Prevalence of Water-Borne Diseases among Farmers of Igboroko Farm Settlement in Ikole Local Government Area, Ekiti State

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Abstract

This study evaluated the prevalence of water borne diseases among farmers of Igboroko farm settlement in Ikole local government area of Ekiti State. The problem of attaining safe and clean water and high prevalence of water borne diseases has not been clearly understood. The study adopted a descriptive research method. Sampling techniques were used to select 100 people in the settlement. Data collected were analyzed using simple frequency count and percentage while the hypothesis was analysed using Pearson Product Moment Correlation. Findings show that there is water- borne diseases among farmers of the settlement. It also shows that well, borehole, sachet of water, and rain water are sources of water supply in the farm. It was recommended that health officers of the Local government should embark on public enlightenment campaigns on the health implications of waterborne diseases, while effort should be made by appropriate authorities to conduct quality assessment of water sources from time to time in order to ensure safe drinking water of good quality is available to the residents

Keyword: Farm, Water, Diseases, Settlement.

Introduction

Water is a major component of the environment and therefore, is the most indispensable natural resource to life and maintenance of health (Olajuyigbe, 2010). Drinking water containing pathogenic micro-organisms which can cause water-borne diseases must be avoided. According to the World Health Organization (2015), the mortality rate associated with water borne diseases was more than 5 million people a year. Waterborne diseases are very rampant especially in sub Saharan African due to lack of access to clear water and poor sanitation. Waterborne or water related diseases encompass illnesses resulting from both direct and indirect exposure to water, whether by consumption or by skin exposure during bathing or recreational water use. It includes diseases due to water-

associated pathogens and toxic substances. A broader definition includes illness related to water contamination during adverse climate events, such as floods and disease related to vectors with part of life cycle in water habitats (Olaopa, 2010).

Waterborne diseases are those diseases that are transmitted through direct drinking of water contaminated with pathogenic micro-organisms. Contaminated water when used in preparation of food can be the source of food borne disease through consumption of the same micro-organisms. Most waterborne disease is characterized by diarrhoea, which involve excessive stooling, often resulting in dehydration and possibly death. According to the World Health Organisation (2015), diarrheal disease accounts for the deaths of 1.8million people every year. Further estimates suggest that 88%of that burden is attributable to unsafe water supply, sanitation and hygiene and is mostly concentrated on children in developing countries (Aribisala, 2011).

Most waterborne diseases are often transmitted via the faecal-oral route, and this occurs when human faecal material is ingested through drinking contaminated water or eating contaminated food which mainly arises from poor sewage management and improper sanitation. Faecal pollution of drinking water may be sporadic and the degree of faecal contamination may be low or fluctuate widely (Emmanuel, 2012). In communities where contamination levels are high, consumers (especially the visitors, the very young, the old and those suffering from immunodeficiency-related diseases) may be at a significant risk of infection. In Igboroko farm settlement, faecal contamination of water arises from runoffs from nearby bushes and forest which serve as defecation sites for them. Waterborne disease can be caused by protozoa, viruses, bacteria, and intestinal parasites. Some of the organisms remarkable for their role in the outbreak of waterborne diseases include Cholera, Amoebic dysentery, Bacillary dysentery (shigellosis), Cryptosporidiosis, Typhoid, Giardiasis, Paratyphoid, Balantidiasis, Salmonellosis, Campylobacter enteritis, Rotaviviours diarrhoea, E.coli, Diarrhoea, Hepatitis A, Leptospirosis and Poliomyelitis (Raji, 2010).

In Nigeria, contaminations of water with pathogens have also been reported in several towns (Bai,2007).Waterborne outbreaks of enteric disease have occurred either when public drinking water supplies were not adequately treated after contamination with surface waters contaminated with enteric pathogens have been used for recreation purpose (Emmanuel, 2012). Today only 58% of

Nigerians have access to safe water (WHO, 2015). Thus, most households have resort to drinking water from wells and streams especially in the rural and suburban communities. These water sources are largely untreated and might harbour waterborne and vector-borne pathogens causing diseases such as cholera, typhoid fever, diarrhoea, hepatitis and guinea worm (Oguntoke, 2019). Considering that drinking water should not contain unacceptable levels of hazardous chemicals and infectious risk to the health of consumers, it is essential to ensure the provision of safe and clean water. Evaluation of microbial quality of drinking water can protect consumers from illness transmitted due to the consumption of water containing pathogens such as bacteria, viruses, and protozoa. It can prevent the waterborne diseases outbreak that is one of the most important global health challenges (Rahman, 2001).

The prevalence of water-borne diseases is particularly linked to the dearth of potable water in most parts of the developing countries. Raji (2010) opined that diarrhoeal diseases are largely caused by unsafe water, inadequate sanitation and poor hygiene among human population. Potable water in most cities and communities is grossly inadequate to meet the increasing demands for water each year due to rapid population growth. Available statistics indicate that the inhabitants of Ibadan Metropolis in Nigeria suffer mainly from diarrhoea, gastro-enteritis, malaria, measles, tuberculosis, cholera and typhoid fever, in that order (Iyunade, 2014).

In rural areas, there are no proper water supply and sewerage systems so water contamination can be attributed to infiltration, leaching, and surface run-off through pasture, lacking and leakage of sewerage disposal systems in villages (Aribisala 2011). Poor water quality is responsible for disease outbreak in many parts of the villages. In order to reduce the diseases outbreaks, there must be some interventions where there is the need to provide drinking water systems according to water quality standards which will reduced diseases,(Ajayi 2011). Water and sanitation management practices can decrease diarrhoea incidence by one-third to one-fourth.

The usual sources of drinking water in Ikole-Ekiti include well, borehole, spring and stream water is an important water source in both rural and urban areas of Ikole-Ekiti. Government, non-governmental agencies, and individuals are involved in sinking boreholes and wells to provide water for communities, companies and their families due to the rapid urbanization of the state. The risk of ground water being contaminated increases particularly in areas where shallow aquifers

exist and in an environment where the topographic features favour contamination (Bai, 2007).

The link between the problem of attaining safe and clean water and high incidence of water borne diseases has not been clearly understood. This is a serious problem that affects people world over, but those living in rural areas are especially the most impacted. It was observed that water borne diseases are endemic in most rural areas, where most of the victims are brought to the hospital for treatment and care.

In as much as the environmental factor, quality of water and prevalence of waterborne disease especially diarrhoea disease are associated with the supply of contaminated water and or lack of water for domestic use (including personal hygiene), this study was conducted to evaluate the prevalence of water borne diseases among farmers of Igboroko farm settlement in Ikole local government area of Ekiti State.

The link between the problem of attaining safe and clean water and high prevalence of water borne diseases has not been clearly understood. This is a serious problem that affects farmers in Igboroko farm settlement. It was observed that water borne diseases are endemic in most rural areas, where most of the victims are brought to the hospital for treatment and care. Based on this background, the study investigated the prevalence of water borne diseases among farmers of Igboroko farm settlement in Ikole Local Government area of Ekiti State.

Research Questions

1. What are the main sources of water supply among farmers of Igboroko farm settlement in Ikole Local Government area of Ekiti State?
2. What are the common types of water borne diseases among farmers of Igboroko farm settlement in Ikole Local Government area of Ekiti State?
3. What are the effects of non-availability of drinkable water among farmers of Igboroko farm settlement of Ikole Local Government area of Ekiti State?

Methodology

Research Design

The design adopted for this study is descriptive design of the survey type, which was considered appropriate for the study because it evaluates the prevalence of water borne diseases among farmers of Igboroko farm settlement in Ikole local government area of Ekiti State and described it without any manipulation. The population for this study consists of all the residence of the farm settlement. The sample for this study

consists of Igboroko farm settlement, in order to carry out the research, simple random sampling techniques was used to select 100 people in the settlement. A self developed instrument was used for the study. It is divided into two sections. Section A contains personal information of the respondents while section B contains items on sources, types and effects of drinking polluted water. The instrument was administered personally by distributing it to the selected people in the study area. The copies of the questionnaire were retrieved immediately from the respondents after completion. Data collected were analyzed using simple frequency counts and percentages while the hypothesis was analysed using correlation.

Results

Table 1: Socio-demographic Characteristics of respondents

Age groups in years:	Frequency	Distribution (%)
16 – 20	1	1.0
21 – 25	53	53.0
26 – 30	15	15.0
31 &above	31	31.0
Sex:		
Male	48	48.0
Female	52	52.0
Religion:		
Christianity	49	49.0
Islam	43	43.0
Traditional	8	8.0
Marital status:		
Single	62	62.0
Engaged	19	19.0
Married	11	11.0
Single parent	8	8.0

The socio-demographic characteristics of the respondents were shown in Table 1. The table shows that more than half of the residents of the Igboroko farm settlement (52.0%) are females, more than half of the residents are between 21-25 years of age (53.0%). Christians (49.0%) constitute the highest

religious denomination, while majority of the residents are single in terms of marital status (62.0%).

Research Question 1

What are the main sources of water supply in Igboroko farm settlement in Ikole L.G.A?

Table 2: Distribution of respondents by sources of water

SOURCES OF WATER	FREQUENCY(*f*)	PERCENTAGE (%)
Well	36	36.0
River	20	20.0
Stream	9	9.0
Sachet water	2	9.0
Rain	33	33.0
Total	100	100.0

The distribution of respondents by sources of water were shown in Table 2. The table shows that well (36.0%) is the most frequently used source of water in the settlement, followed by rain water (33.0%) and river water (20.0%) respectively. The least sources of water are sachet water (9.0%) and stream water (9.0%) respectively.

Research Question 2

What are the activities surrounding sources of water in Igboroko farm settlement in Ikole L.G.A?

Table 3: Activities surrounding sources of water in Igboroko farm settlement

Activities surrounding water	Frequency	Percentage
Poultry	37	37.0
Farming	42	42.0
Piggery	5	5.0
Others	16	16.0

Activities surrounding water were shown in Table 3 The table shows that farming (42.0%) constitute the highest activity surrounding water sources in the settlement, followed by poultry (37.0%) while piggery (5.0%) was the least activity surrounding water in the settlement.

Research Question 3

What are the common types of water borne diseases in Igboroko farm settlement in Ikole L.G.A?

Table 4: Common types of waterborne diseases in Igboroko farm settlement

Common types of waterborne diseases:	**frequency**	**percentage**
Cholera	31	31.0
Typhoid	38	38.0
Infectious hepatitis	12	12.0
Giardiasis	9	9.0
Amoebiasis	10	10.0

Common types of waterborne diseases were shown in Table 4. The table shows that Typhoid fever (38.0%) is the most common waterborne disease in the settlement closely followed by Cholera (31.0%), with Giadiasis (9.0%) being the least common waterborne disease in the settlement.

Discussion

Findings of the study revealed that typhoid fever and cholera diseases are common among the respondents in Igboroko farm settlement. It also shows that well, tap, borehole, sachet of water, bottle and rain water are not common sources of drinking water in the settlement while the activities of the water sources are around poultry and farm. More so, findings also revealed a correlation of water borne diseases among residence of Igboroko farm settlement in Ikole local government areas of Ekiti State. It shows that the null hypothesis which stated that there is no significant effect of water borne diseases among residence of the farm settlement was rejected. This implies that there are water borne diseases among residence of Igboroko farm settlement in Ikole local government areas. This corroborated (Olaopa, 2010) and Olajuyigbe, (2010) who stated that in developing countries, particularly in Nigeria, the two main water problems man contends with are the quantity and quality of water. This is also in line with Bai,2007 and Iyunade, 2014, that many rivers, streams and wells worldwide are affected by faecal contamination leading to increased health risks to persons exposed to the water, degradation of recreational and drinking water quality. The contamination of the two popular sources of water indicate that most residents are at risk of water- borne diseases. The water quality result agrees with the hospital data that show a preponderance of waterborne diseases in the study area.

Conclusion

The finding in this study points to the fact that the prevalence of waterborne disease is linked up with the quality of drinking water sources available among residence of Igboroko farm settlement in Ikole local government area of Ekiti State. It was observed that most of the reported cases of water borne diseases were due to environmental sanitation, indiscriminate waste disposal, effect of age-long communal crisis, low topography and swamps that led to typhoid, water hardness and cholera of the

well and borehole water in the study area. It was observed that effects of lack of drinkable water in the farm settlement was compounded by lack of good road which could have encourage water supply either by well to do individuals or agencies like Rural Water Supply and Sanitation Agencies (RWSSA) which its primary objective is to assist rural dwellers in provision of good water.

During the course of this study, it was observed that political instability, lack of internal security, language barriers, kidnapping and ritual killings were few other challenges that the settler faced. It was also noted that the health centre located in the farm lacks qualified health personnel, lack of drugs and consumables that can be used to attend to simple emergencies like diarrhoea and vomiting which was observed to be the commonest ailment in the farm.

Recommendations

Based on the findings, the following recommendations were made:

1. The government needs to make water available to rural dwellers by drilling solar powered boreholes for the use of the residents.
2. Efforts should be made by appropriate authorities to conduct quality assessment of water sources from time to time in order to ensure that safe drinking water of good quality is available to everyone.
3. Individual member of the community should ensure and maintain good hygienic condition around their water sources.
4. Water sanitation officers should embark on public enlightenment campaigns on the health implications of indiscriminate waste disposal and poor personal hygiene.
5. Non-governmental organizations can be encouraged to dig borehole for the use of farmers in the settlement.
6. Agency like Rural Water Supply and Sanitation Agencies (RWSSA) which its primary objective is to assist rural dwellers in provision of good water should be contacted in providing solar powered borehole for the community.

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