

33rd WEDC International Conference, Accra, Ghana, 2008

ACCESS TO SANITATION AND SAFE WATER:  
GLOBAL PARTNERSHIPS AND LOCAL ACTIONS

## Water and sanitation problems in selected schools in Ibadan, Nigeria

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*The poor state of water and sanitation facilities in schools in Nigeria particularly those studied in Ibadan is one of the major factors for the declining health and reduced productivity among children of school age. This study assessed the state of water and sanitation facilities in schools and determined their health correlates. The study was a descriptive cross sectional survey. Eight Secondary schools located in Ibadan metropolis with average population not less than 500 students per school were selected randomly for the study. A total of 400 questionnaires (50 in each school) were administered to respondents drawn from all the participating schools. In addition observational checklist was used. Results show 60% of the respondents use well water in their various school premises. In most of these schools the number of this water facility was limited to one as reported by 100% of the respondents at OAHS. Majority of the respondents 39(78%) reported that it takes about 5minutes walk to access the facility. Majority 49(98%) especially at OAHS reported that the water was used mainly for cleaning in the school premises. Pit latrine was the major excreta disposal facility used according to 100%, 100%, 100%, 90%, 98%, 76.6% respondents for BPA, IGS, BOHS, OAHS, ACGS and ABHS respectively. The major water and sanitation related ailments reported in the schools apart from malaria were diarrhea and worm infestation. The study indicates that water and sanitation facilities are inadequate in schools. There is a need for such facilities to be provided and upgraded; hygiene improved in order to minimize health risks amongst pupils in schools.*

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### Introduction

Worldwide, more children are going to school than ever before in history. An estimated 83 percent of primary school age children now attend school, and of these, 84 percent complete primary school (UNESCO, 2002). School is important for cognitive, creative and social development of children to learn better and face the challenges of future life (School Sanitation and Hygiene (SSHE) Global Symposium, 2004). Going to school, learning new things, being in a clean school environment and being healthy is every child's right. In reality, however, many children in developing countries do not have access to safe and clean sanitation facilities (IRC International Water and Sanitation Centre, 2001).

The provision of safe water and sanitation facilities in schools is a first step towards a healthy physical learning environment benefiting both learning and health. However, the mere provision of facilities does not make them sustainable or produce the desired impact. It is the use of technical facilities and the related appropriate hygiene behaviours of people that provide health benefits. In schools, hygiene education aims to promote those practices that will help prevent water and sanitation-related diseases as well as promoting healthy behaviour in the future generation of adults (Burgers, 2000).

Although the importance of water and sanitary facilities form essential components of an enabling learning environment and quality education, in practice the sanitary situation in many schools in developing countries is deplorable. While there is no such thing as a typical school in a developing country, we often find that: water supply is either non-existent or inadequate for the number of school children; toilets and latrines do not function properly due, for example, to a lack of water for flushing; latrines are padlocked because children are not trusted to use them properly; children, specifically girls, do not attend school because appropriate and private sanitation facilities are lacking (WHO, 1997).

Under these conditions, schools become unsafe places where diseases are transmitted, with mutually reinforcing negative impacts for the children, their families, the schools and overall community development (WHO, 1997). The incidence of major childhood illnesses such as diarrhea, helminthic infection among its

students will possibly increase. The global prevalence of intestinal helminth infection in school age children is as high as is estimated at 35percent for roundworm, 25percent for whipworm, and 26percent for hookworm (Burgers, 2000). This in turn adversely affects school children, lowering enrollment rates, increasing absenteeism and contributing to poor classroom performances and early school dropout.

This study is focusing on schools because after the family, schools serve as the next most important place of learning for children; they have a central place in the community. Schools are a stimulating learning environment for children and stimulate or initiate change. If sanitary facilities in schools are available, they can act as a model, and teachers can function as role models. Schools can also influence communities through outreach activities, since through their students, schools are in touch with a large proportion of the households in a Community (United Nations Children's Fund (UNICEF) and IRC International Water and Sanitation Centre, 1998).

The objective of this study was to assess the state of water and sanitation facilities in selected schools in Ibadan, South Western Nigeria and to examine how these major factors could lead to declining health and reduced productivity among children of school age.

## **Methodology**

### **The study area**

Ibadan is the capital of Oyo State in Nigeria and the largest city in West Africa. An indigenous African town that lies between latitude 7° and 9°30' east of prime meridian (Fajehinsan, 1988). Ibadan covers a land area of 12 kilometers radius with Mapo hall as the centre. It has an altitude generally ranging from 152 to 213m with isolated ridges and peaks rising to 274m (Sridhar and Ojediran, 1983). The present population of the city is more than 3 million. The majority of the people are Yorubas' while other ethnic groups constitute a smaller proportion of the population. Most of the people are engaged in petty trading and small-scale business, while others are civil/public servants. There are over 3000 schools made up of both public and private nursery, primary and secondary schools in Ibadan metropolis.

### **Materials and methods**

The study was a descriptive cross sectional survey involving questionnaire administration and the use of structured observation checklist. A total of eight secondary schools with average population not less than 500 students were randomly selected for the study. The schools which are all located in Ibadan metropolis are Bishop Philips Academy (BPA), Ikoloba Grammar School (IGS), Bashorun Ojoo High School (BOHS), Oba Akinbiyi High School (OAHS), Mount Olivet Grammar School (MOGS), Loyola College (LC), Anglican Commercial Grammar School (ACGS) and Aperin Boys High School (ABHS).

A total of 400 questionnaires (50 in each school) were administered to respondents drawn from all the participating schools. The respondents were selected through stratified random sampling from a sampling frame of the number of classes available in the selected schools. Consent was sought and obtained from the school administration, all participating students and staff based on interest before the survey commenced. The questionnaire was divided into three sections viz Socio-demographic information, Environmental characteristics and Health conditions. Observation checklist comprised mainly environmental indicators expected in a school environment.

Data on the completed questionnaires were analysed using SPSS statistical package. Frequency distribution tables and other descriptive statistics such as percentages were used for data summary.

## **Results and discussion**

### **Student distribution**

Four hundred questionnaires were used to elicit information from the students. The students consisted of 213(53%) females and 187(47%) males. This is at variance to earlier studies (Ana et al, in press) which recorded a higher male student enrollment in some schools in Ibadan. The respondents were in the age bracket 15-17years consisting mainly of students in the senior class (S.S 1-S.S 3).

### **Water facility**

Water, a very important aspect of man's daily life was available in all the schools but the sources differed. OAHS reported using stream as their main source of water while Ikoloba Grammar had only tap water supply. Results of survey and observation using checklist showed that deep well is the major source of water supply (Table 1) in the school premises (BPA, ABGS, BOHS, MOGS). These wells were situated in the school compounds.

The result indicated that in all the schools studied more than 50% of the respondents reported using buckets as the main water storage device. At MOGS students practiced various forms of water storage: bucket (76%), plastic tanks (10%), drums (6%) and none (8%) while at BOHS 40% of the students claimed that water storage was done mainly through buckets. Of the 50 respondents from BOHS, majority 39(78%) reported that it takes about 5 minutes walk for them to access water facility in their school premises. Similarly, 49(98%) of the respondents from OAHS reported that the water was used mainly for cleaning in the school premises.

**Table 1. Responses about water sources in selected schools in Ibadan (number and (percentage))**

Source of water	Name of schools								Total responses
	BPA	IGS	BOHS	OAHS	MOGS	LC	ACGS	ABHS	
Borehole	0(0)	0(0)	0(0)	0(0)	0(0)	21(42)	7(14)	2(4.3)	30(7.5)
Well	50(100)	0(0)	50(100)	0(0)	50(100)	29(48)	38(76)	41(87.2)	258(65.0)
Stream	0(0)	0(0)	0(0)	50(100)	0(0)	0(0)	5(10)	3(6.4)	58(14.6)
Tap	0(0)	50(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	50(12.6)
None	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	1(2.1)	1(0.3)
	50(100)	50(100)	50(100)	50(100)	50(100)	50(100)	50(100)	47(94)	397(100.0)

### Sanitary facility

For excreta disposal, all the students at BOHS recorded that pit latrine was the main type of disposal facility (Table 2). At MO 86% of the students agreed to using bush for of excreta disposal since their pit latrine was still under construction. The water closet available in the school is for the members of staff.

In all the schools studied more than 50% of the respondents reported using buckets as the main water storage device in both the traditional and VIP latrines. Nevertheless, it was observed that they were not properly maintained. Some of the students resorted to defecating in the bushes because of the filthy conditions of the latrines thus polluting the environment.

Pit latrine built by the education trust fund was present and functional in ACGS; Septic tank was also present and functional. VIP latrine, aqua privy and pour flush were all unavailable in the studied schools. Results show that pit latrine was the major excreta disposal facility used as indicated by 100%, 100%, 100%, 90%, 98%, 76.6% of the respondents at BPA, IGS, BOHS, OAHS, ACGS and ABHS respectively. Majority of the respondents 39(78%) reported that it takes them about 5minutes walk to access the facility. In all the schools studied more than 50% of the respondents reported using buckets as the main water storage device. The majority 392 (98%) especially at OAHS reported that the water was used mainly for cleaning in the school premises.

**Table 2. Responses about excretal disposal facility in selected schools in Ibadan (number and (percentage))**

Excreta disposal	Name of schools								Total responses
	BPA	IGS	BOHS	OAHS	MOGS	LC	ACGS	ABHS	
Pit latrine	50(100)	50(100)	50(100)	45(90)	7(14)	0(0)	49(98)	36(76.6)	287(72.3)
VIP	0(0)	0(0)	0(0)	3(6)	0(0)	3(6)	0(0)	0(0)	6(1.5)
Bush	0(0)	0(0)	0(0)	1(2)	43(86)	47(94)	1(2)	11(23.4)	103(25.9)
Others	0(0)	0(0)	0(0)	1(2)	0(0)	0(0)	0(0)	0(0)	1(0.3)
Total	50(0)	50(100)	50(100)	50(100)	50(100)	50(100)	50(100)	47(94)	397(100.0)

### Water and sanitation related ailments

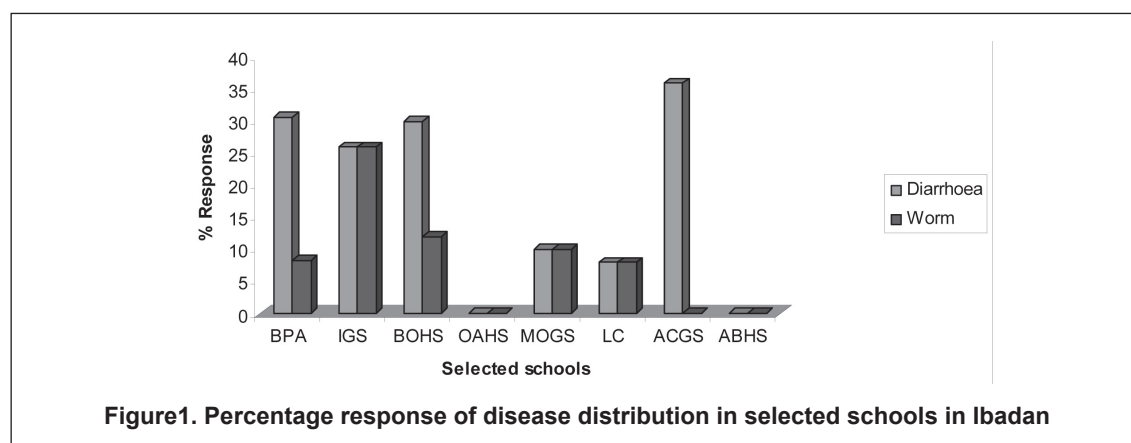
The major water and sanitation related ailments reported in the schools apart from malaria were diarrhoea and worm infestation (ANA-G.R.E.E-Figure1.xl). At IGS, 26% reported diarrhoea, another 26% for worm infestation and 38% for malaria. At BPA 11(30.6%) reported diarrhoea, 3(8.3%) worm infestation and 11(30.6%) malaria (Table 3).

In the result below ACGS recorded varied responses of 36%, 2%, 4%, 0% and 46% for Diarrhoea, Typhoid, Rashes, Worm Infestation and Malaria respectively (Table 3 and Figure 1). Also BPA recorded different responses of 30.6%, 10%, 8.3%, and 30.6% for Diarrhea, Typhoid, Worm infestation and Malaria respectively. The level of water and sanitation-related diseases observed could be as a result of high usage of well water as against the use of a borehole facility which is a more potable water source. Another contributing factor could be the poor state of the toilet facilities (traditional pit latrine and bush) which could be a pre disposing factor to vectors like flies that transmit some of the communicable diseases documented above.

**Table 3. Responses about Water and sanitation-related ailments in Selected Schools in Ibadan (Occurrence by month)**

Ailments	Name of Schools							
	BPA	IGS	BOHS	OAHS	MOGS	LC	ACGS	ABHS
Typhoid	10	0(0)	5(10)	-	2(4)	4(8)	1(2)	-
Rashes	-	3(6)	2(4)	-	11	4(8)	2(4)	-
Malaria	11(30.6)	19(38)	-	-	12(30)	6(12)	23(46)	-

\* Results were missing



**Figure1. Percentage response of disease distribution in selected schools in Ibadan**

The outcome of this study is similar to one carried out in India which concluded that there are more than one million rural schools out of which 45.9% are without toilets and only 17.3 % are without water supply. The consequences of the given situation are that diarrhoea takes a heavy toll while typhoid, dysentery, gastroenteritis, hepatitis A, intestinal worms and malaria continue to kill, debilitate and contribute to the high rates of malnutrition among young children in the country (School Sanitation and Hygiene (SSHE) Global Symposium, 2004).

## Conclusion

The study indicates that water and sanitation facilities are inadequate and poor suggesting a need for provision of improved and adequate water and sanitation facilities in the affected schools. Improved hygiene education, sanitation and water supply are important correlates and if well main-streamed into the school system would reduce disease burden hence enhance public health especially among the children. A clean, safe, secure and enabling learning environment is an indispensable prerequisite that would ensure the optimization of a child's academic potential. Necessary assistance should therefore be rendered by the Government and stakeholders alike to make the school environments more conducive for the students.

## Acknowledgements

The author/s would like to extend thanks to the management of all the eight schools used in the study. We are indeed very grateful to our M.P.H students in Environmental Health who participated in the study as field assistants and facilitators of Environmental programmes in the schools.

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## Keywords

school sanitation, water, health risks, Ibadan, Nigeria

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