

Assessment of the Condition of Sanitary Conveniences in Selected Public Secondary Schools in Gombe Metropolis, Nigeria

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Abstract

Sanitary conveniences are paramount in schools to meet the physical and emotional needs of the students and other users in order to achieve maximum benefits from educational programmes. This study sought to assess the condition of sanitary conveniences in selected secondary schools in Gombe metropolis. Systematic random sampling technique was adopted to select five (5) out of seventeen (17) schools for the study. A total of one hundred and thirty-six (136) students in SS 3 representing 10% of the entire population of the selected schools were purposively selected for questionnaire administration. The study revealed male dominance over female in school attendance with 63.24% and 36.76% respectively. The result indicated that the sanitary conveniences provided were water closet, pit latrine and squat flush system. The provided conveniences in terms of number were inadequate for the sanitary use of the students and the study revealed that the student toilet ratio was higher than the recommended national standard of 1:30. The study indicated that the hindrance to patronage of school conveniences include cleanliness of the toilet, preference for open space, fear of intrusion and waiting on the queue. This was attributed to poor state of the facility, near absence of public water supply and cost of water purchase from private water vendors. Recommendations made based on the findings are that government and the school management should ensure adequate sanitary practice by upgrading pit latrine to water closet to meet national and international standard as well as provision of more sanitary conveniences for the female students to meet their needs and requirement. Adequate arrangement for the cleaning of the conveniences with sufficient detergent, disinfectants and air freshener should be provided. Damage windows and doors to the conveniences should be replaced. Provision of water should be prioritized as an important need of the school through adequate budgeting and financing so as not to negate the gains already achieved in sanitation and hygiene education.

Keywords: Patronage, public schools, sanitary conveniences, sanitation, water

Introduction

Access to an efficient and basic sanitation services in schools is an essential prerequisite for safe sanitation practice. It also plays an integral role in safeguarding the health of the public as well as ensuring these institutions do not become hotspots for breeding disease vectors (Adams, Jamie, Yves & Jackie, 2009). While the absence of basic sanitation services in schools has been acknowledged to promote absenteeism, distraction and decreased enrolment, toilet avoidance and reduced school participation and performance of students (Sommer, 2010; Birdthistle, Dickson, Freeman & Javidi, 2011; Montgomery, Ryus, Dolan, Dopson & Scott, 2012; WHO, 2016).

As a result of increasing pupil enrolment in schools, the sanitary facilities already in place are grossly inadequate and over stretched not only that they are in disgusting state but their maintenance and adequacy have been put to question.

StudGies have revealed inadequacies in the provision of sanitary conveniences in the school environment across Nigeria as against the regulated requirements. Wada et al, (2020) in a study conducted in Lagos revealed that student to toilet ratio for the public-school girls and boys were 3191:1 and 642:1 respectively, while the private school had a ratio of 257:1 and 289:1 for girls and boys respectively. The study of Avula *et al* (2015) in Yenagoa revealed inadequate compliance rate in both private and public schools in comparison with the National School Health Policy (NSHP) minimum standard in the provision of toilet facilities. The study of Kolo, Mshelia and Chutiyami (2017) in Maiduguri revealed that most of the schools had a high number of students-toilet ratio of 1:387 and 1:295 respectively. These studies revealed inadequacies in the provision of toilet facilities when compare to the required minimum standard of 1:30 of the Nigeria Federal Ministry of Education Guidelines on National School Health Programme (2006) of six (6) toilet facilities for a student population of 180. It is suspected that the state of public conveniences in Secondary Schools in Gombe may not be better than the studies reviewed and the health implication of poor sanitary conveniences is worrisome. This study sought to examine the sanitary facilities provided in selected secondary schools in terms of distribution, student-toilet ratio, usage and patronage.

Description of the study area

Gombe LGA is located between Latitude $10^{\circ} 15'N$ to $10^{\circ} 19'N$ and Longitude $11^{\circ} 07'E$ to $11^{\circ} 15'E$. The metropolis cut across 11 wards which includes; kumbiya-kumbiya, Pantami, Jekadafari, Shamaki, Dawaki, Herwagana, Bolari West, Bolari East, Ajiya, Bajoga, Nassarawo (INEC, 2019). Figure 1 shows the location of the study area.

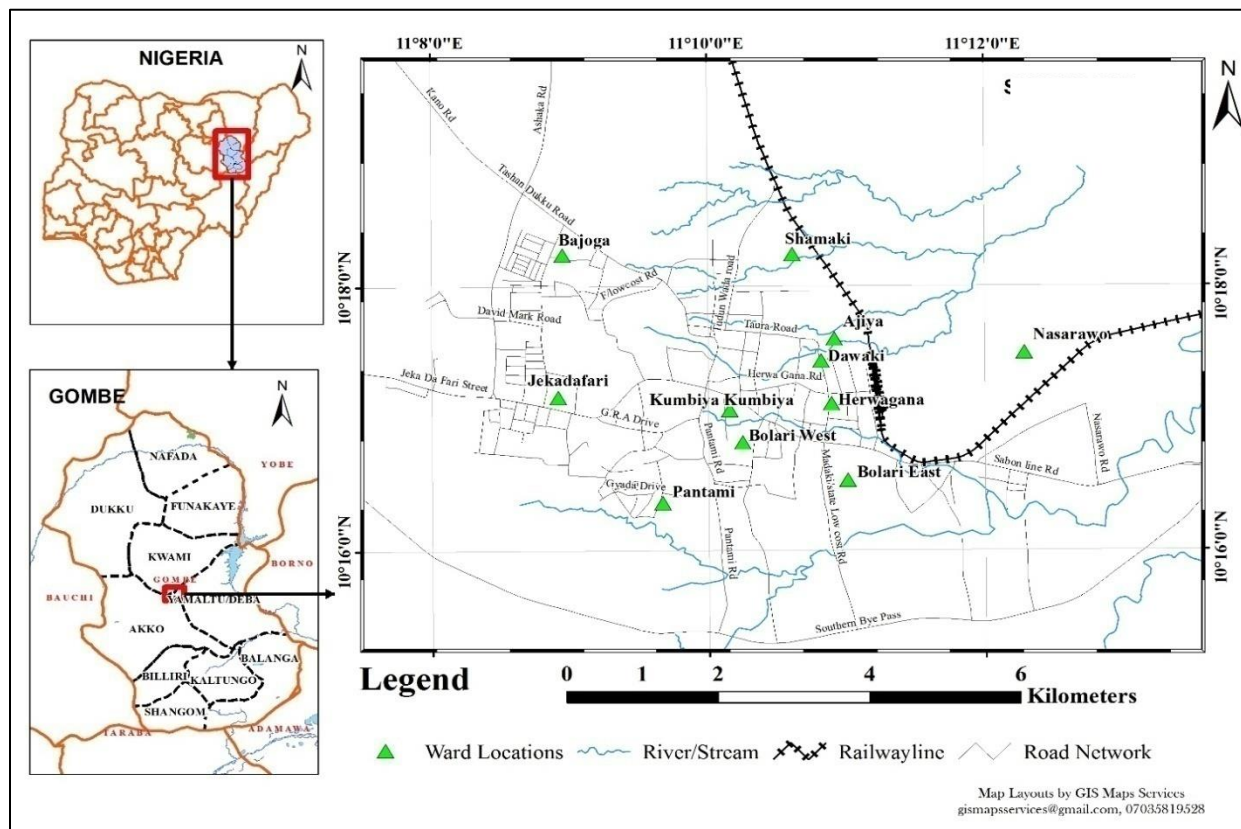


Figure 1: Location of the Study Area
Source: Modified from Administrative Map of Gombe State (2024)

Materials and Methods

The population for the study comprised of the SS 3 students in the 17 public secondary schools in Gombe metropolis namely: Government Arabic College 1, Government Arabic College 2, Government Comprehensive Day Secondary School, Gabukka, Government Comprehensive Day Secondary School, Gombe, Government Day Comprehensive Secondary School, Amada Gombe, Government Day Secondary School, Science 2, Government Day Secondary School, Bolari East, Government Day Secondary School, Gandu, Government Day Secondary School, Herwagana, Government Day Secondary School, Nasarawo, Government Day Secondary School, Orji, Government Day Secondary School, Pantami, Government Day Secondary School Pilot, Gombe, Government Day Secondary School Shehu Abubakar, Bolari, Government Junior Secondary School Hassan Central, Gombe, Government Science Secondary School, Gombe and Special Education Centre, Gombe.

Systematic random sampling technique where the first and every fifth school were selected was adopted to select five (5) out of seventeen (17) schools for the study. The schools selected for the study included Government Arabic College 1 (GAC1), Government Day Comprehensive Secondary School, Amada Gombe (GDCSSAG), Government Day Secondary School, Herwagana (GDSSHG), Government Day Secondary School Pilot, Gombe (GDSSPG) and Special Education Centre, Gombe (SECG). The sample size for this study was one hundred and thirty-six (136) students in the 2024/2025 academic session representing 10% of the entire population of the five selected schools as shown in table 1. The choice of 10% was based on the suggestion given by Andale (2013) who stated that when a population of a study is categorical or ordinal data, 10% of the population of each of category is acceptable. 136 copies of questionnaire were purposefully administered to the students that were present during the period of the survey. The data collected for the study were analyzed using descriptive statistics and the results were summarized in tables.

Table 1. Sample Size Distribution of SS3 Students by Schools

School	Sample frame	Sample size
GAC1	295	30
GDCSSAG	285	29
GDSSHG	265	27
GDSSPG	265	27
SECG	255	23
TOTAL		136

Source: Author's field work, 2024

Result of the Findings

Demographic Characteristics of Respondents

The demographic characteristics of the sampled respondents in this study centered on gender and age and are presented in Table 2.

Table 2. Demographic characteristics of respondents

Characteristics Sub-category		GACI		GDCSSAG		GDSSHG		GDSSPG		SECG		TOTAL	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Gender	Male	20	66.67	18	62.07	17	62.96	17	62.96	14	60.87	86	63.24
	Female	10	33.33	11	37.93	10	34.48	10	34.48	9	39.13	50	36.76
Age	16-19	21	70.00	20	68.97	20	74.07	18	66.67	13	56.52	92	67.65
	20 ≥	9	30.00	9	31.03	7	25.93	9	33.33	10	43.48	44	32.35

Source: Author's Fieldwork, 2024

The study revealed that across the selected schools in the study area 63.24% of the respondents were male while 36.76% were female. This study is in conformity with the findings of Jibril (2000), Kolo, Mshelia and Chutiyami (2017) and Amuda, Durkwa and Bulus (2016) who reported gender disparity in favour of male students in school enrolment in North eastern part of Nigeria. It is evident from these studies that girls experienced lower enrolment rates compared to boys. This disparity is often attributed to cultural norms, early marriage and traditional gender roles of female remaining at home to attend to domestic chores, poverty and financial problems, religious beliefs, child labour, gender bias, large family size, cost of education, fear of sexual harassment, fear of kidnapping while in school, security concerns and insurgence in the region.

The study also revealed the age attainment of the respondents as presented in Table 2 and it showed that 67.65% were between 16-19 years old while 20 ≥ age bracket accounted for 32.35% of the respondents across the selected schools. Majority of the respondents were averagely 19 years old and it can be inferred that this average age represents the age of school graduation. The studies of Wada et al. (2020) and Kolo, Mshelia and Chutiyami (2017) also confirmed that the age of completion of secondary education is majorly between 15 and 19 years.

Distribution of toilet facilities and hygiene practice

The inventory of toilet facilities, distribution of convenience by gender and the students hygiene practices are presented in Table 3.

Table 3. Distribution of toilet facilities and hygiene practice

Characteristics Sub-category		GACI		GDCSSAG		GDSSHG		GDSSPG		SECG		TOTAL	
		freq.	%	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
Inventory of Toilet Facilities	Pit latrine	5	16.67	9	31.03	15	55.56	20	74.07	3	13.04	52	38.24
	Water closet	25	83.33	0	0.00	10	37.04	7	25.93	20	86.96	62	45.59
	Squat flush	0	0.00	20	68.97	2	7.41	0	0.00	0	0.00	22	16.18
Distribution of convenience by gender													
Male	2-3	0	0.00	0	0.00	27	100.00	0	0.00	23	100.00	50	36.76
	4-5	30	100.00	29	100.00	0	0.00	27	100.00	0	0.00	86	63.24
Female	2-3	30	100.00	29	100.00	0	0.00	27	100.00	0	0.00	86	63.24
	4-5	0	0.00	0	0.00	27	100.00	0	0.00	23	100.00	50	36.76
Sources of water supply	Stand tap pipe	2	6.67	2	6.90	2	7.41	3	11.11	3	13.04	12	8.82
	Water vendor	28	93.00	20	68.97	17	62.96	22	81.48	20	86.96	107	78.68
	Borehole/well	0	0.00	7	24.14	8	29.63	2	7.41	0	0.00	17	12.50
Availability of Hand washing facilities	Adequate	6	30.00	4	13.79	6	22.22	4	14.81	3	13.04	23	16.91
	Inadequate	24	70.00	25	86.21	21	77.78	23	85.19	20	86.96	113	83.09

Frequency of hand washing	Before/ after use of toilet	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	After use of toilet	10	33.33	13	44.83	8	29.63	11	40.74	16	69.57	58	42.65
	Not at all	20	66.67	16	55.17	19	70.37	16	59.26	7	30.43	78	57.35

Source: Author's Fieldwork, 2024

The study revealed that the sanitary conveniences provided in the selected schools were pit latrines, water closet and squat flush. The commonly used type of toilet facility in the selected schools were water closet (WC) which accounted for 45.59%, followed by pit latrines and it recorded 38.24% and squat flush system accounted for only 16.18%. It is evident that the usage of water closet (WC) is the most common among the schools. Pit latrines and squat flush system were also patronized where the provision of water closet was lacking for sanitary needs of the students. The study of Wada et al. (2020) revealed the availability of improved sanitation facilities of water closet but most toilet compartments were inaccessible to the students due to their poor conditions thereby providing limited service. The study of Kolo, Mshelia and Chutiyami (2017) also recorded available toilet facility in their order of importance in the investigated public schools to include ventilated improved pit latrine (VIP) followed by Water Closet (WC) Squat flush system.

The study also revealed that on the average the numbers of toilet facilities provided for the sanitary use of the male students were five (5) while that of the female students were three (3). This provision is inadequate by the standard of National School Health Policy (NSHP) of one (1) toilet facility to thirty (30) students. A minimum of forty-six (46) toilet facilities were expected to be provided across the five (5) public schools as against thirty-eight (38) provided. This indicates a deficiency of eight (8) toilet facilities to be provided in the five schools. This implies that the school did not comply with the provision of NSHP in terms of providing toilet facilities. The studies of Wada et al. (2020), Kolo, Mshelia and Chutiyami (2017) and Avula et al (2015) also recorded low compliance rate with respect to NSHP regulations on the provision toilet sanitary facilities.

Regarding the sources of water supply for the sanitary needs of the students, the study revealed that vendor water through private water supply is the dominant sources of water supply representing 78.68% on the average. Sources from borehole and wells were placed second with a record of 12.50% while schools with tap piped water connection were placed third with a record of 8.82%. The observed dominance of water vendor through commercial water tanker supply clearly shows the absence or near absence of public water supply in the selected schools. This has implications on the quantity of water available for use in the schools and may consequently jeopardize sanitation and hygiene practices of hand washing among students. This can lead to the spread of infectious diseases and other health problems impacting students' attendance and academic performance.

Student- toilet ratio

The Federal Ministry of Education guideline of sanitation facilities in school settings require the provision of basic sanitation facilities separate for male and female in the ratio of one toilet per thirty (30) students. The observable student- toilet ratio in the selected schools is presented in Table 4.

Table 4. Number of toilets and student- toilet ratio

Characteristics	Numbers of students	Number of toilets	Ratio
Schools			
GAC1	295	8	1:38
GDCSSAG	285	8	1:36
GDSSHG	265	7	1:38
GDSSPG	265	7	1:38
SECG	255	8	1:32

Source: Author's Fieldwork, 2024

The study revealed that there were differentials in the value of student- toilet ratio in the selected schools and this was determined by dividing the total number of students in each school by the corresponding total number of toilet facilities available. In GAC1, GDSSHG and GDSSPG it was 1:38 while in GDCSSAG and SECG it was 1:36 and 1:32 respectively. The findings revealed that all the schools did not meet the school sanitation standard of 1 toilet per 30 boys and girls set up by the Federal Government of Nigeria. The findings of this study confirmed earlier studies of Wada et al. (2020) who reported a high number of students-toilet ratio of 1:3191 and 1:642 respectively for girls and boys; Kolo, Mshelia and Chutiyami (2017) revealed that some schools have ratios as high as 1:387 for girls and 1:295 for boys, indicating a severe lack of adequate sanitation facilities and Avula et al. (2015) reported a ratio of 1:176 for private schools and 1: 321 for public schools. This disparity in access to toilets is a major concern, with some schools failing to meet the minimum standards for both male and female students.

Usage and patronage of school convenience

The usage and patronage of the school convenience as perceived by respondents is presented in Table 5.

Table 5. Usage and patronage of school convenience

Characteristics	Sub-category	GAC1	GDCSSAG	GDSSHG	GDSSPG	SECG	TOTAL
		freq. %	freq. %	freq. %	freq. %	freq. %	freq. %
Frequency of usage	Always	4 13.33	6 20.69	8 29.63	8 29.63	10 43.48	36 26.47
	Sometimes	16 53.33	14 48.28	12 44.44	11 40.74	9 39.13	62 45.59
	Not at all	10 33.33	9 31.04	7 25.93	4 17.39	4 17.39	38 27.94
Hindrance to patronage							
Cleanliness		9 30.00	11 37.93	13 48.15	14 51.85	17 73.91	64 47.06
Preference for open space		10 33.33	9 31.03	7 25.93	8 29.63	2 8.70	36 26.47
Fear of Intrusion		8 26.67	7 24.14	5 18.52	3 11.11	3 13.04	26 19.12
Queue		3 10.00	2 6.90	2 7.41	2 7.41	1 4.35	10 7.35

Source: Author's Fieldwork, 2024

The study revealed a low use and patronage of the school conveniences with those that use the facility always accounting for 26.47% of the respondents. Those whose patronages were recorded as sometimes accounted for 45.59% of the responses. While those that do not use the facilities at all recorded 27.94%. The study also revealed the hindrance to patronage of the convenience by some of the respondents to include cleanliness of the facility, preference for open space, fear of intrusion and queue. The reasons for the low patronage and hindrance to the use of the facilities

could be associated with the unhygienic and poorly maintained facilities with dilapidated doors and windows as well as inadequate water supply at most times. It should be noted that the terrible condition of use, the ineffectiveness in the cleaning and proper maintenance of the facility will not only increase inaccessibility to patronage but also exposed the facility to rapid deterioration. The studies of Wada et al. (2020), Sommer (2010) and Adams et al. (2009) confirmed that school sanitation facilities in most instances were poor and inadequate. This is evident with students that exhibited unsafe sanitation practices of open defecation and toilet avoidance with moments of prolonged urine and faecal retention. The implication of the unsafe sanitation practices has been reported to increase susceptibility of the students to diarrhoeal and other sanitation-related diseases.

Conclusion

This study underscores the importance of the provision of adequate sanitary conveniences in the school environment to enhance the sanitation and hygiene practices of students to curtail the spread of infectious disease in compliance to the National School Health Policy (NSHP). The study indicates inadequate compliance with the approved guideline of NSHP in the provision of toilet facilities to meet the sanitation needs of the students. This situation encourages the practice of open defecation which predisposes the students to diseases. It was also observed that the sanitary condition of the conveniences was poor and there was absence or near absence of public water supply to facilitate hygiene practices of hand washing. There is the need to enforce the NSHP students' toilet ratio and promote good sanitary maintenance of the facilities to reduce exposure to communicable diseases.

Recommendations

Based on the findings of the study, the following recommendations were made:

- i. The government and the school management should ensure the provision of well-maintained toilet facilities, hand washing stations, soap and other essential hygiene items in sufficient number for both male and female students in all schools in line with the regulated standards as well as upgrade all existing pit latrine to water closet.
- ii. Adequate arrangement for regular cleaning of the conveniences with sufficient detergent, disinfectants and air freshener should be made.
- iii. Damage windows and doors to the conveniences should be replaced.
- iv. Provision of water should be prioritized as an important need of the school through adequate budgeting and financing so as not to negate the gains already achieved in sanitation and hygiene education.
- v. Enlightenment on the preventive measures for toilet infections such as regular hand washing should be carried out.

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