

Public Attitude towards Sanitation Practices in Effurun and Environs, Delta State, Nigeria

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How to cite this paper: Birma, G.J., Odeniyi, K.O., Rita, U., Alaukwu, C.J., Irefo, M., Fadairo, E.A. and Apollos, O.A. (2023) Public Attitude towards Sanitation Practices in Effurun and Environs, Delta State, Nigeria. *Open Journal of Safety Science and Technology*, 13, 189-201.

<https://doi.org/10.4236/ojsst.2023.134010>

Received: November 5, 2023

Accepted: December 17, 2023

Published: December 20, 2023

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Abstract

Public health has a significant impact on mortality and has been reported in many researches. This is why it is important to evaluate our immediate environment since man's health lies largely in his environment. This study assessed public attitude to sanitation practices in Effurun, Delta State, Nigeria. The study was done by qualitative survey of the study area where a random sampling technique was employed to obtain response from residents in Effurun on water and accessibility in the study area, sanitation and gray water condition, solid waste management and drainage and occupancy, household pests and diseases. The result of the respondents showed that 63% have access to drinking water regularly within the study area. However, response also shows possible problems relating to water accessibility with respondents indicating conflict with water source use and harsh control of water sources by landlords and land owners which limit water access. Results also indicated that 31% of individuals within the study area were still operating a pit latrines system of faeces disposal while 73% engage in sharing of toilet facilities which are mostly left unclean. The prevalence of shared toilets, existence of pit latrine, negligence of emptying of septic tanks and unhygienic practice associated with cleaning of hands after use of toilet facility show that public health is likely to be breached. The result of the response on solid waste management had 28% and 35% respondents practicing open dump waste disposal and experience of flood respectively in their areas. It can therefore be concluded that the attitude of residents towards public health sanitation is poor and requires attention and intervention.

Keywords

Sanitation, Public, Water, Environment, Effurun, Practices

1. Introduction

Attitude is a cognitive, affective and behavioral response which is organized on the basis of experience and knowledge of the individual or event around the environment [1] [2]. On the other hand, practice refers to the ways in which people demonstrate their knowledge and attitude through their actions [3].

There should be a greater relationship between sanitation attitudes of people and their sanitation practices because both require an individual to have knowledge of event around the environment. Mohd and Malik [4] confirmed this assertion that sanitation practices are heavily influenced by people's knowledge and attitudes towards it.

Basic sanitation is also described as having access to facilities for the 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/hazardous waste management and waste water treatment and disposal [5].

The key to man's health lies largely in his environment, in fact, much of man's ill health can be traced to adverse environmental factors such as water, soil, and air pollution, poor housing conditions, presence of animal reservoir and insect vectors of diseases which pose threats to man's health. Often, man is responsible for the pollution of his environment through urbanization, industrialization and other human activities [6] [7].

Environment is the circumstances or conditions that surround an organism or group of organisms and their social interaction [8].

Air, soil, water, microbes, plants, animals and humans are major components of the environment. Imbalances in the relationship of one of these with the others may have a catastrophic effect on them all.

In 2016, 13.7 million people died as a result of living or working in an unhealthy environment, representing 24% of all deaths worldwide. The fraction of the global burden of disease due to the environment is 23%. In children under five years, up to 28% of all deaths could be prevented if environmental risks were removed [9].

According to 2021 Water and Sanitation Programme, sanitation costs Nigeria 455 billion Naira each year, equivalent to US\$3 billion. More than 2 billion people worldwide still do not have access to basic sanitation facilities such as toilets and latrines and facilities to safely wash their hands at home [5], consequently, people tend to dispose of their excreta in unimproved and unsanitary conditions. Those who suffer this, lack most basic human needs and also tend to be victims of poverty, ill health and an overall poor quality of life.

Poor sanitation is linked to transmission of diseases such as cholera, malaria, diarrhea, dysentery, hepatitis A, typhoid and polio and exacerbates stunted growth. Other diseases that are caused by poor sanitation include schistosomiasis, trachoma and soil helminthiasis. Inadequate sanitation is estimated to cause 432,000 diarrhoeal deaths annually worldwide [10].

In Nigeria and other developing countries, the main identified diseases of the environment that cause premature deaths are; malaria, diarrheal diseases and lower respiratory infection. In 2017, the lower respiratory infection took the lead, followed by diarrhea disease, all associated with environmental interactions [11].

However, unhygienic disposal of waste by the street corners and in water ways block the water ways resulting in flooding during the rainy season, increasing water contamination, breeding of mosquitoes, emergence and fast spread of water-related disease [11].

One of the essential public health care elements is provision of safe drinking water and sanitation. Water quantity is as important as water quality, washing of hands after defecation and before preparing food is of particular importance in reducing disease transmission, as has been demonstrated by Nigeria's recent control over Corona Virus Disease (COVID-19). Health education and good food hygiene are also equally important.

The environmental sanitation-related diseases exacerbate poverty by diminishing productivity and household income, in addition, the national cost of lost productivity, reduced educational potential and huge curative health costs contribute to a major drain on the local and national economy [12]. Besides, a dirty environment with its attendant health consequences prevailing in most of our cities like Effurun, that can discourage tourists/investors and undermine the economic benefit of tourism to the country. It is on this note that the study was carried in Effurun to evaluate wide-range of actions like public health survey practices to solve environmental sanitation problems in order to reduce and avert their adverse health, economic and developmental effects.

2. Materials and Methods

2.1. Study Area

This study was conducted in Effurun, Uvwie Local Government Area of Delta State of Nigeria. The city's coordinate are 5033'44.52" North, 504648.09" East. It is an Urhobo speaking community with a population of over 100,000 people [13]. It is a busy and highly commercial city. For the purpose of this study, six major roads of the study area were selected randomly, namely; PTI Road, Effurun/Sapele Road, NPA/Nigercat Express road, Jakpa Road, Commissioner Road DSC and Benin Road.

2.2. Sample Size and Sampling Technique

The study adopted the Random sampling technique. The sample size was 250

respondents which included male and female residents randomly selected within Effurun. The questionnaire was distributed along the street roads within the study area.

2.3. Research Instrument

A questionnaire was designed as the instrument for collecting data. The questionnaire was divided into five sections (section A to E). Section A solicited the demographic characteristics of the respondents such as; age, sex, occupation and educational status. Section B comprised of seven (7) items which determined water availability and accessibility in the study area. Section C consists of twelve (12) items that examined the sanitation and gray water condition of the respondents/study area. Section D contained twelve (12) items that assessed the solid waste management and drainage system of the study area. Section E comprised eight (8) items that assessed occupancy, household pests and diseases in the study area. The questionnaire is closed-ended in nature.

2.4. Method of Data Collection, Analysis and Presentation

The questionnaires were administered along the major roads and street level within the study area. The questionnaires were completed by the Respondents and were collected from them accordingly.

The data obtained from this study were analyzed statistically using statistical package for social sciences (SPSS) Version 25, arithmetic calculation such as percentage, average (mean), variance and Cronbach's alpha reliability test. Results obtained in this study were presented in tables and bar charts.

3. Results and Discussion

3.1. Demographic Description

The results of demographic characteristics in percentage distribution and response from respondents are shown in **Figure 1** below. Results revealed that majority of respondents were male with a 51% distribution as against 49% distribution result obtained for female. The result also showed that the respondents were adults and above the age of 18 years with a result of 86%. The respondents were mainly students (36%) and had attained a high level of education (tertiary education—61%). This result shows that the respondents are knowledgeable in disbursing correct information as regards waste management and other environmental practices. This high level of education can be attributed to the tertiary institutions and the drive of the indigenes towards educational goals. This distribution was similar to study by Abejegah *et al.*, in which respondents above the age of 18 was dominant in the study to ensure high level of credibility to the results [14]. However, close comparison with this indicated that respondents were mainly female and only attained a secondary education. This can be as a result of background level of the study area (Oregbeni Market) as against the general city distribution.

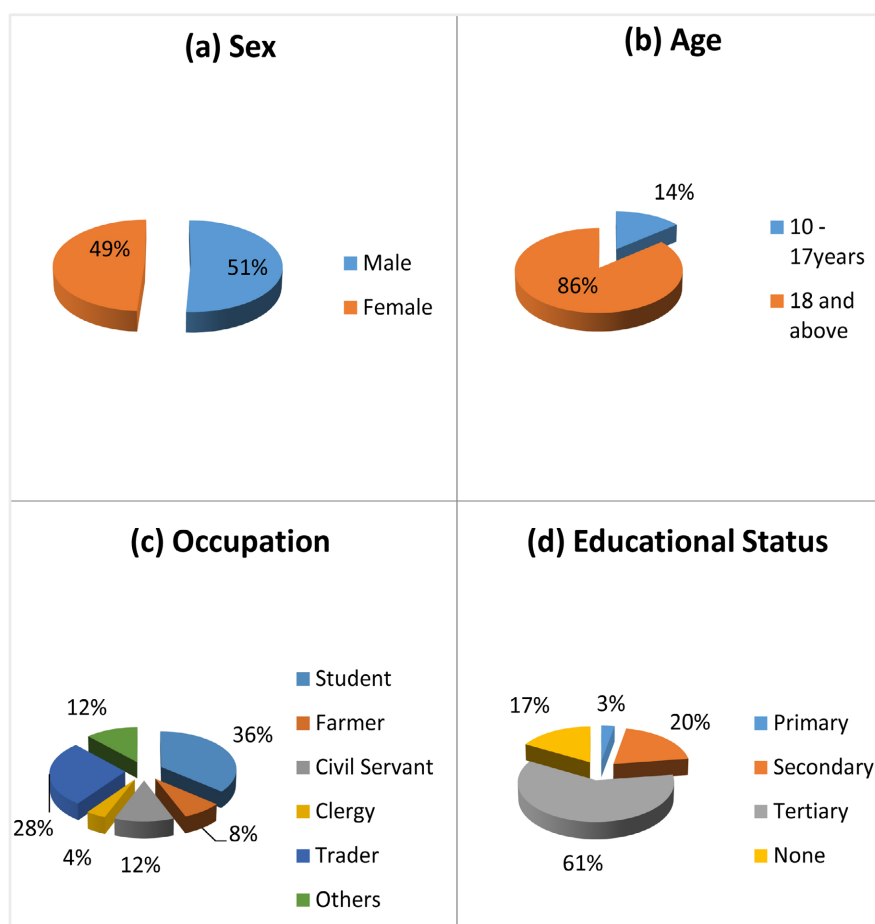


Figure 1. Demographic distribution of respondents within the study area.

3.2. Water Accessibility

The result of the response on Water Accessibility/is presented on **Figure 2** below. From **Figure 2**, it was observed that respondent's drinking water source within the study area was majorly bottle/sachet water purchased from local vendors (47%) as well as household water connections (39%). This can be attributed to perceived groundwater contamination due to anthropogenic activities inherent within the study area. It was also observed that water supply was readily available throughout the year 7 days a week and not subject to seasonal variations.

However, response also shows possible problems relating to water accessibility with response indicating conflict with water source, use and harsh control of water sources by landlords and land owners which limit water access. This can be confirmed by WHO and UNICEF which revealed that about 743 million people that lack access to improved sources of drinking water, 325 million or 43 percent reside in Africa [15]. This shows that in some areas, lack of access to water is a major issue. Sanitary practices indicated that respondents are aware of sanitary practices and engage in basic cleaning of water storage containers prior to storage. Statistical analysis on reliability of respondents indicated a response

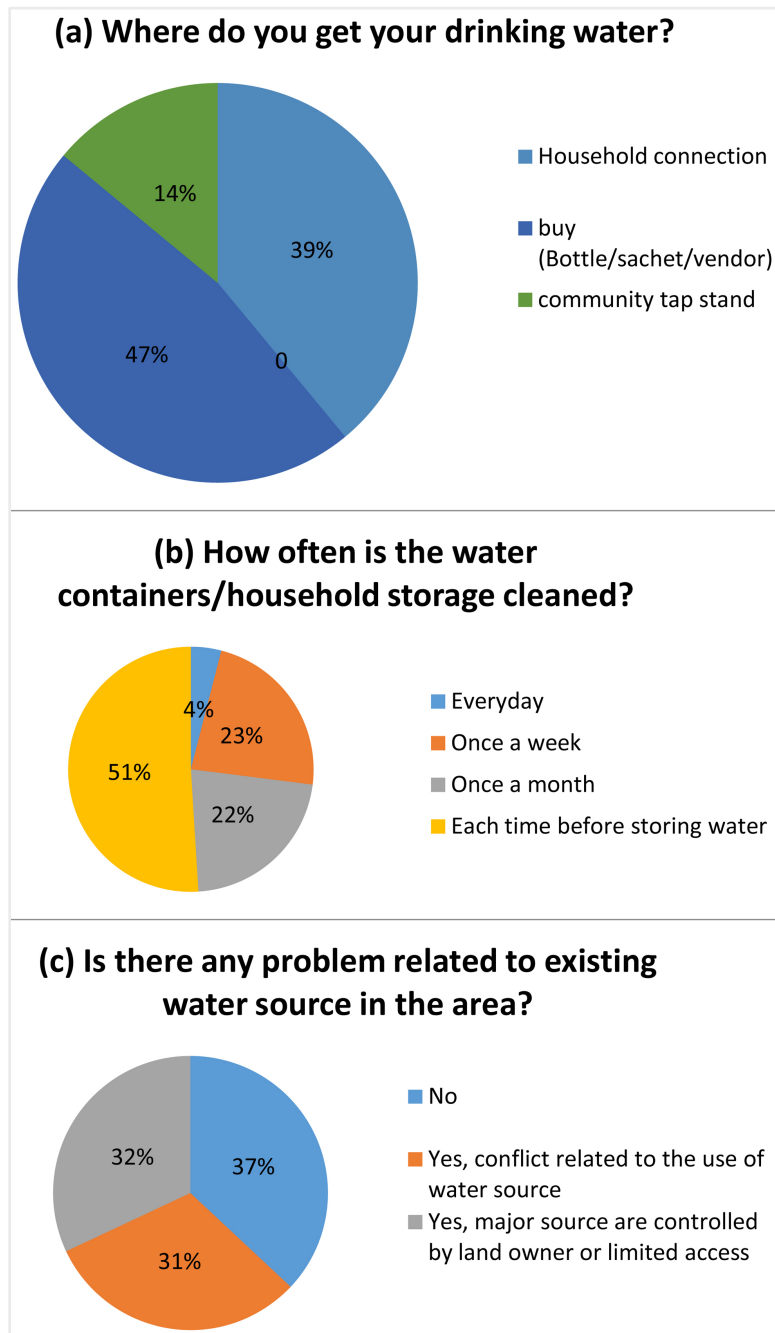


Figure 2. Response on water accessibility and availability.

value of 0.712 (71.2%) which shows a high level of consistency in response from respondents.

3.3. Sanitation/Gray Water Assessment

The result of the Response on Sanitation/Gray water Assessment is presented in **Figure 3** below.

The failure of the numerous efforts to address the problem of Environmental Sanitation has been attributed to various factors. Prominent among these are

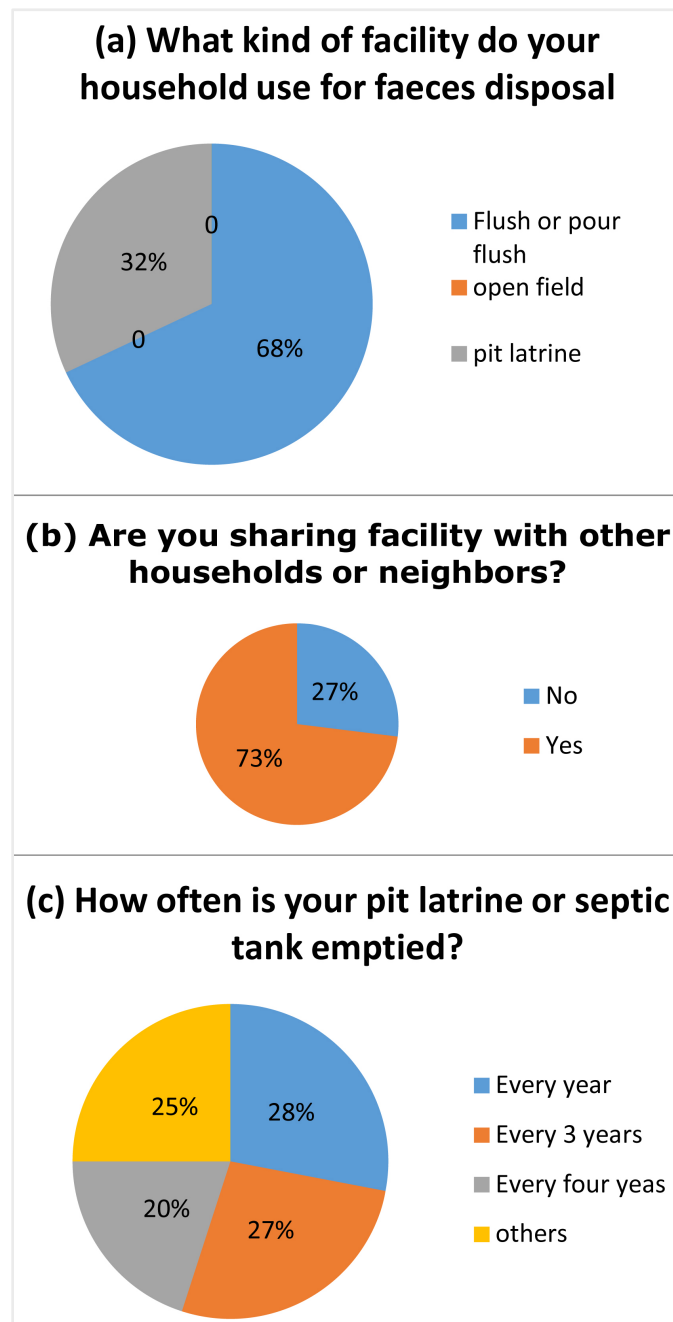


Figure 3. Response on sanitation/gray water assessment.

unhealthy socio-cultural practices, poor Environmental Sanitation education and awareness, low literacy level, bad governance over the years, disregard for the rule of law and other forms of indiscipline [16]. This study reports in **Figure 3(a)** that about 32% of individuals within the study area were still operating a pit latrine method of faeces disposal while also engaging in sharing of these facilities which are mostly left unclean.

However, the use of septic tank as storage facilities was recorded, it was observed that storage of faeces span a long period of time (yearly—27%) before it is

been emptied. This can be reported to be poor as possible spillage in cases of fractured septic tanks leading to groundwater contamination. The result also showed that about 73% of the respondents share facilities with their neighbours. A 27% response showed that individuals still prefer the disposal of children faeces in water bins.

Waste content disposal was seen to be mainly done by private sectors participants, however, open dumping practices were done by few individuals as highlighted by Oyekan and Sulyman which revealed that 87% of Nigerians use disposal methods adjudged as insanitary encouraging the breeding of rodents, mosquitoes and other pests of public health concern, with attendant disease outbreaks [17]. Only 56% of respondents agreed to the practice of hand sanitation with 36% response agreed to the use of soap which indicates the spread of pathogenic microbes especially on public contact surfaces. The result also indicated good improvement on top ranking in open defecation of Nigeria Nation reported by punch newspaper in 2019 [18]. Statistical analysis indicated a low consistency in answer option with a 0.2 reliability score as shown on **Table 2** below.

3.4. Solid Waste Management/Drainage

The result of the response on Solid Waste Management/Drainage is presented in **Figure 4** below.

From **Figure 4** below, it was recorded that the main solid waste disposal method was municipal dumping in waste bins, although a combined 56% response was observed for both open dumping practices and waste burning which revealed poor waste practice within the study area. It was also observed that daily waste disposal was practiced in the study area with the waste majorly packaged in polythene bags before disposal. Other storage means recorded were waste bins (19%), buckets (20%) and open dumps (27%). These practices can be seen to contribute to pollution and negative environmental impacts. Results also revealed that waste segregation was not usually practiced in the study area. This can be tied to lack of awareness on waste segregation and its benefits in promoting waste recycling practices and sustain improved practice. Although it is a common observation that residents conduct sanitation, this result coincides with public knowledge that environmental sanitation practice is only conducted once a month. This practice can be observed to create unsafe living conditions as weeding and drainage cleaning practices are done only once in 30 days. Uchegbu *et al.* [19], posited that the principal consequence of highly deficient waste disposal is the heavy presence of disease, with consequent suffering and hardship, stunted human growth and development, as well as diminished productivity.

3.5. Occupancy/Household Pests

The result of the response on Occupancy/Household Pests is presented on **Table 1** below. With regards to building occupancy, the number of persons within a

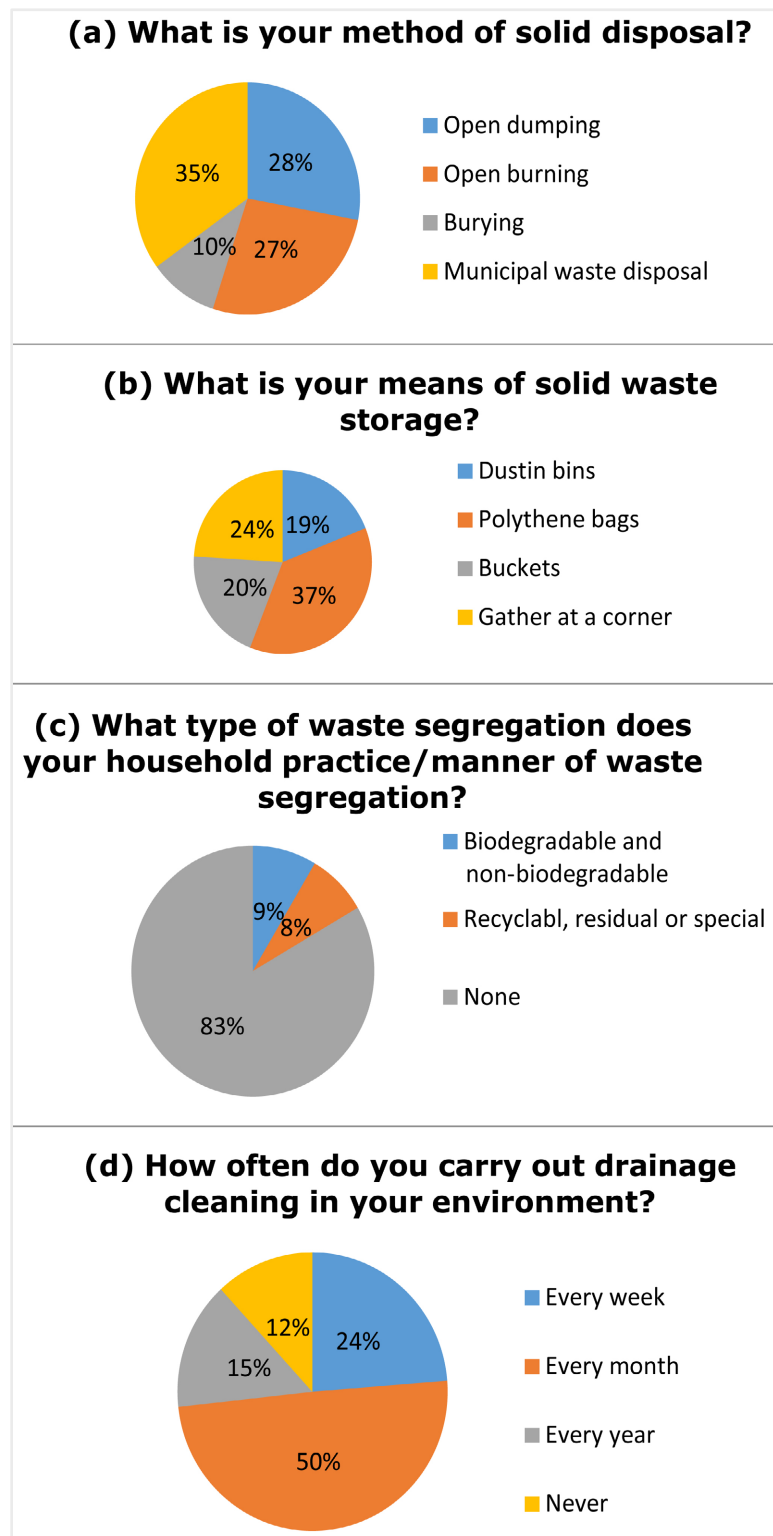


Figure 4. Response on solid waste management/drainage.

household varied greatly from 1 - 3 persons per household.

Also, it was observed that the dominant pest/vectors in homes were mosquitoes, cockroaches and rats which can be attributed to human activities creating

breeding environment for these pests and vectors. Response also indicates that use of chemical insecticide is the most widely used method for prevention and as a control measure for each pest. From **Table 1**, malaria has been observed as the dominant health implication incurred over the last six months which can be attributed to unsanitary conditions leading to breeding of mosquitoes [20] [21]. Statistical analysis observed a 76% consistency in response from respondents (**Table 2**).

Table 1. Response on occupancy/household pests.

S/N	Question	Percentage Distribution					
		House					
		1	2	3	4	5	6
1	How many households are in the building?	53	24	21	2		
		Person					
		1	2	3	4	5	6
2	What is the number of persons in your household?	29	52	19	0		
3	Which pest(s) is/are seen in and around your home?						
		Yes	No				
	Mosquitoes	100	0				
	Flies	47	53				
	Cockroaches	79	21				
	Rats	68	32				
		1	2	3	4	5	6
4	How do you prevent/control mosquito bites.	43	20	18	19	0	0
	1-Use of chemical insecticides, 2-Use of screen on windows and doors, 3-Use of mosquito nets, 4-Use of mosquito repellent, 5-Eradication of standing water near home, 6-Covering of water storage containers						
		1	2	3	4		
5	How do you prevent/control flies?	85	12	3	0		
	1-Use of chemical insecticides, 2-Use of screen on windows and doors, 3-Proper disposal of organic/food by-products, 4-Use of traps						
		1	2	3	4	5	6
6	How do you prevent/control cockroaches?	0	67	29	3	0	0
	1-Use of chemical insecticides, 2-Sealing the entrances, 3-Taking out garbage daily, 4-Storing food in sealed containers, 5-Cleaning the kitchen and house						
		1	2	3			
7	How do you prevent/control rats?	17	39	44			
	1-Sealing entrances, 2-Use of baits, 3-Use of traps						
		1	2	3	4	5	6
8	In the last 6months has anyone in your household had any water, sanitation and hygiene related diseases?	16	13	13	8	16	35
	1-Diarrhea, 2-Skin disease, 3-Respiratory diseases, 4-Parasitism, 5-Recurring fever, 6-Malaria						

Table 2. Reliability test for answered questionnaire.

Section	Cronbach's Alpha	No. of Items
Water Accessibility	0.712	7
Sanitation/Gray Water Assessment	0.213	12
Solid Waste Management/Drainage	0	12
Occupancy/Household Pest	0.773	10

Achieved using the Social Package for Statistics Sciences (SPSS)

$$\text{Gronbach alpha } (\infty) = \frac{K}{K-1} \left(\frac{S_y^2 - \sum S_i^2}{S_y^2} \right)$$

where,

K = Numbers of Items

$\sum S_i^2$ = Sum of variance of each items

S_y^2 = Variance of the total column

4. Conclusion and Recommendations

4.1. Conclusion

The results showed that water scarcity remains a vital issue for residents within the study area due to lack of access to adequate water quality and quantity. The prevalence of shared toilets, existence of pit latrine, negligence of emptying of septic tanks and unhygienic practice associated with cleaning of hands after use of toilet facility shows that public health is likely to be breached. This was confirmed by result from **Figure 4** with observed health issues including dysentery and diarrhea. Solid waste segregation and disposal practices were also void with the persistence of open dumping practices. It can therefore be concluded that the attitude of residents towards public health is poor and requires urgent attention and intervention.

4.2. Recommendations

From the above conclusion, the following recommendations are made:

- 1) Public awareness campaign on health and good public hygienic practices should be conducted.
- 2) Solid waste disposal around the community should be prohibited through the use of monitoring and enforcement agency to eliminate open dumping practices.
- 3) Public borehole water supply system should be constructed to ensure easy access to water sources by the residents.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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