

# Status of Sanitation Facilities and Hygiene Practices in Yakurr Local Government Area, Cross River State, Nigeria

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**Abstract:** The study was a descriptive study, designed to describe the status of sanitation facilities and hygiene practices in Yakurr Local Government Area, Cross River State, Nigeria. Five communities were selected by simple random sampling for the study. Multi-stage random sampling technique which involved four stages was used to select 410 households and structured questionnaire, observation and key-informant interview were used for data collection. The statistical package for social sciences software (SPSS version 20) and MS Excel (2010) were used for data analysis. Results from the study shows that 46.1% of respondents used borehole water as main source of water. Basic types of toilet facilities available in the studied communities were inadequate and substandard; this further compound the already existing poor sanitation and unsafe hygiene practices (26.6% traditional pit latrine). Approximately 52.9% of respondents had handwashing stand to wash hands after defecating while 5.4% used basin with tap for handwashing. 53.9% of respondents washed hands with water only, while 45.6% of respondents washed hands with soap. The lack of access to potable water supply and toilet facilities could affect the general hygiene status of the communities. It was recommended among others that the government should provide more basic sanitary facilities and adequate potable water. Good personal and community hygiene requires sufficient water and basic sanitary facilities.

**Keywords:** Sanitation Facilities, Hygiene Practices, Communities

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## 1. Introduction

The link between hygiene and sanitation, water supply and other basic infrastructure services are now well recognized in developing countries, public health authorities now realized that until hygiene is properly practiced, both at home as a person and in the community as a whole, the desired impact of improved water and sanitation services in terms of community health improvement, cannot be realized. Approximately 28% of the population of Sub-Sahara Africa defecates in an open field/bush and additional 23% uses unimproved sanitation facilities that do not ensure hygiene separation of human excreta from human contact [1].

World Health Organization data on the burden of disease suggest that approximately 3.2% of death (1.8 million) and

4.2% of disability-adjusted-life years (61.9 million) worldwide are attributable to unsafe water, sanitation and hygiene, over 99.8% occur in developing countries, and 90% are of children [2].

It has been estimated globally that over 1.1 billion people do not have access to safe water supply and 2.6 billion are without adequate sanitation. In Nigeria with the population of over 170 million, the sanitation coverage according to National Demographic Health Survey (NDHS) survey of 2003 is estimated at 90% for urban areas and 66% for rural areas. These levels of coverage have been determined based on access to certain sanitation facilities such as flush toilets, traditional pit latrines and ventilated improved pit (VIP) latrines. The sanitation coverage as quoted by NDHS includes access to traditional pit latrines (56% for urban areas and 57% for rural communities) [3].

Many studies on household access to different types of sanitation facilities and factors that influence facility access have been conducted in some developing countries. These include nationwide studies in Indonesia [4], and Ghana [5], southern Ethiopia [6], and Uganda [7]. In 2015, 62% of the population in the least developed countries relied on unimproved sanitation facilities (pit latrines without a slab, flush to pit latrines and bucket and hanging toilets), shared facilities, or defecation in the open [8]. In urban areas specifically, while the share of population not having access to improved sanitation has decreased from 21 to 18% from 1990 to 2015, the total population affected has increased from 1.1 billion to 1.3 billion people over the same period. In other words, population growth has outpaced gains in sanitation coverage in cities. In terms of total population, Southern Asia and Sub Saharan Africa are the two most pretentious regions, with 953 million and 695 million people without access to improved sanitation respectively [8].

A contaminated household environment and sanitation practices account for almost 30% of the total burden of diseases in the world. The most affected are the populations in developing countries, living in extreme conditions of poverty, normally semi-urban dwellers or rural inhabitants. Strengthening sanitation and hygiene practices through focusing resources and attention on them would have multiplier effect on virtually all aspects of life and overall development of the country. Several studies have shown that the incidence of many diseases is reduced when people have access to, and make regular use of adequate sanitary installations [9-11].

This paper described the types of toilet facilities available and hygiene practices among residents in Yakurr LGA. Findings from this study will shed more light on environmental management as a means of breaking the chain of transmission of disease due to poor sanitation and unhygienic practices in the study area, and make recommendations to the appropriate authorities.

Objectives of the study: the objectives of the study are to; (1) Identify the types of toilet facilities available and functional in the study area. (2) Determine the knowledge of hygiene practices in the study area.

## 2. Methodology

### 2.1. Study Setting

Yakurr Local Government Area is located approximately between latitude 5°45' and 5°55' north of the equator and longitude 8°11' and 8°20' east of the Greenwich meridian and 120km (75 miles) North West of Calabar, the capital of Cross River State. Yakurr is located within the equatorial forest region of the tropics. The area is characterized by high temperature, rainfall and humidity. It comprises 13 council wards from 9 communities, and the people exhibit a very high degree of social homogeneity with strong political, cultural, religious and linguistic affinity. They are largely farmers, with population of 196,270 persons and land mass of

about 4,800 hectare (48km<sup>2</sup>) [12].

### 2.2. Study Design

A descriptive study design was undertaken, both quantitative and qualitative methods were used to collect data on sources of potable water and accessibility, the type of toilet facilities available and functional in Yakurr Local Government Area, Cross River State, Nigeria.

### 2.3. Study Population

The study respondents were household members in communities within the basic settlements in Yakurr LGA from which information on sources of potable water and the status of sanitation facilities in their households was sought using the questionnaire. The study also targeted environmental health workers, community health workers, civic/opinion leaders, and village heads, as key-informants using pre-prepared topic guide. The total estimated population of the five selected communities was official figures used by the Primary Health Care (PHC) centers in the respective communities.

### 2.4. Sample Size Determination

Using the Fischer's formula for population above ten thousand, 384 was the minimum sample size, considering a non-response of 10%, the final sample size of 426 was used to collect data in the study area. Following the UNICEF (1999) Guidelines in the selection of the sample size for observation and interview, which suggest that for cluster of ten communities which are ethnically homogenous, 70 households should be observed for four days and 10 key-informants interviewed. 70 households were observed and 15 key-informants interviewed.

### 2.5. Sampling Techniques

Multistage sampling technique was used in the selection of the study subjects. Based on these, four stages were involved.

#### 2.5.1. Selection of Communities

Stage one was to sample five communities out of the nine communities in the study area which covered 55.6% of the study communities. In this stage, the name of each community was written in a piece of paper, folded, mixed up and five persons each representing a community were asked to pick. The five communities that were picked became the sampled communities for the study.

#### 2.5.2. Selection of Streets

Five streets were selected from each of the five selected communities by simple random sampling. Names of the major street were written on pieces of paper, folded, mixed up and five persons were asked to pick one each. The streets that were picked formed streets that were used for the study. The second, third, fourth, and fifth streets were to be used in case the questionnaire were not exhausted in the first street.

### 2.5.3. Selection of Houses

Systematic sampling technique was used to select houses for the interview. Applying this technique, the fourth houses were skipped after a house has been sampled. That is every 4th house starting from the first house on the street was picked (1st, 5th, 9th, etc.). This method was preferred because it is efficient and required less time, thus permitting data to be collected from a larger population.

### 2.5.4. Selection of Household

Having used systematic sampling technique to select houses, in a house where more than one household exist, simple random sampling method was used to select household for the study. Numbers were given depending on the number of households in the building, written in pieces of papers, folded, mixed up, and people were asked to pick based on the number, the household that picked number one (1) was interviewed. A household head was taken as the key respondent and in a household where the household head was not available, an adult probably the most senior was taken as household head. An adult in this case was any body from 18 years and above.

### 2.5.5. Observation Procedure

Observation was gone early in the morning, after informing the respondent a day before. The research team sat quietly where they can see the domestic behaviors of household members and note for e.g. exactly what happens associated with adult and child defecation event. Each time one of the behaviors on the checklist is seen, the researcher/field assistant note when and where it happened and who did what on a report sheet for four days. The researcher also observes the location of their toilet, type of toilet, handwashing facilities and their source of water.

### 2.6. Pre-Testing of Instruments for Data Collection

In order to ensure that the data collected was valid; the questionnaire was pre-tested for validity, comprehensiveness, and reliability in Biase LGA of Cross River State.

### 2.7. Ethical Consideration

The research was duly approved by the Cross River State Health Ethics Research Committee (CRSH-REC). This was possible through a written application by the researcher and letter from the head of department to the Paramount ruler of Yakurr LGA. Oral informed consent was obtained from respondents and reassured of the confidentiality of the information that they would provide.

### 2.8. Data Analysis

The completed questionnaires were cross-checked to ensure that the responses were correct and tick properly. The data was coded and analyzed using MS Excel and Statistical Package for Social Sciences (SPSS version 20, 2010).

## 3. Results

A total of 426 questionnaires were administered to members of the communities, out of which 410 representing 96.2% response rate were retrieved. The demographic characteristics of respondents as presented in Table 1, shows that 34.2% of respondents fell within the age group of 28-37 years while 17.3% were within 48 years and above. Approximately 37% of respondents were male while 63.2% were female. 62% of respondents were married and 25.6% were single. Approximately 86.1% of respondents had secondary and tertiary education while 4.1% had no formal education. Majority of respondents (33.7%) were farmers while 5.1% were unemployed. Respondents (96.8%) were Christians while 3.0% practiced traditional religion.

*Table 1. Demographic characteristics of respondents (n=410).*

Demographic variables	Frequency	Percentage %
Age		
18 – 27	66	16.1
28 – 37	140	34.2
38 – 47	133	32.4
48 and above	71	17.3
Total	410	100
Sex		
Male	151	36.8
Female	259	63.2
Total	410	100
Marital Status		
Single	105	25.6
Married	254	62.0
Divorced	23	5.6
Separated	13	3.2
Widow/widower	15	3.6
Total	410	100
Education		
Primary	40	9.8
Secondary	208	50.7
Tertiary	145	35.4
No Formal Education	17	4.1
Total	410	100
Occupation		
Farmer	138	33.7
Civil servant	85	20.7
Trader	67	16.3
Commercial driver	12	3.0
Unskilled labourer	34	8.3
Unemployed	21	5.1
Others	53	12.9
Total	410	100
Religion		
Christianity	397	96.8
Islam	1	0.2
Traditional religion	12	3.0
Total	410	100

Ownership of toilet facilities as presented in Figure 1 shows that 79.7% of respondents had access to their own

latrine while 20.3% do not own latrines. Respondents (43.2%) owned pour flush toilets while 26.6% of respondents owned traditional pit toilets. Majority (94.9%) of respondents own functional latrines while 5.1% of respondents owned non-functional latrines. However some of the respondents who claimed ownership of functional toilet facilities do not used them as indicated by 5.1% of respondents. Approximately 52.9% of respondents had handwashing stand to wash hands after defecating while 5.4% used basin with tap for handwashing. 53.9% of respondents washed hands with water only, while 45.6% of respondents washed hands with soap and water (table 3).

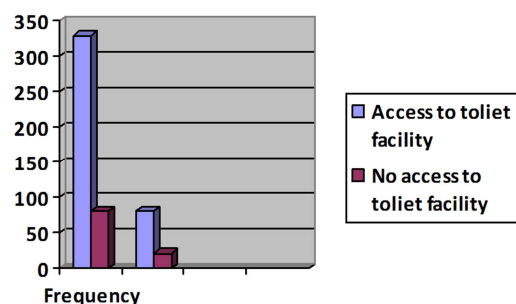


Figure 1. Distribution of Respondents by Access to Toilet Facility.

Table 2. Distribution of respondents by types of toilet facility available and functional.

Variables	Frequency	Percentage
Type of Toilet Facility		
Traditional pit latrine	109	26.6
Pour flush toilet	177	43.2
VIP Latrine	14	3.4
Bush/Field	15	3.7
Stream/River	10	2.4
No Response	85	20.7
Total	410	100
Toilet condition		
Functional latrine	389	94.9
Non-functional	21	5.1
Total	410	100
Toilet Usage		
Yes	368	94.6
No	20	5.4
Total	389	100

Table 3. Distribution of respondents by handwashing facilities.

Variables	Frequency	Percentage
Handwashing facilities		
Basin with tap functioning	22	5.4
Handwashing stand	217	52.9
Bowl to put hand in	150	36.6
None	21	5.1
Total	410	100
Handwashing Materials		
Water only	221	53.9
Water and Soap	187	45.6
Water and Ash	2	0.5
Total	410	100

Regarding child defecation event, 72.7% of respondents reported that children of under 5years of age defecate in the yard while about 17% uses the defecating pot. Approximately 34% of respondents dispose of child's faeces in the latrine while 2.0% used stream (Table 4).

Table 4. Distribution of respondents by child defecation events (n=410).

Variable	Number of respondents	%
Where child's defecate		
Pot	71	17.3
House	15	3.7
Nappies	26	6.3
Yard	298	72.7
Total	410	100
Disposal of child's faeces		
Latrine	141	34.4
Bush/Field	101	24.6
Waste bin	48	11.7
Bury it	112	27.3
Stream/River	8	2.0
Total	410	100

Table 5 shows results from observations on the community hygiene practices and sanitary facilities available in the studied communities. Out of the 84 latrines observed, 6 were school toilets, 2 commercial toilets, one in the market and 75 private toilets. Handwashing facilities were observed in 73 (86.9%) out of 84 latrines. Regarding the type of toilet facilities observed, 38 (45.3%) were pour flush toilet, 17 (20.2%) were ventilated improved pit latrines while 29 (34.5%) were traditional pit latrine.

In 118 occasions of child's defecation observed, child stool was dispose of in the latrine 43 (36.4%) times, while 39 (33.1%) of child stool was put in a dust bin and dispose of alongside with rubbish.

Table 5. Observed sanitary facilities available in the study area.

Type of Toilet Facilities	Number	Percentage (%)
Pour flush toilet	38	45.9
Traditional pit latrine	29	34.5
VIP Latrine	17	20.2
Total	84	100
Disposal of child stool		
Toilet	43	36.4
Buried it	36	30.5
Dust bin	39	33.1
Total	118	100

## 4. Discussion

Safe disposal of human faeces is essential for the health of families and the community as a whole. In Nigeria, with a population of over 170 million, the sanitation coverage according to National Demographic Health Survey (NDHS) survey of 2003 was estimated at 90% for urban areas and 66% for rural areas. Types of sanitary facilities in use in a given community depict the socio-economic status of the people.

Ownership of toilet facilities was high in the studied communities; however, 20% of the residents do not have access to toilet facilities. This finding agrees with WHO/UNICEF [8] report that 2.4 billion people do not have access to any type of improved sanitary facilities and also with the studies carried out by Amina [13] that more than half of the population in developing countries lacked access to basic sanitation facilities which include excreta disposal facilities. About 27% of latrines owned by residents in the studied communities were traditional pit latrines and 6.1% of respondents practiced unsafe excreta disposal (open field, bush, gutters, and streams). This figure is lower than UNICEF/WHO [1] report which stated that 28% of the population of sub-Sahara Africa defecated in an open and an additional 23% used unimproved sanitation facilities that do not ensure hygienic separation of human excreta from human contact. These findings are also supported by WHO/UNICEF [8] report that 62% of the population in the least developed countries relied on unimproved sanitation facilities (pit latrines without a slab, flush to pit latrines, bucket and hanging toilets), shared facilities, or defecation in the open. The increment in traditional pit latrines was due to the campaign by UNICEF in 2013 on the construction of pit latrines that can be affordable and less expensive in order to achieve Open Defecation Free (ODF) Zone. Surprisingly, 5.4% of respondents who claimed ownership of pit latrines do not use them. However, half of the multiple answers given to the questions during key-informant interview regarding reasons for not using pit latrines showed that respondents especially women could not endure the odour and heat released and also unable to afford the materials for the construction of pour flush toilet. These are socio-cultural and economic reasons as well as having no existing values attached to latrines. Settlements in the studied communities do not seem to be conducive for latrine location in each household following the recommended 5 – 10m distance of a pit latrine away from a living house, unless some space outside is designated for such purpose subject to good security. About 38% of respondents practiced unsafe disposal of child faeces (bush, field, waste bin and streams). These findings are supported by UNICEF Multiple Indicator Cluster Survey (MICS) carried out in 2000 in seventeen African countries which reported that in more than half of households surveyed in rural areas, the faeces of children (under 3years) were not disposed of safely. Several studies have shown that the incidence of many diseases is reduced when people have access to, and make regular use of adequate sanitary facilities [14-16].

Approximately 52.9% of respondents had handwashing stand to wash hands after defecating while 5.4% used basin with tap for handwashing. 53.9% of respondents washed hands with water only, while 45.6% of respondents washed hands with soap. This result is in agreement with the research conducted globally by World Bank [17] that handwashing with soap is seldom practiced and the observed rate at critical times ranges from 0 – 34%. Studies carried out by Adefunke [18] also reported that about 27% of the women in Bodija market

wash hands with soap and water after cleaning child's anus.

## 5. Conclusion

Majority of the residents used borehole as their main source of water. The basic types of sanitary facilities available to the residents in the studied communities are inadequate and substandard; this further compound the already existing poor sanitation and unsafe hygiene practices, while majority of respondents who claimed ownership of pit latrines does not use them. Owing to lack of sanitation facilities such as better latrines, there is open defecation around bush, field, streets, streams, river and indiscriminate disposal of solid waste. Hence, disease associated with poor sanitation and hygiene practices still constitute the utmost health burden than any other causes of morbidity and mortality in the studied communities. There is need for hygiene improvement interventions that have been demonstrated to be effective in reducing poor hygiene and sanitation related diseases at households and community level. These include hand-washing, safe excreta disposal, safe household management, home improvement campaign etc., in an integrated manner.

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