



(RESEARCH ARTICLE)



Assessment of water, sanitation, and hygiene facilities to eliminate open defecation in public secondary schools in Obollo education zone, Enugu State, Nigeria (2018-2022)

Frederick Chirote Odo ¹, Angela U. Iloh ¹, Nnamdi Casmir Ugwuonu ², Oliver A. Nnauko ² and Anthonia Chioma Maduabuchi ^{3,*}

¹ Department of Public Administration, Caritas University, Enugu, Nigeria.

² Department of Industrial Relations and Personnel Management, Caritas University, Enugu, Nigeria.

³ Caritas University, Enugu, Nigeria.

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Abstract

In Nigeria, a target was set in 2015 to eradicate open defecation in both private and public spaces. This study aimed to evaluate the availability of water sources, sanitation, and hygiene facilities in public secondary schools within the Obollo Education Zone of Enugu State, Nigeria. The objectives included assessing the provision of sanitation facilities, hygiene amenities, and potable water sources in these schools. The research utilized a survey design and incorporated both primary and secondary data. Random sampling was employed to select schools, while purposive sampling was used to select respondents. The findings revealed that a significant number of schools lacked adequate sanitation and hygiene facilities, as well as access to clean water sources. Consequently, it is recommended that schools intensify efforts to ensure the availability of sanitation facilities, promote hygiene practices, and explore community-driven initiatives to address water and sanitation challenges.

Keywords: Water; Sanitation; Open defecation; Hygiene; Enugu; Nigeria

1. Introduction

School is a place specially designed and assigned the responsibility of educating the young ones. Schools are made up of facilities available for giving and receiving instructions, the teachers for giving instruction and learners for receiving the instructions. Both children and teachers are supposed to be comfortable in school especially in the areas of making available functional and private facilities for disposal of wastes from humans and other waste materials. In fact everyone requires potable water, sanitation and hygiene promotion practices in his environment, cleanliness they say is next to Godliness”.

Children in particular wherever they may find themselves require to be given adequate attention in terms of providing potable water, sanitation and hygiene facilities. Children leave their homes every morning for school and return to their places in the afternoon and in most cases in the evening thereby spending most of their daily times in schools. These schools are expected to have adequate potable water, sanitation and hygiene facilities to enable the children to relieve themselves easily.

Even though inadequate potable water, sanitation and hygiene facilities negatively affect everyone, children are mostly hit (Water aid: 2018). Being in schools without potable water, sanitation and hygiene facilities exposes the children to health hazards that could inhibit their progress in schools or even cause their death. Children staying without adequate potable water, sanitation and hygiene facilities at school find it difficult to complete their education (Water aid, 2018).

* Corresponding author: Anthonia Chioma Maduabuchi

This is in view of the fact that suffering from unhygienic and poor sanitation related diseases like diarrhea and intestine worms could lead to their missing school and consequently cause them not to perform well in the class work. In addition, not having sanitation and hygiene facilities in the school can generate anxiety and distress on the children when they want to relieve themselves, thereby discouraging them from attending school or paying adequate attention to teaching and learning process. This is the general impact of lack of adequate potable water, sanitation and hygiene facilities in schools.

Females in particular are at higher risk of dropping out from school lacking potable water, sanitation and hygiene facilities (Water aid 2018). Females who are menstruating need toilets that are for them only, water and soap, dust bins to dispose waste materials. Females who cannot manage their monthly periods hygienically at school are more likely to stop school from time to time which may invariably lead to their poor performance in school assignments (UNESCO: 2014). This poor performance may discourage them from continuing their education. Schools are expected to encourage children to continue their education by creating favourable environment necessary for them to safeguard their body and ward off likely attack by disease through improvement in potable water supply, sanitation and hygiene practices.

Presently, the adoption of proper sanitation and hygiene practices is one of the global challenges facing mankind. Sanitation is the keeping of environment and body clean in order to have fresh and sweet breath. It is the hygienic removal of refuse and human excreta from the reach of human being. In general sanitation is defined as the provision of infrastructural facilities and services for the safe disposal of refuse, urine and faeces (Water aid 2018). The importance of sanitation cannot be over emphasized. Good sanitation practices promote good health, keep the environment in decent form and provide employment and to be precise, good sanitation practices improve quality of life. Quality of life is improved when the people enjoy clean environment, uninfected food, drinking water and practice good hygiene by having the culture of washing their body, teeth; and cloths at least after wearing them for two consecutive times.

So in order to have access to good potable water, sanitation and hygiene practices in our public secondary schools in Obollo Education Zone, Enugu State Nigeria, the school must have infrastructural facilities in place. Access is conceptualized as the percentage of the population that uses improved drinking water, sanitation and hygienic facilities (Akpabio 2012).

1.1. Statement of the problem

A beautiful nation is characterized by decent and attractive environment. And environment cannot improve itself. This improvement must be perpetuated by its citizens. This is achievable if the citizens install adequate potable water, sanitation and hygiene facilities through which the citizens can keep the environment clean and maintain healthy population.

Today 620 million school children in the world do not have basic school toilets (UNICEF and WHO: 2018). Specifically, in Nigeria for example, progress towards achieving house hold and public sanitation and hygiene is disappointing due to poor and weak attention to that effort. Six people out of ten (60%) are still living without basic sanitation and hygiene facilities (WHO and UNICEF 2017:2). The reports continue to show that public schools are not exception, half of public schools in Nigeria do not provide students with adequate potable water, sanitation and hygiene facilities and this contributes drastically to poor health conditions of the students.

Public places such as schools, markets, motor parks, and even hospitals have often to defecate in open spaces and sometime in and around water sources (Asma'll, Atadoga and Ayenajeh, 2022) like water ponds. In the schools where pit toilets are available, there is no water and soap to wash hands and buttocks. The problem is that it is not clear the level of facilities put in place in public secondary school in Obollo Education Zone, Enugu State Nigeria, where the students and the staff can relieve themselves and end open defecation.

1.2. Research questions

The broad research question is to find out whether facilities that can be used to end open defecation in public secondary schools in Obollo Education Zone Enugu State Nigeria have been put in place. The specific research questions are as follows:

- Have sanitation facilities been put in place in public secondary schools in Obollo Education Zone, Enugu State Nigeria to enhance open defecation free.
- Have hygiene facilities been put in place in public secondary schools in Obollo Education Zone, Enugu State, Nigeria to enhance hygiene behaviour improvement.

- Have sources of potable water been put in place in public secondary schools in Obollo Education Zone, Enugu State, Nigeria realize sanitation and hygiene goals.

Objectives of the study

The broad research objective of this study is to find out the extent to which facilities that can be used to end open defecation have been provided in public secondary schools in Obollo Education Zone, Enugu State.

The specific objectives are to:

- Examine the level of provision of sanitation facilities in public secondary schools in Obollo Education zone, Enugu State.
- Find out the extent to which hygiene facilities have been put in place in public secondary school, in Obollo Education zone Enugu State.
- Assess the extent to which sources of potable water have been put in place in public secondary schools in Obollo Education Zone Enugu State, Nigeria.

2. Literature review

2.1. Conceptual issues

2.1.1. Sanitation

Sanitation is the art of keeping the environment clean. Sanitation facilities according to United Nations Sustainable Development Goal 6(n.d) refer to the provision of facilities and services for the safe disposals of human urine, faeces and waste materials. In accordance with Sustainable Development Goal 6 (SDG6), sanitation services should be carefully and safely managed throughout the sanitation chain that is from waste occurrence to the disposal or reuse (SDG6) n.d). This implies that sanitation includes the whole process and procedures of making the environment clean, keeping the surrounding air and land free from all that are waste materials and could constitute health hazards to humans.

Asma'u, Atadoga and Aye najeh (2022) conceptualized environmental sanitation as the activities that are targeted towards improving the standard of basic environmental conditions affecting the welfare of the people. They went further to explain environmental conditions as clean and potable water, clean and safe ambient air, efficient and safe animal, human and industrial waste disposal, protection of food from biological and chemical contaminants and open defecation free surrounding. Uchegbo (2002) posited that sanitation is the necessary effort put in place for the protection of health through the removal of human, industrial and domestic waste from human contact. The National Sanitation Policy of the Federal Republic of Nigeria (2005) defined environmental sanitation as the principles and practices affecting the healthful and hygiene conditions in the environment to promote public welfare, improve quality of life and ensure a sustainable environment. This implies that sanitation is broad and involves all that is used in keeping the environment clean and in good condition especially as it affects open defecation free environment. Open defecation free can only be sustained through the provision of improved sanitation facilities.

Akpabio (2012) posited that improved sanitation facilities include: public sewer or septic system flush latrines, ventilated improved pit latrines, ventilated improved pit latrines and pit latrines with slabs or platforms.

Water aid (2018:4) categorized sanitation levels in schools into three thus:

- Basic sanitation
- Limited sanitation; and
- No sanitation

Water aid (2018) outlined what constitutes basic sanitation in schools as school toilets such as flush or pour flush toilets, ventilated improved pit latrines, composting toilets, and pit latrines with a slab or platform, that are single sex and usable- that is being available, functional and private and that limited sanitation in schools involves school toilets that are like a basic sanitation but either not single-sex or not usable that is not functional. Water aid (2018) explained in detail that “no sanitation” in school involves school toilets that do not hygienically separate human waste from contact with people, such as latrines over an open pit or water, or no school toilets at all. The provision of these sanitation facilities has the potential of solving pollution challenges posed by open defecation. Open defecation is people relieving

themselves in open places (Water aid 2018:4). Open defecation is found in bushes, in gutters and on rivers and roads. In the case of schools, open defecation is found in and around the school compounds.

In our study, we also categorize hygiene behavior levels into three thus:

- Basic hygiene behaviour
- Limited hygiene behaviour
- no hygiene behaviour

Basic hygiene behaviour in schools include schools having water and soap at strategic points like in toilets, at school gates, in the classrooms; and in the staff rooms. Limited hygiene behaviour facilities are like basic hygiene behaviour but not usable or functional. No hygiene behaviour facility in schools involves schools that do not have hygiene behaviour facilities at all. And for water supply, basic water supply involves schools that have source of potable water supply-like public stand pipes, school boreholes, protected wells, protected springs and harvested rain water. No source of water supply involves school that do not have source of potable water supply.

2.1.2. Water and Hygiene

Hygiene in this context is a micro sanitation and hygiene practices cannot be successful without having adequate access to drinking water. Access in this context according to National Policy on Water and Sanitation (2000) as in Akpabio (2012) is the percentage of population that uses drinking water from improved sources. Improved sources of drinking water in Nigeria include households' connection; public stand pipes boreholes, protected wells and springs (Akpabio, 2012). Water is for drinking, washing and flushing and in effect sanitation and hygiene practices without adequate available sources of improved water cannot be achieved. Safe drinking water according Millennium Taskforce Report (2008) is the water that is safe to drink and available in sufficient quantities for hygienic purposes. Millennium Taskforce Report (2008) further stated that the working definition of basic sanitation is the lowest cost option for securing sustainable access to safe, hygiene and convenient facilities and services for excreta and waste water disposal that provide privacy and dignity while ensuring a clean and healthful living environment both at home and in the neighbourhood of users and in this context public schools.

Thus, in order to maximize the benefits associated with having access to water, sanitation, hygiene facilities and education, students of public secondary schools should practice hand washing for hygiene behaviour improvement.

2.1.3. Global Sustainable Development Goals on Water, Sanitation and Hygiene

The new 17 global Sustainable development goals on water, sanitation and hygiene were adopted by all United Nations member countries at the landmark of 70th United Nations General Assembly in New York, United States of America on September 25, 2015 (Wateraid: 2018). In this 17 global declaration for sustainable development goals was goal 6. Goal 6 was directed towards universal access to safely managed water, sanitation and hygiene for everyone, everywhere and every time (United Nations. n.d). This implies providing potable water at home, work places and in public places including markets, schools and hospitals and readily available whenever it is required (Water aid 2018:4). This goal 6 went further to address the issues of sanitation and hygiene by proclaiming that a private toilet, where faecal waste is safely disposed of, with sanitizers, disinfectants, soap and water for washing hand and parts of the body should be made available. Hygiene behaviour change is not easy to approach. For people to embrace hygiene behaviour change, they have to have access to sufficient quantities of potable water, facilities for a sanitary disposal of faeces, waste or excreta and materials for example, water soap and sanitizers for practicing hygiene behaviour change (WHO, 2010).

Part of the new 17 Global Sustainable Development Goals was goal 4. Goal 4 prescribed inclusive and quality education and promotion of lifelong learning and improving school facilities that are accessible to all, including basic sanitation flush toilets, ventilated improved strong pit latrines, strong composting toilets, water easy toilets, pit latrines with a slab or platform and urinary that are single sex, usable and decent United Nations, n.d). Based on these declarations, Nigeria has set year 2015 to end open defecation in private and public places including on rivers, roads, gutters and in bushes.

School children have their own rights. They have rights not only to eat, put on cloths and receive education or training, but rights to access adequate sanitation and hygiene by using potable water. (Water aid, 2018) pointed out that a school that does not have basic access to water, decent toilets and good hygiene practices should not be referred to as school. Raising children in schools without adequate toilets exposes them to various health challenges that could get rid of their lives. In addition, children are exposed to dangerous animals, while defecating in bushes due to lack of adequate sanitation related facilities. Being worried about where to defecate could affect children's academic progress in schools

as Water aid (2018) commented that inadequate toilets in the school compound can generate anxiety and stress in children thereby discouraging them from paying adequate attention to learning.

Basic and safely managed sanitation and hygiene facilities- that is facilities that cannot endanger the users life are required in schools in order to save the user's life and the environment. Both human beings and the environment are endangered species when sanitation facilities are poor as UNICEF/WHO (2017) observed that untreated faeces and other effluents are discharged in the environment and this threatens people's life and the ecological systems. In addition, a user of pit toilets can fall into it if the floor or slab breaks.

2.2. Theoretical framework for this study

We know that various levels of government are responsible to their citizens for ensuring that fundamental facilities including sanitation, hygiene and potable water are made available to the people. Government alone cannot perform these functions. And because of the failure of state apparatus to deliver basic services, we decided to anchor our theoretical framework for this work on Community Led Total Sanitation Water aid 2018). This is referred to as triggering (Water aid: 2018). According to Water aid (2018), triggering is a concept used in community led total sanitation to explicate the process by which an emotional response is brought out in community members as they realize the negative impacts of open defecation and uncoordinated refuse disposal. According to Water aid (2018) triggering implies that: instead of teaching people that they ought to practice certain behaviour, it is better to motivate them through for instance, the desire to nurture the need for social affiliation, disgust provoked by unhygienic conditions, and their ambitions for improved status and better environment surrounding.

Impliedly triggering generates collective community decision to say no to open defecation and make necessary efforts to end open defecation everywhere. The purpose is to bring positive change through community mobilization and self directed action/Water aid 2018). Through triggering, a community develops steps to improve its sanitation and hygiene behaviour and improve toilet facilities. This is done in such a way that all the people resident in the community have access to improved water, sanitation and hygiene facilities. Schools are part of the community where they are located. Irish Aid (2009) stated that participatory facilitation, community analysis and action known as community led total sanitation has been proven to be a good approach to improving water, sanitation and hygiene facilities.

In applying this theoretical framework for this study, we recognize that all public secondary schools in Obollo-Education Zone have Parents' Associations (PA) and School Based Management Committees (BMC).

Unfortunately, fees generated by these committees are not enough to be invested in the provision of potable water sanitation and hygiene facilities. And because of this financial deficiency, school heads of public secondary schools in Obollo-Education Zone in collaboration with these committees can develop Community Track Initiatives. (CTI). Adoption of community track initiative will enhance the participation of the community in decision making with regard to drawing plans for ending open defecation in the community including public secondary schools through the provision of potable water, sanitation and hygiene facilities in schools.

Community mobilization process must take into cognizance the already existing structures and systems in the community. The administrative hierarchy of the community must be given due recognition so that there will not be disagreement regarding the community's intervention in the provision of school water, sanitation and hygiene facilities. The community must be given the opportunity to create time for the meeting, place of the meeting and date for the meeting.

3. Material and method

This study was a survey study. It was a survey in that smaller population was studied to represent a larger population the population for this study constituted 41 principals. The population for this study constituted 41 principals of public secondary schools in in Obollo-Education Zone, Enugu State. The sample size for this study was made up of the 41 principals of public secondary schools studied. Two methods of data collection were adopted. These were primary and secondary data. Primary data were obtained from the field work while secondary data were gathered from books, journal articles, internet materials, government documents and unpublished works.

Questionnaire cum-oral interview and personal observation were used to collect the data. The data collected were analyzed using simple percentage.

4. Results

4.1. Data presentation

Table 1 The status of sanitation facilities in public secondary schools in Obollo-Education Zone, Enugu State

S/N	Items	Numbers of schools	Percentage of schools
1	Basic sanitation facilities	8	19.5
2	Limited sanitation facilities	16	39.0
3	No sanitation facilities	17	41.5
	Total	41	100.00

Table 1 item shows that 8 or 19.5% schools have basic sanitation facilities. Item 2 in the same Table 1 shows that 16 39.0% schools have limited sanitation facilities.

Item 3 in Table 1 indicates that 17 or 41.5% schools have no sanitation facilities.

Table 2 The status of hygiene facilities in public secondary schools in in Obollo-Education Zone, Enugu State

S/N	Items	Numbers of schools	Percentage of schools
4	Basic hygiene behaviour facilities	3	7.3
5	Limited hygiene behaviour facilities	7	17.1
6	No hygiene behaviour facilities	31	75.6
	Total	41	100.00

From table 2, it can be seen that: item 4 shows that 3 or 7.3% schools have basic hygiene facilities. Item 5 shows that 7 or 16.1% schools have limited hygiene facilities; and item 6 indicates that 31 or 75.6% school do not have hygiene facilities at all.

Table 3 The status of sources of potable water public secondary schools in Obollo Educations Enugu State

S/N	Items	Numbers of schools	Percentage of schools
7	Basic source of potable water	8	68.3
8	No source of potable water	13	31.7
	Total	41	100.00

Item 7 shows that 28 or 68.3% schools have basic source of potable water. Item 8 shows that 13 or 31.7% have no source of potable water.

5. Discussion

The discussion of the findings of this study is hinged on three paragraphs in accordance with the research questions. On sanitation facilities, it was found that 8 or 19.5% of the schools studied have basic sanitation facilities. This means that they have one type of toilet or the other. This study also revealed that 16 or 39.0% of the schools studies have limited sanitation facilities. This implies that they have basic sanitation facilities that are not usable or functional. Findings also indicated that 17 or 41.5% of the schools studied do not have sanitation facilities at all. Schools that have limited sanitation facilities should as a matter of necessity upgrade or put their sanitation facilities in good conditions to make them usable. This will help both students and teachers to relieve themselves easily. It will also help to stop open defecation on school grounds. The outcome is that improved sanitation level can help to prevent outbreak of disease. Schools that do not have sanitation facilities should mop up all energies within their disposal to find ways of installing

sanitation facilities as Water aid (2018) posited that any school that does not have adequate sanitation facilities like water toilets and hygiene practices should not be called a school.

On hygiene facilities, this study revealed that 3 or 7.3% of the schools have basic hygiene behaviour facilities. This implies that the schools keep water and soap at strategic points to promote hygiene behavior improvement. It was found that 7 or 17.1% of the schools studied have limited hygiene facilities. This means that they have hygiene facilities that are not functional. Thus study also showed that 31 or 75.6% of the schools surveyed do not have hygiene facilities. Schools that have limited hygiene facilities should work hard to sharpen and upgrade their hygiene facilities so that they can be functional and usable. Schools that do not have hygiene facilities should mobilize actions that can help them to install hygiene facilities. Hygiene improvement behavior change cannot be attained if adequate and functional hygiene practicing facilities are not available in schools.

On sources of potable water, it was found that 28 or 68.3% of the schools studied have access to potable water. This means that the schools can get water from public stand pipes or protected well or springs depending on their locations. This study also revealed that 13 or 31.7% do not have access to potable water like public stand pipes or springs can construct ponds. These schools where sources of potable water do not exist, both the students and the teachers will find it difficult to maintain their hygiene conditions.

6. Conclusion

Having done this study, we state that 8 or 19.5% of the schools studied having basic sanitation facilities are too few to promote open defecation free in our public schools. These schools where basic sanitation facilities are limited or not put in place at all will make both the students and the teachers to be defecating or relieving themselves around the school compounds thereby promoting unhealthy conditions of the schools.

In a similar vein, 3 or 7.3% of the schools studied having basic hygiene facilities are also too few to sustain the hygienic conditions of the schools, students and the teachers. These schools that have limited or have no hygiene facilities at all will not have the atmosphere of imbining hygiene improvement behaviour into the students. Education is an overall development of the children, but when students are not exposed to hygiene improvement behaviour, their education will not be complete.

The availability of basic sources of potable water in 28 or 68.3% of the schools studied is not enough to perform the functions of water elsewhere.

Recommendations

Based on the finding of this study, the following recommendations are made:

- Schools that have limited or no sanitation facilities at all should try as much as possible to install them. This action will enhance the promotion of open defecation free in schools. In addition, both the students and the teachers will not face the challenge of physical attack while trying to defecate in bushes.
- Schools that have limited or no hygiene facilities at all including those that do not have sources of potable water should make every effort to have them so as to imbibe the culture of improvement of hygiene conditions of the students.
- Schools should adopt the theory of community triggering to mobilize the communities to come to their aid. Community track initiatives using community school collaboration approach can help to achieve these goals.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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