

Assessment of the Practice of School Health Services among Primary Schools in Ilorin Metropolis Kwara State Nigeria

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Abstract: Background: School Health Services (SHS), is an essential component of the school health programme. It ensures the achievement of Education for All (EFA); inclusive of children with special needs.

Objective: This study aimed to assess the current practice of SHS among primary schools in north-central Nigeria

Method: The study adopted a cross-sectional design. It was carried out in 128 primary schools comprising 64 private and 64 public schools in Ilorin, Nigeria. The School Health Programme Evaluation Scale (SHPES), self-administered questionnaire was used to obtain data. The data collected on the questionnaire was appropriately verified and computed for analysis.

Result: One hundred and seven schools met the minimum acceptable score of 19 in SHS

Conclusion: From our assessment, the majority of those who met the minimum score were private schools. Hence, private schools performed better than public schools in practicing school health services.

Keywords: school health program, school health services, primary school health services, health education, private schools, public schools, Ilorin Nigeria

Effective SHP can limit conditions, like stunting, diarrhoea and helminthic infections, malaria, and tuberculosis that are capable of causing physical growth retardation and cognitive impairment in school-age children. [5], [6] Besides augmenting the care of the pupils, effective SHP also helps to increase school attendance and improve the academic performance of the pupils. It also decreases school drop-out rates. [1], [7], [8] Despite its numerous advantages, however, an effective school health program is lacking in most schools in Nigeria. [1], [9]

In 2001, the Federal Ministry of Health and the Federal Ministry of Education in collaboration with WHO took the initial step, by conducting a Rapid Assessment of the School Health System in Nigeria to ascertain its status. The assessment noted several health problems among learners; the lack of health and sanitation facilities in schools, and the need for urgent action in school health; in 2006, a national health policy was formulated in an attempt to improve SHP in Nigeria. [2]

The need for periodic evaluation of the implementation of SHP in primary schools in Nigeria cannot be over-emphasized. This study, therefore, aimed to assess the current status and level of implementation of the SHS – a key component of the SHP - in primary schools in Ilorin, Kwara State, Nigeria.

II. METHODS

Study Site

The study was conducted in Ilorin, the capital of Kwara State located in the North Central geographical zone of Nigeria, with coordinates 8°30'N 4°33'E. Ilorin has three local governments: Ilorin-South, Ilorin-East, and Ilorin-West local governments. According to the 2006 census, the population of Kwara State was estimated at 2.37 million people, with an estimated growth rate of 2.3%. The same source estimated the population of Ilorin at 777,667[10]. Ilorin has 189 public primary schools and 523 registered private primary schools; with an average of 109, 492 pupils registered in these schools

I. INTRODUCTION

A national study of the school health system conducted by the World Health Organization WHO, in collaboration with the Federal Ministry of Health and Federal Ministry of Education, revealed that health care services in schools were sub-optimal. [1], [2]

School Health Services (SHS) - an important component of the school health program (SHP) - is directed at the well-being and health of the school community. [3] They are preventive and curative services provided for the promotion of the health status of learners and staff. The purpose of the SHS is to help children at school to achieve the maximum health possible, for them to obtain full benefit from their education. The specific services include school medical examination, health clinics, school meals, food hygiene, control of communicable diseases, and play activities.[2] – [4]

[11]. There are 55 public and 221 registered private primary schools in Ilorin-West; 55 public and 205 registered private primary schools in Ilorin-South; and 79 public and 97 registered private primary schools in Ilorin-East local government areas [11].

Study Design

This is a cross-sectional study.

Study Population

This study was carried out in some selected private and public primary schools in Ilorin.

Sample Size

The minimum sample size was calculated using the formula:

$$n = (u + v)^2 \frac{[P_1(1 - P_1) + P_2(1 - P_2)]}{(P_1 - P_2)^2}$$

Where;

n = Minimum sample size

u = Standard Normal Deviate (SND) corresponding to the confidence level of 95% for a two-tailed test. = 1.96

v = SND corresponding to the power of 80%. = 0.84

P_1 = Proportion of private schools performing medical inspection of the pupils = 51.0% = 0.51[9]

P_2 = Proportion of public schools performing medical inspection of the pupils = 27.6% = 0.276[9]

$$n = (1.96 + 0.84)^2 \frac{[0.51(1 - 0.51) + 0.276(1 - 0.276)]}{(0.51 - 0.276)^2}$$

$$= \frac{3.5}{0.055} = 64$$

64 public and 64 private primary schools were recruited for the study

Therefore, the total number of schools studied is 128

Research Instrument

The School Health Programme Evaluation Scale (SHPEs) [3], [12] was adapted to obtain the state of the school health services. It is a structured instrument that has been validated for use in various similar studies. [1], [5], [13], [14] A semi-structured questionnaire was also prepared to obtain the general administration data. The questionnaire was pre-tested in selected primary schools outside the sampled schools.

Sampling Technique

A multistage sampling technique was used

STAGE 1: The lists of public and private primary schools obtained from the state Ministry of Education were each arranged in alphabetical order.

STAGE 2: Proportionate sampling was used to choose the number of schools that were picked from each local government area.

STAGE 3: The first schools recruited were the first on the arranged lists; while subsequent schools recruited were selected using the appropriate sampling intervals.

Procedure

A pretested self-administered questionnaire was used to obtain necessary information from the head teachers/proprietors of the selected schools after a clear explanation of the nature and purpose of the study had been given and consent obtained. Inspection tours of the schools were also undertaken to see the available facilities and the environmental condition of the schools. The location and general environment of the schools were looked at; the classrooms, living quarters, toilets, sources of water, and sewage disposal systems were also inspected. The available documents (school clinic records, health instruction timetables, cleaning rosters, meal plans) were requested for and inspected. These were documented by the researchers.

Data Analysis

The data collected were appropriately verified and entered into a computer. Data analysis was done using SPSS® ver. 20 (IBM Corporation). Tables and charts were used to report descriptive statistics. Scores were assigned to the various components of the SHP as detailed in the questionnaire. These scores were summed to obtain the scores for the various components. Mean scores and standard deviation were compared across the various schools using a t-test. Schools were also categorized into various groups based on their scores and same analyzed with respect to school characteristics such as age, student population, staff population, location, etc. Pearson's chi-square was used to determine the difference between the frequencies of variables in public and private schools. The level of significance was established at a p -value of <0.05.

Ethical Clearance

This was obtained from the Ethical Review Committee of the University of Ilorin Teaching Hospital.

Sponsorship

The cost of the research was borne by the researcher.

III. RESULTS

School Administrative Data

A total of 128 primary schools comprising 64 private and 64 public schools were surveyed. Twelve (9.4%) private and 26 (20.3%) public primary schools were recruited from Ilorin East Local Government Area (LGA). Twenty-five (19.5%) private and 19 (14.8%) public primary schools were recruited from Ilorin South LGA; while 27 (21.1%) private and 19 (14.8%) public primary schools were recruited from Ilorin West LGA. (Figure 1).

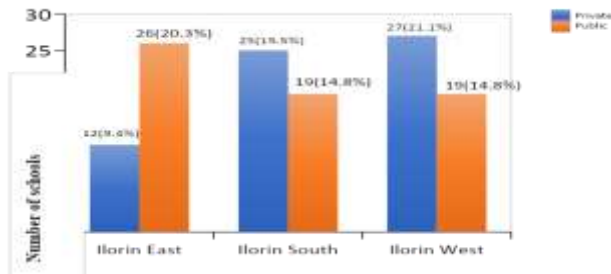


Figure 1: Distribution of surveyed primary schools according to Local Government Area and school type.

Availability of School Health Committee, functional Parents Teachers Association (PTA), and extra-curricular activities in the schools studied.

Eighty-three (64.8%) of the 128 schools had School Health Committee, 120 (93.8%) had functional PTA and 93 (72.7%) organized extra-curricular activities for the pupils. (Table I). There were significantly more public schools with School Health Committee than private schools ($p = 0.005$). All public schools had functional PTA compared with 87.5% of private schools ($p = 0.011$). Public and private schools were comparable in terms of organising extra-curricular activities ($p = 0.074$).

Table I: Availability of School Health Committee, functional Parents Teachers Association, and extra-curricular activities.

Variable	Total (%) n=128	Public (%) n=64	Private (%) n=64	χ^2	p-value
School Health Committee	83 (64.8)	49 (76.6)	34 (53.1)	7.711	0.005*
Functional PTA	120 (93.8)	64 (100.0)	56 (87.5)	6.533 ^Y	0.011*
Extra-curricular activities	93 (72.7)	42 (65.6)	51 (79.7)	3.185	0.074

χ^2 : Chi-square; ^Y: Yates corrected chi-square; *: p-value <0.05 (i.e. statistically significant)

Implemented School Health Services

Health personnel present in the primary schools studied

One hundred and four (81.3%) of the sampled primary schools in Ilorin had no designated health personnel. The designated health personnel available in the schools were a Health Assistant / trained First Aider in 17 schools (13.3%), a Health Educator / Nutritionist in 4 schools (3.1%), and a trained Nurse in 6 schools (4.7%). There was no school with a Medical Doctor. Three schools had both trained first aider and Health educators. Fifty-nine public schools surveyed had no health personnel compared with 45 of the private schools. This was found to be statistically significant ($p = 0.002$), as shown in Table II.

Health appraisal of pupils in the schools

One hundred and twenty-six (98.4%) schools inspected the pupils medically routinely, 92 (71.9%) referred the sick to the hospital when necessary, 31 (24.2%) regularly supervised the

health of the handicapped, while 17 (13.3%) did screening tests for disabilities and periodic medical examinations. (Table II). A significantly higher number of private schools did screening tests ($p = 0.019$) and periodic medical examinations ($p = 0.004$) for the pupils than the public schools. There was no difference in the proportion of private and public schools that provided other health appraisal services.

Treatment facilities within the schools

One hundred and twenty-three (96.1%) schools had first aid boxes, of which 117 (91.4%) had essential drugs and medicaments in the boxes. Fifteen schools (11.7%) had a sick bay, 26 (20.3%) had school buses and 36 (28.1%) had telephone services for health-related calls. Significantly higher number of public than private schools had first aid box ($p = 0.023$), a health room/sick bay ($p = 0.001$), school bus ($p = 0.001$) and telephone services ($p = 0.001$). No school had an ambulance. There is no statistically significant difference in the availability of essential drugs and medicaments in the schools as shown in (Table II)

Table II: Health Personnel, Appraisals, and Treatment Facilities in the Primary Schools Studied.

Variables	Total (%)	Public (%)	Private (%)	χ^2	p value
	n = 128	n = 64	n = 64		
Health Personnel [#]					
None	104 (81.3)	59 (92.2)	45 (70.3)	10.051	0.002*
Health Assistant/trained first aider	17 (13.3)	5 (7.8)	12 (18.8)	3.324	0.068
Health Educator/Nutritionist	4 (3.1)	2 (3.1)	2 (3.1)	0.258 ^Y	0.611
Nurse/ Midwife	6 (4.7)	0 (0)	6 (9.4)	4.372	0.037*
Health appraisals [#]					
Routine inspection	126 (98.4)	64 (100.0)	62 (96.9)	0.508 ^Y	0.476
Screening tests	17 (13.3)	4 (6.3)	13 (20.3)	4.341 ^Y	0.037*
Periodic medical examinations	17 (13.3)	3 (4.7)	14 (21.9)	6.783	0.009*
Referrals to healthcare/hospitals	92 (71.9)	42 (65.6)	50 (78.1)	2.473	0.116
Supervision of the handicapped	31 (24.2)	18 (28.1)	13 (20.3)	1.064	0.302
Treatment facilities [#]					
First aid box	123 (96.1)	64 (100.0)	59 (46.1)	5.203	0.023*
Essential drugs and materials	117 (91.4)	61 (95.3)	56 (87.5)	2.486	0.115
Health room	15 (11.7)	0 (0.0)	15 (23.4)	14.801 ^Y	0.001*
Ambulance/school bus	26 (20.3)	0 (0.0)	26 (40.6)	30.166 ^Y	0.001*
Telephone services	36 (28.1)	3 (4.7)	33 (51.6)	32.502 ^Y	0.001*

[#]: multiple response; χ^2 : Chi-square; ^Y: Yates' chi-square; *: p-value <0.05 (i.e. statistically significant)

Record keeping, emergency care, and control of communicable diseases in the primary schools studied.

Record keeping

Of the 128 schools studied, 101 (78.9%) had no health records, and 25 (19.5%) had health records though not cumulative (i.e. not detailed). One school (0.8%) had cumulative health record which was not transferrable (the records were hand-written in books) while another one (0.8%) had cumulative and transferrable health record (the records were detailed and stored on a desk-top computer, hence, can be easily retrieved and transferred electronically). The health records available in private and public primary schools were comparable. (Table III).

Emergency Care

Regarding the various forms of care given for illness/injury, 125 (97.7%) of the schools gave first aid treatment, but only 42 (32.8%) recorded the treatment given. Other actions taken by school authorities include immediate notification of parents in 122 (95.3%), transportation of the child to the nearest health post when needed in 108 (84.4%), and taking the child home after treatment in 98 (76.6%) schools. (Table III). Public schools recorded the treatment given to children with emergency illness/injury more than private schools (p=0.001). Other aspects of the care given in emergency situations in the schools were comparable.

Control of communicable diseases

Regarding measures taken for the treatment and control of communicable diseases, 116 schools (90.6%) gave health talks, 125 (97.7%) sent children with communicable diseases home, 7 (5.5%) isolated such children in a sick bay, while 119 schools (93.0%) organized for children to be immunized in the schools during disease outbreaks. Significantly more private than public schools isolate/quarantine children with communicable diseases in a sick bay (p = 0.020). There is no significant difference in the other measures used for the control of communicable diseases, as shown in Table III.

Table III: Recordkeeping, Emergency care, and control of Communicable diseases in the Primary Schools Studied.

Variables	Total (%)	Public (%)	Private (%)	χ^2	p value
	n = 128	n = 64	n = 64		
Records keeping					
Number of records available	101 (78.9)	50 (78.1)	51 (79.7)	0.047	0.828
Available but not cumulative	25 (19.5)	14 (21.9)	11 (17.2)	0.447	0.504
Cumulative but not transferable	1 (0.8)	0 (0.0)	1 (1.6)	0.000 ^Y	1.000
Cumulative and transferable	1 (0.8)	0 (0.0)	1 (1.6)	0.000 ^Y	1.000
Emergency care [#]					
First aid treatment usually given	125 (97.7)	64 (100.0)	61 (95.3)	1.365 ^Y	0.243

Treatment given recorded	42 (32.8)	30 (46.9)	12 (18.8)	11.482	0.001*
Notification of parents immediately	122 (95.3)	62 (96.9)	60 (93.8)	0.175 ^Y	0.676
Transport child to the nearest health post	108 (84.4)	51 (79.7)	57 (89.1)	2.133	0.144
Convey child home after treatment	98 (76.6)	47 (73.4)	51 (79.7)	0.697	0.404
Control of communicable diseases [#]					
Health talks	116 (90.6)	57 (31.7)	59 (92.2)	0.368	0.544
Send child home	125 (97.7)	62 (96.9)	63 (98.4)	0.341	0.559
Isolate/quarantine in a health room	7 (5.5)	0 (0.0)	7 (10.9)	5.440	0.020*
Immunization	119 (93.0)	60 (93.8)	59 (92.2)	0.120	0.729

[#]: multiple response; χ^2 : Chi-square; ^Y: Yates' chi-square; *: p-value <0.05 (i.e. statistically significant)

Nutrition and Guidance and Counseling Services in the schools studied

Nutrition services

Twenty (15.6%) of the 128 recruited schools had school farm, whilst 50 (39.1%) had nutritional demonstration classes. School meals (schools arranged for a vendor to sell food to children at a lower cost) were offered in 97 (75.8%) schools, while 10 (7.8%) schools gave nutritional supplements. (Table IV). Significantly more private schools had nutrition demonstration classes (p = 0.001), whilst more public schools had school meals provided (p = 0.001). There was no statistically significant difference in the availability of school farms and nutritional supplements in private and public schools.

Guidance and counseling services

One hundred and twenty-six (98.4%) schools had their pupils undergo counseling sessions with the teachers while 122 (95.6%) schools had parents present for some of the counseling sessions. (Table IV). There is no statistically significant difference in the number of public and private schools that had guidance and counseling services.

Table IV: Nutrition and Guidance and Counseling services in the schools studied.

Variables	Total (%)	Public (%)	Private (%)	χ^2	p value
	n = 128	n = 64	n = 64		
Nutrition services [#]					
School farm available	20 (15.6)	6 (9.4)	14 (21.9)	3.793	0.052
Nutrition demonstration classes	50 (39.1)	14 (21.9)	36 (56.3)	15.885	0.001*
School meals	97 (75.8)	60 (93.8)	37 (57.8)	22.518	0.001*

Nutritional supplements	10 (7.8)	4 (6.3)	6 (9.4)	0.434	0.510
Guidance and counseling services [#]					
With teachers	126 (98.4)	64 (100.0)	62 (96.9)	0.508 ^Y	0.476
With parents	122 (95.6)	61 (95.3)	61 (95.3)	0.175 ^Y	0.676

[#]: multiple response; χ^2 : Chi square; ^Y: Yates' chi-square; *: p value <0.05

Overall SHS Performance

One hundred and seven schools (53public and 54 private) met the minimum acceptable score of 19 in SHS. The mean score in the SHS of private primary schools is significantly higher than that of the public schools ($p = 0.028$). Overall, the SHS of private primary schools in Ilorin is better than that of public schools. (Table V)

Table V: Overall SHS Performance.

	Total (%)	Public (%)	Private (%)	χ^2	p value
Variables	n = 128	n = 64	n = 64		
Mean \pm SD		21.38 \pm 2.72	22.77 \pm 4.20	2.224 ^t	0.028*
Poor	21 (16.4)	11 (17.2)	10 (15.6)	0.057	0.811
Good	107 (83.6)	53 (82.8)	54 (84.4)		

χ^2 : Chi square; t: Independent Samples t test; *: p value <0.05

IV. DISCUSSION

The dearth of qualified health personnel in primary schools in Ilorin demonstrated in this study is a reflection of the poor state of SHS in Ilorin. Similar findings have been reported in other parts of Nigeria. [14], [15] Health designated school teachers can be trained to play enormous roles in the health appraisal of the school community. The use of primary school teachers to correctly identify 80% of eye diseases among primary school pupils in rural Tanzania [16] provides a ready example of their utility when trained.

Crucial components of the SHS are the routine inspection of pupils by designated staff and periodic medical examination by health personnel. Most (98.4%) of the primary schools in Ilorin carried out routine inspections of the pupils (clothes, skin, nails, teeth, hair), at least once weekly; a finding that is similar to that of previous reports.[15], [17], [18] On the other hand, a periodic medical examination was conducted by a few schools (13.3%), probably reflecting the earlier mentioned lack of health personnel. Alex-Hart et al, [15] in Rivers state (2008), reported that none of the schools did periodic medical examinations. Their study was conducted in a relatively rural community of Bonny and this may explain the worse performance. The findings are, however, similar to what Kuponiyi [17] found in Ogun state and the National average of 14%. [2] . Only thirteen percent of the schools in this study did pre-entry medical screening to detect health problems like hearing and visual impairments which have been shown to

have a negative impact on learning or had been routinely supervising the health of handicapped pupils. This is higher than that reported by Olatunya [19] in the Ilesa-East local government area, and Oyinlade et al[14] in Sagamu; where 7.8% and 11% of the schools, respectively, did pre-entry medical screening.

The effect of the glaring lack of health personnel in these schools is further exemplified by the lack of stocked first aid boxes. The first aid box provides a ready set of materials required for dealing with minor illnesses and injuries and has been shown to limit morbidity in these situations. Though the presence of first aid boxes in 96.% of the schools in this study is similar to reports by Nwachukwu[20] in Imo state and Ezeonu et al[21] in Ebonyi, where between 60.0% and 80.6% of schools had first aid boxes, many of them were empty and the stocked ones were sparingly so.

The presence of some form of first aid treatment in most of the schools is similar to the report by Kuponiyi [17] in Osun state. Most schools in Ilorin kept no record of the treatment given to pupils; and where kept, the records were neither detailed nor tidy – a finding in keeping with that of Oyinlade *et al* [14] in Ogun State. Poor health record keeping may be due to ignorance of its importance on the part of those saddled with this responsibility. It could also reflect the absence of trained personnel who would have done a better job of keeping these records.

Only 11% of the schools had a health room, which were called by different names, e.g., sick bay, school clinic, etc. This is similar to what Ezeonu[21] found in Abakaliki, but far below the findings in other parts of Nigeria[9], [17], [20] and the USA.[22]

Regarding other health services provided by the schools, such as the availability of school buses to convey ill children to health facilities, when necessary, telephone service for health-related calls, treatment, and control of communicable diseases, the general performance was poor. This is similar to reports by other workers. [14], [17], [23]

Regarding the school feeding programme, most schools provided vendors selling food at reduced prices, with the food sold each day patterned after the food time-table prepared by the school health committee or health teacher. This is similar to findings in other parts of Nigeria. [9], [15], [20] This ensures that pupils get nutritious and hygienically prepared meals at affordable prices. A few schools had school farm, some of the produce of which were used in nutrition demonstration classes. This is similar to what was reported in Sagamu. [14]

Despite the deficiencies noted in the SHS of primary schools in Ilorin, 84.4% met the minimum acceptable score of 19 for SHS on the SHP evaluation scale. This is at variance with what was previously reported in other parts of Nigeria, [14], [17], [18], [23] where SHS was found to be poor. This could

be due to an improvement in this aspect of the SHS over the years in primary schools in Ilorin.

In comparison, more private than public schools had health personnel. This could be due to better insight of the proprietors of the private schools, hence the employment of health personnel to attend to the health needs of the school community. It is therefore not surprising that a significantly higher number of private schools were found to do pre-entry screening tests and perform periodic medical examinations for the pupils; as health personnel would know the importance of these tests and examinations and thus ensure that they are done. This could also account for the higher number of private schools with telephone services for health-related calls. This finding is in contrast to what Kuponiyi [17] found in Ogun state, where more public than private schools had health personnel. The presence of health rooms in more private schools could also be due to the availability of health personnel there, as they would require a place where ill pupils could be attended to. Also, more private schools isolated/quarantined children with communicable diseases in a health room, understandably because private schools had more health rooms than public schools. This is similar to what Kuponiyi [17] reported.

Despite the fact that more public than private schools had first aid boxes, there was no difference in the availability of essential drugs and materials in the schools. This is because many first aid boxes in the public schools were empty; mostly due to lack of funds, but also due to the lack of good maintenance culture of public properties. The finding of empty first aid boxes in the public schools is supported by the report by Kuponiyi [17] in Ogun state, where, though there was no difference in the number of private and public schools with first aid boxes, more private schools had essential drugs and materials.

More public schools recorded the treatment given to children with emergency illness/injury than private schools. The situation in Ogun [17] is, however, different as no difference was found in the number of public and private schools that recorded the treatment given to ill pupils. While school meals were offered in more public than private schools, there was no difference in the availability of school farms and nutritional supplements in private and public schools.

The mean scores of private schools were significantly higher than those of public schools. Hence, the SHP of private schools in Ilorin is better than that of public schools.

V. CONCLUSIONS

Over 80% of primary schools in Ilorin had good SHS as evidenced by their obtaining up to the minimum acceptable score of 19 on the SHP evaluation scale. However, there is a need for further study to explore other components of school health programs. This will help evaluate the overall status of its implementation across schools in this study area.

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