. We are interviewing many people in this community. We would like to know various things from you related to dengue disease.

Purpose of the research

The purpose of the research is to contribute to the broader research project titled "Climate Variability, Social-Ecological Changes, and Dengue Disease in Bangladesh: Development of an Integrated Ecohealth and Adaptive Management (IEAM) approach", funded by International Development Research Center (IDRC), that intends to figure out ways to prevent dengue transmission. As well, this research will help me to complete my MA degree in Anthropology from the University of Manitoba, Canada. I would appreciate your help in this regard.

Procedure

If you agree with the purpose of this research, I would like to ask you questions about your thoughts and practices related to dengue disease. We would discuss various things related to dengue disease in detail today. I will use a semi-structured questionnaire for this interview and will take notes about this interview. I may ask you some additional questions in order to

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[14] This informed consent was translated in Bengali, mother tongue of the respondents, and read out for the participants who could not read and collected a mark (e.g. ×) from the participants as an alternative of their signature.

be clear about your thoughts. You can decline to answer any question you don't want to answer, and you can withdraw from this interview or from this whole research project at any time you want to. If you agree, I would prefer to tape record this interview. Your name and identity will be kept confidential. I will keep your name separate from the information provided. Also, I will use a pseudonym for you in my all field notes, transcription, and in other recordings. All data will be kept securely in a locked cabinet at North-South University (NSU), and only I will have access to that. All the data will be destroyed after the requirements are fulfilled for my MA degree and publication shortly thereafter. All data should be destroyed by 2018. This interview will need two sittings and duration for per sitting will be approximately one hour. Your participation in this research project will help in prevention of dengue and will help widen knowledge about dengue disease. There is a minimal risk for you in this research. The only foreseeable risk is that you might feel discomfort recalling any unpleasant memories associated with dengue disease. If that happens we will stop the interview immediately, and you can always decline to discuss any question you do not feel comfortable with. During this research, if I find any child or vulnerable person is at risk and need protection, I will need to inform that to my Supervisor and Child and family services. Would you like to participate in this in-depth interview?

NO   Yes

If yes,

Would you permit this interview to be tape recorded?

NO   Yes

Are you comfortable if I take notes while I am conducting this interview with you?

NO   Yes

Name of the respondent:

Signature: Date:

Questions for In-Depth interview

How would you describe your ward in comparison to other wards in terms of, for example, sanitation, cleanliness, and water supply?

What changes would you like to see in your community to better the health of yourself and your family?

What would you identify as the top 5 health concerns that you have for you and your family? Do you feel you have any control over these concerns? Please explain.

Are you familiar with dengue (yes/no)? If so, can you tell me what you know about dengue? For example, how do you think people become infected with dengue? What are the signs or symptoms of dengue disease?

Do you think that dengue can be prevented?

How do you think you can protect yourself and your family from dengue?

Who do you think is most likely to become sick with dengue?

Do you think wealth influences dengue disease? Please explain.

On a typical day, would you expected to be bitten by mosquitoes? (yes/no).

Do you think mosquitoes can make you sick? (yes/no) If yes, what sorts of illnesses do you associate with mosquitoes?

In your opinion, can you and your household control mosquitoes? Why or why not?

How do you try to control mosquitoes in and around your home?

Where do you think mosquitoes breed?

Does your community or the government attempt to control mosquitoes? If so, how?

How would you define risk? And where do you put dengue in your risk definition.

How do you find mosquitoes in your life? Are they risky or harmful for your health and life?

Have you or any of your family members ever suffered from dengue? (Yes/No), if yes, please tell me in detail.

In terms of your health concerns, what diseases get priority, and who gets priority for medical attention and medication in your family?

Do you think stored water also can be risky for your health and life? Please explain.

How important to you is proper garbage disposal?

In your opinion, who is/ are mainly responsible for controlling mosquitoes and dengue prevention, and why?

In your opinion what are some effective ways to prevent the spread of dengue?

What activities/ practices do you think cause dengue to spread?

In your opinion, how accountable is government for dengue prevention?

What steps do you think government takes to prevent dengue in your community?

How effective do you think those actions are?

Tell me about your community effort, if any, to prevent dengue disease?

According to you how important is power in preventing diseases like dengue?

In your opinion how wealth influences dengue disease?

During our three month research we may need further cross checking with you for couple of minutes or so. Would you like to help us later?

Yes   No

Thanks for your participation. We really appreciate that. You can communicate us any time regarding your any concern related to this research project. You have a wonderful day.

Guideline for focus Group Discussion (FGD)

(This guideline was translated in Bengali, mother tongue of the participants)

Issues of Risk

Explore assessment of risk

Explore experience about dengue

Explore health seeking behaviour

Explore practices related to water storage and garbage disposal in detail, and reasons behind it.

Explore attitude and knowledge toward mosquitoes and dengue (explore if they think mosquitoes and dengue are problematic in their daily life)

Issues of responsibility

Explore knowledge of and attitude about the issues of responsibility on dengue prevention and transmission

Explore the top five responsibilities they hope to be taken care of by social/political leaders/government

Explore if there is any individual, community and government effort on dengue prevention and how they evaluate it.

Explore what actions they think would help to eliminate disease like dengue

Issues of power

Explore who they think powerful in the community and in the family and why.

Explore who they think are powerful for dengue prevention and why.

Explore decision making process in the family (regarding storage of water, disposal of garbage, gender division of labour in the household, health seeking behavior etc.)

Explore social power structure in relation to dengue prevention and transmission (explore how wealth influence dengue disease)

<div align="center">**References cited**</div>

Addlakha, R.
2001 "State legitimacy and social suffering in a modern epidemic: A case study of dengue haemorrhagic fever in Delhi" in *Contributions to Indian Sociology,* 35:151, pp 151-169.

Ahmed, F. U., C.B. Mahmood, J.D. Sharma et al.
2001 "Dengue and Dengue Haemorrhagic Fever in Children during the 2000 Outbreak in Chittagong, Bangladesh" in *Dengue Bulletin* Vol. 25, Issue, 2, pp 33-39.

Ahmed, Shamim
April, 10, 2010 Acute water crisis continues in Dhaka, bdnews24.com,
http://bdnews24.com/details.php?id=157897&cid=2

Ahmed, Sharif Uddin
1986 *Dacca: A study of Urban History and Development,* Riverdale, Curzon Press.

Akhter Hussain Sandhu
2009 the reality of' Divide and Rule' in British India. Pakistan journal of History and Culture, vol: xxx No. I.

Ali, M., Y. Wagatsuma, M. Emch et al.
2003 " Use of a geographic information system for defining spatial risk for dengue transmission in Bangladesh: role for Aedes albopictus in an urban outbreak" in *The American journal of tropical medicine and hygiene,* vol. 69, issue 6, pp 634-40.

Ambedkar, B.R.
2004, "Castes in India: Their mechanism, Genesis and Development" in Manoranjan Mohanty ed. *Readings in Indian Government and Politics: Class, Caste, Gender,* New Delhi: Sage Publication India Pvt. Ltd.

Amin, M.M.M., A.M.Z. Hussain, K. Nahar et al.
2000 "Sero-diagnosis of Dengue Infections in Four Metropolitan Cities of Bangladesh" in *Dengue Bulletin* Vol. 24, Issue, December, pp 29-33.

Amin, S.
1995 "The Poverty-Purdah Trap in rural Bangladesh: Implications for Women's Roles in the Family", *Working Paper75.* New York: Population Council Research Division.

Amin, S., I. Diamond, R. Naved, and M. Newby
1997 "Transition to Adulthood of Female Factory Workers: Some Evidence from Bangladesh" *Working Paper 102:* New York: Population Council Research Division.

Arendt, Hannah
2004 *The origins of totalitarianism.* New York: Schocken.

Armstrong, C.
1923 "Association of Schools of Public Health Dengue Fever" in *Public Health Reports,* Vol. 38, No. 31, pp 1750-1784.

Atkinnson, P. and Silverman, D.
1997 "Kundera's Immortality: The interview society and the invention of self", *Qualitative Inquiry,*3, 304-325.

Aziz, M.A., Gorham, J.R. and Greeg. M.B.
1967. "Dacca fever"- an outbreak of dengue. Pak J Med Res. 6: 83-92.

Bangladesh News
24, April, 2008   Hundreds protests over water shortage in Dhaka, http://www.independent-bangladesh.com/200804244714/country/hundreds-protest-over-water-shortage-in-dhaka.html.

Bashar, K., M. Samsuzzaman, M.S. Ullah et al.
2005 "Surveillance of Dengue Vectors Mosquito in Some Rural Areas of Bangladesh" in *Pakistan Journal of Biological Science,* 8(8): 1119-1122.

Beck, U.
1992 *Risk Society: Towards a New Modernity.* London: Sage

Berg, Bruce, L.
1989 *Qualitative Research Methods for the Social Sciences,* Boston/London/Sydney/ Toronto: Indiana University of Pennsylvania.

Boyce, C. and P. Neale
2006   "Conducting In-Depth Interviews: A guide for Conducting and Designing In-Depth Interviews for Evaluation Input", *Pathfinder International.*

Bradbury, J.
1989   "The policy implications of differing concepts of risk". *Science, technology, and Human Values.* Vol.14, no.4, pp. 380-399.

Bradshaw, D., Groenewald, P., Laubscher, R., Nannan, N., Nojilana, B., Norman, R., et al.
2003 *Initial burden of Disease Estimate for South Africa.* Cape Town: South African Medical Research Council.

Caprara, A. et al.
2009 "Irregular Water supply, household usage and dengue: a bio social study in the Brazilian Northeast" in *Cad. Saude Publica, Rio de Janerio*. Pp 125-136.

Chain, M., S. R. Khanam and S. Nahar
1997 "Class, Patriarchy and Women's work in Bangladesh", *Population and Development Review,* 5(3): 405-438.

Chen, Marty
1986 " Poverty, Gender, and Work in Bangladesh" in *Economic & Political Weekly,* Vol.21, NO.5, pp 217-222.

Chopra, Mickey,
2005, "Inequalities in health in developing dountries: Challenges for public health research," *Critical Public Health,* 15(1) pp 21-26.

Cohn, B.
1987 "The census, social structure and objectification in South Asia", in COHN B. ed*., An Anthropologist Among the Historians and Other Essays*, Delhi, Oxford University Press, pp.224-254.

Crabtree, S. A., C.M. Wong, and F. Mas'ud
2001 "Community Participatory Approaches to Dengue Prevention in Sarawak, Malaysia" in *Human Organizations,* Vol. 60, No. 3, pp281-287.

Denzin, Norman K.
1989 *Interpretive interactionism.* Newbury Park, CA: Sage.

Denzin, Norman K. and Yvonna S. Lincoln
2003 "Methods of Collecting and Analyzing Empirical Materials" , , Norman K. and Yvonna S. Lincoln eds *Collecting and Interpreting Qualitative Materials.* Second edition, Sage publication.

Dean, M.
1997 "Sociology after Society", in Owen, D. ed. *Sociology after postmodernism*, London:Sage, pp. 205-28.

Desai,S. and D. Jain
1992 "Maternal Employment and Changes in Family Dynamics: The Social Context of Women's Work in Rural South India", *Working Paper 39*, New York: Population Council Research Division.

Douglas, M.
1992 *Risk and Blame: Essays in Cultural Theory.* London: Routledge.

Dowding, Keith
2012 "Why should we care about the definition of power?" in *Journal of political Power*, vol. 5, no.1 pp 119-135.

Dung, N.M., N. P. J. Day, D. T. H. Tam et al.
1999 "Fluid Replacement in Dengue Shock Syndrome : A Randomized , Double-Blind Comparison of Four Intravenous-Fluid Regimens" in *Clinical Infectious Disease,* Vol. 29, NO. 4, pp 787-794.

Escalada, M. and K.L Heong
http://ricehoppers.net/wp-content/uploads/2011/07/Tools-Focus-group-discussion.pdf

Ewald, F.
1991 "Insurance and Risk", in Burchell, G., Gordon, C. and Miller, P. eds. The Foucault Effect: Studies in Governmentality. London: Harvester, pp 197-210.

Farmer, Paul

2002   "On suffering and structural violence: a view from below. In: Vincent, Joan (Ed). *The anthropology of politics: A reader in ethnography, theory and critique.* Malden/Oxford, Blackwell.

Farmer, Paul, Bruce Nizeye, Sara Stulac, and Salmaan Keshavjee

2006   "Structural Violence and Clinical Medicine," in *PLOS Medicine,* Vol.3, Issue, 10, pp 1686-1690.

Fatimil, L. E.,M.M.A.H. Mollah, S. Ahmed et al.

2003   "Vertical Transmission of Dengue : First Case Report From Bangladesh" in *Clinical Infectious Diseases*, vol. 34, issue 4, pp 2-5.

Ferguson, N.M., C.A. Donnelly, and R.M. Anderson

1999   "Transmission Dynamics and Epidemiology of Dengue: Insights from Age-Stratified Sero –Prevalence Surveys" in *Philosophical Transactions: Biological Sciences,* Vol. 354, NO. 1384, pp 757-768.

Fine, M.

1994 Working the hyphens: Reinventing self and other in qualitative research, in N.K. Denzin and Y. S. Linclon edds. *Hamdbook of qualitative research,* thuands Oaks, CA: Sage.

Fontana, Andrea and James H. Frey

2003 "The Interview: From Structured Questions to Negotiated Text" in Denzin, Norman K. and Yvonna S. Lincoln eds *Collecting and Interpreting Qualitative Materials.* Second edition, Sage publication.

Foucault, M.

1991   "Governmentality", in Burchell, G., Gordon, C. and Miller, P. eds. *The Foucault Effect: Studies in Governmentality,* Hempstead: Harvester Wheatsheaf , pp. 87-104.

Greenhalgh,S.

1991   " Women in the Informal Enterprise: Empowerment or Exploitation?," *Working Paper33,* New York: Population Council Research Division.

Griffin, C.

1986 "Qualitative methods and female experience. Young women from school to the job market, in S. Wilkinson ed. *Feminist social psychology: developing theory and practice,* England: Open University Press.

Gubler, D.J.

1997   " Dengue and dengue hemorrhagic fever: its history and resurgence as a global public health problem." In: Gubler DJ, Kuno G, eds. Dengue and dengue hemorrhagic fever. London: CAB International, Pp. 1–22.

1998   " Dengue and Dengue Hemorrhagic Fever" in *Clinical Microbiology Reviews"* Vol. 11, No. 3, pp 480-496.

Haq, K. A.

2006 "Water management in Dhaka," *Water Resources Development,* vol. 22, No. 2, pp 291-311.

Haque, E. and Parnali D.C. personal communication, 7th June 2012.

Hart, G.
1997 "'From "Rotten Wives" to "Good Mothers": Household Models and the Limits of Economism'", *IDS Bulletin* 28(3): 14-25.

Harun, A. and A. Naher
2000 " গ্রামীণ নারীর ক্ষমতায়নের মিথ প্রেক্ষিত বাংলাদেশ" in Z. Ahmed and M. chowdhury eds. চর্চা: নৃবিজ্ঞানের প্রবন্ধ সংকলন department of Anthropology, Jahangirnagar University.

Helman, Cecil G.
1981 "Disease versus illness in general practice," in *Journal of the Royal College of General Practitioners,* Vol.31, pp 548-552.

Hossain, M.A. and Tisdell, C.A.
2005 "Closing the gender gap in Bangladesh: inequality in education, employment and earnings" in *International Journal of Social Economics,* Vol.32, Issue.5, pp 439-453.

Hossain, M.I.,Y. Wagatsuma, M.A. Chowdhury et al.
2000 "Analysis of some Socio demographic Factors Related to DF/DHF Outbreak in Dhaka City" in *Dengue Bulletin* Vol. 24, Issue, December, pp 34-41.

Hossain, Shahdat
2006, *Urban Poverty and Adaptation of the Poor to Urban life in Dhaka City, Banladesh,* PhD thesis, School of sociology and Anthropology, University of New South Wales, Sydney, Australia.

2008, " Rapid Urban Growth and Poverty in Dhaka City" in *Bangladesg e- Journal of Sociology,* Vol. 5, No.1. pp 1-24.

Islam, M.A., M.U. Ahmed, N. Begum et al.
2006 "Molecular characterization and clinical evaluation of dengue outbreak in 2002 in Bangladesh" in *Japanese journal of infectious diseases,* vol. 59, issue 2, pp 85-91.

James, A. A.,
1996 "Dengue Hemorrhagic Fever" in *Science,* Vol. 272, No. 5263, pp 829.

Kabeer, N.
1997 "Women, Wages and Intra-Household Power Relations in Urban Bangladesh", *Development and Changes,* 28(2): 261-302.

Kendall, C.
1998   "The Role of Formal Qualitative Research in Negotiating Community Acceptance: The Case of Dengue Control in El Progreso, Honduras" in *Human Organization*, Vol. 57, No. 2.pp 217-221.

Kendal, C., P. Hudelson, E. Leontsini et al.
1991   "Urbanization, Dengue, and the Health Transition: Anthropological Contributions to International Health" in *Journal of Medical Anthropology,* Vol.5, Issue, 3, pp 257-268.

Kleinman, Arthur
1978   "Concepts and a Model for the Comparison of Medical Systems as Cultural Systems" in *Social Science and Medicine*, Vol.12, pp. 85-93.

Labadarios, D.
2000 *The National Food Consumption Survey: Children aged 1-9 Years in South Africa, 1999.* Pretoria: Department of Health.

Leung-Chen, P.Y.
2008 "Dengue Fever: Coming soon to a hospital near you?" in *AJN* Vol.108, No. 4, pp 26-28.

Ligon, B. Lee
2004   Dengue Fever and Dengue Hemorrhagic Fever: A Review of the History, Transmission, Treatment, and Prevention in *Seminars in Paediatric Infectious Disease,* Elsevier Inc.

Lupton, Deborah
1995 *The Imperative of Health: Public Health and the Regulated Body,* London: Sage.

1999 *Risk: Key Ideas*, London and New York: Routledge.

2012   *Risk* London, New York: Routledge:

2012   *Medicine as Culture: Illness, Disease And The Body*, London: Sage.

2013 "Risk and emotion: towards an alternatives theoretical perspective." *Health, Risk & Society,* Vol.15, No. 8, pp 634-647.

Lupton, Deborah, and John Tulloch
2002 "Risk is part of your life: Risk Episemologies Among a Group of Australians." *Sociology,* Vol.36, No.2, pp 317-334.

Lupi, O.
2011   "Mosquito-borne hemorrhagic fevers," in *Dermatologic Clinics*, Vol. 29 pp. 33–38.

Madriz, Esther
1998 "Using focus groups with lower socioeconomic status latina women." *Qualitative Inquiry,* 4, 114-128.

2003 " Focus groups in Feminist Research" in Denzin, Norman K. and Yvonna S. Lincoln eds *Collecting and Interpreting Qualitative Materials.* Second edition, Sage publication.

Mahbub, KR., A. Nahar, MM. Ahmed, and A. Chakraborti
2011 "Quality Analysis of Dhaka WASA Drinking Water," *Journal of Environmental Science and Natural Resources,* Vol.4, No. 2.

Mahbub, A.
2000   "গ্রামীণ নারীদের স্বাস্থ্য সেবার ব্যাবহার: স্বাস্থ্য পরিচর্যায় অগ্রাধিকারের প্রতিফলন" in Z. Ahmed and M. chowdhury eds. চর্চা: নৃবিজ্ঞানের প্রবন্ধ সংকলন department of Anthropology, Jahangirnagar University.

Merndelson, Oliver, and Marika Vicziany
1998   *The Untouchables: Subordination, Poverty, and the State in Modern India,* Cambridge University Press.

Mines, Diane P.
2009 Caste *in India: Key issues in Asian Studies ,* Association for Asian Studies, Michigan, USA.

Mohanty, Manoranjan
2004, " Introduction: Dimensions of Power and Social Transformation" in Manoranjan Mohanty ed. *Readings in Indian Government and Politics: Class, Caste, Gender,* New Delhi: Sage Publication India Pvt. Ltd.

Monath, T.P.
1994   "Dengue: The Risk to Developed and Developing Countries" in *Proceedings of the National Academy of Sciences of the United States of America,* Vol. 91, Issue. 7, pp 2395-400.

O'Malley, p.
1992 "Risk, power and crime prevention", in *Economy and Society,* Vol. 21, No.3, pp. 252-275.

Oliver Mendelsohn and Marika Vicziany
1998 *The Untouchables: Subordination, Poverty, and The State in Modern India,* Cambridge University Press.

Ovichegan, Samson
2013 " Social exclusion, Social Inclusion and 'Passing': The experiences of Dalit Students at one elite Indian University" in *International journal of inclusive Education,* DOI:10.1080/13603116.2013.777129

Parvin, Gulshan Ara and Rajib Shaw

2011 "Climate Disaster Resilience of Dhaka City Corporation: An Empirical Assessment at Zone Level," *Risk, Hazard and Crisis in Public Policy,* Vol. 2, No. 2, Article, 6.

Parsons, Talcott

1963 "On the concept of power" in *Proceedings of the American Philosophical Society*, vol. 107, pp 232-262.

Paul-Majumder, P. and A. Begum

2000 "The Gender Imbalances in the Export Garment Industry in Bangladesh: Policy Research Report on Gender and Development", *Working Paper Series12.* Washington DC: World Bank.

Perez-Guerra, C.L., E. Zielinski-Gutierrez, D. Vargas-Torres et al.

2009 "Community beliefs and practices about dengue in Puerto Rico" in *Public Health,* 25(3): 218-225.

Podder, G., R.F. Breiman, T. Azim et al.

2006 "Short Report : Origin Of DengueType 3 Viruses Associated with the Dengue Outbreak in Dhaka, Bangladesh , in 2000 and 2001"in *Tropical Medicine,* vol. 74, issue 2, pp 263-265.

Rahman, M., K. Rahman, A.K. Siddique et al.

2002 "First Outbreak of Dengue Hemorrhagic Fever, Bangladesh" in *Emerging Infectious Disease,* Vol. 8, No. 7, pp 738-740.

Salway, S., S. Jesmin. and S. Rahman

2005 "Women's Employment in Urban Bangladesh: A Challenge to Gender Identity" in *Development and change* 36(2): 317-349.

Schendel, William Van

2009, *A History of Bangladesh,* Cambridge: Cambridge University Press.

Shami, S.

1990 *Women in Arab Society: Work Patterns and Gender Relations in Egypt, Jordan and Sudan,* Oxford: BERG/UNESCO.

Silverman, David.

2003 "Analyzing Talk and Text" in Denzin, Norman K. and Yvonna S. Lincoln eds *Collecting and Interpreting Qualitative Materials.* Second edition, Sage publication.
Warren, C.A.B. 1998 *Gender issues in field research.* Newbury Park, CA: Sage.

Stewart, Neil

1951 " Divide and Rule: British Policy in Indian History" in Science and Society, Vol. 15, No.1 pp 49-57 Accessed: 21/05/2013 17:19.

Suarez, R., C. Gonzalez, G. Carrasquilla et al.
2009 "An ecosystem perspective in the socio-cultural evaluation of dengue in two Colombian towns" in *Cad. Saude Publica, Rio de Janerio*. Pp 104-114.

The Daily Star
27, April, 2009 Dhaka gone Crazy: Heat, Outage, Water crisis cripple city life, http://www.thedailystar.net/newDesign/news-details.php?nid=85811.

United States,
1906   Public Health Reports, Vol. xxii, Issue 14.

Wagatsuma, Y., R.F. Breiman, A. Hossain et al.
2004 "Dengue Fever Outbrak in a Recreation Club, Dhaka, Bangladesh" in *Emerging Infectious Diseases,* vol. 10, issue 4, pp 747-750.

Warren, C.A.B.
1998   *Gender issues in field research*. Newbury Park, CA: Sage.

White, S.
1992   *Arguing with the Crocodile: Gender and Class in Bangladesh.* Dhaka: University Press Ltd.

Whiteford, L.M.
1997 "The Ethnoecology of Dengue Fever" in *Medical Anthropology Quarterly,* Vol.11, Issue, 2, pp 202-223.

World Bank
2007   *Dhaka: Improving Living Conditions for the Urban Poor, Bangladesh* Development Series, Paper No. 17.

WHO
2006 Bangladesh: dengue trend from http://www.searo.who.int/linkfiles/dengue_dengue_bangladesh.pdf

Yunus E. B., A.M. Bangali, M.A.H. Mahmood et al.
2001 "Dengue Outbreak 2000 in Bangladesh: From Speculation to Reality and Exercise" *Dengue Bulletin* Vol. 25, Issue, December, pp 33-39.

Newspaper Links:

http://archive.thedailystar.net/newDesign/news-details.php?nid=262297

http://archive.thedailystar.net/newDesign/news-details.php?nid=260593

http://www.globallabourrights.org/alerts?id=0401

http://www.thedailystar.net/beta2/news/rana-plaza-was-built-poorly/

http://archive.thedailystar.net/newDesign/news-details.php?nid=246253

http://www.guardian.co.uk/world/2013/feb/13/shahbag-protest-bangladesh-quader-mollah

http://archive.thedailystar.net/newDesign/news-details.php?nid=269336

http://www.bbc.co.uk/news/world-asia-21611769

http://articles.timesofindia.indiatimes.com/2013-03-14/south-asia/37712647_1_hindus-war-crimes-temples