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Original Research Article

Assessment of school health programmes implementation in Nigeria primary schools

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ABSTRACT

Background: School health program (SHP) involves all aspects of the school program that contribute to understanding, maintaining, and improving school health. This study aimed to assess the level of implementation of SHP in all its domains among primary schools.
Methods: The study is a comparative, cross-sectional study carried out in 64 public and private primary schools each in Ilorin Nigeria using the school health program evaluation scale (SHPES) pre-tested, self-administered questionnaire to obtain data. The data collected on the questionnaire was appropriately verified and computed for analysis.
Results: A total of 128 primary schools were surveyed. Eighty-three (64.8%) of the 128 schools had school health committee. One hundred and four (81.3%) of the sampled primary schools in Ilorin had no designated health personnel. Significantly more private schools had no health hazards at the site (p=0.001) than public schools. Twenty-seven schools (21.1%) met the minimum acceptable total SHP score of 103. One hundred and seven met the minimum acceptable score of 19 in SHS. Six schools (all private) met the minimum acceptable score of 57 in HSE. Ninety-eight schools met the minimum acceptable score of 27 in SHI. 25 private schools (39.1%) performed well in the total SHP score compared with 2 (3.1%) among the public schools.
Conclusions: The SHP implementation was poor in this study area. However, private schools performed better than public schools and the difference was statistically significant.

Keywords: School health program, Primary schools, Ilorin Nigeria

INTRODUCTION

A school health program (SHP) is an important component of the overall health care delivery system of any country.[1] It denotes all aspects of the school program that contribute to the understanding, maintenance and improvement of the health of the school community.[2,3] The SHP mainly aims to improve the health of learners and staff, and thus enhance their productivity as members of a larger community.[4] Also, the learning of health-related knowledge, attitudes, and behaviour begin at an early age, hence the emphasis on primary schools.[4]

The components of the SHP have been categorized into three main domains, namely: school health services (SHS), school health instruction (SHI), and healthful school environment (HSE).[5] 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.[4-6] SHI is how health education is achieved. It promotes the development of sound health knowledge, attitudes, skills, and practices

among the learners. It is aimed at meeting the growth and developmental needs and interests of learners. The HSE denotes all the consciously organized, planned, and executed efforts to ensure safety and healthy living conditions for all members of the school community. It involves everything in the school surroundings that affect the physical, mental, social, and psychological well-being of the school community.[4-6] The HSE, in its ramifications, serves as a major determinant of health and greatly influences the individual's level of intellectual growth and development.[4,5] Effective SHP can limit conditions, like stunting, diarrhoea and helminthic infections, malaria and tuberculosis in school-age children, that are capable of causing physical growth retardation and cognitive impairment.[2,7] Besides augmenting the care of the pupils, effective SHP helps to increase school attendance and improve the academic performance of the pupils. It also decreases school drop-out rates.[1,8,9]

A National study of the school health system conducted by the WHO in collaboration with the federal ministry of health and federal ministry of education revealed that health care services in schools were sub-optimal.[1,4] This led to the formulation of the National School Health Policy which was introduced in 2006 to improve the state of school health programs in the country.[4] Despite its numerous advantages, however, an effective school health program is lacking in most schools in Nigeria.[1,10]

Various studies have indicated a poor status of the SHP in Nigeria, with the public schools being worse off than the private schools. Toma et al in Jos, found that SHS was generally poor in public and private primary schools, although the situation was better in the private schools.[11] Ogala et al noted serious deficiencies in all aspects of the SHP in Zaria.[12] Using an adapted SHP evaluation scale, none of the schools met the minimum acceptable scores. Ofovwe and Ofili in Egor local government in Edo state found that only 38.3% of schools had some form of SHP; the majority of the schools do not provide adequate health services to their pupils, more so in public than private schools. While 45.9% of all the schools perform a medical inspection at entry and from time to time, more private schools, 51.0% compared to 26.7% of public schools, provided this health service. A majority of schools (92.5%), however, had a policy for school meals in place.[10] Improving the implementation of SHP will impact positively on school-age morbidity and mortality statistics and help in the achievement of the education- and health-related sustainable development goals (SDGs), precisely SDGs 1-7; as it did with the millenium development goals (MDGs).[1,13]

METHODS

Study design and location

Current study is a comparative, cross-sectional study. The study was conducted in Ilorin, the capital of Kwara State. It is located in the North Central geographical zone of Nigeria, with coordinates 8°30′N 4°33′E. Ilorin has 189 public primary schools and 523 registered private primary schools; with 109,492 pupils registered in these schools.[14]

Study population

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

Sample size determination

The minimum sample size was calculated using the formula for a comparative study

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

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, P_2=proportion of public schools performing medical inspection of the pupils =27.6% =0.276.[10] From the mentioned formula sample size was calculated to be 64, so 64 public and 64 private primary schools were recruited for the study.

Sampling technique

A multistage sampling technique was used; stage 1: the lists of public schools and registered private schools were obtained from the state ministry of education. 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 sampling intervals calculated.

Study instrument

The school health program evaluation scale (SHPES) was used.[5,15] The scale has three (3) sections: the first section is on SHS, second section on SHI and the third section on HSE. The SHPES is a structured instrument that has been used in various similar studies across Nigeria.[1,2,16,17] The questionnaire was pre-tested in selected primary schools outside the sampled schools

Data analysis

The data collected on the questionnaire was appropriately verified and entered into a microcomputer. Data analysis was done using SPSS® ver. 20 (IBM Corporation). Tables and charts were used to report descriptive statistics. Mean scores and standard deviation were compared across the various schools using a t-test. 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 $p<0.05$.

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).

School health services being implemented in the primary schools studied

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 1). 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 organizing extra-curricular activities (p=0.074).

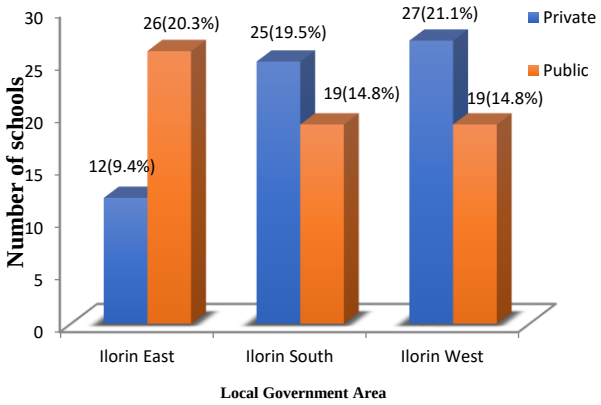

Figure 1: Distribution of surveyed primary schools according to local government area and school type.

Table 1: School health services being implemented in the primary schools studied.

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
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 health 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*
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

Table 2: Healthful school environment in the primary schools studied.

Variable	Total (%) n=128	Public (%) n=64	Private (%) n=64	χ^2	P value
Water source					
Pipe borne	32 (25.0)	13 (20.3)	19 (29.7)	1.500	0.221
Bore hole/mono pump	44 (34.4)	30 (46.9)	14 (21.9)	8.866	0.003*
Well	48 (37.5)	18 (28.1)	30 (46.9)	4.800	0.028*
None	4 (3.1)	3 (4.7)	1 (1.6)	0.258^Y	0.611
Water source location					
Within the school	83 (64.8)	35 (54.7)	48 (75.0)	5.792	0.016*
Outside school	41 (32.0)	26 (40.6)	15 (23.4)	4.342	0.037*
Toilet type					
Water closet/septic tank	74 (57.8)	24 (37.5)	50 (78.1)	17.243	0.001*
Pit/trench	36 (28.1)	28 (43.8)	8 (12.5)	15.459	0.001*
Surface / None	18 (14.1)	12 (18.8)	6 (9.4)	0.321	0.571
Toilet pupil ratio					
1:≤30	32 (25.0)	7 (10.9)	25 (39.1)	13.500	0.001*
1:31-45	16 (12.5)	7 (10.9)	9 (14.1)	0.286	0.593
1:46-60	7 (5.5)	3 (4.7)	4 (6.3)	0.000^Y	1.000
1:61-90	16 (12.5)	6 (9.4)	10 (15.6)	1.143	0.285
1:>90	39 (30.5)	32 (50.0)	7 (10.9)	23.048	0.001*
None	18 (14.1)	9 (14.1)	9 (14.1)	0.000	1.000
Refuse disposal system					
Incineration	9 (7)	4 (6.3)	5 (7.8)	0.000^Y	1.000
Controlled tipping	16 (12.5)	0 (0.0)	16 (25.0)	16.071^Y	0.001*
Open dumping and burning	103 (80.5)	60 (9 3.7)	43 (67.2)	12.725^Y	0.001*
School buildings General status					
Dilapidated	3 (2.3)	1 (1.6)	2 (3.1)	0.000^Y	1.000
Old walls, leaking roof	35 (27.3)	29 (45.3)	6 (9.4)	20.802	0.001*
Strong walls with minor cracks	55 (43.0)	28 (43.8)	27 (42.2)	0.032	0.858
Strong walls, good roof	35 (27.3)	6 (9.4)	29 (45.3)	20.802	0.001*
Fire protection					
All building with fire resistant material	120 (93.7)	64 (100.0)	56 (87.5)	6.533^Y	0.011*
Some prefab building	7 (5.5)	0 (0.0)	7 (10.9)	5.440^Y	0.020*
All prefab building	1 (0.8)	0 (0.0)	1 (1.6)	0.000	1.000

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

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).

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 1). 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 sickbay, 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/sickbay (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 1).

Record keeping

Of the 128 schools studied, 101 (78.9%) had no health records, 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 1).

Nutrition services

Twenty (15.6%) of the 128 recruited schools had school farms, 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 1). 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 counselling services

One hundred and twenty-six (98.4%) schools had their pupils undergo counselling sessions with the teachers while 122 (95.6%) schools had parents present for some of the counselling sessions (Table 1). There is no statistically significant difference in the number of public and private schools that had guidance and counselling services.

Healthful school environment in the primary schools studied

Source of water

Forty-eight schools (37.5%) had well as their source of water, 44 (34.4%) had boreholes, 32 (25.0%) had pipe-borne water, while 4 (3.1%) had no water supply. Eighty-three schools (64.8%) had their water source located within the school, 38 (29.7%) had their water source located less than 200 meters outside the school, while 3 (2.3%) had their water source located more than 200 meters outside the school (Table 2). Significantly more public schools had boreholes as their source of water, however, more private schools had well as their source of water (p=0.003 and 0.028 respectively). Also, significantly more private schools had their source of water located within the school (p=0.016).

Toilet facilities in the schools

Seventy-four (57.8%) schools had water closets, 36 (28.1%) had pit latrines, while 18 schools (14.1%) had no toilet facilities. Thirty-two (25.0%) schools had the ideal one toilet to less than 30 pupils, 16 (12.5%) had a toilet to 31-45 pupils, 7 (5.5%) had a toilet to 46-60 pupils, another 16 (12.5%) had a toilet to 61-90 pupils, 39 (30.5%) had a toilet to more than 90 pupils, while 18 (14.1%) had none. More private schools had water closets as their toilet type (p=0.001); while significantly more public schools had pit latrines as their toilet type (p=0.001). Significantly more private schools had the ideal toilet:pupil ratio of 1:≤30 (p=0.001), while significantly more public schools had a toilet : pupil ratio of 1:>90 (p=0.001) (Table 2).

Refuse disposal system

One hundred and three (80.5%) of the 108 schools dispose of their refuse by open dumping and burning, 16 schools (12.5%) by controlled tipping, and 9 (7%) by incineration (Table 2). Significantly more private schools dispose of their refuse by controlled tipping (p = 0.001); while more public schools dispose of their refuse by open dumping and burning (p=0.001).

School buildings

Thirty-five (27.3%) of the surveyed schools had strong walls with good roofs, 55 (43.0%) had strong walls with minor cracks, 35 (27.3%) had old walls with leaking roofs, while 3 (2.3%) schools had dilapidated buildings. One hundred and twenty (93.7%) schools had all buildings with fire-resistant materials; 7 (5.5%) had some prefabricated buildings, while 1 (0.8%) school had all buildings prefabricated (Table 2). Significantly more public schools had old walls with leaking roofs (p=0.001); while more private schools had strong walls with good roofs (p=0.001). All public schools visited had all buildings with fire-resistant material compared to 87.5% of private schools which had the same (p=0.011). Significantly more private schools had some prefabricated buildings (p=0.020).

School health instruction being implemented in the primary schools studied

Time allotted to health teaching

All the schools taught their pupils about health as shown in (Table 3). Fifty-six (43.8%) had three periods per week for health education for each class, another 56 (43.8%) had two periods per week while 16 (12.5%) had one period per week for health education for each class. Significantly more public schools had three periods of health teaching per week (p=0.032).

The general plan for progressive health instruction for all grades

One hundred and eighteen schools (92.2%) had a general plan for progressive health instruction for all grades. There is no significant difference in the number of public and private schools that had this.

Scope/conduct of health education curriculum

Total 122 (95.3%) schools had growth and development, 126 (98.4%) had personal health, 117 (91.4%) had community health, 117 (91.4%) had social and emotional health, 118 (92.2%) had AIDS education, while 123 (96.1%) had safety education and first aid in their health education curriculum (Table 3). There is no statistically significant difference in the scope of the health education curriculum in private and public primary schools.

Teaching methods

Of the schools studied, 123 (96.1%) taught directly, 107 (83.6%) correlated health teaching with other subjects, 37 (28.9%) integrated health teaching with other classroom activities, 109 (85.2%) used supplementary teaching aids, and 7 (5.5%) visit medical specialist and voluntary groups. A higher number of public schools taught with supplementary aids than private schools (p = 0.025). There is no significant difference in the other teaching methods used in public and private schools (Table 3).

Health instruction beyond the classroom

Ninety-five schools (74.2%) provided health instruction outside the classroom in addition to health instruction provided within, with 10 (7.8%) of these having organized health and safety trips outside school. None of the public schools organized health and safety trips outside the school, while 19.2% of the private schools did. This difference is statistically significant (p=0.001). There is, however, no significant difference in the number of public and private schools that organized health and safety trips in school (Table 3).

Preparation of teachers for health teaching

Seventy-one schools (55.5%) organized in-service training for health teachers. Sixty schools (46.9%) included personal health, components of SHP and community health in the training. There is no significant difference in the number of private and public primary schools that prepared their teachers for health teaching (Table 3).

Table 3: School health instruction being implemented in the primary schools studied.

Variable	Total (%) n=128	Public (%) n=64	Private (%) n=64	χ^2	P value
Time allotted to health teaching					
One period/week	16 (12.5)	5 (7.8)	11 (17.2)	2.571	0.109
Two periods/week	56 (43.8)	25 (39.1)	31 (48.4)	1.143	0.285
Three periods/week	56 (43.8)	34 (53.1)	22 (34.4)	4.571	0.032*
Scope of health education curriculum#					
Growth and development	122 (95.3)	62 (96.9)	60 (93.8)	0.175^Y	0.676
Personal health	126 (98.4)	63 (98.4)	63 (98.4)	0.508^Y	0.476
Community health	117 (91.4)	59 (92.2)	58 (90.6)	0.099	0.753
Social and emotional health	117 (91.4)	60 (93.8)	57 (89.1)	0.398^Y	0.528
AIDS education	118 (92.2)	61 (95.3)	57 (89.1)	0.976^Y	0.323
Safety education and first aid	123 (96.1)	61 (95.3)	62 (96.9)	0.000^Y	1.000
Teaching methods#					
Direct – by health education staff	123 (96.1)	62 (96.9)	61 (95.3)	0.000^Y	1.000
Correlation with other subjects	107 (83.6)	53 (82.8)	54 (84.4)	0.057	0.811
Integrated with other classrooms activities	37 (28.9)	16 (25.0)	21 (32.8)	0.950	0.330
By visiting medical specialist and voluntary groups	7 (5.5)	2 (3.1)	5 (7.8)	0.604^Y	0.437
With supplementary teaching aids	109 (85.2)	59 (92.2)	50 (78.1)	5.006	0.025*
Health instruction beyond the classroom#					
Organized health and safety trips in school	85 (66.4)	43 (67.2)	42 (65.6)	0.035	0.852
Organized health and safety trips outside school	10 (7.8)	0 (0.0)	10 (15.6)	10.847	0.001*
Personal health, components of SHP, community health included in training elementary teachers	60 (46.9)	34 (53.1)	26 (40.6)	2.008	0.156

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

Table 4: Performance of the schools in the various components of the SHP.

Variables	Total (%) n=128	Public (%) n=64	Private (%) n=64	χ^2	P value
SHS					
Mean±SD		21.38±2.72	22.77±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)		
SHI					
Mean±SD		29.50±4.00	28.67±5.48	0.976 [t]	0.331
Poor	30 (23.4)	12 (18.8)	18 (28.1)	1.567	0.211
Good	98 (76.6)	52 (81.3)	46 (71.9)		
HSE					
Mean±SD		38.98±5.68	46.44±8.48	5.842 [t]	0.001*
Poor	122 (95.3)	64 (100.0)	58 (90.6)	4.372[Y]	0.037*
Good	6 (4.7)	0 (0.0)	6 (9.4)		
Total score					
Mean±SD		89.86±8.53	97.95±12.82	4.205 [t]	0.001*
Poor	101 (78.9)	62 (96.9)	39 (60.9)	24.830	0.001*
Good	27 (21.1)	2 (3.1)	25 (39.1)		

χ^2: Chi square; Y: Yates corrected chi square; t: Independent Samples t test; *: p value <0.05.

Performance of the schools in the various components of the SHP

Twenty-seven schools (21.1%) (comprising 2 public and 25 private) met the minimum acceptable total SHP score of 103. One hundred and seven schools (53 public and 54 private) met the minimum acceptable score of 19 in SHS. Six schools (all private) met the minimum acceptable score of 57 in HSE. Ninety-eight schools (52 public and 46 private) met the minimum acceptable score of 27 in SHI. All schools that performed well in the HSE were private schools and this difference is statistically significant (p=0.037). 25 private schools (39.1%) performed well in the total SHP score compared with 2 (3.1%) among the public schools. This is also significant (p=0.001). The mean score in the SHS of private primary schools is significantly higher than that of the public schools (p=0.028). There is no significant difference in either the total score or the mean score in the SHI of public and private schools. The mean score of the HSE in private schools is significantly higher than that in public schools (p=0.001). The mean total SHP score in the private schools is also significantly higher than that of the public schools (p=0.001). Overall, the SHP of private primary schools in Ilorin is better than that of public schools (Table 4). The range of total SHP scores was 62-132 for schools in Ilorin. The modal score was 102, while the mean score±SD was 101.8±21.3.

DISCUSSION

The head teacher, health designated school teachers and health personnel are crucial to the proper implementation of the SHP. They provide the leadership and drive the SHP implementation in the schools. The dearth of qualified health personnel in primary schools in Ilorin demonstrated in this study is thus a reflection of the totality of SHP in Ilorin. Similar findings have also been reported by other workers.[17,18] 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 provides a ready example of their utility when trained.[19]

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 a routine inspection of the pupils (clothes, skin, nails, teeth, hair), at least, once weekly, a finding that is similar to that of previous workers.[18,20,21] 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 in Rivers state (2008), reported that none of the schools did periodic medical examinations.[21] 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 found in Ogun state and the National average of 14%.[4,20] 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 hurt learning or had been routinely supervising the health of handicapped pupils. This is higher than that reported by Olatunya in the Ilesa-East local government area, and Oyinlade et al in Sagamu; were 7.8% and 11% of the schools, respectively, did pre-entry medical screening.[17,22]

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 in Imo state and Ezeonu et al 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.[23,24]

The presence of some form of first aid treatment in most of the schools is similar to the report by Kuponiyi 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 in Sagamu.[17,22] 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 was called by different names, e.g., sickbay, school clinic, etc. This is similar to what Ezeonu found in Abakaliki, but far below the findings in other parts of Nigeria and the USA.[10,23-25]

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.[17,23,26]

Regarding the school feeding program, most schools provided vendors selling food at reduced prices, with the food sold each day patterned after the food timetable prepared by the school health committee or health teacher. This is similar to findings in other parts of Nigeria.[10,18,23] This ensures that pupils get nutritious and hygienically prepared meals at affordable prices. A few schools had school farms, some of the produce of which was used in nutrition demonstration classes. This is similar to what was reported in Sagamu.[17]

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, where SHS was found to be poor.[17,20,21,26] This could be due to an improvement in this aspect of the SHP over the years in primary schools in Ilorin. The most common source of water in the schools was well, most of which were uncovered and had no dedicated drawing bucket. The availability of, at least, one source of water in most of the schools is higher than what was reported in Ile-Ife[48] and Imo State, where only 20.0% and 28.0% of the schools, respectively, had a functional source of water; but similar to the report from Lagos, where all schools had a source of water.[17,27] One out of every three schools in Ilorin with a water source had the water source located outside the school, a finding that is similar to the report by Olatunya in Ile-Ife, where one out of every four schools had water sources located outside school.[28] With this, water adequacy and potability cannot be guaranteed, hence, increasing the risk of the spread of water-borne diseases and diseases related to water shortage in the school population.[4]

The most common form of refuse disposal was open dumping and burning, which is similar to the findings in other parts of Nigeria.[2,17,28] This could be due to the low to no cost and the ease of maintenance of this method, compared to safer and more economically expedient methods like incineration and controlled tipping. Dumping sites could be an eye-sore and serve as breeding sites for disease vectors like flies, mosquitoes and rodents; while the burning process constitutes a major source of air pollution. Most of the schools had toilet facilities which are similar to that reported by another worker, but at variance with the report from Bonny LGA of Rivers state. The most common toilet type, present in about half of the schools was the water closet/septic tank. This is in contrast to earlier findings in rural parts of Nigeria, where ventilated improved pit latrines were reported as the commonest toilet type.[20,23,29] A quarter (25.0%) of the schools met the recommended ratio of one toilet to not more than 30 pupils. The better toilet facilities found in primary schools in Ilorin could be due to the higher proportion of private schools included in this study, the fact that Ilorin is a state capital, with better development and more enlightened residents, or it could reflect an improvement in this aspect of the HSE in this part of the country.

The parlous state of classrooms as found in this study is similar to the findings of previous workers.[17,28,29] Few schools had strong walls with good roofs expected of school buildings, and the floor finishing was substandard in most schools. Ventilation, though adequate in most schools, was controllable in less than half. All but one school had good natural lighting but very few had supplementary artificial light. About half of the schools had a full ceiling in all buildings. Although most schools had enough furniture for all teachers, fewer had enough and appropriate furniture for all their pupils, which may hinder them from optimizing their learning experiences.

Many schools had no environmental safety measures (like fire extinguishers, fire alarms and school fences) in place. This is similar to the findings by other authors.[28,30,31] The lack of these safety measures is quite disturbing, bearing in mind that children are prone to accidents.[29,31,32] This may be due to ignorance on the part of the school authorities, lack of funds to implement some of these measures and poor enforcement of these measures by the appropriate agencies.

A third of the schools had no obvious health hazards within the school, and this is at variance with the report which shows that all schools in Bonny local government area of Rivers state had at least one obvious health hazard on-site; and in Ilesa, where various forms of health

hazards were encountered in 81.3% of the schools. The commonest health hazard found in the schools was animal grazing, which is similar to what was found in other reports.[2,28] Most schools had a well-maintained environment, evidenced by low cut grasses, clean classes, toilets and surroundings. Almost all schools had an adequate emotional climate (the interviewed teachers had a good working relationship with other teachers and pupils and are generally satisfied with their job). This is in contrast to the findings by Olatunya and Alex-Hart et al in which most teachers in Ilesa and Bonny local government areas of Rivers state, respectively, complained of inadequate emotional climate.[2,22] This difference may be attributable to the improved teachers' welfare that has occurred over the years. The recommendation of adequate provision of the sports field and sports facilities was met by most of the schools.[33] Extracurricular activities like sports stimulate neurocognitive development in growing children. They also help to identify children who are talented in sports for further grooming.

Overall, only six schools (all private) met the minimum acceptable score of 57 in the HSE. This shows the poor state of the HSE in primary schools in Ilorin. This is similar to the findings by other workers.[1,2,17,28] Less than half of the schools complied with the National Education Research Development Council's (NERDC) recommendation of not less than three periods per week of health teaching; a finding similar to that of previous workers where none of the schools complied with this recommendation.[23,34] The school health curriculum included growth and development, personal health, community health, social and emotional health, AIDS education, safety education and first aid. This would help form a good foundation for healthy living as the children grow. In this study, direct teaching was the most common modality used to instruct the pupils on health. A few schools did not use supplementary teaching aids to reinforce what the pupils were being taught. This would limit how much the pupils remember what was being taught, as they would be unable to see or put to practice what they had learned. Very few schools visited a medical specialist and voluntary groups as a means of teaching the pupils about health.

About 50% of the schools did not organize In-service training for health teachers. This calls to question the quality and effectiveness of the health instruction given in these schools, as in-service training updates the teacher on discoveries on health and better equips him/her on what and how to teach the pupils.

A good number (76.6%) of the schools met the minimum acceptable score of 27 in the SHI. Hence, it can be said that the SHI of primary schools in Ilorin is good. This is in contrast to findings by previous workers.[1,17,35] This contrast could be due to better supervision of the schools by the ministry of education to ensure that pupils get the required amount of instruction. Regarding the comparison of public and private schools, 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 found in Ogun state, where more public than private schools had health personnel.[20] 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 reported.[20]

Even though 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 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.[20]

More public schools recorded the treatment given to children with emergency illness/injury than private schools. The situation in Ogun is, however, different as no difference was found in the number of public and private schools that recorded the treatment given to ill pupils.[20]

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. Well, as a source of water supply was more common in the private schools while borehole was more common in the public schools. This could be attributed to the recent provision of boreholes to the schools by the local governments. More private schools, however, have their source of water located within the school premises. The boreholes that serve most public schools, however, also serve the communities around the school, regardless of whether it is situated in or outside the school. This is in contrast to the finding in Ilesa, where more private schools had boreholes and more public schools had wells.[28]

Controlled tipping was more common in private schools as a means of refuse disposal, while open

dumping/burning was more common in public schools. This is in contrast to what was found in Ilesa, where all schools (public and private) practiced open dumping and burning.[28] The public and private schools were comparable in terms of disposal of refuse via other means. More private schools had water closets as their toilet type, while more public schools had pit latrines as their toilet type. This could be due to the higher cost of installation and maintenance of water closets compared with pit latrines. There is no difference in the toilet-pupil ratio in both public and private primary schools in Ilorin. This finding is similar to what Olatunya found.[28]

Many public schools had old walls with leaking roofs; in contrast to private schools where most had strong walls with good roofs. The age of the schools could account for this. Most public schools were above 25 years since established, while most private schools were below 25 years. All public schools visited had all buildings with fire-resistant material in contrast to the finding of buildings with prefabricated materials in some private schools. This is in agreement with findings from Ilesa.[28]

There is no statistically significant difference in the floor space of classrooms in public and private schools in Ilorin. However, significantly more public schools had floors with worn off, broken and dusty finishing. This could be explained by the older age of the public schools, coupled with the poor maintenance culture of public properties by the appropriate agencies. It also explains why more public schools had partial ceilings: as the ceilings age and fall off, they were not replaced, hence, the defects observed. It also explains why less than half of public schools had good and appropriate chairs for all pupils, in contrast to all but one private school having the same. More private schools also had good chairs for all teachers. All public schools had adequate ventilation, in contrast to private schools where some had inadequate ventilation. However, more private schools had controllable ventilation. Some private schools, to maximize cost, compromise the adequate cross ventilation that is necessary to prevent the transmission of diseases associated with overcrowding. Buildings are constructed close together and some classes are built with single windows to maximize the small land used. There is no difference in the scope of the health education curriculum in private and public primary schools in Ilorin. This is because all primary schools (private and public) follow a single government-approved curriculum on health.

More public schools are taught with supplementary aids than private schools. There is no significant difference in the other teaching methods used in public and private schools. This could be due to better funding for the private schools. None of the public schools organized health and safety trips outside the school, while 10 (19.2%) of the private schools did. This is easier in private schools because parental consent is obtained, and the funds for such trips are sourced from the parents. The parents of pupils in public schools are, however, less likely to be able to support such a cause financially.

There is no significant difference in the number of private and public primary schools that prepared their teachers for health teaching. All schools that performed well in the HSE were private. Twenty-five private schools (39.1%) performed well in the total school health program score compared with 2 (3.1%) among the public schools. The mean scores of private schools in the SHS, HSE, and the overall SHP were significantly higher than those of public schools. Hence, the SHP of private schools in Ilorin is better than that of public schools.

CONCLUSION

The SHP implementation was poor in this study area. However, private schools performed better than public schools and the difference was statistically significant.

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