Water supply and sanitation status of low income area in Mymensingh District

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ABSTRACT

A survey of water supply and sanitation status at Dhopakhola Bosti of Mymensingh district was done using questionnaires, interviews, observations and secondary data from other sources. Only 2.81% people have secondary level education. Lack of basic sanitation system threatens environmental and human health in this low income urban community. Only 14% of the respondents washed their hands after defecation and before taking food of them, 41% sometimes wash their hand and 45% don't wash their hand after defecation and before taking food. Local government was not actively involved in improving sanitation status in the study area as compared to nongovernmental organizations (NGO). The survey also indicates that the sanitation condition of study area was poor but water supply condition was found to be acceptable condition. Mymensingh municipality needs to raise public awareness about the safe and hygienic water supply and sanitation to improve the present situation of that area.

INTRODUCTION

Bangladesh is one of the world's most densely populated countries with 150 million people, 13% of whom live below the national poverty line of US $2 per day (Misha and Sulaiman, 2016). A huge amount of the people of this country is illiterate. So they have no adequate knowledge about family planning, proper use of water and sanitation, environmental pollution and their impacts on humans as well on overall environments (WHO, 2000). Population under water supply coverage improved significantly during the water supply and sanitation decade and after the Decade, it has been estimated about that 25% of the population in developing countries still does not have access to safe water. As a result, millions of people in developing countries suffer from water-related diseases each year. The infant mortality rate is still very high in developing countries largely due to lack of safe water supply and sanitation and unhygienic condition (Ahmed and Rahman, 2012). Adequate supply of safe drinking water is universally recognized as a basic human need. Yet millions of people in the developing world do not have ready access to an adequate and safe water supply (Kimani-Murage and Ngindu, 2007). One of the essential elements of primary health care is provision for safe water and hygienic sanitation to ensure health for all, the importance of providing safe water and hygienic sanitation can hardly be exaggerated (Rana, 2009).

Sanitation refers to the safe management and disposal of human excreta (Parkinson et al., 2008). Sustainability is literally referring to the maintenance or sustenance of something over the long term (Carden and Winter, 2009). In that context sustainable sanitation could be defined as safe management and disposal of human excreta over the long term. According to principles of sustainable sanitation are as: human health, affordability, environmental sustainability and institutional appropriateness (Mara et al., 2007).

Poor sanitation in developing countries is an important example of this general phenomenon. Globally, 2.5 billion people live without access to improved sanitation, with one billion of these people practicing open defecation (WHO and

UNICEF, 2014). Inadequate sanitation is believed to cause 280,000 deaths per year (Prüss-Ustün et al., 2014), contribute to serious health problems such as chronic diarrhea and tropical enteropathy (Alan et al., 2013; Audrie et al., 2013), and may diminish human capital through impacts on stunting and cognitive capacity (Dean, 2012). In recent past, 97% of the people had access to safe water within 150 meters. With the discovery of arsenic in groundwater, the coverage has come down to about 75%. However, alternative options are being implemented for supply of arsenic safe water (DPHE, 2007).

The poor, and in particular the slum dwellers suffer from insufficient basic infrastructure services, namely insufficient and unhygienic sanitation. In most slum areas a few pit latrines have to be shared by a large number of households. Generally, almost one third of slum household uses katacha toilets or open holes. Insufficient sanitation is compounded by frequent flooding, resulting in seriously unhygienic conditions in which human excreta often find their way into drainage canals and water bodies (Mymensingh Pourashava, 2013). Water is usually provided through tube well hand pumps, against shared by large number of households. Also, water quality is generally worse in slum area, with a higher share of unclean and contaminated water. The objectives of the research work were to assessing the situation of water supply and sanitation of dwellers at Dhopakhola Bosti and provide awareness and proper knowledge about safe water supply and hygienic sanitation on the community.

MATERIALS AND METHODS

Study area

The district of Mymensingh is situated between 24°02'03" and 25°25'56" North latitude and 89°39'00" and 91°15'35" East longitude. Mymensingh city is clearly marked by the old Brahmaputra river flowing along its north. The study area Dhopakhola Bosti is located under the Mymensingh municipality and ward no 13. Dhopakhola Bosti is also called as Bashbari colony. Total family number were about 300. Because of poverty, unemployment and lacking of

awareness they are much more lag behind from the others. Most of the people of the study area are day labor. They also pull the thela gari or rickshaw. Their average income was below 6000 taka.

Data analysis

Data was collected from the primary and secondary sources which have been assembled and presented in tabular form using Microsoft office (MS) Word and MS Excel and analyzed according to objectives of the study.

RESULTS AND DISCUSSION

Family size

It was observed that 57 percentage family includes 4-6 persons in that area. Also 25 percentage families include more than seven persons and 18 percentage family include 1-3 persons (Figure 1).
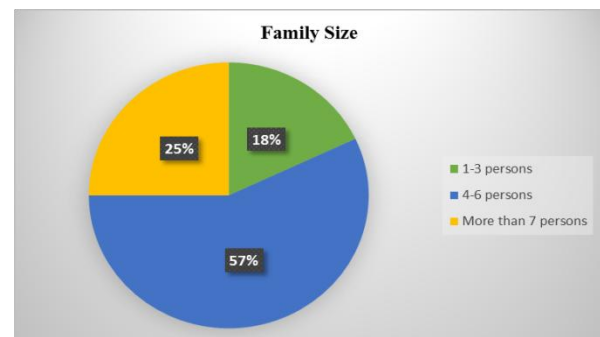

Figure 1
Family size of the respondents.

Family Income

It was observed that 46 percent households interviewed had a total monthly household income lying between three thousands to four thousands. The second highest 35 percentage had a total household income between one thousand to two thousands. Only 19 percentage income lying four thousands to six thousands. Less family income is responsible for unhygienic environment on that area (Figure 2).
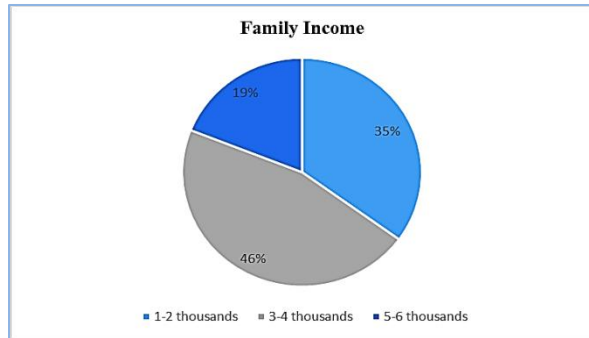
Figure 2
Family income of respondents.

Educational status of the Dhopakhola Bosti dwellers is very low. Most of the people are illiterate. The percentage of illiterate people is 45.4% and the people who can sign only are 39.6%. Some of them have primary level and a few have secondary level education. The percentages are 12.19% and 2.81% respectively (Figure 3). Due to illiterate, they are not aware enough about the sanitation system.
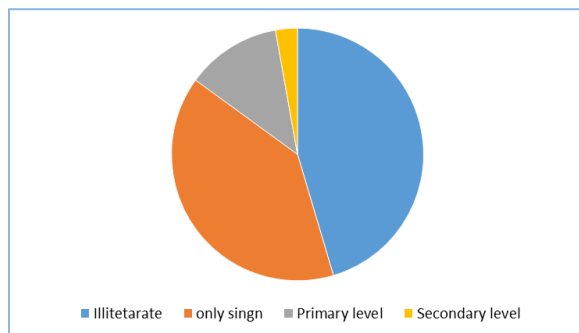

Figure 3
Educational status of the respondents.

Water supply status

The study indicated that deep tube-well water and supply pipe line system were the basic water supply system in that area. It was observed that 83% water supply system was deep tube-well water and 17% supply water (Figure 3).
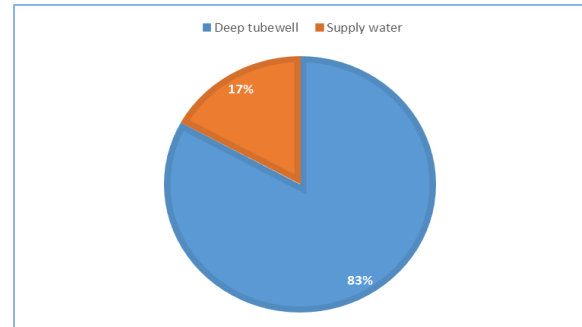

Figure 4
Water supply system in the study area.

The available source of water of the study area where the source of water were grouped in deep tube-well and supply water. Among them the usages of deep tube-well water 59% and pipe line supply water system 41%. Rain water is not used necessarily though it is most available in the rainy season only (Figure 4). The findings indicated that deep tube well water was most available source for household purposes in the study area.
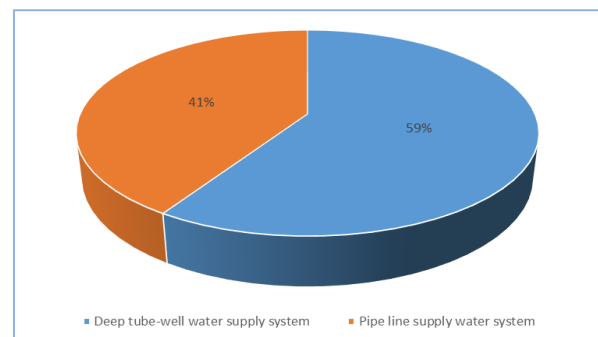

Figure 5
Available source of water in the study area.

It showed that 73% deep tube-well water were situated within 100m, 27% were situated in the range 100-500 m. In case of supply water, 82% were situated within the range 100m, and other 18% were situated in the range 100-500m (Figure).The findings indicated that deep tube-well water was mostly owned by individuals and situated within the household boundary.
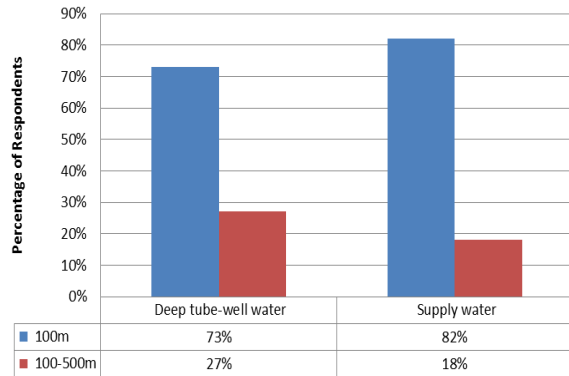
Figure 6
Distances of water sources from the house.

It showed that, 68% collectors were female, male 32%, were in case of water collection from deep tube-well. In case water collection from supply water, 52% collectors were female and male were 48% (Figure 7). The findings indicated that female were the only water collector in the study area with a little portion of help from male. The female were engaged in the collection system with hard difficulties due to the distance factor.
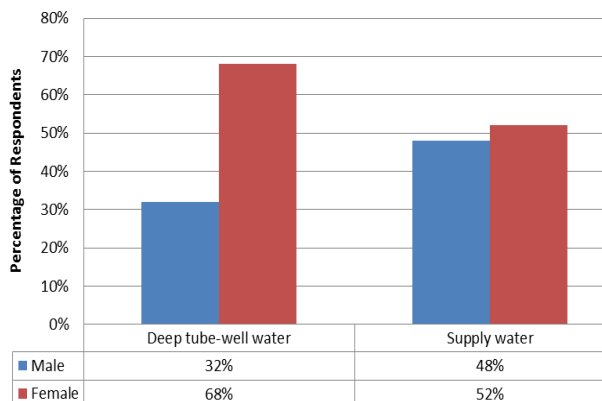

Figure 7
Collection of water from sources in the study area.

Sanitation Status

Washing of hands

The percentage of people who wash their hands after defecation and before taking any food. The people were grouped into- wash, never wash, and sometimes on the basis of their hand washing. 41% respondents sometimes wash their hands after defecation or before taking any food. Only 14%

respondents wash their hands after defecation or before taking any food and 45% respondents never wash (Figure 8). A large number of people was not the habits of washing their hands after defecation and before taking any food.
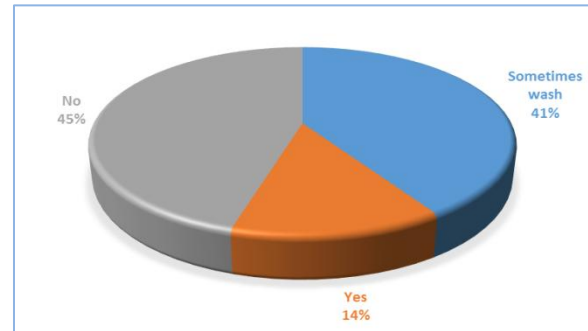

Figure 8
Washing hands after defecation and before taking any food.

Sanitary latrines in the locality

Sanitary latrine is a must in the issue of sanitation. Without sanitary latrine the concept of sanitation cannot be fulfilled. Table 1 showed that 90% households have sanitary latrines of their own. The findings indicated that more or less all the people awere aware of the necessity of sanitary latrines in the locality. It has also been found that many households cannot construct sanitary latrines for financial inability and also due to not having enough land to construct latrines.

Table 1
Household having sanitary latrine.

Sanitary latrine in a household	Percentage of Respondents (%)	
	Have	Never
According to Municipality	90	10
According to DPHE	85	15

Types of sanitary latrines in the locality

There were various types of sanitary latrines all over the world. In Bangladesh, the types of sanitary latrines also varied. Figure 9 represents

the different types of sanitary latrines used in the study area which were classified into ring slab latrine, improved pit latrine. It showed that 89% sanitary latrines in the study area were ring slab latrines, and 11% were improved pit latrine. Thus from the study it was found that most of the sanitary latrines in the study area were not 100% safe hygiene. In most cases, the technology is a single pit latrine. Although the national success in terms of coverage is promising, the municipalities are not prepared to provide a reliable, affordable and regular system of maintenance, for example an affordable and reliable system of emptying pits (Ali and Stevens, 2009).
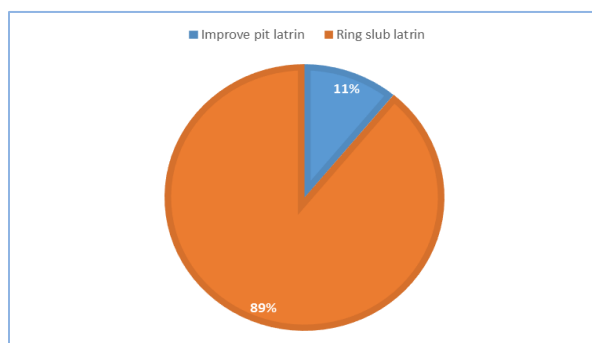

Figure 9
Types of sanitary latrines in the locality.

Distance between latrine and tube-well

Most of the Latrines of the slums are very close to the drinking water source. It is observed that the distance between the drinking water source and the latrine is within 10 m mostly and some are also greater than 10 m away from the water source.

Diseases of the respondents

The most common disease were affecting in my study area. Due to precarious hygienic and sanitation conditions, Diarrhea, Cholera, Dysentery and Scabies were significantly more common disease in my study area. It was observed that 59% respondents were affected diarrhea, 4% respondents were from cholera, 5% respondents were from dysentery, 30% respondents were scabies and 2% others (Figure 10)**.** Poor water quality can be a major threat to human health. Exposure to water contaminated with human fecal matter as a result of open defecation or the lack of

a toilet facility can cause severe diarrheal diseases. It is estimated that diarrhea caused by waterborne diseases accounts for 3.6% of the global disease burden, killing 1.5 million people every year (WHO, 2012).
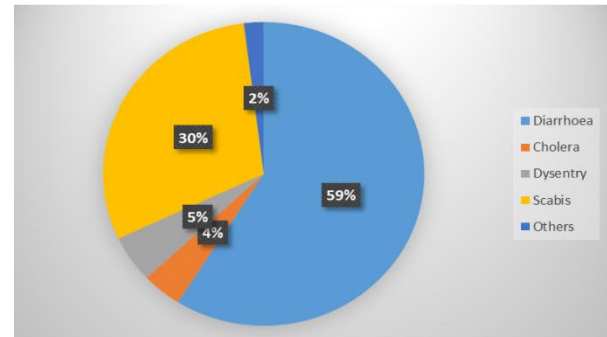

Figure 10
Disease of the respondents.

CONCLUSIONS

From the study area it was found that the people were mostly dependent (41%) on supply water for their daily household purposes. They mainly used deep tube-well water 59% as the source of supply water. For ground water they mainly depend on deep tube–well, with a high numbers of supply water. Supply water was mainly used for bathing and washing purposes. Deep tube-well was not owned by personally and people have to collect water from the distances 100-500m 27% households. The female were the main collector 68% of the water from deep tube-well water. Supply water was mainly owned by Governed and situated in the Municipal area, city corporation area used for household purposed mainly toilet purposes, cooking bathing and washing purposes. In the field of sanitation, most of the people were serious and a small portion of them were still unaware of safe hygiene. Most of the people don't wash their hands after defection and before taking any food. Through raising awareness about the safe and hygienic water supply and sanitation is effective to improve the present situation of that area.

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