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Title of the Research: Water Borne Disease and Sanitation Problem on Women and Children in Rural Villages of Uarsi Union of Mirzapur Upazila in Tangail District

Period: November 2014

Safe drinking water, sanitation and hygiene are the key issues to ensure good health and sustainable development in any country. Lack of safe water and sanitation is one of the biggest issues affecting the health of people. Poor water supply and sanitation condition as well as their unhygienic environment causes for different water borne diseases and death of many people. According to WHO, in any country access to safe drinking-water and basic sanitation is essential to human health and survival (WHO, 2014).

Water is indispensable for all life, but at the same time it also represents a major threat to human health. The main reason for it is that everything in nature depends on water, which also attracts certain substances and bacteria that might be life-threatening. People are extremely vulnerable to diseases that are transferred through water due to the fact that their life is dependent on water (Aleksandra D, 2007).

Sanitation as a method of containment and sanitization of human excreta is of utmost importance as it prevents spread of diseases and protects both human and environmental health (Aleksandra D, 2007). Sanitation refers to the safe disposal of human excreta (Beth Scott, 2006).

Hygiene promotion includes strategies that encourage or facilitates a process whereby people assess, make considered choices, demand, effect, and sustain hygienic and healthy behaviors. This encompasses personal, domestic, and environmental hygiene practices and any action or initiative taken to erect barriers to diseases. In this strategy paper, the 'Hygiene Promotion' is considered particularly related to water supply and sanitation (GoB, 2012). Hygiene is the science that treats of the presentation of health. It is very important for keeping good health of man.

Waterborne diseases are illnesses caused by drinking water contaminated typically by human or animal feces that enter the water along different paths. Waterborne diseases are caused by pathogenic microorganisms – viruses, bacteria, protozoa, or intestinal parasites (Daniel Citron, 2014).

Water is critical component of life on earth, and safe drinking water and sanitation are essential for good public health. An estimated 884 million people lack access to safe drinking water and contaminated water is responsible for 1.6 million deaths per year primarily in children under age 5 (“Global Water, Sanitation”, 2012: Hruday & Hruday, 2007). Approximately 88% of diarrheal diseases are the result of unclean water and poor sanitation (“Global WASH-Related Diseases”, 2012). WaterAid’s vision is of a world where everyone has access to safe water and sanitation. This vision can only be achieved by working in collaboration with others. This report is part of an ongoing programme of work which seeks to reach out beyond the water, sanitation and hygiene (WaterAid, 2011).

UNICEF has contributed significantly to policy dialogues that have led to the establishment of the technical groups on rural water supply, sanitation and hygiene in 2007, the development of national strategic action plan for arsenic mitigation and a national strategy for rural water supply, sanitation and hygiene in 2010. According to UNDP, overall human development is more closely linked to access to water and sanitation than any other development driver, including spending on health or education, and access to energy services (UNDP, 2010). Research indicates that more than half of acute illnesses are attributable to water, sanitation and hygiene-related across all age groups (BRAC, 2008). About 748 million people in the world do not have access to safe water. This is roughly one in ten of the world’s population and 2.5 billion people don’t have access to adequate sanitation, one in three of the world’s population (WHO/UNICEF Joint Monitoring Programme (JMP) Report, 2014). Sustainability is about whether or not WASH services continue to work and good hygiene practices continue to be performed and deliver benefit over time. In other words, sustainability is about permanent beneficial change in WASH services and hygiene practices as described by one international NGO active in the WASH sector (WaterAid, 2011).

Ensuring access to safe water and sanitation is complicated, but many policymakers and global health organizations around the world are working to address the issue. The millennium development goals (MGDs) which consist of eight global health and development aims, set out by the United Nations (UN) in 2000, highlight water access as a key target in ensuring environmental sustainability. Specifically, the aim is to “halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation” (“Millennium Development Goals, 2010). In 2005 the UN launched an initiative called the “International Decade for Action ‘Water for Life’ 2005-2015 to further enhance the MDG’s water goals. Water for Life aims to promote sustainable water practices by emphasizing action based programs and policies that encourage long-term water resource management and improved sanitation (“International Decade”, 2012). The indicator for measuring water supply and sanitation access is “proportion of the population using and improved drinking water source” and “using an improved sanitation facility” (UNDESA, 2012). Rural areas in developing countries across the

world remain severely underprivileged, with eight out of ten people not having access to safe water supply. WHO and UNICEF, about 87% of the world population could have access to safe drinking water, a progress of 10% within the last two decades (Tadesse, 2013).

Most of the developing world does not share these same luxuries. Nine hundred million people around the world do not have adequate access to potable drinking water with approximately 2.6 billion people lacking basic sanitation systems. Nearly 20 million people worldwide die each year of waterborne diseases. Approximately one-half of all of the world's hospital beds are occupied by patients suffering from diseases associated with lack of access to potable water, poor sanitation, and inadequate hygiene (Daniel Citron, 2014). In developing countries, the poor people have a great burden of diseases due to inadequate water supply, sanitation and hygiene. The United Nations Millennium Declaration, in particular its eight Millennium Development Goal, reflects the global importance of water sanitation and hygiene for development, poverty reduction and health. Governments are unable to provide basic needs to the citizens, because of the rapid increase in the urban population. Compared to rural households, urban households have 135% improved sanitation facilities and 30% have improved water source in developing countries. In Asia, the water supply and sanitation coverage is 81% and 48%, respectively. (Jabeen, S. et al, 2011).

Among the developing countries, Bangladesh is a country with about 160 million people living in an area of 147,570 square kilometer making the country one with the highest population density in the world. This country is rural based country and its economically is very poor in the world. Villages lack good sanitation and clean drinking water and others problems such as poor communication, lack of electricity, inadequate health services, etc. Supply of safe-drinking water in Bangladesh occasionally suffers from various technical and institution constraints which need to be addressed in a systematic manner with a comprehensive strategic planning to sustain the results. Therefore improving water quality, hygiene practices and safe excreta disposal need to be taken into consideration with a holistic approach for reducing transmission of water-borne diseases (GOB, 2012).

Bangladesh has made progress in both sanitation and water, but low levels of sanitation and arsenic contamination in groundwater remain important public-health threats. MDGs 7, Target C: Halve by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. Bangladesh MDG Targets; Ensure that 86% of people have access to safe water by 2015. Ensure 60% of people have access to improved sanitation by 2015 (WHO-UNICEF Joint Monitoring Programme Report on Water and Sanitation, 2006). In Bangladesh, a large number of people use unsafe sources of water for personal and domestic needs like cooking, bathing and washing utensils, due to a lack of awareness about the safety of the water used for these purposes. Every day 20,000 metric tons of human excreta deposited on public

lands and waterways and is one of the main causes of contaminated surface water. Here 13.5% of rural households use sanitary latrines. Overall, sanitation access including pit latrine is officially stated to be 43.4% for combined rural and urban communities with an increase of about 1% per annum. At this rate it will take nearly 60 years to cover the entire country with safe sanitation facilities. In Bangladesh one of the main causes of water borne diseases are faecal-oral transmission routes. The people have a poor understanding about the link between poor hygiene and disease. Only 26.7% of people wash their hands with water, soap or ashes after defecation (only 7% use soap), 3% wash their hands with soap and water before having a meal, feeding children and preparing food. Hygiene-related disease in Bangladesh costs 5 billion taka (US\$ 80 million) each year, for treatment alone. The nutritional status of under-fives is strongly related to sanitation conditions, suggesting longer-term impacts beyond immediate illness (WaterAid Bangladesh et al, 2013).

Many people in rural areas are dependent on water of poor quality from unprotected wells or surface water sources. Unfortunately, millions of people lack access to a basic water supply from a clean source or adequate sanitation. People in rural communities often have much less access to water and sanitation than town dwellers. It may be difficult or expensive for governments to extend piped water and sanitation networks to remote, scattered communities. However, they have a duty to do so and can make and maintenance of traditional sources of water such as reservoirs, springs and rivers, and promote safe sanitation and hygiene practices (HAKI SETU, 2010). For rural area, without access to sanitation, safe water may not be enough to eliminate the spread of disease. Access to safe and clean water is important as a health and development issue at national, regional and local levels (World Health Organization, 2006).

The main aim of this research was to investigate and analyze the cotemporary water borne diseases and sanitation problem on women and children in rural setting of Bangladesh taking Uarsi union of Mirzapur upazila in Tangail District.

To fulfill the aim of this research following objectives have been taken -

- To find out the present condition of water supply and sanitation system in the study area
- To assess the knowledge and practices of women and children about water borne diseases and sanitation in the study area
- To investigate the causes, effect and major types of water borne diseases and sanitation problem on women and children.

Findings/conclusions from the research: The research included water safety and sanitation services are important public health issue in emergencies of particular concern is the risk of water borne diseases from water contaminated with faecal and other pathogens. Water,

sanitation and hygiene have important impact on both health and disease (WHO, 2014). The impact of inadequate and unsafe water, lack of sanitation, and poor hygiene behavior on disease burden is a complex issue (Kumar Jyoti Nath et al, 2010). While progress has been made towards achieving the Millennium Development Goals (MDGs), this has not yielded equitable results. For poor places, sizable gender gaps remain (World Bank, 2012). Domestic water supply must be attended by appropriate sanitation and hygiene education. Duncan Mara (2010) expressed sanitation is a complex topic, with links to health and to social and economic development. In addition, the biennial global reports on sanitation and drinking water published by the World Health Organization and UNICEF (WHO, UNICEF, 2000) contribute towards political leadership and aid effectiveness by publicizing the sanitation work of both developing country governments and support agencies. Hygiene promotion is the planned, systematic attempt enabling people to take action to prevent or mitigate water and sanitation related diseases. The perception of the community, particularly the women, regarding the public health and hygiene issues is an important influencing factor in conditioning the practice of hygiene in the community. The disease burden related to community water supply and sanitation could be significantly reduced if provision of sanitary toilets in individual houses accompanied by appropriate health and hygiene education campaigns (Kumar Jyoti Nath, 2010). To achieve these goals, decision-makers must address the persisting inequalities between women and men, embracing the human rights principles of equality and non discrimination to ensure universal access to water and sanitation for all women everywhere (Satterthwaite M et al, 2012). According to the experience from this research on present circumstances in the study area it is important to establish the sequence of the type of water supply, sanitation and hygiene intervention produce the greatest health benefit for women and children in these areas. The information of this research would assist in formulating policies on health and water and sanitation for developing areas to access safe rural water supply and hygiene promotion on poor sanitation services. It is coherent that GOs and NGOs WASH policies, programmes and proper implementations must have need of safe and privacy for women and children and actions aimed at reducing water borne diseases by the importance of access to safe water and sanitation in rural Bangladesh.

*For more information on this research, please contact the National Resource Centre, NGO Forum for Public Health, Email: [nrc@ngof.org](mailto:nrc@ngof.org)*