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ASSESSMENT OF WASH PROGRAM IN PUBLIC SECONDARY SCHOOLS IN SOUTH-WESTERN NIGERIA

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ABSTRACT

The provision of safe water, sanitation and hygiene in schools has been established to improve health, boost educational achievement, and promote gender equity which has a positive impact on the society. The aim of this pilot study is to ascertain the state of WASH program in public secondary schools in South-Western Nigeria. A total of twelve schools which span across three Local Government areas in two States (Lagos and Ogun), in South-Western Nigeria were selected. The standard for WASH in schools by UNICEF was used as the guiding principles to evaluate the adequacy of the various WASH components. Out of the 12 public secondary schools visited, only 3 (25%) had drinking water points (boreholes) and 40% of the schools do not have separate latrines for boys and girls, and for promoting privacy of older girls. Only 1 (10%) of the schools had hand washing points but without soap and there is no plan in the schools for advancing WASH program. This study reveals that the present WASH practice in many of the schools is not adequate.

Keywords: public secondary schools, WASH program, education, Lagos state, Ogun state.

INTRODUCTION

The provision of safe water, sanitation and hygiene in schools has been established to improve health, boost educational achievement, and promote gender equity which consequently has a positive impact on the society. School sanitation and hygiene education have been given prominence in the Total Sanitation Campaign, which recognizes the role of children in absorbing and popularizing new ideas and concepts (Majra and Gur, 2010). This is globally recognized as a key intervention to promote student's right to health and clean environment which would influence a change in health promotion, behaviour and attitudes (UNICEF, 1998). However, lack of sustained, effective and safe services is a common experience for many developing countries around the world which has resulted into a high prevalence of water and sanitation related diseases, causing many people, children in particular, to fall ill or even die (UNICEF, 1998). Even though, effort has been made by government agencies, local organizations and NGOs to increase access to safe water supply and sustainable sanitation in major cities in Nigeria; by supporting the provision of improved water sources and sanitation facilities in schools and rural communities thereby contributing to the achievement of the national target of 90% by 2015 and 100% by 2020 (UNICEF, 2007; ADB, 2012), large numbers of both urban and rural schools and health centers still lack access to adequate sanitary facilities like latrines and hand washing facilities.

In practice, the situation in many schools in developing countries is deplorable. The sanitation is non-existent or very poor, sometimes even unsafe, and a cause of many diseases. Currently, Nigeria is part of the countries whose sanitation coverage rates are between 20% and 40% points below the MDG targets (Banerjee and Morella, 2011; Aremu, 2012). Most public secondary schools in Nigeria are short of the basic water and sanitation facilities, and hygiene education programs are often inadequate (Adam *et al*., 2009). On August 3, 2010, Nigeria was among the 122 countries that entered into a resolution adopted by the United Nations General Assembly pledging to make water and sanitation as human rights for their citizens. The acknowledgment by the UN General Assembly, in 2010, of water and sanitation as a human right provides additional political thrust towards the ultimate goal of providing everyone with access to these vital services. As part of the agenda, coupled with the millennium development goal (MDG) target, it was pledged to half by 2015, the proportion of people who had no access to water supply and basic sanitation. In spite of this pledge, presently 2.6 billion people do not have access to improved sanitation in the world, while 1.1 billion people still practice open defecation. Out of this number, 33 million are Nigerians (UNICEF, 2007; UNESCO, 2009; WHO/UNICEF, 2010; UNICEF/WHO, 2012). As the 2015 target date is being approached for the MDGs, WHO and UNICEF are addressing current monitoring challenges and those that lie ahead (UNICEF and WHO, 2012).

It was observed that many of the available data and progress reports on the Millennium Development Target on sanitation focus on access at household levels without reference to access at public places like bus stations, schools, markets, religious and refugee camps, and construction sites (Adeniji and Afolabi, 2010; Aremu, 2012). After the family, schools are most important places of learning for students who have a central place in the community. If WASH facilities are absent, or are badly used and maintained, schools become risky places where diseases are transmitted (UNICEF, 1998). Schools can also pollute the natural environment in such a way that it causes health hazards for the community at large. Water, sanitation and hygiene are also associated with school attendance and performance especially for girls (UNICEF, 2006; WHO and UNICEF, 2010). It is therefore important that schools have proper facilities. However, improved

facilities in themselves are not sufficient, behavioral changes are also needed, leading to proper use of the facilities. More importantly, advancing WASH program in public secondary schools could lead to the attainment of other MDGs in terms of health, education and economic development (WHO, 2010; Adam *et al*., 2009; UN, 2011).

When knowledge is supported by enabling and reinforcing factors, desirable changes would occur in the school setting and subsequently transferred to the community. A school child educated about the benefits of sanitation and good hygiene behavior is a conduit for carrying those messages far beyond the school walls, bringing lasting improvement to community hygienic practices. This stresses the importance of involving schools in WASH program. This pilot study is a supporting effort to the realization of the MDGs. Specifically pertinent to partnering with the government of each State and other stakeholders, in the attainment of the MDGs related to WASH for schools, thereby enhancing equitable development. As a pilot study, public secondary schools were considered in order to identify the state of WASH program and facilities in schools within Lagos and Ogun States. Therefore, this study was carried out to know the present situation as far as school WASH program is concerned. This would enable the provision of adequate strategy in integrating WASH program into national education policy.

METHODOLOGY

Scope

The study centers primarily on assessing the present state of WASH program in public secondary schools in three (3) LGAs. The research focused on gathering key data on all components of WASH program that includes water, sanitation and handwashing facilities; hygiene knowledge and practices; and operation and maintenance systems in public secondary schools by a user-based data collected through school surveys. The assessment was based on number-, condition- and usage-of WASH facilities (Reed and Shaw, 2008; Aremu, 2012). The behavioral outcomes and health impacts of WASH program in the selected locations are not included in this pilot study.

The study areas

Three local government areas (LGAs), Somolu in Lagos State, Abeokuta and Ado-Odo Ota in Ogun States were used for the pilot study. Most schools are situated in the selected LGAs. Lagos State lies between the sedimentary belt of South-Western Nigeria on longitude 2^o 45'E and 4^o 20'E and latitude 6^o 2' N and 6^o 4' N. It is the most urbanized state in Nigeria and regarded as a megacity (Mabogunje, 2002). According to the Lagos Bureau of Statistics; Ministry of Economic Planning and Budget, the State`s public junior and senior secondary schools have an annual growth rate of 3.2%. Abeokuta, the Ogun state capital and largest city in the State, lies in the southwestern tip of the Federal Republic of Nigeria. This is located between Latitude 6.2°N and 7.8°N and Longitude 3.0°E and 5.0°E. Ota is the capital of the Ado-Odo/Ota local government area and has the third largest concentration of industries in Nigeria (Salako, 1999). Ota is on latitude 6.41°N and 6.68°N and longitude 3°41′E and 3.68°E. Ado-Odo/Ota Local Government has an estimated population of 527, 242 (Male 261, 523 and Female 265, 719) (2006 Census) with about Four hundred and fifty (450) towns, villages and settlements. The Local Government has eighteen (18) Public Secondary Schools. Figure-1 shows the map of Nigeria with the locations where the study was carried out.

Figure-1. Map of Nigeria showing locations where the survey was carried out.

Methods of data collection

Five, three and four public secondary schools were selected from Somolu- (Lagos), Abeokuta- and Ado-Odo/Ota- LGAs (Ogun State) respectively for the purpose of this study. The criteria for selecting these schools were based on their prominence in the society and the willingness of the school authorities to grant permit. Sample size, in terms of both numbers of schools and number of students and teachers polled, was influenced by the willingness of the schools to provide information. The few schools that gave approval were promised of utmost confidentiality. Consents were taken from the heads of the schools with the first part of the questionnaire focusing on basic school information and a structured questionnaire on water-, sanitation-, and hygiene- related issues were administered to the students. The same questionnaire administered to the students was given to the teachers. The role of teachers in the survey was to examine the consistency of the students view concerning the state of the WASH program in the schools.

Four main methods of data collection were used. These are the questionnaire, interviews, observation and focus group discussion methods. Only senior students were sampled to achieve high degree of accuracy in questionnaire response. The age range of these students is 15-20 years. Some teachers declined in responding to the questionnaires because of their official schedule. For the purpose of confidentiality, the names of these schools are not mentioned in this paper. On site observations which

involved moving around the schools to see the facilities on ground for data collection were carried out. The standards for WASH in schools (UNICEF, 2011) were used as the guiding principles to evaluate the adequacy of the various WASH components. Investigation on the causes of inadequate portable water, poor sanitation and hygiene education among students in public secondary schools were also carried out. To assist in data collection, three graduating students were involved. The survey was carried out in the dry season, between the Months of January and March, 2012. A total of 60 questionnaires were administered to the students in each school and 10 questionnaires were administered to the teachers. The data collected through questionnaire and observation were compiled and analyzed by using percentages and proportions as the statistical methods while the qualitative analysis was based on data derived from the interviews and focus group discussions. Findings from these methods were then combined together and presented as a single assessment.

RESULT AND DISCUSSIONS

The results of this study are based on students and teachers' responses. The result of the pilot study revealed that students` knowledge and perceptions were shallow with WASH program. The schools do not have any hygiene and sanitation learning materials, on hygiene and health for the students. The WASH facilities are in a very poor state, not well maintained and urinals are not provided. The following subsections identify the challenges faced by the public secondary schools in the study area:

Nine (75%) of the schools were overcrowded. The population of the schools visited range between 576 - 3800 students. Many of the students in all the schools visited were not enlightened on the importance of hygiene education and attitudes towards regular practices concerning water, sanitation and personal hygiene. Many of the school teachers were also not acquainted with the knowledge of ensuring enabling environment and promoting continual awareness campaigns to the students. None of the schools realized the importance of having information, education and communication (IEC) materials that incorporate water-, sanitation-, and Hygiene-related neither were any of the schools had posters in neither classrooms nor the teachers common-rooms.

Water related

Only 3 schools (20%) out of the 12 schools visited had drinking water points (boreholes). The water from the borehole is pumped and stored in the overhead water tanks which are then connected through pipes to link other points for accessibility. This source of water does not go through any form of treatment before use and this does not make it totally safe for drinking. Though, some students still drink it. However, borehole and tap water is considered acceptable provided it has undergone necessary treatment that meets national standards. From the focus group discussion and interview, majority of the students bring their drinking water from home while some depend on sachet water sold in school. It was revealed that the borehole and public tap in some of the schools had not been functional for quite some time and for that reason, water is usually accessed from unprotected hand dug well which is not potable for drinking. The schools in this category resolve to dedicate a day during the week to fetch water from the wells and stored in large drums. In many cases also, since the water supplied is not treated before storage, majority of the students bring their drinking water from home. From the student assessment and focus group discussion, an average of 90% of them prefer to bring their drinking water from home because they could not drink the water while others buy water in sachet popularly known as "pure water" from nearby source in the school premises. The water in the school premises does not have only unpleasant taste but it also contain contaminants and odor. Table-1 shows the result on water related matter from the respondents. It could be inferred that schools with code (C, F and I) had their water sources functional while the remaining schools did not have theirs functional. The school with code "I" does not have any water source which makes it more difficult for students to have access to water.

Sanitation related

It was observed that there are insufficient toilets in all the public schools. The pit latrine is the major type that is available in many of the schools. Latrine construction in all the schools had not kept pace with the increase in enrollment which has resulted in some schools having more than 200 pupils per drop-hole. 40% of the schools do not have separate latrines for boys and girls. The population of the schools visited range between 576 - 3800 students with number of toilet facilities that ranges between 4 and 12. The ratio of toilets to students in some of the schools range from 1:70 to 1:320 as compared to the global standard of one toilet compartment for every 25 girls, and one toilet compartment for every 50 boys (UNICEF, 2011). Some of the toilet facilities were not well designed because of improper ventilation and having no urinals which consequently breeds flies and offensive odor. Therefore, students find it difficult to use especially the female students, who prefer using the toilets before leaving their various homes and also at the close of the day. Proper use of the toilet facility can only be possible when the toilet facilities are well designed. An average of 65% of the students could not use the toilet facility because it is always dirty. No urinals are provided in all the schools assessed. Table-2 shows the result on sanitation related matter from the respondents.

Only 1 out of the 12 schools visited (Code G) had functional flush water toilet facility because the supply from the borehole is consistent and the students find the toilet convenient to use. The toilets are gender segregated which allows both male and female to have their privacy and they are always cleaned by auxiliary workers employed by the school management board. In this

particular school, the water system is constructed in such a way that the youngest students can have access to it as well. This facility was made available by the old students association of the school. None of the schools had sanitation club which could be helpful in reminding the students on the ethics of good sanitation. However, the population of students served by these facilities is much more than the stipulated standard by UNICEF. Many of the students would have to take their turn before they access the facility. A school reported giving hygiene talk once in a term whereas there are no facilities and program in the schools for promoting safe and private menstrual hygiene for older girls. Girls just do not need toilet facilities just for defecation; they also need privacy and dignity. Sexual harassment and rape are a risk for girls when they have to defecate in the open and there exists a potential of high prevalence of water and sanitation related diseases, which could cause many students to fall ill.

Hygiene related

Hand washing facilities are not provided in most of the public schools especially in schools with codes A, B, C, D and E, and where they are available in the other schools; they are in a deplorable state. Only 1 (10%) of the schools had hand washing points but without soaps (School Code G). Through thorough observation and investigation, it was revealed that IEC materials are not provided in any of the public schools though some students claimed to have some IEC materials in their teachers' offices. The essence of IEC materials is to educate the students on the hygiene rules. The major efforts that were made so far by the school authorities to improve the health of students is by checking student finger nails once a week and students are being punished if not neat and tidy. The students also expressed that they are been taught hygiene education in schools but not with the perception of WASH program. Hygiene education in schools is very important as this promotes the health of students and learning ability. Students would be encouraged to pass hygiene knowledge to their families and communities.

Table-1. Response on water related matter.

S/N	School code	School type	Number of respondents	Water source functional?	Frequency	Treatment of water before use	Population of students who prefer to bring water to school (%)
Somolu- Lagos							
1	A	Day school	64	Yes	21	Not treated	93
				No	43		
2	B	Day school	65	Yes	36	Not treated	89
				No	29		
3	C	Day and boarding	60	Yes	46	Not treated	98
				No	14		
4	D	Day school	67	Yes	32	Not treated	95
				No	36		
5	E	Day school	68	Yes	22	Not treated	98
				No	46		
Abeokuta-Ogun state							
6	F	Day school	70	Yes	55	Not treated	93
				No	15		
7	G	Day school	70	Yes	10	Not treated	92
				No	60		
8	H	Day and boarding	70	Yes	14	Not treated	94
				No	56		
Ado-Odo/Ota-Ogun state							
9	I	Day school	70	Yes	36	Not treated	84
				No	34		
10	J	Day school	70	Yes	0	No water Source	86
				No	70		
11	K	Day and boarding	70	Yes	6	Not treated	84
				No	64		
12	L	Day school	70	Yes	5	Not treated	88
				No	65		

Table-2. Response of sanitation related matter.

S/N	School code	Population of students	No. of toilet facilities	Ratio of toilet to students	Condition of toilets	Frequency (%)	How often students use the toilets	Frequency (%)
Somolu-Lagos								
1	A	1050	5	1:210	Difficult to use	20	Always	28
					Dirty	75	Sometimes	50
					Clean	5	Never	22
2	B	1052	4	1:263	Difficult to use	17	Always	60
					Dirty	77	Sometimes	25
					Clean	6	Never	15
3	C	1291	8	1:161	Difficult to use	30	Always	33
					Dirty	62	Sometimes	63
					Clean	8	Never	4
4	D	1453	6	1:242	Difficult to use	25	Always	28
					Dirty	63	Sometimes	54
					Clean	12	Never	10
5	E	830	12	1:69	Difficult to use	13	Always	38
					Dirty	83	Sometimes	46
					Clean	4	Never	16
Abeokuta-Ogun state								
6	G	2520	10	1:250	Difficult to use	0	Always	47
					Dirty	26	Sometimes	40
					Clean	74	Never	14
7	H	576	4	1:144	Difficult to use	36	Always	57
					Dirty	64	Sometimes	29
					Clean	0	Never	14
8	I	1584	8	1:200	Difficult to use	71	Always	57
					Dirty	29	Sometimes	28
					Clean	0	Never	15
Ado-Odo/Ota-Ogun state								
9	J	2510	12	1:210	Difficult to use	33	Always	44
					Dirty	67	Sometimes	33
					Clean	0	Never	23
10	K	1387	8	1:173	Difficult to use	14	Always	21
					Dirty	86	Sometimes	43
					Clean	0	Never	36
11	L	3800	12	1:320	Difficult to use	10	Always	0
					Dirty	90	Sometimes	7
					Clean	0	Never	93
12	M	1678	8	1:210	Difficult to use	21	Always	41
					Dirty	79	Sometimes	30
					Clean	0	Never	29

Table-3. Response on hygiene related matters.

S/N	School Code	Availability of hand washing facility	Response (%)	Availability of soap	Response (%)	Is hygiene taught in school?	Response (%)	Availability of IEC materials	Response (%)
Somolu-Lagos									
1	A	Not Available	-	Not available	-	Yes	100	Not Available	-
						No	0		
2	B	Not Available	-	Not available	-	Yes	100	Not available	-
						No	0		
3	C	Not Available	-	Not available	-	Yes	100	Not available	-
						No	0		
4	D	Not Available	-	Not available	-	Yes	100	Not available	-
						No	0		
5	E	Not Available	-	Not available	-	Yes	100	Not available	-
						No	0		
Abeokuta-Ogun state									
6	G	Yes	77	Always	17	Yes	87	Yes	21
				Sometimes	26				
		No	23	Never	57	No	13	No	79
7	H	Yes	13	Always	11	Yes	87	Yes	9
		No	87	Sometimes	14	No	13	No	91
				Never	74				
8	I	Yes	14	Always	11	Yes	73	Yes	8
				Sometimes	14				
		No	88	Never	74	No	27	No	92
Ado-Odo/Ota-Ogun state									
9	J	Yes	33	Always	6	Yes	84	Yes	21
				Sometimes	26				
		No	67	Never	68	No	16	No	79
10	K	Yes	0	Always	0	Yes	84	Yes	11
				Sometimes	0				
		No	100	Never	100	No	16	No	89
11	L	Yes	0	Always	0	Yes	89	Yes	20
				Sometimes	4				
		No	100	Never	96	No	11	No	80
12	M	Yes	3	Always	2	Yes	86	Yes	13
				Sometimes	2				
		No	97	Never	96	No	14	No	87

CONCLUSIONS AND RECOMMENDATIONS

It can be deduced that the present state of WASH program in all the schools are not satisfactory due to inadequate provision of potable water supply, sanitation and hygiene education. The possible underlying reasons for poor WASH in the public secondary schools surveyed can be connected to a lack of clear policy, insufficient budget allocations from government and lack of awareness and understanding on the part of the school management system. Generally, the WASH sector in both States has weak monitoring and evaluation systems, with limited evidence based data collection and documentation which are important for improved sector advocacy. Therefore, to maximize the potential of students as the most persuasive advocates of good WASH program in the society, it is necessary to provide schools with adequate WASH facilities and educate the students well on the challenges that negligence of the program might pose.

The following recommendations are provided:

a) Schools should introduce orientation programmes at the beginning of every term which will remind the students' on the need to managing well the available facilities. In addition, adequate number of well designed and gender segregated toilet facilities should be provided for students and must be well maintained.
b) Health clubs should be encouraged in schools in order to ensure adequate campaign on the importance of WASH in schools and I E C materials must be pasted at conspicuous and strategic places in the school premises.

c) Introduction of competitions and awards to best schools with best environmental practices in school environmental management. These will ensure a better school environment for a more fruitful academic endeavor.
d) The States ministry of education and the management board should set policies and guidelines on accreditation of secondary schools to include effective WASH program and provision of adequate facilities.

Limitations of study

a) Permission for the assessment of 'Water, sanitation and hygiene' (WASH) in some schools was not granted by the school's authority because most school did not want themselves to be exposed.
b) It was difficult to assess some schools at the time of visit due to other school activities at those periods.
c) Only senior students were sampled to achieve high degree of accuracy in questionnaire response and some teachers declined in responding to the questionnaires because of their official schedule and other reasons known to them.

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REFERENCES

Adam J., J. Bartram, Y. Chartier and J. Sims. 2009. Water, Sanitation and Hygiene Standards for Schools in Low Cost Settings. World Health Organization, Geneva, Switzerland.

Adeniji G and Afolabi F. 2010. Resulting Gender Issues in Accessibility and Operation of Sanitation Services Provided by Private Sector in Nigeria. Journal of Applied Sciences in Environmental Sanitation. 5(4): 411-417.

2012. African Development Bank in Action: Activities in the Water and Sanitation Sector in the Federal Republic of Nigeria.

Aremu A. S. 2012. Assessment of Sanitation Facilities in Primary Schools within Ilorin, Nigeria. Journal of Applied Sciences in Environmental Sanitation. 7(1): 29-33.

Banerjee S. G. and Morella E. 2011. Africa's Water and Sanitation Infrastructure: Access, Affordability and Alternatives. The International Bank for Reconstruction and Development/ the World Bank, Washington DC, U. S. A.

Mabogunje A. L. 2002. Land Management in Nigeria: Issues, Opportunities and Threats. Paper presented at the National Conference on Land Management and Taxation, Department of Estate Management, University of Lagos. Available from: worldbank.org/EXTARD/Resources/336681-1236436879081/5893311-1271205116054/mabogunje.pdf. Accessed 03/01/2013.

Majra J. P. and Gur A. 2010. School environment and sanitation in rural India. J. Global Infect Dis. 2 (2). 109-111. Available from: http://www.jgid.org/text.asp?2010/2/2/109/62882 Accessed 03/01/2013.

Reed R. A. and R. J. Shaw. 2008. Sanitation for Primary Schools in Africa. Water, Engineering and Development Centre (WEDC), Loughborough University, UK.

Salako R. A. 1999. Ota: The Biography of the Foremost Awori Town. Penink and Co. pp. 85-87.

United Nations Children's Fund. 1998. A Manual on School Sanitation and Hygiene. Water, Environment and Sanitation Technical Guidelines Series No. 5. New York, NY Available at ww.irc.nl/. Accessed 15/01/2012.

UNICEF. 2006. Water, Sanitation and Hygiene Strategies. United Nations, New York, U. S. A.

UNICEF/IRC. 2007. Towards Effective Programming for WASH in Schools: A manual on scaling up programmes for water, sanitation and hygiene in schools. http://www.unicef.org/wash/files/TP_48_WASH_Schools_07.pdf. Accessed 05/03/2012.

UNICEF/IRC. 2007. Towards effective programming for WASH in schools. Delft, the Netherlands, IRC International Water and Sanitation Centre. (Technical paper series; no. 48).

UN. 2011. The Millennium Development Goals Report. United Nations, New York, U. S. A.

UNICEF. 2011. WASH in Schools Monitoring Package.
WHO and UNICEF. 2010. Progress on sanitation and drinking water: 2010 update. Geneva: World Health Organization and United Nations Children`s Fund.

WHO. 2010. Health through Safe Drinking Water and Basic Sanitation. Accessed from http://www.who.int/water_sanitation_health/mdg1/en/index.html. Accessed 15/01/2012.

UNICEF and WHO. 2012. Progress on Drinking Water and Sanitation. Joint Monitoring Programme for Water Supply and Sanitation. ISBN: 978-92-806-4632-0.