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INVESTIGATION INTO THE FACTORS HINDERING EFFECTIVE SERVICE DELIVERY OF WATER, SANITATION AND HYGIENE (WASH) FACILITIES IN THE MAJOR MARKETS OF ANAMBRA STATE

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Abstract

One of the greatest challenges facing the world in recent times, is the widespread of diseases and epidemics arising from lack of water and poor sanitation. Thus, this study examined the challenges facing water, sanitation and hygiene (WASH) facilities in the major markets of Anambra State. The objectives of the study were to; assess the availability and access to water, sanitation and hygiene (WASH) services and ascertain the major challenges facing the WASH facilities in delivering quality services in the major markets of Anambra State. The research design was a descriptive survey design while the sampling technique was the stratified random sampling technique. The population of study comprised of 74,547 persons (which were obtained from the various markets' unions). Out of which 399 persons were selected for the study using Taro Yamane sampling formula. The 399 questionnaires were administered to each of the selected markets respondents using stratified random sampling technique. The research instrument was a structured questionnaire designed by the researchers. The data collected were analyzed using the Weighted Mean and the Principal Component Analysis (PCA). The results indicated that there exist WASH facilities in most of the markets and the major challenge facing the WASH facilities was poor management of the facilities (component 0.912). Thus, the major findings of this study was that there exist WASH facilities and bore holes in most of the markets but lack of regular water supply, poor hygiene behaviour of the users of the facilities and poor management of the facilities were the major challenges hindering the effectiveness of WASH facilities in the markets. The study concluded that good hygiene practices are as much important as water and the sanitation facilities, without which the desired results cannot be achieved. It therefore, recommended that the Anambra State Government, in partnership with the relevant local governments' authorities, be directly involved in the management of the facilities by setting up a machinery to that effect.

Keywords: Diseases, Epidemics, Hygiene Practice, Sanitation, WASH, Water

Introduction

While the covid-19 pandemic and the national cholera out-break in 2021 presented an opportunity for investments in water, sanitation and hygiene, their impact on socio-economic activities and health has adversely affected gains in the WASH sector.

The overall status of the WASH sector in Nigeria is low. Only 10% of the population have access to complete basic water, sanitation and hygiene services. Only 4% of markets have basic water supply, sanitation and hygiene services (FMWR, 2021).

WASH is the collective term for water, sanitation and hygiene and this is because of

the inter-dependent nature of the three core issues. Each is dependent on the presence of the other. (UNICEF,2020).

To address the enormous problems of environmental sanitation in Nigeria, the Federal Ministry of Environment (FMOE) through the National Environmental Sanitation Policy identified the sanitation in markets and abattoirs as a serious areas of concern (FMOE, 2005).

Unfortunately, the current access to WASH services in Nigeria poses a threat to quality health care especially in our markets where the majority of the population access sanitation services (Social Protection Healthcare in Nigeria, 2020). Thus, the WASH facilities that are in our markets are in a state of despair; lack of water and convenience is a common feature and heaps of solid waste complete with traders for space. Most markets are deficient of a proper drainage system, portable water and storage facilities (Angmor, 2012). Consequently, most of the WASH facilities in the markets of Anambra State are poorly equipped and managed. Thus, raising important sustainability question on existing facilities. There is need to begin to figure out why we have low hygiene participation in our markets (Ezenwaji, 2021).

Universal access to water and sanitation, coupled with hygiene promotion is essential in reducing infectious diseases. This approach has been integrated into the sustainable development goal 6 whose second target states that "by 2023, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situation.

But the current access to WASH in our markets is frightening; about 33% of the markets have access to basic water supply services. Only 20% of the markets have improved water supply facilities within the premises that are accessible to the people living with disabilities. I out of 5 markets (20%) have access to basic sanitation services (FMWR; WASHNORM, 2021).

In Anambra state, public places, especially markets and parks, large numbers of people with varying degrees of ill-health are using one or two toilets. Most of the toilet facilities are not sex-separated and lack water and urinals. Hand washing basins, soaps and other sanitary materials are non-existent. Regular and adequate water supply in these facilities is a luxury while wastes are disposed indiscriminately in and around the facilities and the markets environment.

Adequate and efficient WASH facilities are therefore lacking in most of the major markets in Anambra State. This requires a close investigation of the contributing factors to this problem with a view to proffering necessary solutions. This specifically, forms the focus of this study.

Aim/Objective

The aim of this study is to investigate the factors hindering effective service delivery of WASH facilities in the major markets of Anambra state with a view to suggest appropriate ways for improvement. In order to achieve this aim, the following objectives are set:

1. To assess the availability and access to water, sanitation and hygiene (WASH) services in the major markets of Anambra State.
2. To ascertain the major challenges facing the WASH facilities in these markets.

Research Questions

1. To what extent are adequate water, sanitation and hygiene (WASH) services available in the major markets of Anambra State?
2. What are the major challenges facing the WASH facilities in the markets?

Methodology

A descriptive survey design was used while the sampling technique was the Stratified Random Sampling Technique. The data were

collected using structured administered questionnaire, field observation and focus group discussion. The questionnaire was administered to the traders, and market official The population of study comprised of 74,547, (which were obtained from the markets' unions of each of the 18 selected major markets out of about 250 markets in the State.) persons out of which 399 samples were selected for the study using Taro Yamane (1967) formula for sample size determination.

The eighteen selected major markets in the study area were selected using stratified random sampling technique. Stratified random sampling technique was also used to select the number of respondents in the selected market based on their population size. Each market was then divided into zones. A systematic sampling procedure was then applied to get the required number of respondents for each of the eighteen markets with the aid of two research assistants.

The questionnaires was divided into two sections; section A contained personal information of the respondents; the name of the market, age, sex and type of goods sold among others. While section B contained responses on the challenges faced by the WASH facilities in the markets. The questionnaire was drawn from the Primary Health Care Assessment Form of the United States of America Centre for Disease Control and Prevention by the Nigerian Health Watch (Nigerian Health Watch, 2021). This was adopted with modifications by the researchers for this study.

The study also made use of Weighted Mean and the Principal Component Analysis (PCA) to extract the major components in the challenges facing WASH facilities in the study area. This study was undertaken between January 2021 and August 2023.

Results and Discussions

From Table 1, Onitsha Markets have adequate and regular supply of water in majority of the market except the International Utensils Market that purchase its water from Water vendors. There is inadequacy of washing soaps and toilet bins in most of the markets. There is lack of washing hand basins, inadequate bleachers and other sanitary materials that are necessary for environmental cleanliness in the markets.

Awka markets lack water supply facilities, have poor hygiene behaviour, lack toilets waste beans, inadequate washing soups, inadequate hand-washing basins and lack bleaches and other sanitary materials. Only the abattoir (meat) market has enough water available in their toilets and the environment is clean. The Eke-Oyibo markets Amawbia is also clean but it is not regularly in use.

Nnewi Market have regular and adequate water in the sanitation facilities but they lack toilet waste bins, washing soaps, hand-washing basins, bleaches and other sanitary materials. The toilet environment is clean.

Umunze Market lack water, poor hygiene behaviour, no urinals, no toilet waste bin, poor environmental cleanliness, lack washing soaps, lack hand-washing basin, bleaches and other sanitary materials.

Ufuma Market lack water and it is not in use. So, this market toilet lack all necessary sanitation services expected from a market.

Ekwulobia Market has a functional borehole but it is not regularly operated. There is good hygiene behaviour but it lacks toilet waste bins, washing soaps, hand-washing basins and other sanitary materials. The toilet environment is clean and it has good management.

There is generally lack of water in the markets except Onitsha and Nnewi markets. The water is for the toilet facilities only and not for the entire market. There is lack of toilet waste bin in the majority of the markets. There is generally poor hygiene behaviour among the sanitation facility users and attendants Most of the facilities lack washing soaps, hand-washing basin, bleaches and other sanitary materials.

Table 1: Field study checklist of WASH services in the major markets

Name of market	Regularity of water	Adequacy of toilets	Adequacy of washing soap	Toilet waste bin	Adequacy of sanitary material	Hygiene Behaviour	Environmental cleanliness	Hand washing basin	Hand washing prompts	No of toilets
Onitsha main market (zone1)	Regular	Adequate	None	None	Poor	Poor	Good	None	None	10
Onitsha main market (zone2)	Regular	Adequate	None	None	Poor	Poor	Good	None	None	10
Onitsha main market (zone3)	Regular	Adequate	None	None	Poor	Poor	Good	1	None	10
International building material market Ogidi	Regular	Adequate	None	1	Poor	Good	Good	None	None	10
International Utensil market Onitsha	Not Regular	Poor	None	None	Poor	Good	Good	1	None	6
Old auto spare parts, market Obosi	Good	Good	None	5	Poor	Poor	Poor	Poor	None	60
Awka Main market	Not Regular	Poor	None	None	Poor	Poor	Poor	1	None	10
Eke Oyibo market Amawbia	None	None	None	None	Poor	Poor	Good	None	None	6
Nkwo market, Amaenyi, Awka	None	None	None	None	None	Poor	None	None	None	None
Abattoir market Awka	Regular	Good	None	None	Poor	Good	Good	1	None	3
Eke Market Nibo	Regular	Good		None	Poor	Poor	Poor	None		2
Nkwo market Enugu-Ukwu	Not Regular	Not Adequate	None	None	None	Poor	Poor	None	None	3
Agba-Edo United market, Nnewi.	Regular	Adequate	None	None	Poor	Good	Good	None	None	5
Agbo-Edo Motor parts market, Nnewi	Regular	Adequate	None	None	Poor	Poor	Good	1	None	6
New auto spare parts market, Nnewi	Regular	Adequate	None	None	Poor	Good	Good	None	None	4
Nkwo market Umunze	Not Regular	None	None	None	Poor	Poor	Poor	None	None	6
Afor Market Ufuma	Not Regular	None	None	None	Poor	Poor	Poor	None	None	6
Eke Market Ekwulobia	Not Regular	Adequate	None	None	Poor	Good	Good	None	None	12

Source: Researchers' field work (2022)

Major sanitation challenges facing these major markets

In order to ascertain the major sanitation challenges facing the markets, relevant items were structured together and included in the questionnaire. The responses are contained in Table 2.

Table2: Perceived Major Sanitation Challenges facing the WASH facilities

S/N	Issue raised	SD	D	NS	A	SA	Mean	Remark
1	Lack of water	10	61	62	79	187	3.93	Agree
2	In-adequate water	29	75	92	89	114	3.46	Agree
3	Irregularity of water	23	76	98	39	163	3.61	Agree
4	Inadequate facility	51	99	120	78	51	2.95	Disagree
5	Poor hygienic condition of the facility	9	33	191	54	112	3.57	Agree
6	Poor location of the facility	45	117	99	92	46	2.94	Disagree
7	Poor hand washing behaviour of the users	20	55	111	93	120	3.60	Agree
8	Poor hygienic behaviour of the users	61	57	77	96	108	3.33	Agree
9	Waste disposal is not regular	15	149	87	67	81	3.13	Agree
10	Absence of facility attendants	20	55	102	121	101	3.57	Agree
11	Poor management of the facilities	61	106	58	78	96	3.11	Agree
12	Poor lighting in the facility	51	99	120	78	51	2.95	Disagree
13	Poor health education of the traders	10	61	187	79	62	3.31	Agree
14	Unavailability of washing soaps at the facilities	29	75	92	105	98	3.42	Agree
15	Unavailability of tissue papers at the facilities	19	81	74	131	94	3.50	Agree
16	Unavailability of bleaches and other sanitary materials at the facilities	40	69	121	94	74	3.24	Agree
17	Unavailability of gender–sensitive and socially-inclusive sanitation service.	21	101	120	93	64	3.20	Agree

Source: Researchers' Field Survey (2022)

The results of the responses of the respondents contained in table 2 above shows that three (3) items have their mean responses to be below 3.0 while others have their mean responses greater than 3.0. Therefore we conclude that Lack of water (3.93), In-adequate water (3.46), Irregularity of water (3.61), Poor hygienic condition of the facility (3.57), Poor hand washing behaviour of the users (3.60), Poor hygienic behaviour of the users (3.33), Waste disposal is not regular (3.13), Absence of facility attendants (3.57), Poor management of the facilities (3.11), Poor health education of the traders (3.31), Unavailability of washing soaps at the facilities (3.42), Unavailability of tissue papers at the facilities (3.50), Unavailability of bleaches and other sanitary materials at the facilities (3.24) and Unavailability of gender–sensitive and socially–inclusive sanitation services (3.20) are the major sanitation challenges facing these major markets. Thus the major challenges facing the WASH facilities in the markets are poor management of the facilities, inadequate water supply, lack of sanitary materials and poor hygiene behaviour in the facilities.

Factor analysis of the challenges facing WASH facilities in the markets

Below are the outputs of the factor analysis of the challenges facing the markets and the interpretation as contained in Tables 3a -3d.

Table 3a: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.951
Bartlett's Test of Sphericity	Approx. Chi-Square	17877.620
	Df	136
	Sig.	.000

The factor analysis was carried out using principal components analysis extraction method and Varimax rotation method. The minimum factor loading criterion was set to 0.50. The communality was accessed and the results show that all communalities were over 0.50 (see Table 3b).

Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy (MSA) yielded a value of 0.951 which is meritorious. This shows that the data are adequate for factor analysis.

Bartlett's Test of Sphericity showed a significant result with p<0.001; X^2(n=396) =17877.620. This showed that the correlation matrix has significant correlations among some of its components. See Table 3a.

Table 3b: Communalities

	Initial	Extraction
Lack of water	1.000	.864
In-adequate water	1.000	.948
Irregularity of water	1.000	.888
Inadequate facility	1.000	.936
Poor hygienic condition of the facility	1.000	.850
Poor location of the facility	1.000	.935
Poor hand washing behaviour of the users	1.000	.936
Poor hygienic behaviour of the users	1.000	.950
Waste disposal is not regular	1.000	.905
Absence of facility attendants	1.000	.938
Poor management of the facilities	1.000	.951
Poor lighting in the facility	1.000	.933
Poor health education of the traders	1.000	.861
Unavailability of washing soaps at the facilities	1.000	.951
Unavailability of tissue papers at the facilities	1.000	.941
Unavailability of bleaches and other sanitary materials at the facilities	1.000	.937
Unavailability of gender–sensitive and people–friendly sanitation services	1.000	.928

Extraction Method: Principal Component Analysis.

Table 3c: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.653	92.075	92.075	15.653	92.075	92.075
2	.345	2.028	94.103			
3	.228	1.342	95.446			
4	.204	1.203	96.648			
5	.112	.660	97.309			
6	.093	.550	97.859			
7	.082	.480	98.338			
8	.055	.321	98.660			
9	.052	.306	98.966			
10	.040	.234	99.200			
11	.034	.200	99.400			
12	.027	.160	99.560			
13	.022	.128	99.689			
14	.019	.111	99.800			
15	.016	.096	99.896			
16	.012	.071	99.967			
17	.006	.033	100.000			

Table 3d: Component Matrix	Component
	1
Poor management of the facilities	.975
Unavailability of washing soaps at the facilities	.975
Poor hygienic behaviour of the users	.975
In-adequate water	.974
Unavailability of tissue papers at the facilities	.970
Absence of facility attendants	.969
Unavailability of bleaches and other sanitary materials at the facilities	.968
Poor hand washing behaviour of the users	.967
Inadequate facility	-.967
Poor location of the facility	.967
Poor lighting in the facility	.966
Unavailability of gender–sensitive and people–friendly sanitation services	.963
Waste disposal is not regular	.951
Irregularity of water	-.942
Lack of water	.930
Poor health education of the traders	.928
Poor hygienic condition of the facility	-.922

Extraction Method: Principal Component Analysis.[a]
a. 1 components extracted.

The factor solution yielded one component which accounted for 92.075 percent of the variation in the data. See Table 3c.

The result of the study is a single component extraction which were arranged according to descending order of the factor loadings as contained in Table 3d. The loading shows the various strengths of the variables. Since the factor loadings are contained in one component and all the variables are loaded together, with high loadings, we conclude that the observed sanitation challenges facing the markets are significantly the same; form one construct (component) And they are; poor management, poor hygiene behaviour of the users, inadequate water and sanitary materials. Therefore, we reject the null hypothesis and accept the alternative hypothesis. We therefore conclude that the greatest challenges facing the WASH facilities in the markets are poor management of the facilities, poor hygiene behaviour of the users, inadequate water and lack of sanitary materials.

Discussion of Findings

There exist enough WASH facilities in most of the markets in Anambra State. But these facilities lack basic sanitary materials and water. The users of these facilities exhibited a high degree of poor hygiene behaviour. This was made worse by the lack of WASH facilities like hand-washing basin, soaps, disinfectants and other sanitary materials. The danger is that these people eventually go back to their various shops to handle food stuff and fresh vegetables in the markets. This finding agreed with the findings of Ordinioha and Owhondah (2008) and Nwankwo, Uzoechina and Oguegbu (2016).

The greatest challenges hindering the effectiveness of the WASH facilities are poor management of the facilities, poor hygiene behaviour of the traders and attendants at the facilities, inadequate water and poor waste management behaviour. Despite their high level of awareness of the dangers of indiscriminate disposal of wastes, they still practice improper waste disposal. This finding agreed with Abejegah *et a.,* (2019) and Olise, Emeh and Amujiri (2023).

Conclusion

Despite the enormous. Challenges faced by WASH in the markets, WASH have been contributing greatly in improving the hygiene behaviour of the traders and also reducing open defecation in and around the markets. But poor hygiene practices among the traders, coupled with poor management of these facilities have adversely affected the reaping of the immense benefits that the WASH facilities have to offer to promote good health to the people.

Recommendations

Since one of the major challenges hindering the effective service-delivery of the WASH facilities in the major markets of Anambra state is poor management (among others) of the facilities, the following recommendations are hereby made:

1. The state government should set up a committee or board that will be directly responsible for the management of all WASH facilities in the major markets of the state. Whose responsibilities, among others will be operation and management of the facilities including collections of usage fees and purchasing of sanitary items required to maintain the facilities including the management of water in the markets.
2. The state and the respective local governments should create awareness about safe hygiene practices.

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