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ASSESSMENT OF WATER AND SANITATION PRACTISES IN FIVE COMMUNITIES IN OWERRI NORTH LOCAL GOVERNMENT AREA OF IMO STATE

Opara AU*[1], Eberendu IF[2] and Uloneme GC[3]

[1]Department of Medical Laboratory Science, Faculty of Health Sciences, Imo State University, Owerri, Nigeria.
[2]Department of Public Health, Faculty of Health Sciences, Imo State University, Owerri, Nigeria.
[3]Department of Anatomy and Neurobiology, Faculty of Medicine, Imo State University, Owerri, Nigeria.

Corresponding Author:- **Opara AU**
E-mail: ulokaima3@gmail.com

ABSTRACT

This study assessed water and sanitation practices in five communities in Owerri North L.G.A. of Imo State. 320 respondents were randomly selected and interviewed from the five randomly selected communities. Data were collected from them to assess how they use the water facilities; how they use the sanitation facilities; how they manage domestic water, and assess community plan/strategy for effective water sanitation. Results showed that main sources of water were Borehole (47%), Rain water 34% and Stream/Rivers 20%.65% of the respondents had access to inadequate water supply; while 52% lack access to improved sanitation facilities. There is satisfactory management of domestic water with 63% storing water in receptacles that have cover. However the community water sources are not treated before use. Women were found to be strong, and more proactive in the maintenance of the community water. However, it is recommended that Local, State and National Governments should increase water availability. Such water should be regularly tested for water quality by relevant organizations. Also Environmental Health Practitioners should be recruited to beef up Environmental Sanitation activities in communities among other suggestions.

INTRODUCTION

Water is a clear, colourless, odourless and tasteless liquid substance essential for most plant and animal life and a mostly used solvent [1]. Water has, been described as the most essential element, next to air, for human survival. Water plays an important role in the daily maintenance of our bodies such as body temperature, regulation of metabolism, serves as lubricant, alleviation of constipation, as well as in the prevention and reduction of diseases such as 45% of colon cancer, 50% of bladder cancer, and breast cancer. This means that the quality of drinking water is as important as the quantity. Wastes that can contaminate sources of water supply and cause health problems include human and animal feaces, solid wastes, domestic waste water (sewage, sullage and gray water), industrial waste and agricultural waste [2]. Indiscriminate

and unregulated pig husbandry pose serious health hazard to inhabitants of rural communities. Such is practised in communities of Owerri North Local Government Area of Imo State, Nigeria where pig rearing is undertaken for substance without resort to standard sanitary control measures. Hygienic means of prevention of disease can be by using engineering solutions (e.g. latrines, septic tanks, water treatment) or even by personal hygiene practices (e.g. simple hand washing with soap). Lack or inadequate sanitation has been implicated as major cause of diseases and so, improving sanitation win greatly impact positively on health of individuals and community [3]. Access to safe sources of water and sanitation facilities in communities has remained a matter of great concern to both individuals and organizations. This is because the

water and sanitation practices of the people greatly affect their level of health. Nigeria's water and sanitation situation is such that the coverage is among the world's lowest in the world because the country is yet to reach the MDG's target of 75% coverage for safe drinking water and 63% coverage for basic sanitation by the year 2015.

In Nigeria, only 60% of households have access to improved sources of drinking water, a situation that affects both the rich and the poor and even those who rely on deep bore well cannot reliably secure uncontaminated water.

Poor water and sanitation practices have implications for both the individual and for the community in general. Its health implications can be seen in the high degree of infant morbidity and mortality which arise due to disease such as cholera, diarrhea, dysentery, amoebiasis, typhoid fever, guinea worm infection, etc [4]. These diseases are said to arise due to contamination of water and food sources with disease causing micro-organisms, unhygienic food preparations practices, non-washing of utensils and hands while preparing food, before eating and after going to toilet (poor personal hygiene), and indiscriminate defecation due to lack or inadequate toilet facilities. Again, the use of water from contaminated, unprotected and untreated water sources pose grave public health hazards. When the wholesomeness of an available water supply has been compromised, health and wellness suffer serious limitations.

The subject matter of water and sanitation therefore is very vital to public health. The United Nations, through World Health Organization (WHO), observed that water quality, pollution and access were very serious environmental issues that are vital to public health [5]. It noted that there was high morbidity and mortality among infants and children due to prevalence of water-borne diseases. It called on International Agencies, Governments and other stakeholders to provide access to improved sources of water and sanitation facilities and declared 1981-1990 International Drinking Water Supply and Sanitation Decade.

Prior to the declaration of the International Drinking Water Supply and Sanitation Decade 1981-1990, the main sources of water supply remained rain water, hang dug and machine dug wells, ponds, streams and rivers for those who have rivers flowing past their community as well as bore holes.

These sources of water supply do not seem to be guaranteed safe sources of water supply. They tend to be contaminated by many anthropogenic, as well as natural, ecological, and environmental factors. These contaminated sources of water supply are used by many to satisfy their daily water needs. This gives rise to poor state of health, occurrence of diseases, and lack of wellness. Life expectancy is low in communities with inadequate supply of potable water. More so, where sanitation is very poor and inadequate, serious human infectious diseases occur.

The international Drinking Water Supply and Sanitation Decade 1981-1990 has long past with, its

objectives and targets. Programmes and projects were carried out in communities. Now we are in the era of Millennium Development Goals (MDGs) where the subject matter of water sanitation (under environmental sustainability) is number 7. Nigeria's Water and Sanitation situation is such that the coverage is among the lowest in the world as the country is currently not on track to reach the MDGs targets of 75 percent coverage for safe drinking water and 63 percent coverage for basic sanitation by the year 2015. To what extent have community practices tended towards the realization of the MDGs targets? UNICEF has had programmes called WATSAN, RUWASSAN and now they preach WASH. All the acronyms, point to the fact of the need to improve water availability, accessibility and quality as well as improving the sanitation and health status of the people by reducing water borne diseases, increasing community participation and involvement in their own health decisions.

With all these programmes, one tend to still hear of complaints of water scarcity, which make women and children trek long distances to fetch water; people still resort to using available unsafe water irrespective of its source, and stories of diarrhea disease, cholera and gastro enteritis outbreaks. The study aimed at assessing water and sanitation practices in five communities of Owerri North local government of Imo State.

METHODOLOGY
Research Design

This study involved a look at practices in five communities of Oyigbo LGA with a view to knowing how the people use water and sanitation facilities in the selected communities. The point here is to identify gaps in the use of the facilities and proffer solutions to close up the gaps. The researcher used the survey research method for the collection of primary data. Structured questionnaire was designed and administered to the respondents. The data obtained from the questionnaires were supplemented with the ones acquired through personal interviews. The data collected were analyzed through sorting, editing, charting and tabulation. In data analyses, the statistical technique of simple percentage was used.

The five communities that comprised the sample population were chosen through a multistage sampling procedure. This is because some of the communities are riverine while some are not and to achieve proper representation and fairness. Due to time and access constraints, a purposive sampling technique was used to identify the study samples. Then a conscious effort was made to select respondents from households in different settlement areas of the selected communities. A total of 400 questionnaires were administered to respondents. The household is the unit of inquiry. The wife of the head of the household or any adult woman met at the household above 18 years of age and capable of giving information was the key respondent. Interviews were administered to women from 50 households at the rate of 10 from each

community. The selection of the wife of the head of household as the key respondent was to look at the gender perspective with particular reference to water and sanitation since women are said to be better home managers than men.

Methods of Data Collection

The designed self-administered questionnaires were distributed to literate respondents, while that of illiterate respondents were done through the help of research assistants. Other techniques used in data collection are:

➢ Guided questionnaire
➢ Records of sanitary inspection of water sources
➢ Key information interviews
➢ Observations

Table 1 shows the demographic factors of respondents. Sex distribution shows that 214 (66.9%) respondents were females while 106 (33.1%) consist of males. On Marital Status of respondents, 144 (45%) were single while 167 (52.2%) were married, 9 (2.8) respondents were divorcees. For Occupational Distribution, 66 (20.6%) were students, 16 (5%) were civil servants, 48 (15%) were traders, 151 (47.2%) were farmers while 39 (10.2%) were full housewives. Sources of water supply available to the respondents are Borehole (Mono pump) 46%, followed by Rain Water 34%, then Rivers and Streams had 18% responses. Well had just 2%. No response for spring and pond (Table 2, item 1).

Table 2 (item 3) also shows that 208 (65%) out of 320 responses say that available sources of water supply are not adequate for their respective communities while 112 (35%) say that available sources of water supply are adequate in their communities. 228 (71.3%) of the respondents have experienced water scarcity and 92 (61%) has had it for 1-2 weeks. Also it shows that while 28% has had 3-4 weeks water scarcity, yet 11% of respondents have had water scarcity for 4-5 weeks.

Table 2 (item 4) above, 253 (79.1%) of responses have an average of 1km to their source of water supply and 50 (15.6%) respondents have their source of water supply within 1-3kms, 5.3% (17) of responses say they trek 3-4km to get water while no source of water supply is beyond 4km from respondents house as shown in the table. From the table above (item 1), 212 (66%) responses have latrines in their households while 108 (34%) of respondents do not have latrines. Table 3 (item 2) shows that out of the 212 respondents who claim they have latrines, 87 (41%) have pit latrine with cover, 20 (9%) have pit latrines without cover; 77 (36%) use caste system; 10 (5%) use the VIP or San-plat latrine' and 4 r2% respondents use water closet. 14 (7%) responses who claim they have toilet actually do not have latrine. This table (item 3) also shows that all respondents (100%) say they do not have public toilet in their community.

Table 4 shows that majority of 201 (63%) response claim that they store their water in Jerry cans and

Inferences were drawn based mainly on the field data collected from these primary and secondary data sources.

These materials were particularly useful, helping the researcher to discuss issues in terms of theoretical and conceptual framework. The questionnaires would be collected and cross checked for completeness and correctness. Thereafter the data would be sorted, edited, tallied, tabulated and percentages worked out for analysis.

RESULTS

A total of 425 questionnaires were distributed to the communities to be studied but the number of questionnaires returned by respondents after sorting and editing was 320. These numbers of respondents were used as the sample for analysis, buckets with cover; while 60 (19%) say they store their water in Jerry cans/buckets without cover. Another 51 (16%) responses say they store water in metal buckets without cover. Those who say they store their water in overhead tanks and clay with cover respectively is 4 each representing 1 % each.

DISCUSSIONS

From the findings of this study, the main sources of water supply to the people are Borehole (mono-pump), 300 response (47%), Rain with 34% responses, River/Stream 117 (18%), 20% make use of well, people no longer use ponds as source of water supply for domestic purposes but water from ponds are still being use for oil mill processing.

Table 2 (Item 2) shows that these sources of water supply are not adequate (65%) for the communities. The point here is that rain water is not guaranteed all the year round. Rainfall in the area is from May-September. Available sources of water supply face pressures after the rainy season.

The inadequacy of water supply is further shown by the 71.3% (Item 3, Table 2) respondents who say they have experienced water scarcity. 61.4% of the number had water scarcity for two weeks, followed by 27.6% who had water scarcity for 1-2 weeks (see Table 2 (Item 4) and figure 1. the problem of inadequacy and scarcity of water will expose the people to accessing water from suspicious sources thereby creating opportunity for spread of water borne diseases [6]. Table 2 item 3, show that majority (79%) of the sources of water supply are within one kilometer distance from the household, yet it takes majority (71.3%) the people sampled 30-60 minutes (46%) and > 60 minute (28.3%) average time (return journey) to fetch water. This is above the WHO recommended average time of 30 minutes return journey to fetch water exposes the water to contamination at points of collection, while on queue, and during haulage (see legends 1&3). Again, longer average time shows that source of water supply is inadequate.

Table 1. Demographic factors of Respondents

Item	Description	Frequency	Percentage (%)
1.	**Sex**: Male Female **Total**	106 214 **320**	33.1 66.9 **100**
2.	**Marital Status:** Single Married Divorced **Total**	144 167 9 **320**	45 52.2 2.8 **100**
3.	**Age**: 10 -20 21-30 31-40 41-50 51-60 >61 **Total**	54 88 74 50 39 15 **320**	16.9 27.5 23.1 15.6 12.2 4.7 **100**
4.	**Occupation**: Students Civil Servants Traders Farmers Full Housewives **Total**	106 16 48 151 39 **320**	20.6 5 15 47.2 10.2 **100**

Table 2. Use of Water Supply

Item	Sources of Water	Frequency	Percentage (%)
1.	RainWater Ponds Rivers/Streams Borehole (Mono pump) Spring Well Total	22 0 117 300 Nil 12 **654**	34 0 18 46 NIL 2 **100**
2.	**Adequacy of Supply** Yes No Total	112 208 **320**	35 65 **100**
3.	**Head Water Scarcity:** Yes No Total	228 92 **320**	71.3 28.7 **100**
4.	**Duration of Scarcity** 1-2 weeks 3-4 weeks 4-5 weeks > 5 weeks Total	140 63 25 - **228**	61 28 11 - **100**
5.	**Average Distance** 1km 1-2km 3-4km >4km **Total**	253 50 17 None **320**	79.1 15.6 5.3 0 **100%**

Table 3. Use of Sanitation Facilities

Item	Do you have latrine?	Frequency	Percentage (%)
1.	Yes	212	66
	No	108	34
	Total	**320**	**100**
2.	**What type of latrine?**		
	Pit latrine with cover	87	41
	Pit latrine without cover	20	9
	Cast System	77	36
	Water closet	4	2
	VIP /San-plat	10	5
	None	14	7
	Total	**212**	**100**
3.	Have you Public Toilet?		
	Yes	0	0
	No	320	100
	Total	**320**	**100**

Table 4. Domestic use of Water

Item	Where do you store water?	Frequency	Percentage (%)
	Clay pots with cover	4	
	Clay pots without cover	0	
	Jerry cans/bucket with cover	201	
	Jerry cans without cover	60	
	Metal bucket and basins without cover	51	
	Overhead tanks	4	
	Total	**320**	**100**

Table 2, (Item 5); show that 63% of the people store their water in rubber jerry cans and buckets with cover. This is improved system of water storage but the process of water collection at source can contaminate the water. Legend 1 shows a woman using cork of the other persons jerry can to collect water she wants to drink from the tap while water was being fetched into a bigger jerry an. However, such water are not usually treated before they are drank. The only type of water treatment practiced by the household is stand and settles. Neither the Local Government Health Department, nor the State Water Board Monitor water samples for quality assessment/testing.

The study shows that 34% of household (Table3, item 1) do not have latrines in their households. This means they would likely defecate in the bushes around causing odour nuisance, unsightliness, fly infestation and contamination of the subsoil [7]. Out of the 66% who claim they have latrines, 41 % actually have pit latrines with cover, 9% have pit latrines without cover, while 36% practice cast system. Water closet accounts for only 2%, while 5% use VIP/San-Plat latrine. 7% actually indicated none. The study indicated that only 48% of households have improved access to sanitation facilities. World Health Organization classified water closet, pit latrine with cover, VIP/San-Plat Latrine with cover as improved sanitation facilities. Findings from interview of mothers show that in disposal of children (up to 3 years) 37.5% just defecate in the open and then it is scrapped and thrown away at the nearby refuse dump back yard or front yard; 26.5% bury feaces in the ground; 4.7% defecate directly into poor and its rinsed into toilet, and 4.7% defecate directly into latrine. Table 3, item 2 shows that only 15.7% practice the WHO recommended standards (that is those who defecate directly into latrine and those who rinse and put into toilets) 84.3% have the improved access to sanitation facilities. This situation can lead to spread of diseases. As rainfalls, such effaces are washed off and carried along with the flood and discharged into sources of water supply such as rivers and stream as; feacal matter could be ingested by children who play in the rains with flood water: Diarrhoeal diseases, Gastro Enteritis, dysentery, hookworm and other water borne related diseases become prevalent. Additional to the inadequacy of sanitation facilities is the finding that none of the five communities studied had a public latrine except for school latrines which are poorly managed. This study shows that these communities lag behind in access to improved sanitation. Further findings also reveal that there is inadequate sanitary inspection of premises in the area. Sanitary inspection report shows that sanitary inspection visit is carried out once a year and this has implication for the poor environmental sanitation of the area.

Adequate and proper sanitary inspection plays a vital role in the reduction of the spread of diseases. Regular and adequate sanitary inspection of premises in the communities and enforcement of the relevant

Environmental Health Laws by Environmental Health Practitioners will improve the sanitary standard of the community.

On personal hygiene, the people need to know the new method of hand washing to improve on their hygiene practices. Findings show that majority (63%) collect and store water in the jerry cans and buckets with covers. This is a satisfactory healthful practices which can protect water from contamination with impurities, 35% store their water in uncovered receptacles which exposes their water to contamination with impurities and so render the water unwholesome. Contamination of such water can come from the road while going to collect water. It could be at the point of collection while in the queue waiting for tum (legend 1). It could also be contaminated in the home where it is stored in an open storage facility. Storing water in an uncovered facility will also expose the water to mosquito breeding. Such exposed water become vehicles for the spread of water borne and water related diseases such as malaria, gastro entries, diarrhea, dysentery, hepatitis etc.

Findings show that the only form of water treatment practiced by the household is stand and settle. No other form of treatment is given to their water source either by Local Government Authorities or by the State Water Board. This is not satisfactory since it has been noted that samples of water from public water supply sources should be taken regularly, tested and possibly treated [8]. The essence of taking such samples is to check water quality and their wholesomeness.

The study indicates that community women (55%) take responsibility for the maintenance and repairs of the boreholes when breakdown. The women raise funds through levying themselves, donations and special fund raising launching activities during festive periods like Christmas, Easter and Women August Meeting. Water committee, collect such levies and use it to engage pump mechanics who do the maintenance and repairs of broken-down pumps. Men are said to also contribute (26%) their quota to community project, youths also show considerable interest in carrying out community responsibilities. Retired teacher/civil servant as well as other groups show good interest too. However the contribution of each of these groups should not be overlooked. Community ownership and management of water facilities has been identified as a sure way of sustainability of development programmes [9]. Poor rural people do not have the resources, know-how or support to carry out the necessary repairs. Community ownership starts with community participation in the decision making process on matters that concern their well-being. Community had to select who they know can serve them and someone who possess the capacity to take up the responsibility needed. So, they nominate the persons they trust to carryout supervision of community based health programmes. Local structures played essential role in ensuring these committees are drawn from men and women of proven integrity such retired teachers, traders, farmers, etc who are collectively and openly chosen by community members. These projects, instead of outright sale of water to community members (water was obtained free of charge in all the communities studied).

The study indicated that there are gaps in the achievement of access to improve water supply in the communities. All necessary steps to have access to improved water supply or safe water supply should be adopted from availability, accessibility, quality and to storage of water. This will reduce the average time it takes to fetch water and the suffering of women and girls who are the water managers of households. Also the study indicates that there are gaps in the achievement of access to improved sanitation facilities. This means that the communities are exposed to the dangers of impending disease and other environmental health hazards.

Poor environmental sanitation undermines socio-economic development and if no urgent action is taken by government to address the problem, it will portend grave public health problem. This has the potential to increase infant morbidity in the community. Quality and adequate assessment of water and sanitation practice in the Niger Delta to measure the programme against recommended WHO standards and meeting the Millenniums Development Goals (MDGs), should be a regular issue to ensure that the communities have adequate and quality service

RECOMMENDATIONS

Stakeholders (international and local) should encourage the provision of more sources of water supply (e.g Boreholes) to reduce the average time to fetch water to <3D minutes and to conform to the WHO recommendation State and Local Government should encourage household treatment of water before use though the rain water is comparatively safe, it is usually collected through rooftops that have dust and other impurities and so should not be drank without any form of treatment. State Water Board and LGA health Department should regularly take samples of water.

Adequate manpower and capacity building has being identified as very effective and efficient in environmental health services. Recruitment of Environmental Health Practitioners and other .technical personnel to meet the health services needs of the Local Government area is very important. This is because the number of Environmental Health Officers in the area is grossly inadequate. The WHO standard is an environmental health to 8000 people. There are only four Environmental Health Officers covering a population of 207,048 people.

Available Environmental Health Officers should enforce Environmental Health Law particularly as it affects provision of sanitation facilities in the household and other sanitation rules.

There should be synergy between stakeholders in the area to ensure proper monitoring of corporate activities

and forestall health threatening emergencies. This joint effort should be aimed at protecting public health, providing more facilities for water and sanitation and promoting their use. This can be done through organizing workshops and seminars for community people. This will promote Public Health in the area.

There should be a revitalization of the village health communities in the various communities for the purposes carrying out monitoring of water and sanitation activities in the communities.

The slab production committee should be reconstituted with greater balance reinvigorated with honest nominees from the communities. The LGA should live up to her expectation by funding adequately the production of slabs in communities in the Local Government Area.

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