

Assessment of Water Sanitation and Hygiene Practices in Ibadan, Nigeria

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ABSTRACT

This study was carried out at Ibadan North Local Government Area of Oyo State, Nigeria to assess the water sanitation and hygiene practices among randomly selected households. A total of 450 respondents were given questionnaires to fill. Information obtained from the questionnaires revealed that 56.4% treated their water while 43.6% did not. Among those that treated their water, 28% boiled their water, 20.1% filtered with alum and 33.5% used chlorine. 67.3% of the households had pour flush toilet, 16% used ventilated improved pit latrine and 1.8% went into the bush for defecation. Results also showed that 37.3% washed their hands after using the toilet and 43.5% washed their hands after eating. While 25.8% washed their hands with water only, 28% washed their hands with medicated soap and water. 31.8% of the respondents reported a history of sickness from water usage while 68.2% did not. The symptoms experienced include stomach pain 28.7%, fever 28.7%, stooling 30.8% and vomiting 11.9%. Sensitization of the populace toward proper disposal of household waste, promotion of good hygiene practices and treatment of drinking water was recommended.

Keywords:

Water sanitation; hygiene; hand washing; diarrhea; illness

INTRODUCTION

Water sanitation and hygiene practice form an important aspect of Environmental Public Health in disease prevention and control, especially water and sanitation related diseases. Water serves as an important medium through which many illnesses are spread in the human population. The essential role it plays in human survival cannot be over emphasized, especially in the sustenance of life and promotion of health. Thus, it is impossible to separate issues of water and sanitation, including hygiene from life as they impact significantly on our health and general wellbeing. They are also regarded as fundamental human rights by the United Nations^{1,2}. Water sanitation and hygiene practice have become global issues and one of the United Nations Millennium Development Goals (MDGs) which is aimed at ensuring environmental sustainability targeted towards reducing by half the proportion of people without sustainable access to safe drinking water

and basic sanitation by 2015. It is expected that if the proportion of the population using improved drinking water source and the proportion of the population using improved sanitation facility increases there will be a reduction in disease transmission and mortality/morbidity rates³.

The agents of disease or pathogens such as bacteria, viruses, parasites etc. are normally passed out in faeces in large numbers and if not properly disposed off, the sources of drinking water supply will be contaminated, given the fact that just one (1) gram of feces may contain as many as 10,000,000 viruses, 1,000,000 bacteria, 1,000 parasite cysts and 100 worm eggs⁴. These microorganisms are infectious when consumed with water or food and may cause frequent diarrhea in children, including dysentery, cholera and typhoid, hepatitis A etc. Thus, it is necessary that people have access to portable drinking water and sanitation systems for proper disposal of their excreta to guard against infection. The extent of the problems of lack of clean and safe drinking water and sanitation facilities (sanitary toilets) worldwide, particularly in developing countries poses serious public health risks to the citizens. Globally, it is estimated that over 1.1 billion people do not have access to safe water supply and 2.6 billion are without adequate sanitation. In the developing countries, only 31% of the rural inhabitants have access to improved sanitation. The situation in Nigeria with a population of over 120 million is not different as sanitation coverage is estimated at 41% for urban areas and 26% for rural areas. These levels of coverage were determined based on access to sanitation facilities such as flush toilets; traditional pit toilets and ventilated improved pit (V.I.P) latrines⁵. According to UNICEF Fact Sheet⁶, over 12 million Nigerians have no access to safe water and about 40 million are without improved

sanitation. Furthermore, out of an estimated population of 150 million, nearly 65 million people do not have access to safe water. The statistics clearly shows that more than 100 million people lack improved sanitation facilities such as latrines or toilets, while a larger proportion of the population practice open defecation. Studies also indicate that basic hygiene practice in households, such as hand washing with soap at critical times can equally prevent and reduce diarrheal infection in children by as much as 44% and acute respiratory infections including pneumonia by 25%⁵. Therefore it is not enough to provide communities with supply of safe water and latrines alone without hygiene promotion, if the people are to use such facilities properly and avoid water and sanitation related diseases.

In Nigeria, diarrhea is the second highest childhood killer disease, as it causes about 17% of deaths in children every year and in every second a child dies as a result of poor sanitation. Other diseases which cause deaths in children below five years in the communities as a result of the absence of potable water and good sanitation include guinea worm, cholera, dysentery and typhoid⁶. Lack of water and sanitation therefore affects the health of every one generally, but the impact on women and girls is more in terms of education and privacy, because of their involvement in household water collection from long distances outside the home. For example, walking long distances to fetch water may result in school absence and expose women or girls to violence, sexual harassment or assault by men. Studies^{7,8,9} has proved that improved sanitation and good hygiene practices with adequate water supply reduces the incidence of cholera, helminthes infection, diarrhea, pneumonia and malnutrition, among other illnesses, and prevent about 1.5 million deaths each year in human population. It is

therefore necessary for every household to be provided with safe drinking water supply backed by good personal hygiene and community sanitation practices in order to prevent and control prevailing water and sanitation related diseases in the communities. This explains why the study was carried out to ascertain the water sanitation and hygiene practices among households in Ibadan North Local Government Area, Southwestern Nigeria. Data obtained from this study will serve as a good database for policy making, planning and implementation of water supply and sanitation programs.

MATERIALS AND METHODS

This study was carried out at Ibadan North Local Government Area Oyo State, in the South Western part of Nigeria. The dominant language spoken in the area is Yoruba. The people are well known traders, farmers, fishermen, civil servants and commercial drivers, while Christianity, Islam and traditional idol worship are the major religions. The research design was a cross-sectional descriptive study to assess the level of water supply, sanitation and hygiene practices. The households were randomly selected from the population, using the simple random sampling technique. A well-structured questionnaire was distributed to the households which they filled out. The data obtained was compiled and presented in tables for further analysis with computer-aided designs such as IBM-SPSS Statistics Version 20.0 (IBM-SPSS Corp, Chicago, III, USA) and Microsoft Excel 2010.

RESULTS

A total of 450 respondents filled out the questionnaires. From Table 1, the majority of the respondents made up of 45.1% were less than 25 years old, followed by 25.6% aged between 25-34 years, while 48.9% were 35-44 years and 10.4% subjects were 45 years and above. The result also showed

that 58.7% were males and 41.3% were females. Out of 450 respondents, 41.3% had tertiary education, 57.6% had secondary education, 2.4% had only primary education and 1.3% had no formal education. The table also shows data on marital status and occupation. From the results of the study in Table 2 on the sources of water supply, majority of the respondents 49.1% get their water from well, followed by 26.4% who fetched water from boreholes; 20.0% used tap water and 0.4% obtained water from other sources like lake, stream, river, etc. In terms of household water treatment, 56.4% being majority treated their water before drinking, compared to 43.6% who did not treat water for drinking. Assessment of method of water treatment indicated 33.5% used bleach or chlorine to treat their water, 28.0% boiled their water for drinking, 20.1% added alum and filter through cloth, 10.6% allowed water to stand and settle, 4.7% used candle filter and 3.1% used solar disinfection. Table 3 showed that 67.3% of the households used pour flush connection into septic tank, 16.0% used ventilated improved pit (VIP) latrine, 1.8% had no toilet or practiced open/bush defecation and 1.3% defecated into polythene or nylon bags. Table 4 showed that 92.9% respondents practice handwashing, while 7.1% did not. Also, 43.5% washed their hands before eating, 37.3% washed their hands after using the toilet, while 19.1% washed hands after handling dirty materials. In addition, 28.0% used clean water and medicated soap to wash hands, 25.8% used clean water only, 25.8% also used clean water and plain soap, 12.0% used clean water with detergent while 8.4% used clean water and liquid soap. Table 5 showed that 68.2% did not suffer any illness associated with water sanitation, while 31.8% suffered from illnesses due to the water they used. Of the 450 subjects studied, 30.8% complained of stool, 28.7% claimed

they had stomach pain or disorder, 28.7% had fever, while 11.9% complained of stool and vomiting.

DISCUSSION

Water sanitation and hygiene are essential to human health and survival, as well as the development of the community. In Nigeria, more than 65 million people lack safe drinking water⁵ and do not have sanitation facilities with many practicing open defecation. The situation in Ibadan North Local Government Area is not different as open defecation and indiscriminate dumping of solid waste are still major problems. For instance, most of the toilet facilities e.g. pit latrines and flush toilets are in poor hygiene conditions or dilapidated, while some households have no piped water connections. This situation is applicable to many rural communities in developing countries¹⁰. Majority of the respondents in this study obtained their water supply from protected wells and borehole. A study¹¹ in Obowo, Southeastern Nigeria reported borehole water as the major source of water supply in the area. Most households fetch their water from designated sites with bore hole, while some who can afford the cost drill their own borehole in the premises. After fetching the water, it is still treated before drinking. Although 43.6% of the respondents in this study did not treat their water before drinking, others adopted different forms of water treatment, such as the use of chlorine, boiling of water and treatment with alum. Other studies^{12,13} have shown that boiling is one of the most effective ways of treating water before drinking.

There is a high level of awareness of water treatment among the people from this study. The practice of handwashing was also good, as 92.9% maintained the habit of washing their hands regularly. This indicated that the level of awareness on

hygiene is appreciable, though educating the people on good hand washing techniques and the critical times for hand washing is very essential. The symptoms exhibited by the respondents from sickness due to drinking water ranged from stool, stomach disorders to vomiting. A study¹⁴ reported good reduction in diarrhea episodes as a result of hand washing. More emphasis needs to be given to the promotion of good hygiene practices, particularly amongst children and child care givers.

In conclusion, this study showed some improvement in water supply and hand washing among the households. However, sanitation and hygiene is still a major challenge as open defecation and indiscriminate dumping of solid waste are still common. Continuous sensitization of the people toward proper disposal of household waste, promotion of good hygiene practices, such as hand-washing with soap and water, treatment of drinking water and participation in monthly clean up exercise was recommended.

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TABLES

Table 1: Characteristics of the Respondents

Age	Frequency	%
Below 25 years	203	45.1
25 – 34 years	115	25.6
35 – 44 years	85	18.9
45 years and above	47	10.4
Sex		
Male	264	58.7
Female	186	41.3
Educational Background		
Primary	11	2.4
Secondary	214	47.6
Tertiary	219	48.7
Others	6	1.3
Marital Status		
Single	258	57.3

Married	172	38.2
Divorced	11	2.4
Widowed	9	2.0
Occupation		
Student	213	47.3
Civil servant	122	27.1
Professional	33	7.3
Self employed	30	6.7
Business man	11	2.4
Farmer	2	0.4
Trader	26	5.8
House wife	5	1.1
Unemployed	8	1.8

Table 2: Conditions of drinking water

Source of drinking water supply	Frequency	%
Tap water	90	20.0
Borehole	119	26.4
Well	221	49.1
Water vendor	18	4.0
Others	2	0.4
Method for treating drinking water		
Boiling	71	28.0
Add alum and filter through cloth	51	20.1
Add bleach or chlorine	85	33.5
Use candle filter	12	4.7
Solar disinfection	8	3.1
Let it stand and settle	27	10.6
Don't treat water before drinking	196	43.6
Storage container for drinking water		
Narrow-mouthed containers	50	12.7
Wide-mouthed containers	253	64.4
Underground concrete tank	10	2.5
Gee-pee tank	80	20.4
Cleaning of water container		
Daily	69	17.6
After 2 days	88	22.4
Weekly	178	45.3
Monthly	58	14.8

Table 3: Conditions of toilet facilities

Type of toilet facility in households	Frequency	%
Flush/pour flush into septic tank	303	67.3
Ventilated improved pit latrine	72	16.0
Pit latrine with slab	47	10.4
Pit latrine without slab	13	2.9
Hanging toilet/latrine	1	0.2

No toilet/bush defecation	8	1.8
Others	6	1.3
Sharing of toilet with other households		
Yes	276	61.3
No	174	38.7
Cleanliness of toilet		
Yes	382	84.9
No	41	9.1
Don't know	27	6.0
Problems caused by toilet facilities		
Leaking sewage around the house	15	13.0
Leaking sewage into neighbor's premises	14	12.2
Foul odor	51	44.3
High cost of evacuation	33	28.7
Don't know	2	1.7
Toilet facility don't cause any problem	335	74.4
Closeness of water supply to toilet		
Yes	42	9.3
No	408	90.7

Table 4: Hand washing practices in the households

Households that practice hand washing	Frequency	%
Yes	418	92.9
No	32	7.1
Period of hand washing		
After using the toilet	156	37.3
After handling dirty materials	80	19.1
Before eating	182	43.5
Materials use for hand washing		
Clean water only	108	25.8
Clean water and plain soap	108	25.8
Clean water and medicated soap	117	28.0
Clean water with detergent	50	12.0
Clean water and liquid soap	35	8.4

Table 5: Sickness from water usage

History of sickness from water usage	Frequency	%
Yes	143	31.8
No	307	68.2
Type of symptoms experienced		
Stomach pain or disorder	41	28.7
Fever	41	28.7
Stooling	44	30.8
Stooling and vomiting	17	11.9