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Availability of Sanitation Facilities in Informal Settlements of Enugu Municipality Nigeria

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ABSTRACT

The need to improve the quality of sanitation in informal settlements in Enugu State necessitated this study. The study determined the availability of sanitation facilities in informal settlements of Enugu Municipality. The study adopted survey design and the population consisted of all the residents of informal settlements in Enugu municipality, Enugu State. Sample size of 200 male and female residents was drawn using accidental sampling technique. This sample size was selected using accidental sampling technique. A-17 item structured questionnaire validated by three experts in the field of Human Kinetic and Health Education and Measurement and Evaluation was used for data collection. The reliability of the instrument was established using a pilot test and data collected were analyzed using Cronbach Alpha which yielded co-efficient value of 0.84. Data collected were analyzed using the frequencies, percentages and t-test statistic. The findings showed that pit latrine with slab was the available sanitation facilities for use by respondents in Enugu municipality as it has percentage score above 50%. The findings also revealed that gender was not a significant factor in determining available sanitation facilities in Enugu municipality. Based on the findings of the study, the researchers concluded that sanitation facilities are not available for use in informal settlement in Enugu Municipality. It was recommended among others that; government should by way of subvention or by direct delivery provide the needed facilities in order to close the existing gap on availability of sanitation facilities.

Keywords: Availability, Sanitation Facilities, Informal Settlements

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INTRODUCTION

Quality drinking water, proper sanitation, and hygiene are essential requirements to ensure human health and better economic development**.** The importance of adequate sanitation is recognized globally. Adequate sanitation is a fundamental human right of every person. As such, adequate sanitation should be accessible to all with no discriminations, safe, hygienic and culturally acceptable (World Health Organization (WHO), 2018). Sanitation directly impacts labour productivity and school enrolment, which have a straight connection to social and economic development. Poor sanitation according to WHO (2018) contributes to stunting and impaired cognitive function and impacts on well-being with lifelong consequences especially for women and girls.

In recognition of the importance of adequate sanitation, 2008 was declared the International Year of Sanitation (IYS) by The General Assembly of the United Nations through its Resolution A/C.2/61/L.16/Rev.1 dated 4 December 2006 (Sanusi, 2014). The key elements of the IYS are that sanitation is vital for human health, generates economic benefits, contributes to dignity and social development, helps the environment, and improving sanitation is achievable. Similarly, the Sustainable Sanitation Alliance (SuSanA) (2014) stated that one of the Sustainability Development Goals (SDGs) of the United Nations is to ensure availability and accessibility to adequate and equitable sanitation facilities for all, end open defecation and pay special attention to the needs of women and girls and those in vulnerable situations. SuSanA further stated that protecting and promoting the health conditions of

informal dwellers requires the provision of sanitation facilities by government, non-governmental organizations, private individuals as well as religious organizations.

Sanitation refers to a process where people demand, develop, and sustain a hygienic and health environment for themselves, erecting barriers to prevent the transmission of disease (National Sanitation guidelines, 2000). The process thus involves building, use and maintenance of latrines and other sanitation facilities. Facilities to improve sanitation in slums according to the United Nations Children's Fund (UNICEF) (2015) include: borehole water, waste disposal baskets and containers, toilets flushing to sewer systems or septic tanks, ventilated improved pit (VIP) latrines, pit latrines with a slab and composting toilets. Edwin (2014) stated that sanitation facilities can be achieved through establishment of centralized sewerage facilities and decentralized sanitation facilities. Centralized sewerage facilities have a wide range and high number of people (more than 50,000) connected to them and includes a network of pipes, treatment plants and maintenance. Although, well-managed centralized sewerage facilities could improve sustainable sanitation (Scheinberg, Spies, Simpson and Mol, 2011), provision and maintenance of centralized facilities in Nigerian cities have been hampered by political, economic, ecological and social instabilities. Decentralized sanitation facilities include simple pit or traditional latrines, ventilated improved latrines (VIP) and household septic tank. Most of these facilities are lacking in the informal settlement therefore affecting utilization and promoting the spread of diseases.

Availability according to Soneye (2017) is defined as the condition of being obtainable or accessible at a particular point in time. It is an expression of how facilities can easily be gotten and used for a particular purpose and time. Availability in the context of this study means providing sanitation facilities in informal settlements to enable dwellers access and use them to improve their sanitation conditions. The negative impacts of unavailability of sanitation facilities on human and environmental health of informal settlers in Nigerian cities include exposure to acute excreta-related illness such as diarrhea, cholera, dysentery, typhoid, and hepatitis A, contamination of drinking water sources, and environmental degradation. In agreement with the WHO (2016) which stated that children under 5 years old have a 38 percent higher risk of dying from lack of improved sanitation in Nigeria. Therefore, informal settlement dwellers in Nigeria deserve the recognition and attention of policy makers, government agencies, planners and development partners for genuine areas of provision of sanitation facilities.

Informal settlements are residential areas where inhabitants often have no security of tenure for the land they inhabit, neighbourhoods usually lack basic services and city infrastructures, and housing may not comply with planning and building regulations (UN-Habitat, 2015). Informal settlement are characterized by high levels of poverty, high rates of illiteracy, poor housing and lack of access to quality health care. WHO, (2014) stated that living in informal settlements often poses significant health risks such as poor sanitation, and shortage of food storage facilities. Also, drinking water quality is often poor and the inhabitants are exposed to a wide range of virus that can cause disease. Factors such as rapid urbanization, lack of affordable housing and poor urban planning by government could create informal settlements. Poor urban planning is as a result of weak governance policy in building low cost houses for low-paid workers and urban management. Moreover, when people are unable to keep up with the high cost of living in cities, they resort to living in informal settlements.

The rapid urbanization in Enugu city has resulted to shortage of low-income housing units and increasing price of affordable housing (Ononugbo, Akpan, Osho and Kritsonus, 2010). This makes it increasingly difficult for low-income households in Enugu to maintain an acceptable standard of living, thereby pushing them to live in informal settlements where with inadequate city infrastructure, good sanitation and clean water supply. The worsening of the situation in recent times, as a result of increased populations in informal settlements and creation of new ones, suggests that informal settlements will be transmission epicenters of future diarrheal disease outbreaks without available sanitation facilities (Ministry of Water Resources, 2012). Informal settlements in Enugu municipals include Ogui squatting settlement, UgboOkonkwo layout, Ugbo Chime, Obiagu and Ikilike settlement.

The availability of sanitation facilities by informal settlement dwellers in Enugu State could be influence by factors such as educational attainment, income/wealth, gender, occupation and household size. In agreement, Abubakar (2017) revealed that there is an association between educational attainment, income/wealth, gender and household size of informal settlement dwellers and their availability of sanitation facilities.

Studies have been carried out by experts on the availability of sanitary facilities in information

settlements. For example, a study by Nwachi, Agbor and Inah (2012) revealed that informal settlements in Nigeria lack basic sanitary facilities. Muhele (2016) reported that lack of sanitation facilities forces informal settlement dwellers in Nigeria to defecate in the open, in rivers or near areas where children play or food is prepared. Furthermore, Ononugbo, Akpan, Osho and Kritsonis (2010) found that informal settlement dwellers in Nigeria lack sanitary facilities. Abubakar (2017)'s study also showed poor sanitary facilities in informal settlements covered. Sanusi (2010) findings revealed that fringe settlements do not have adequate access to water and sanitation. Tsinda, Abbott, Pedley, Charles, Adogo, Okurut and Chenoweth (2013) carried out a study on challenges to achieving sustainable sanitation facility in informal settlements of Kigali, Rwanda, and reported poor sanitation in the informal settlements. Pfeiffer, Glaser, Vencatesan and Schliermann-Kraus, (2013) observed that Africa is one of the worst performing continents in sanitation. Pruss-Ustun, Bartram and Clasen, (2014) posited that more than two thirds (2/3) of the population lack sanitary means of excreta disposal in Africa. Based on this background, this study ascertained the availability of sanitation facilities in informal settlement of Enugu Municipality.

Statement of the Problem

Human excreta pose a major treat to health, particularly infectious disease. But provision of adequate basic sanitation facilities such as latrines can protect health. Waste can also be a useful resource, for example human excreta and waste water are used and recycled in many countries for example in Agricultural and aquaculture.

Informal settlements in Nigerian cities have evolved as a result of rapid and poorly managed urbanization, and government lack of capacity to adequately meet the housing needs of urban residents within formal planned cities. Living in informal settlement posed greater health risks to the dwellers such as storage of good health facilities, quality drinking water and most importantly, general sanitation. Although, sanitation is seen as a human right which must be available to all without discrimination, many informal settlements in Nigerian cities do not have improved sanitation.

In Enugu State, the situation is not different, as informal settlers struggle to overcome the issues of poor sanitation. The researcher's visit to some of the informal settlements in Enugu state revealed poor sanitation. This implies that sanitation facilities may not be available. The United Nation (2015) recognizes the importance of the provision of sanitation facilities as one of the 6th Sustainable Development Goals (SDGs) in its' Millennium Development Goals (MDGs). However, it is not known whether all the informal settlements in Enugu State still lack necessary sanitation facilities which imply that Enugu State may still be far from achieving sustainable sanitation goal.

The researcher is worried that when sanitary facilities are not available in informal settlements, dwellers cannot utilize them to improve the quality of their lives. This could expose the dwellers to poor health condition, infectious diseases, sickness and even death. Considering the enormous health risk posed by these informal settlements to the overall health of the entire population of Enugu State generally, especially at this critical period of out-breaks of many viral infections (Lassa fever, Covid-19 virus epidemics) in different parts of the work. The researcher was motivated to ascertain specifically the availability of sanitation facilities in the informal settlement of Enugu municipality.

Research Questions

1. What are the available sanitation facilities for use by informal settlement dwellers of Enugu Municipality?

Hypotheses

The following research null hypothesis was tested at 0.05 level of significance:

1. There is no significant difference in the available sanitation facilities for use by informal settlers in Enugu Municipality based on their gender.

Research Design

The design for this study was survey. The study was carried out in Enugu Municipality, Enugu State. The population of this study consisted of residents of informal settlements in Enugu municipality, Enugu State. There are five informal settlements which are Ogui squatting settlement, UgboOkonkwo layout, Ugbo Chime, Obiagu and Ikilike settlement. A sample size of 200 male and female residents formed the sample of this study. This sample size was selected using accidental sampling technique. Structured questionnaire titled "Availability of Sanitation Facilities in Informal Settlements (ASFIS)' and has two sections A and B. Section A contains item on demographic information of the respondents such as gender while Section B contains 17 items on availability of sanitation facilities in informal settlement. The items are structured on a two-point rating scale of available (A) and not available (NA),

The researcher personally administered copies of the questionnaire to the respondents with the help of three research assistants adequately briefed on the

modalities for administration and collection of the questionnaire. The face validity of the instrument was establish using opinions of three experts from the Department of Human Kinetics and Health Education and one expert from Measurement and Evaluation Unit of Educational Foundation Department both in Faculty of Education, Nnamdi Azikiwe University, Awka. Reliability of the instrument was determined through trail test and data collected were analyzed using Cronbach Alpha which yielded co-efficient value of 0.84.

Frequencies and percentages were used to answer the research question while t-test was used to test the null hypothesis. Any item that scored up to 50 percent was considered available while below 50 percent was considered not available. A hypothesis was rejected where the p- value was less than the significant value. Otherwise, the null hypothesis was accepted. The data analysis was carried out using statistical package for Social Sciences (SPSS) version 23.

Results

Research question 1: What are the available sanitation facilities for use by informal settlement dwellers of Enugu Municipality?

Table 1: Frequencies and percentage responses of respondents on available sanitation facilities for use by informal settlement dwellers of Enugu Municipality

S/N	Items	A	%	NA	%	RMK
1	Pit latrine with slab	173	86.5	27	13.5	A
2	Pit latrine without a slab	22	11.0	178	89.0	NA
3	Bucket or handing latrine	12	6.0	188	94.0	NA
4	Government owned pipe borne water	4	2.0	196	98.0	NA
5	Drainage system	4	2.0	196	98.0	NA
6	Standard bathing facilities	2	1.0	198	99.0	NA
7	Shared bathing facilities	12	6.0	188	94.0	NA
8	Treated mosquito net	16	8.0	184	92.0	NA
9	Chemical toilets	4	2.0	196	98.0	NA
10	Toilets flushing to sewer system or septic tanks	4	2.0	196	98.0	NA
11	Waste transport and disposal of waste	6	3.0	194	97.0	NA
12	Well water	24	12.0	176	88.0	NA
13	Private owned borehole water	6	3.0	194	97.0	NA
14	Government built health centres	16	8.0	184	92.0	NA
15	Waste collection container	-	-	200	100.0	NA
16	Refuse pickups	12	6.0	188	94.0	NA
17	Container based toilets	-	-	200	100.0	NA

In table 1, only pit latrine with slab was available sanitation facilities for use by respondents in Enugu municipality as it has percentage score above 50% which is the acceptable percentage level for availability. While Pit latrine without a slab, Bucket or handing latrine, Government owned pipe borne water, Drainage system, Drainage system, Shared bathing facilities, Treated mosquito net, toilets, Toilets flushing to sewer system or septic tanks, Waste transport and disposal of waste, Well water, Private owned borehole water, Government built health centres, Waste collection container, Refuse pickups and Container based toilets are not available sanitation facilities for use by the respondents, this is so because they have percentage scores below 50% which is the acceptable percentage level of availability.

Hypothesis 1: There is no significant difference in the available sanitation facilities for use by informal settlers in Enugu Municipality based on their gender.

Table 2: t-test comparison of the mean ratings scores of male and female respondents on the available sanitation facilities in informal settlement of Enugu municipality

Gender	N	Mean	SD	df	t-value	p-value	Decision
Male	53	21.679	13.502				
				198	.427	.670	Not significant
Female	147	20.823	12.133				

Results in table 2 shows that gender is not a significant factor in determining the available sanitation facilities among informal settlement dwellers of Enugu municipality (male and female) with p-value of 0.670, thus the Null hypothesis stated was not rejected since the p-value .670 is greater than the level of significant .670.

Discussion

Findings from the study showed that pit latrine with slab is the only available facility for informal dwellers in Enugu municipality for faecal disposal among other sanitation facilities. This finding agrees with findings of Abubaka (2017) that majority of the people use pit latrine for faecal disposal. The finding supports that of Cross and Coobes (2014) that 2.5 billion people do not have access to proper sanitation, including private toilets in their homes. The reason that may have contributed to this result could be the fact as reported by Tsinda, Aboth, Pedley, Charles, Adojo, Okurut and Chenoweth (2013) that cost of the sanitation facility for faecal disposal has resulted to the use of pit latrine with slab only. This falls in line with the posits of (WHO, 2015) that due to challenges such as lack of space/overcrowding, insecure land tenure, and difficulties in determining an appropriate sanitation technology informal settlement dwellers are faced with many challenges including household facilities.

Consequently upon, the informal dwellers are left with the choice of communal disposal practices. Observation revealed that communal is the dominant disposal practice in the community and were not in a good sanitary condition. Practice of safe faecal disposal was poor and sanitation facilities were not in good sanitary conditions. Availability of toilet facility within homes improves safe faecal disposal practice. Hence the call for government intervention for improved sanitation facilities in these communities. Without improved sanitation – a facility that safely separates human waste from human contact – people have no choice but to use inadequate communal latrines or to practice open defecation. In the immediate environment or river as the case may be, exposed that fecal matter will be transferred back into people's food and water resources, helping to spread serious diseases such as cholera. Beyond the community, the lack of effective waste disposal or sewerage systems can contaminate ecosystems and contribute to disease pandemics as confirmed by WHO (2020) that provision of safe water, sanitation and waste management and hygienic conditions is essential for preventing and for protecting human health during all infectious disease outbreaks, including of corona virus disease 2019 (COVID-19).

Conclusion

Based on the findings of the study, it was concluded that sanitation facilities are not available and used in informal settlement in Enugu Municipality.

Recommendations

The following recommendations are made based on the findings and the implications:

1. Since pit latrine with slab is the only available sanitation facility with the informal dwellers, government should by way of subvention or by direct delivery provide the needed facilities in order to close the existing gap on availability of sanitation facilities.
2. Non-governmental organizations should partner with government to improve the provision of sanitary facilities to informal settlements in Enugu Municipality.
3. Private individuals and philanthropist should assist government in providing sanitary facilities to informal settlements in Enugu Municipality.

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