International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

Assessing Awareness and Challenges of Water, Sanitation, and Hygiene (WASH) Practices among Rural Dwellers in Ibadan, Nigeria

Mustapha B. M.
Environmental Health Officer, Tutors Course, University College Hospital, Ibadan,
kennybukolamustaper@yahoo.com

Arulogun O.
Health Promotion and Education, University of Ibadan, Ibadan
oyedunniarulogun@gmail.com

Mustapha A. H.
Department of Earth Sciences, Ladoke Akintola University of Technology, Ogbomoso

Akinsolu F.
Aduroja P.
Ajayi F.
Public Health Department, Lead City University, Ibadan, Oyo State

ABSTRACT

This study examines the awareness levels and obstacles related to Water, Sanitation, and Hygiene (WASH) practices among rural residents in four Local Government Areas of Ibadan, Nigeria (Lagelu, Akinyele, Egbeda, and Ido). Employing a mixed-methods design, the study surveyed 600 participants to explore their socio-demographic profiles, water sources, sanitation infrastructure, and hygiene behaviours. Results indicate that wells serve as the primary drinking water source for 65% of households, while 41.2% of respondents resort to open defaecation due to inadequate sanitation facilities. Although 93.7% of participants engage in WASH practices, primarily focusing on personal hygiene, 57.7% encounter significant challenges, such as water scarcity (60.7%), limited financial resources, and absent toilet facilities. Seasonal variations in water availability and minimal water treatment practices further compound these issues. Despite widespread recognition of WASH's role in promoting health, deficiencies in infrastructure and education persist. The study advocates for community-driven advocacy, public awareness campaigns, and training programs on water treatment to improve WASH conditions and mitigate waterborne disease risks in these rural areas.

Keywords: *Water, Sanitation and Hygiene (WASH), Sources of water, Open defaecation*

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

INTRODUCTION

Water is a basic natural resource that is essential for the daily functions of both plants and animals. However, the availability of safe and accessible water remains a critical public health concern, particularly in the context of its use for drinking, sanitation, food production, and recreational activities (WHO, 2023). Enhancements in water supply, sanitation systems, and the management of water resources have the potential to significantly accelerate economic growth in many countries and play a pivotal role in poverty alleviation. Furthermore, access to water is universally recognized as a basic human right. In 2010, the United Nations General Assembly formally acknowledged the human right to water and sanitation, affirming that every individual is entitled to sufficient, continuous, safe, acceptable, physically accessible, and affordable water for personal and domestic use (Charles, 2017).

Poor access to a good quality water supply and inadequate hygiene practices can lead to the spread of preventable diseases. According to WHO/UNICEF (2017), 780 million people around the world do not have access to safe water, and 2.5 billion people cannot access the sanitation services they need. Inadequate water, sanitation and hygiene (WASH) remain critical problems in many parts of the world. About 2 billion people do not have access to water that can be readily available for home use, and which can be free from contamination, with 263 million people who spend more than 30 minutes per trip to collect water from external sources. Also, 159 million people drink untreated water from sources such as streams or lakes (CDC, 2022. At the same time, over one third of the world's population lacks basic sanitation such as facilities for the safe disposal of human excreta and only 19% usually wash their hands with soap and water after defaecation (Abdiwahab et al., 20107).

Statement of the problem

The global community faces a critical WASH crisis, particularly in developing regions. Nearly half of the population in these countries, approximately 2.5 billion people, lack access to improved sanitation facilities, while over 884 million rely on unsafe drinking water sources. This dire situation results in thousands of preventable child deaths and illnesses each day, perpetuating cycles of poverty and limiting socio-economic opportunities (UNICEF and WHO, 2023).

The deficiency in WASH services disproportionately affects the most vulnerable. Girls are frequently denied a safe and dignified learning environment because schools often lack proper sanitation facilities, while women invest countless hours collecting water instead of engaging in education or income-generating activities. This imbalance hinders gender equality and broader community development (World Bank Group, 2023; UNICEF, 2024).

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

Waterborne diseases such as diarrhoea, cholera, and malnutrition remain among the most devastating consequences of poor WASH conditions. With an estimated 700,000 children succumbing annually to diarrhoea-related illnesses, the impact on child health and long-term development is profound. Recurrent episodes of chronic diarrhoea stunt both physical growth and cognitive progress, further reinforcing the cycle of poverty and ill-health (WHO, 2023; Hmwe Hmwe Kyu et al., 2024).

Research questions

1. What is the level of awareness of rural dwellers in Ibadan on Water, Sanitation and Hygiene (WASH)?
2. What are the problems faced by the rural dwellers in the Ibadan area towards the practice of WASH?

Literature Review

Safe drinking water, adequate sanitation, and good hygiene (WASH) are very important factors in improving the standards of living of people in a nation. Improved standards of living can be measured by better physical health, protection of the environment, better educational outcomes, time savings, assurance of lives lived with dignity, and equal treatment for both men and women. In populations where people have poor Water supply, Sanitation and Hygiene (WASH) services, their health will be affected by poor socio-economic behaviours. Improved WASH is therefore central to reducing poverty, promoting equality, and supporting socioeconomic development and thereby helps to create healthful living (WHO, 2025).

Provision of safe water, with adequate sanitation and effective hygiene behaviour, will reduce illness and death, leading to improved health, poverty reduction, and socio-economic development globally. But this is not possible in many countries; the majority have challenges to provide these basic needs to their populations, leaving people at risk of poor water, sanitation, and hygiene (WASH)-related diseases (CDC, 2024). Access to WASH services is a human right, other than a privilege, for men, women, and children. Even though the WHO is making progress to provide safe drinking water and sanitation to people throughout the world, many people still lack access to these services daily (WHO and UNICEF, 2021).

According to WHO/UNICEF, about 21% of the world's population lacks basic sanitation, which accounts for an estimated number of 1.7 billion people. Sanitation, which is a way of life for people, is paramount for human existence. Basic sanitation can be defined as having access to facilities for safe disposal of human waste (faeces and urine), as well as having the ability to maintain hygienic conditions, through services such as garbage collection, industrial and hazardous waste management, and wastewater treatment and disposal. Centre for Disease Control (2021) affirms that 2.3 billion people which account for 29% of the world population lack access to basic hygiene, including hand washing

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

station with soap and water at home. Sanitation facility is globally described as one that hygienically separates excreta from human contact (World Bank Group, 2025). These facilities can be categorized into flush toilet, piped sewer system, septic tank, flush/pour flush to pit latrine, ventilated improved pit latrine, pit latrine with slab and a composting toilet. All these methods of disposal are safe to varying degrees because they limit excreta handling. World Health Organisation (2019) estimated that effective sewer connections provide an estimated 69% reduction in diarrhoeal disease compared to an estimated 16% reduction from improved sanitation without sewer connections

WASH situation in Nigeria is very poor, as there is no good access to clean water for use of the people. In November 2018, the Nigerian President declared a state of emergency in the Water, Sanitation, and Hygiene (WASH) sector, demonstrating political will at the highest level of government, and launched a national campaign tagged ***'Clean Nigeria: Use the Toilet'*** **(**WHO **)**. Sokoto and Kebbi states have the lowest levels of access to basic water services at 38 percent and 39 percent, respectively. Access to basic sanitation is also low in Kebbi, Zamfara and Sokoto at 35 per cent, 38 percent, and 41 per cent, respectively. Only five percent of people in Sokoto and one percent in Kebbi have access to safely managed water services (PUNCH, 2021).

This shortage of clean water supply, toilets, and hand washing facilities in households across Nigeria is a great challenge to individuals, the community, and the nation at large. This has been a major cause of diarrheal morbidity and mortality in Nigeria and is associated with at least 70,000 deaths in children under five each year (UNICEF, 2021). 1 out of 4 children below five years of age exhibits severe stunting, while 1 out of 10 of them is wasted, due to frequent uncontrollable diarrhoea disease and other Water, Sanitation, and Hygiene (WASH) related diseases (UNICEF, 2022).

Today, hundreds of millions of people do not have access to improved sources of drinking water, leaving them at risk for water, sanitation and hygiene (WASH) related diseases. Worldwide in 2015, 500,000 children died from diarrheal illnesses, most of which are caused by unsafe water, poor sanitation, and inadequate hygiene (UNICEF and WHO, 2021). Devastating epidemics of cholera, such as the epidemics that have swept through Africa, causing more than 71,176 cases of illness and 937 deaths in 2015 alone, are only the "tip of the iceberg," as most waterborne diseases, illnesses, and deaths are never reported (UNICEF, 2021).

The poor access to water supply is a prevalent issue in over 850 million people worldwide, with over 2.5 billion limited by access to sanitation facilities. The global burden of disease and mortality rates could be reduced by about 9.1% and 6.3%, respectively, if rapid success is attained in facilitating access to water, sanitation, and hygiene facilities (UNICEF and WHO, 2021). A large proportion of these diseases are related to diarrhoea incidences, which contribute to the mortality rate of about 1.9 million and new diarrhoea cases estimated at 4 billion annually, especially among children under five years old.

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

The consequences of inadequate water, sanitation, and hygiene (WASH) are far-reaching, impacting health, hindering economic and social development, and posing a significant barrier to poverty reduction. Many communicable diseases can be effectively controlled through the adoption of improved WASH practices. Implementing three key interventions, safe disposal of faeces, hand washing with soap at critical times, and safe treatment and storage of drinking water, has been shown to significantly reduce the prevalence of waterborne diseases. Specifically, hand washing with soap can reduce disease incidence by up to 40%, safe faeces disposal by 30%, and proper water treatment and storage by 30–50% (UNICEF and WHO, 2022).

Poor access to improved water and sanitation facilities remains a significant contributor to the high morbidity and mortality rates among children under five in Nigeria. The consumption of contaminated water and exposure to unsanitary conditions heighten the risk of waterborne diseases, particularly diarrhoea, which is responsible for the deaths of over 70,000 children under five each year. Approximately 73% of the diarrhoeal and enteric disease burden is linked to inadequate water, sanitation, and hygiene (WASH), with the poorest children disproportionately affected. Frequent WASH-related illnesses not only increase vulnerability to malnutrition but also lead to prolonged school absenteeism. Despite the critical importance of safe WASH access, only 26.5% of the population in Nigeria uses improved drinking water sources and sanitation facilities, while 23.5% still practice open defaecation (UNICEF, 2021).

Prüss-Ustün (2019) affirms that some 829,000 people are estimated to die each year from diarrhoea because of unsafe drinking-water, sanitation and hand hygiene. Yet, diarrhoea is largely preventable, and the deaths of 297,000 children aged under 5 years could be avoided each year if these risk factors were addressed. Where water is not readily available, people may decide hand washing is not a priority, thereby adding to the likelihood of diarrhoea and other diseases (Prüss-Ustün et al., 2019).

Methodology

The study employed a series of methods in its conduct for effective intervention on Water, Sanitation and Hygiene (WASH). The work assesses the impacts of intervention on behavioural change of the participants, which leads to safety practices in water collection and storage, behavioural health and appropriate methods of sanitation and hygiene practices at the household level. Mixed-methods of approach were used, incorporating both quantitative and qualitative data from a sample of rural dwellers divided into intervention and control groups.

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

Analysis and Discussion of Findings

Table 0.1a: Socio-Demographic Characteristics of the respondents in the four LGAs (Source: Baseline Fieldwork)

Socio-Demographic Characteristics	Freq.	Percentage
Age of respondents		
Less than 21 years old	110	18.3
21-40 years old	265	44.2
41-60 years old	158	26.3
Older than 80 years	65	10.8
Undisclosed	2	0.3
Sex		
Male	224	37.3
Female	376	62.7
Religion		
Christianity	313	52.2
Islam	280	46.6
Traditional religion	7	1.2
Ethnic group		
Yoruba	551	91.8
Igede/Egede	23	3.8
Hausa	10	1.7
Others	16	2.7
Marital Status		
Single	169	28.2
Married	380	63.3
Widowed	46	7.7
Divorced	4	0.7
Unresponsive	1	0.1
Highest level of Education		
None	77	12.8
Primary	114	19.0
Secondary	329	54.8
Tertiary	72	12.0
Arabic	2	0.3
Undisclosed	6	1.0

Source: 2022 fieldwork report

The table above revealed that 18.3% of the respondents were younger than 21 years of age, 44.2% of them were between 21 and 40 years of age, 26.3% of them were between 41 and 60 years of age, 10.8% of them were older than 80 years, while 0.3% of them could not disclose their age. It means that the majority of the respondents were between 21 and 40 years of age. Also, 37.3% were males, while 62.7 were females, which shows that females contributed mostly to the work.

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

From the table, 52.2% of the respondents were Christians, 46.6% of them were Muslims, while 1.2% of them were Traditionalists. In conclusion, the majority of the respondents practice Christianity. 91.8% of the respondents were Yorubas, 1.7% of them were Hausa, 3.8% of them were Igede or Egede, 2.7% of them were from other tribes, including Tiv, Igbo, and some non-Nigerians.

From table 4.1, 28.2% of the respondents were single, 63.3% of them were married, 7.7% of them were widowed, and 0.7% of them were divorced, while 0.1% of them did not respond. It can be concluded that majority of the respondents were married. The table above also revealed that 12.8% of the respondents had no formal education, 19.0% of them had only a primary level of education, 54.8% had only a secondary level of education, 12.0% of them had only a tertiary level of education, 0.3% of them had an Arabic education, while 1.0% of them did not respond.

Table 0.2b: Socio-Demographic Characteristics of the respondents in the four LGAs

Socio-Demographic Characteristics	Freq.	Percentage
Occupation		
Trading	197	32.8
Artisan	149	24.8
Farming	91	15.1
Apprentice	51	8.6
Student	34	5.8
Civil Servant	27	4.5
Food seller	24	4.1
Clergy	10	1.7
Retired	7	1.2
Farming and Artisan	4	0.6
Housewife	2	0.3
No response	2	0.3
Contractor	1	0.1
Apprentice and Student	1	0.1
Type of family		
Nuclear family	427	71.1
Extended family	169	28.2
No response	4	0.7
Size of Household		
1-4 people	187	31.1
5-9 people	317	52.8
10-14 people	66	11.0
More than 14 people	25	4.2
No response	5	0.9

Source: Baseline Fieldwork Report, 2022.

Furthermore, the table above revealed that 32.8% of them were traders, 24.8% of them were artisans, 15.1% of the respondents were farmers while 4.5% of them were civil servants,

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

4.1% of them were food sellers, 0.3% of them were housewives, and 8.6% of them were students. Another type of occupation was reflected in the table above.

From Table 4.1b, 71.1% of the respondents are nuclear families, 28.2% of them are extended families, while 0.7% of them did not respond. It implies that the majority of the respondents belonged to nuclear families. The table also revealed that 31.1% of the respondents had between 1 and 4 people in their households, 52.8% of them had between 5 and 9 people in their households, 11% of them had between 10 and 14 people in their households, 4.2% of them had more than 14 people in their households, while 0.9% of them did not respond.

Table 1a: Water usage and water hygiene in households

Water for household use	Freq.	Percentage
Source of Drinking Water		
Well	283	47.2
Borehole	148	24.7
Well and rain	64	10.7
Stream	28	4.7
Borehole and rain	20	3.3
Well and borehole	19	3.2
Borehole and Stream	15	2.5
Packaged water	7	1.2
Rain	6	1.0
Borehole and Pure water	4	0.7
Pipe	2	0.3
Rain and Pure water	2	0.3
Undisclosed	1	0.2
Closest source of drinking water		
Well	390	65.0
Borehole	163	27.2
Stream	37	6.2
Well and Borehole	6	1.0
Pipe	3	0.5
Undisclosed	1	0.2
Water source for other domestic purposes		
Stream/Spring	66	11.0
Aquifer	515	85.8
Pond	6	1.0
Stream and Borehole	4	0.7
Borehole, Stream, and Rain	2	0.3
Borehole and Rain	2	0.3
Well and Rain	4	0.7
Undisclosed	1	0.2

Source: 2022 fieldwork report

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

From the table 1a above, 47.2% of the respondents drink well water, 24.7% of them drink borehole water, 4.7% of them drink stream water, 1.0% of them drink rain water, 1.2% of them drink packaged water (pure water and/or bottled water), 3.2% of them drink well and borehole water, 10.7% of them drink both well and rain water, 3.3% of them drink borehole and rain water, 0.7% of them drink borehole and packaged water, 2.5% of them drink rain and pure water, while 0.2% of them did not disclose the source of drinking water.

It was also revealed from the above table that 65.0% of the respondents said that Well is the closest source of water to their households, 0.4% of them said that Pipe (installation) is the closest source of water to their households, 27.2% of them said that Borehole is the closest source of water to their households, 6.2% of them said that stream is the closest source of water to their households, 1.0% of them said that both Well and Borehole are the closest sources of water to their households, while 0.1% of them did not respond. It can be concluded that well water is the closest source of water to many households in the study area.

From the table above, 11% of the respondents use water from stream for other domestic purposes apart from drinking, 85.8% of the respondents use water from Aquifer (water from wells and boreholes) for other domestic purposes apart from drinking, 1% of them use water from pond for other domestic purposes apart from drinking, 0.7% of them use water from borehole and stream for other domestic purposes apart from drinking, 0.3% of them use water from borehole, stream, and rain for other domestic purposes apart from drinking, 0.3% of them use water from borehole and rain for other domestic purposes apart from drinking, 0.7% of them use water from well and rain for other domestic purposes apart from drinking, while 0.2% of them did not respond. It means that the majority of the respondents use water from the Aquifer (Well and Borehole) for other domestic purposes apart from drinking.

Table 1b: Water usage and water hygiene in households in the four LGAs

Water for household use	Freq.	Percentage
Required time to get water		
Less than 15 minutes	429	71.5
More than 20 minutes	118	19.7
Do not know	28	4.7
No response	25	4.2
Seasonality		
Water fluctuate seasonally	323	53.8
Does not fluctuate seasonally	256	42.7
Do not know	4	0.7
No response	17	2.8
Drinking Water Treatment		
Boiling	39	6.5
Chlorination	83	13.8
Addition of Alum	142	23.7

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

Sieving	37	6.2
I don't treat my drinking water	274	45.7
Salt	6	1.0
Water guard	2	0.3
Others	16	2.7
No respon**se**	1	0.2

Source: 2022 fieldwork report

From Table 1b above, 71.5% of the respondents said that fetching water for domestic purposes takes less than 15 minutes, 19.7% of them said that fetching water for domestic uses takes more than 20 minutes, 4.7% of them did not know, while 4.2% of them did not respond. It means that it takes the majority of the respondents less than 15 minutes to get water in the study area. The table revealed that 53.8% of the respondents said that their water source fluctuates seasonally, 42.7% of them said that their water source does not fluctuate seasonally, 0.7% of them did not know, and 2.8% of them did not respond. This implies that the source of water fluctuates seasonally in areas of most areas of the respondents.

The table above showed that 6.5% of the respondents boil their drinking water, 13.8% of them chlorinate their drinking water, 23.7% of them add alum to their drinking water, 6.2% of them sieve their drinking water, 45.7% of them do not treat their drinking water, 1% of them add salt to their drinking water, 0.3% of them add water guards to their drinking water, 2.7% of them use other methods or a combination of the methods, while 0.2% of them did not respond. This means that the majority of the respondents do not treat their drinking water. The majority of the respondents who treat their drinking water do so by chlorinating the water source. Other drinking water treatment employed in the study area includes one or a combination of boiling, addition of salt, addition of coagulants (e.g., alum), addition of water guard, and sieving. It can be concluded that the majority of the respondents do not treat their water before drinking.

Table 2: Excreta facility usage and hygiene in households in the four LGAs

Excreta facility for household use	**Freq.**	**Percentage**
Usage of Excreta Facility		
Water Closet	198	33.0
Pit latrine	110	18.3
Pour flush	45	7.5
Open field defaecation	247	41.2
Reason		
Cheap	43	7.2
Easy to maintain	246	41.0
Cannot afford to build a better one	303	50.5
Toilet under construction	5	0.8
Illiteracy (lack of knowledge)	2	0.3
No response	1	0.2

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

Excreta facility sharing		
Share excreta facility with	323	53.8
<5 households	*21*	*6.5*
5 – 10 households	*30*	*9.3*
>10 households	*231*	*71.5*
Do not know	*2*	*0.6*
No response	*39*	*12.1*
Do not share excreta facility	264	44.0
Do not know	2	0.3
No response	11	1.8
Accessibility to Public		
Accessible to the Public	256	42.7
Not accessible to the Public	297	49.5
Do not know	4	0.7
No response	43	7.2
Willingness to change		
Willing to change	236	95.6
Unwilling to change	3	1.2
No response	8	3.2
Wash time of excreta facility		
On a daily basis	232	38.7
Every other day	58	9.6
Weekly	45	7.5
No response	12	2.2
Twice a week	3	0.5
Three times a day	1	0.2
Twice a day	1	0.2
After use	1	0.2
Does not have toilet	247	41.1

Source: 2022 fieldwork report

From table 2, 33% of the respondents use water closet, 18.3% of them use pit latrine, 7.5% of them use pour flush, while 41.2% of them use open field defaecation. This means that the majority of the respondents did not have an excreta facility in their houses.

The table above revealed that 7.2% of the respondents chose their excreta facility because it is cheap to build, 41.0% of them chose their excreta facility because it is easy to maintain, 50.5% of them chose their excreta facility because they could not afford to build a better excreta facility, 0.8% of them chose their excreta facility they have a better excreta facility under construction, 0.3% of them believed that illiteracy (lack of knowledge) was responsible for the choice of excreta facility used in their household, while 0.2% of them did not respond. In conclusion, the inability of residents to build a better excreta facility is responsible for the choice of toilet for the households in the study area.

From the table also, 53.8% of the respondents share their excreta facility with other households out of which 6.5% share their excreta facility with lesser than 5 households,

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

9.3% share their facility with 5 to 10 households, 71.5% of them share their excreta facility with more than 10 households, 0.6% did not know, while 12.1% did not respond. However, 44.0% of the respondents do not share their excreta facility with other households, 0.3% of them did not know, and 1.8% of them did not respond. The table above revealed that 42.7% of the respondents said that members of the public had free access to their excreta facility, 49.5% of them said that members of the public did not have access to their excreta facility, 0.7% of them did not know, while 7.2% of them did not respond.

Table 2 presented the willingness of respondents who used open field defaecation to change to a better excreta facility. From this table, 95.6% of the respondents who used open field defaecation are willing to change, 1.2% of them are not willing to change, while 3.2% of them did not respond. Furthermore, the table presents the results the methods of toilet maintenance by respondents, hence only respondents with toilets could answer; out of which 38.7% of them wash their toilet on daily basis, 9.6% of them wash their toilet every other, 7.5% of them wash their toilets weekly, 2.2% of them did not respond, 0.5% of them wash their toilet twice a week, 0.2% of them wash their toilet three times a day, 0.2% of them wash their toilet twice a day, while 0.2% of them wash their toilet after use. It can be concluded that the majority of the respondents who have a toilet in their houses wash their toilet facilities every day.

Table 3: Hand washing Practice in the study area in the four LGAs

Hand Washing Practice	Freq.	Percentage
Moment		
Before meal	116	19.3
After defaecation	62	10.3
After cleaning the children	4	0.7
After touching faeces	1	0.2
Do not know	25	4.1
Before meal, after defaecation, After cleaning the children, and after packing faeces	284	47.4
Before a meal, after defaecation, and after cleaning the children	13	2.2
Always or Anytime	53	8.7
Before a meal, after cleaning the children, and after packing faeces	1	0.2
Before a meal, after defaecation, and before cooking	1	0.2
Before a meal and after defaecation	31	5.2
Before a meal, after defaecation, and after working	7	1.2
No response	2	0.3
Activity		
Go my way	1	0.2
Wash hands	599	99.8
With		
Water only	*111*	*18.5*
Water with soap	*469*	*78.3*

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

Water with ashes	*4*	*0.7*
Paper/cloth	*7*	*1.2*
Waterand Paper/cloth	*2*	*0.3*
Water with ashes and Paper/cloth	*1*	*0.2*
Water with soap and sanitizer	*5*	*0.8*

Source: 2022 fieldwork report

Table 3 above revealed that 19.3% of the respondents said that it is important to wash hands before eating only, 10.3% of them said that it is important to wash hands after defaecation, 0.7% of them said that it is important to wash hands after cleaning children, 0.2% of them said that it is important to wash hands after packing faeces, 4.1% of them did not know, 47.4% of them said that it is important to wash hands before meal, after defaecation, after cleaning the children, and after packing faeces, 2.2% of them said that it is important to wash hands before meal, after defaecation, and after cleaning children, 8.7% of them said that it is important to wash hands always, 0.2% of them said that it is important to wash hands before meal, after cleaning children, and after packing faeces, 0.2% of them said that it is important to wash hands before meal, after defaecation, and before cooking, 5.2% of them said that it is important to wash hands before meal and after defaecation, 1.2% of them said that it is important to wash hands before meal, after defaecation, and after working, while 0.3% of them did not respond

Also from the table, 0.2% of the respondents go their way after defaecation while 99.8% of them wash their hands. Out of the respondents that wash their hands, 18.5% of them wash their hands with water only, 78.3% of them wash their hands with water and soap, 0.7% of them wash their hands with water and ashes, 1.2% of them clean their hands with paper or cloth, 0.3% of them wash their hands with water and paper or cloth, 0.2% of them wash their hands with water with ashes and also paper or cloth, while 0.8% of them wash their hands with water and soap and sanitizer.

Table 4a: Problems associated with the Practice of WASH among dwellers of four (4) communities

Practice of WASH	**Freq.**	**Percentage**
Practice of WASH		
Observe WASH	562	93.7
By maintaining personal and household hygiene	125	22.2
By maintaining personal and water hygiene	26	4.6
By practicing personal hygiene	278	49.5
By washing toilet facility always	10	1.8
By practicing environmental sanitation	9	1.6
By always washing hands	14	2.5
By washing hands and toilets	2	0.4
By making sure toilets and surroundings are clean	5	0.9
By always treating the water used in the household	66	11.7
No response	27	4.5

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

Do not observe WASH	27	4.5
Do not know	2	0.3
No response	9	1.5
Problem encountered during the practice of WASH		
Encountered problem	346	57.7
Water Scarcity	210	60.7
Financial Constraint	5	1.4
Absence of dumping site and toilet facility	2	0.6
Irregular power supply	6	1.7
Time wastage and stress resulting from the distance to water source	21	6.1
Lack of water treatment materials	18	5.2
Lack of toilet facility and Inadequate water supply	11	3.2
Indiscriminate defaecation	51	14.7
Seasonal fluctuation of water and indiscriminate defaecation	8	2.3
Inadequate power supply and water scarcity	3	0.9
Flooding	1	0.3
Water uncleanliness	3	0.9
No response	7	2.0
Do not encounter problem	206	34.3
Do not know	6	1.0
No response	42	7.0

Source: 2022 fieldwork report

Table 4a above presents ways or methods in which respondents practice WASH. From the table, 93.7% of the respondents observed WASH, 4.5% of them did not observe WASH, 0.3% did not know, while 1.5% of them did not respond.

Out of the 645 respondents (93.7%. of the respondents) that observed WASH, 22.2% of them observed WASH by maintaining personal and household hygiene, 4.6% of them observed WASH by personal and water hygiene, 49.5% of them observed WASH by practicing personal hygiene, 1.8% of them observed WASH by washing toilet facility always, 1.6% of them observed WASH by practicing environmental sanitation, 2.5% of them observed WASH by always washing hands, 0.4% of them observed WASH by washing hands and toilets, 0.9% of them observed WASH by making sure toilets and surroundings are clean, 11.7% of them observed WASH by always treating the water used in the household, while 4.5% of them did not respond.

Table 4a presents the problems associated with the practice of WASH in the four local government areas used in this study. From the table 57.7% of the respondents encountered problems while practicing WASH, 34.3% of them did not encounter problem while practicing WASH, 1% of them did not know, while 7% of them did not respond.

Also, out of the 346 respondents that encountered problems while practicing WASH, 60.7% of them encountered water scarcity while practicing WASH, 1.4% of them said that financial constraint is a factor that potentially hinder the practice of WASH, 0.6% of them

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

said the absence of dumping site and toilet facility in the communities are problems or constraints to the practice of WASH, 1.7% of them said that irregular power supply is a constraint to the practice of WASH, 6.1% of them said that time wastage and stress resulting from the distance to water source are the constraint to the practice of WASH, 5.2% of them said that the lack of water treatment materials or chemicals is the constraint to the practice of WASH, 3.2% of them said that the lack of toilet facility and inadequate water supply are the constraints to the practice of WASH, 14.7% of them said that the indiscriminate defaecation in the communities is a problem to the practice of WASH, 2.3% of them said that the seasonal fluctuation of water and indiscriminate defaecation are the constraints to the practice of WASH, 0.9% of them said that the inadequate power supply and water scarcity are the problems associated with practice of WASH, 0.3% of them said that flooding is a constraint to the practice of WASH, 0.9% of them said that unclean water is a constraint to the practice of WASH, while 2.3% of them did not respond.

Table 4b: Problems associated with the Practice of WASH among dwellers of four (4) communities in the four LGAs

Practice of WASH	Freq.	Percentage
Reasons for the encountered problems		
Occurrence of water-related problems	254	42.3
Insufficient water	82	13.7
Uncleanliness of water and unavailability of water treatment chemicals	16	2.7
Irregular power supply	31	5.2
Seasonal fluctuation of water	75	12.5
Most wells are unproductive	8	1.3
Distance to water source	36	6.0
Over-exploitation of the existing water source	4	0.7
Faulty water supply facility	2	0.3
Financial constraint	12	2.0
Failure of the government to provide basic amenities	5	0.8
Nonchalant attitude	1	0.2
Ignorance	2	0.3
Lack of toilet facility	44	7.3
Water Scarcity and the absence of a toilet facility	10	1.7
No response	18	3.0

Source: 2022 fieldwork report

The table above presents the occurrence of problems associated with the practice of WASH among respondents that stated problems associated with the practice of WASH in the 4 local government areas. As seen from table 4b, 42.3% of the respondents believed that the occurrence has to do with water related problems from which 13.7% of the respondents said that insufficient water in the community led to water scarcity which is one of the constraints to the practice of WASH, 2.7% of them said that uncleanliness of water and water source,

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

and also the unavailability of water treatment chemicals are persistently made it quite difficult to get potable water in some of the communities.

Few of the participants 5.2% said that irregular power supply is responsible for water scarcity because their communities depend on boreholes that in turn, depend on power supply to pump water, 12.5% of them said that seasonal fluctuation of water is responsible for water scarcity in their communities, 1.3% of them said that most wells in their communities are unproductive (they do not have water) leading to water scarcity, 6% of them said that the available source of potable water is far from them leading to time wastage and stress when fetching water, 0.7% of them said that the available wells are over-exploited signalling that the wells around them are not sustaining the population around them leading to reduced amount of water available to each household, while 0.3% of them said the available water supply facility (government owned) were faulty due to mismanagement or vandalism making it hard to source for potable water in the community.

Apart from the occurrence of water related problem (still from table 4.6), 2% of the respondents blamed the reoccurrence of the constraints associated with practice of WASH on financial constraint of the community members to provide better amenities for themselves e.g. Improved water source, better excreta facility, water treatment chemicals, etc., 0.8% of them said that the failure of government to provide basic amenities for them over the years has led to the reoccurrence of the problems associated with the practice of WASH, 0.2% of them attributed the reoccurrence of the problems associated with the practice of WASH with the nonchalant attitude of members of their households to solve the problems, 0.3% of them attributed the occurrence of the problems associated with the practice of WASH with the ignorance of members of household as they do not have sufficient knowledge on the practice of WASH, 7.3% of them said that the lack of toilet facility in households and also government toilet facilities leads to indiscriminate defaecation by members of households, 1.7% of them said that water scarcity and absence of toilet facility lead to the occurrence of the constraints associated with the practice of WASH, while 3.0% of them did not respond.

Discussion of findings

Socio-demographic characteristics of the respondents

The study focused on people in rural areas of Ibadan and their attitude towards Water, Sanitation and Hygiene (WASH) at both household and community levels. This is very important as recognized by United Nation General Assembly that claimed that every human has right to water and sanitation (UN, 2010). Majority of them were female and Christians. This corroborated by Rauch and Helgegren (2014), who said that in many countries women are responsible for providing water for the households. It was noted that there was a gender disparity in fetching water, as females (93%) were largely responsible for fetching water in many areas (Helgegren et al., 2021; UNICEF, 2021).

International Journal of Health and Medical Information
Volume 8, Number 3, December 2025
ISSN: 2350-2169(Print) 2795-3068(Online)
Published By
International Centre for Integrated Development Research, Nigeria
In collaboration with
Copperstone University, Luanshya, Zambia

Young persons participated greatly in the study as most of them were aged between 21 and 40 years. Yoruba was the dominant ethnic group, reflecting the geographical location of the study area, though the presence of other tribes highlighted its multi-ethnicity. Professions varied by ethnicity, with Igede/Egede people primarily farming in rural areas. Most respondents had secondary education, many of them were traders, and had households of 5 to 9 members.

Level of awareness of people in Ibadan rural areas on Water, Sanitation and Hygiene (WASH)

The main source of drinking water for most residents in the four local government areas where the study was carried out (Lagelu, Akinyele, Egbeda and Ido Local governments) is well water, which is also the closest water source to many households. This is in contrary to WHO's affirmation that says 159 million people depend on water from surface source like rivers and 423 million take water from unprotected springs linked to transmission of water-related diseases (WHO, 2017).

Water from aquifers (wells and boreholes) is predominantly used for domestic purposes beyond drinking. Many of them dry off during the dry season which is corroborated by Ndububa and Adamolekun (2017) who stated that rural boreholes and water pumps have no water, rural water scheme/projects are deserted. For most respondents, accessing water takes less than 15 minutes. However, water availability fluctuates seasonally, and many respondents do not treat their drinking water. Those who do treat it typically with the use of chlorine.

Most respondents lack private excreta disposal facilities, leading to the prevalent practice of open field defaecation. This is in line with WHO (2018) affirmation that says Million women and girls globally lack adequate sanitation facilities especially for monthly hygiene. This is primarily due to the inability to build better facilities as such result to practicing open defaecation. This is supported by the World Bank Group (2017)) which estimated that around 90% of rural Nigerians defecate in the open and the Leadership (2023) who affirmed that there was an increase in the number of open defaecations from 46 million in 2019 to 48 million in 2021. Among those with excreta facilities, the majority share them with other households, and these facilities are typically not accessible to the public. Despite the prevalence of open field defaecation, many respondents are willing to adopt safer disposal methods.

Those with toilets in their homes tend to clean them daily. Majority of respondents that practice WASH is primarily through personal hygiene, but more than half faced challenges in doing so. The leading issues are insufficient water availability and seasonal water fluctuations, along with unclean water, over-exploitation, unproductive wells, and faulty supply facilities. This is in accordance with Okesanya (2024), Nigeria is the worst country in Africa for sanitation access due to unavailability of water for drinking and for other purposes in many homes. Non-water-related factors, such as a lack of toilet facilities,

ignorance, nonchalance, financial constraints, and inadequate government support, also contribute to WASH-related problems.

CONCLUSION

It can be concluded that poor WASH is very dangerous to health of people as can lead to the spread of diseases in the community. The findings of this study requires creation of awareness on importance of adequate WASH to improve quality of life among rural people. Hence, there is need for government to reach out to rural people through public enlighten campaign and provision of amenities such as water and public toilets for people in public places especially the rural dwellers

RECOMMENDATIONS

1. There should be a public enlightenment programme for all heads of households relating to provision of adequate sources of water supply and sanitation facilities within the household level in the other communities where the intervention did not covered. This should involve the use of the electronic and print media.
2. Advocacy programmes should be planned and carried out by members of the community targeted at policy makers on the need to provide good quality water supply in the four local government areas. The Public Health effects of fetching water from unprotected sources should constitute the advocacy issues.
3. Training intervention on purification of water should also be organised and conducted for community members in the area where the training intervention did not cover most especially for girls and women in these communities. This will improve their knowledge on the treatment of water before use and ultimately give improvement on their health which will prevent diseases and prolong health and efficiency.
4. Continued public enlightenment programme on the effects of drinking polluted and contaminated water should be conducted by the government of various levels; this will create awareness on its effects and need to treat their water sources before use to prevent the spread of water- borne diseases.

REFERENCES

Freeman, Matthew C., Joshua V. Garn, Gloria D. Sclar, Sophie Boisson, Kate Medlicott, Kelly T. Alexander, Gauthami Penakalapati, et al. “The Impact of Sanitation on Infectious Disease and Nutritional Status: A Systematic Review and Meta-Analysis.” *International Journal of Hygiene and Environmental Health* 220, no. 6 (August 2017): 928–49. https://doi.org/10.1016/j.ijheh.2017.05.007.

Helgegren, Ida, Jennifer McConville, Graciela Landaeta, and Sebastien Rauch. "A Multiple Regime Analysis of the Water and Sanitation Sectors in the Kanata Metropolitan Region, Bolivia." *Technological Forecasting and Social Change* 166 (May 2021): 120638. https://doi.org/10.1016/j.techfore.20

Leadership (2023). Report on the 2021 Water, Sanitation and Hygiene National Outcome Routine Mapping (WASHNORM III) in Nigeria, 2023

Ndububa, Olufunmilayo, and Oluwaseun Adamolekun. "Analysis of Access to Improved Water Supply for Domestic Use in Otunja Community, Ikole- Ekiti, Nigeria." *International Journal of Applied Environmental Sciences* 12, no. 11 (2017): 1895–1912.

Okesanya, Olalekan John, Gilbert Eshun, Bonaventure Michael Ukoaka, Emery Manirambona, Olaleke Noah Olabode, Ridwan Olamilekan Adesola, Inibehe Ime Okon, et al. "Water, Sanitation, and Hygiene (WASH) Practices in Africa: Exploring the Effects on Public Health and Sustainable Development Plans." *Tropical Medicine and Health* 52, no. 1 (October 9, 2024): 68. https://doi.org/10.1186/s41182-024-00614-3.

Olufunmilayo I., Ndububa. "Motorized Rural Water Supply Points in Some Northern Nigeria States and the Way Forward towards Achieving the Sustainable Development Goals." *Energy and Environmental Engineering* 5, no. 3 (June 2017): 59–66. https://doi.org/10.13189/eee.2017.050301.

WHO/UNICEF (2023): new report on WASH in households. New data from the World Health Organization (WHO) and United Nations Children's Fund (UNESCO) shows continuing stark inequalities in access to water, sanitation and hygiene (WASH), with a heavy burden falling on women and girls. 04 July 2023.

WHO: Billions of People Lack access to safe water, sanitation and hygiene in 2030 unless progress quadruples – warn WHO, UNICEF. 2021

World Health Organization. Global report reveals major gaps in menstrual health and hygiene in schools. 28 May 2024. Departmental update