Original Article

An Assessment of School-Based Health Instruction Among Primary Schools in Ido/Osi Local Government Area Southwest, Nigeria

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Abstract

Background: School Health Instruction (SHI) comprises of series of formal, well-planned, and organized learning whereby information concerning knowledge, habits, attitudes, practices, and conducts are given pertaining to the health of an individual or members of the school community. A well-structured and implemented SHI forms the basis for a healthy health promotion. **Aim:** The study aimed at assessing the implementation of SHI among primary schools in a Local Government Area, Southwest, Nigeria. **Subjects and Methods:** A cross-sectional descriptive study was carried out among 67 private and public schools in a Local Government Area of Ekiti State using a standardized checklist and direct observation. Data were analyzed using SPSS version 25. **Results:** The ratio of teachers to pupils was 1:16 in public schools and 1:10 in private schools. More public-school teachers (93.8%) compared to private school teachers (28.9) had education-related qualifications ($P < 0.0001$). All public schools adhered to the recommended three periods per week on health education while the frequency of adherence varied in private schools. About half of the private school teachers and 60.4% of the public school teachers have had in-service training on general health and health promotion. Direct teaching by a subject teacher was carried out by 11.9% of the schools while 49.3% had supplemental teaching aids. The scope of health education was uniform among all the schools. Only 46.3% of the schools attained the recommended minimum acceptable score on SHI. **Conclusion:** School health instruction was poorly implemented in the study location. There is a need to scale up SHI and monitor its implementation in the study location. These efforts should be supported by all stakeholders and backed with adequate oversight function by regulatory authorities, provision of in-service training, and teaching aids for teachers.

Keywords: *Ekiti State, implementation, Nigeria, primary schools, school health instruction*

Introduction

School health instruction is an aspect of a School Health Programme (SHP) that comprises a series of formal, well-planned, and organized learning whereby information concerning knowledge, habits, attitudes, practices, and conducts pertaining to individual or group health is passed onto children.[1-4] It includes curriculum development, training of teachers, organization, and period allotment for health instruction.[2] It is aimed for learners to take appropriate decisions and actions that will promote their health.[5] Three periods per week is recommended for health education in Nigerian schools.[1,2,5]

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School health instruction must be skill-based and supported with appropriate instructional materials. It must have clear parameters with which its impact can readily be quantified.[3,6,7] It is carried out either through personal methods which involve direct interaction between the school children and the teacher who is the health instructor or a health personnel attached to the school. Non-personal methods involve the use of mass media, posters, and billboards, or a combination of these two methods.[8]

The following areas are being covered in the school health instruction curriculum; personal health, growth and development, social and emotional health including drug and sex education, HIV/AIDS, safety education, community health, and environmental health.[7,8]

Primary school education is the first level of formal and structured education that forms the bedrock of any other educational attainment in life, hence, the need for right and adequate health instructions by well-trained teachers. The promotion of the health of the school populace is a critical step towards quality achievement in education.[9]

Despite the fact that SHI is an avenue to inculcate into the school-aged child, healthy habits which he/she should maintain throughout his/her life, there are still challenges in its implementation in Nigeria. These include lack of adherence to the recommended three periods per week allotted for health education,[4,10,11] inadequate teachings on safety, health education, and the control of communicable diseases like HIV/AIDS despite these being topical issues,[3] inadequate numbers of trained health education teachers,[4,11,12] and inadequate instructional materials.[13]

To improve the health of pupils, the National School Health Policy was launched in 2006 with the help of the National School Health Association (NSHA) and development partners such as the World Health Organization (WHO), Japan International Cooperation Agency (JICA), United Nations Children's Fund (UNICEF), as well as other stakeholders like the Ministries of Health and Environment.[14] The aim was to promote the health of learners to achieve the goals of Education for All (EFA).[14] The implementation guidelines on the national SHP were developed alongside National School Health Policy in the same year.

It is important that the impacts of the above-mentioned efforts are assessed periodically. In addition, there is a need for regular data on the contents and delivery of SHI in different locations of Nigeria in order to identify areas of strengths and deficiencies needing appropriate interventions. There is a dearth of data on SHI in the study location. The study aimed at assessing the implementation of SHI among primary schools in a Local Government Area in Southwest Nigeria.

Methodology

This was a cross-sectional descriptive study carried out among primary schools (both public and private) in a Local Government Area (LGA), in Ekiti State between October 2019 and November 2019. The LGA is one of the 16 LGAs in Ekiti State, located in the Southwestern part of Nigeria. According to the 2006 Census, the Local Government has a total population of 159,114 people.[15] There are 13 communities in the local government and all of these communities are rural settlements with accessible road networks. The inhabitants are mainly farmers but some of them are also petty traders and artisans. Furthermore, a few of the inhabitants are civil servants. The main source of drinking water is well water with government-supplied pipe-borne water that does not flow regularly.

There are 17 Primary Health Centers in the LGA. Also, a Federal Teaching Hospital located in LGA serves as an easy referral center to the PHCs and other health facilities within and outside the state. There are 72 primary schools (52 public schools and 20 government-accredited private schools) in the LGA that serve the educational need of the local government populace. In addition, the LGA has a tertiary health facility and a school of nursing.

Selection of schools

The sample size was calculated using Fisher`s formula for cross-sectional studies.[16] Based on a local study,[17] the estimated sample size for the study was 67. Given a public to private school ratio of 2.6:1 in the study location, a total of 48 public and 19 private schools were selected by balloting.

Ethical consideration

Approval was obtained from the Research and Ethics Committee of the Federal Teaching Hospital (ERC/2018/08/31/136A), the State Ministry of Education (EK/ED/SCHLS/84/VOLII/177), and the State Universal Basic Education Board/the Local Government School Education Authority (EKSUBEB/SS/57/57) before the commencement of the study.

Written consent was obtained from each of the school administrators after the benefits and risks of the research work were explained to them in clear and simple language. The study was conducted with minimal disruption of learning.

Pilot study

A pilot study was carried out using two primary schools, one public, and one private school, in Ijero LGA of Ekiti State, Nigeria (a location outside but close to the study area). The information obtained from the pilot study was used to modify the questions to make them clearer.

Data collection method/Instrument

The standardized and validated SHP evaluation scale developed by Anderson and Cresswell,[18] modified by Akani *et al*,[2] and reported by Olatunya *et al*,[19] to suit the Nigerian environment, was used to record information and score each school visited. The evaluation scale has different components each for the school administrative data and various components of SHP including the scope, contents, and methods of delivery of SHI. According to the evaluation scale, the maximum obtainable score for SHI was 41 while the minimum acceptable score was 27. Schools with less than the minimum acceptable score were adjudged to have performed poorly. The headteacher (HM) who is the administrative head of the school, the school health instructor (who is responsible for the direct implementation of the School Health Programme), and two pupils were selected from each school. The two pupils were selected randomly from the final year class. The first and last names of pupils on the class attendance register present for the day were selected. These people had spent at least one academic session thus making them likely to have information on the scope of SHI being implemented in their schools and enhance objectivity. The pupils were interviewed first in a secluded location on the same day but at different times. Thereafter, the teachers were interviewed at their various offices.

The average of the scores obtained from the four respondents was recorded and rounded up to the nearest whole number. These scores were collated and used to determine the final score for each school.

Methods of data analysis

The data obtained were analyzed using SPSS version 25.[20] The quantitative data were tested for normality using the Kolmogorov-Smirnov test and Shapiro-Wilk normality test. Continuous data that were not normally distributed were reported as the median and interquartile range (IQR) while the SHI scores were normally distributed and were described using mean and standard deviation. Other analyses were performed using proportions and percentages as applicable. The SHI scores obtained from the public schools were compared with those of the private schools using the independent sample *t*-test. Categorical variables were compared using the Pearson's Chi-squared (x^2) tests with Yate's correction where applicable. A *P* value of less than 0.05 was accepted as statistically significant.

Results

A total of 67 schools was studied (48 public schools and 19 private schools).Most of the schools 65 (97.0%) comprising 47 (97.9% public vs. 18 (94.7%; $P = 0.248$) had functional Parents Teachers Association.

There were 9,480 pupils and 697 teachers in the 67 schools. The ratio of teachers to pupils was 1:16 in public schools and 1:10 in private schools.

Teachers' educational qualifications and duration of teaching

As shown in Table 1, the public schools had significantly more teachers with education-related qualifications. More public school teachers had longer teaching experience compared to private schools.

Time allotment, plan for progressive health instruction, and scope of the curriculum

Table 2 shows the scope of the curriculum implemented in the schools. All the public schools adhered to the three periods per week for health education teaching classes compared to the private schools ($P < 0.0001$).

Forty-one (61.2%) schools comprising 12 (63.2%) private and 29 (60.4%) public schools had a general plan for progressive health instruction for all grades. The scope of health education (growth and development, personal health, community health, social and emotional health, AIDS education, and safety education and first aid) was covered by all the schools as shown in Table 2.

Teaching methods, organized trips, and teacher's preparation

Of the 67 schools surveyed, 8 (11.9%) taught directly, 66 (98.5%) correlated health teaching with other subjects, 62 (92.5%) integrated health teaching with other classroom activities while 33 (49.3%) schools used supplementary teaching aids and by visiting medical specialist/voluntary groups. All public schools integrated health education into classroom activities while all private schools taught health education in correlation to other subjects as shown in Table 3.

Forty-one schools (61.2%) provided health instruction outside the classroom in addition to health instruction provided within, with 8 (11.9%) of these having organized health and safety trips outside school. On in-service

Table 1: Teachers` educational qualification and length of time in teaching

Variable	Private *n*=38 *n*(%)	Public *n*=96 *n*(%)	Total *n*=134 *n*(%)	χ^2	*P*
Educational status					
Nigerian Certificate in Education	9 (23.7)	60 (62.5)	69 (51.5)	92.61	<0.0001*
Ordinary National Diploma	6 (15.8)	0 (0.0)	6 (4.5)		
Higher National Diploma	5 (13.2)	0 (0.0)	5 (3.7)		
Bachelor in Education	2 (5.3)	30 (31.3)	32 (23.9)		
Bachelor of Science	14 (36.8)	6 (6.3)	20 (14.9)		
Master's Degree	2 (5.3)	0 (0.0)	2 (1.5)		
Education related qualification	11 (28.9)	90 (93.8)	101 (75.4)	89.22	<0.0001*
Non education related qualification	27 (71.1)	6 (6.3)	33 (24.6)		
Length of time in teaching					
<1 Year	3 (7.9)	3 (3.1)	6 (4.5)	54.04	<0.0001*
1-5 Years	12 (31.6)	3 (3.1)	15 (11.2)		
6-10 Years	11 (28.9)	21 (21.9)	32 (23.9)		
11-15 Years	7 (18.4)	25 (26.0)	32 (23.9)		
16-20 Years	3 (7.9)	8 (8.3)	11 (8.2)		
>20 Years	2 (5.3)	36 (37.5)	38 (28.4)		

Test statistics=Chi square test; *: *P*<0.05

Table 2: Respondents' view on time allotment, plan for progressive health instruction and scope of curriculum

Health instruction	Private school *n*=19 *n* (%)	Public school *n*=48 *n* (%)	Total *n*=67 *n* (%)	χ^2	*P*
Time allotted to health teaching					
One period/week	1 (5.3)	0 (0.0)	1 (1.5)		
Two periods/week	4 (21.1)	0 (0.0)	4 (6.0)		
Three periods/week	14 (73.7)	48 (100.0)	62 (92.5)	29.89	<0.0001*
Plans for progressive health instruction	12 (63.2)	29 (60.4)	41 (61.2)	0.190	0.662
Scope of health education curriculum					
Growth and development	19 (100.0)	48 (100.0)	67 (100.0)		
Personal health	19 (100.0)	48 (100.0)	67 (100.0)		
Community health	19 (100.0)	48 (100.0)	67 (100.0)		
Social and emotional health	19 (100.0)	48 (100.0)	67 (100.0)		
AIDS education	19 (100.0)	48 (100.0)	67 (100.0)		
Safety education and first aid	19 (100.0)	48 (100.0)	67 (100.0)		

Test statistics=Chi square test; *: *P*<0.05

Table 3: Respondents' view on teaching methods, organised trips and teacher's preparation

Health instruction	Private school *n*=19 *n*(%)	Public school *n*=48 *n*(%)	Total *n*=67 *n*(%)	χ^2	*P*
Teaching methods					
Direct teaching by educational staff	3 (15.8)	5 (10.4)	8 (11.9)	1.592	0.207
Correlation with other subjects	19 (100.0)	47 (97.9)	66 (98.5)	2.020	0.155
Integrated with classroom activities	14 (26.3)	48 (100.0)	62 (92.5)	117.5	0.0001*
Teaching by visiting specialist	12 (63.2)	21 (43.8)	33 (49.3)	2.455	0.007
Supplemental aids	14 (73.7)	19 (39.6)	33 (49.3)	23.58	0.001*
Organized health and safety trips					
In school	10 (52.6)	31 (64.6)	41 (61.2)	2.976	0.085
Outside school	3 (15.8)	5 (10.4)	8 (11.9)	1.592	0.207
Preparation of teachers for health teaching					
In-service training for teachers and head-teachers	10 (52.6)	29 (60.4)	39 (58.2)	0.996	0.318
Areas included in training elementary teachers	10 (52.6)	29 (60.4)	39 (58.2)	0.996	0.318

Test statistics=Chi square test; *: *P*<0.05

Table 4a: An outline of school health instruction scores for each of the public schools

s/n of schools	Time allotted to health teaching (max=5)	Progressive teaching for all grades (max=5)	Scope of health instruction (max=12)	Teaching methods (max=10)	Organization of health and safety trips (max=5)	Teachers preparation for health teaching (max=4)	Total (max=41)
1	5	5	12	2	0	4	28
2	5	0	12	0	0	4	21
3	5	0	12	4	2	0	23
4	5	0	12	4	0	4	25
5	5	5	12	4	0	4	30
6	5	5	12	4	2	0	28
7	5	5	12	2	0	4	28
8	5	5	12	0	0	0	22
9	5	5	12	0	2	4	28
10	5	5	12	0	2	4	28
11	5	5	12	6	2	0	30
12	5	5	12	0	0	0	22
13	5	5	12	2	0	4	28
14	5	5	12	6	0	0	28
15	5	5	12	2	0	4	28
16	5	5	12	2	0	4	28
17	5	0	12	0	5	0	22
18	5	5	12	6	2	4	34
19	5	5	12	6	5	0	33
20	5	0	12	4	0	4	25
21	5	5	12	2	2	4	30
22	5	5	12	4	0	4	30
23	5	5	12	0	2	4	28
24	5	5	12	10	2	4	38
25	5	5	12	0	0	4	26
26	5	0	12	0	1	4	22
27	5	5	12	0	2	4	28
28	5	0	12	0	0	4	21
29	5	5	12	2	0	4	28
30	5	5	12	0	0	0	22
31	5	5	12	0	0	4	26
32	5	5	12	4	2	3	31
33	5	5	12	0	2	4	28
34	5	0	12	4	2	0	23
35	5	0	12	0	0	4	21
36	5	5	12	6	0	4	32
37	5	5	12	0	0	4	26
38	5	5	12	0	2	4	28
39	5	0	12	4	1	0	22
40	5	0	12	0	0	3	20
41	5	0	12	4	0	3	24
42	5	0	12	4	0	4	25
43	5	0	12	0	0	3	20
44	5	0	12	0	0	3	20
45	5	0	12	4	0	3	24
46	5	0	12	0	2	3	22
47	5	0	12	4	0	3	24
48	5	0	12	0	0	4	21

training, 39 (58.2%) of the schools organized training for health teachers; more public schools compared to private schools did this as shown in Table 3.

Overall scores of the schools on SHI

Tables 4a and 4b show the scores of the individual schools in each component of SHI. As shown in the table,

Table 4b: An outline of school health instruction scores for each of the private schools

s/n of schools	Time allotted to health teaching (max=5)	Progressive teaching for all grades (max=5)	Scope of health instruction (max=12)	Teaching methods (max=10)	Organization of health and safety trips (max=5)	Teachers preparation for health teaching (max=4)	Total (max=41)
1	1	5	12	0	0	4	22
2	5	0	12	4	2	4	27
3	5	5	12	10	2	4	38
4	5	5	12	4	0	0	26
5	3	0	12	4	0	4	23
6	5	5	12	4	5	4	35
7	5	5	12	2	0	4	28
8	1	5	12	4	0	0	22
9	5	5	12	6	0	0	28
10	1	5	12	2	2	4	26
11	1	5	12	6	2	4	30
12	3	0	12	8	2	4	27
13	1	5	12	4	0	0	22
14	5	5	12	4	0	0	26
15	1	5	12	4	2	4	28
16	5	0	12	4	0	0	21
17	3	0	12	4	0	3	22
18	5	0	12	2	0	3	22
19	5	0	12	4	0	3	24

Table 5: Performance of the schools on SHI

Variable	Private school *n*=19 *n*(%)	Public school *n*=48 *n*(%)	Total *n*=67 *n*(%)	χ^2	*P*
School health instruction					
Good	8 (42.1)	23 (47.9)	31 (46.3)	0.727	0.393[a]
Poor	11 (57.9)	25 (52.1)	36 (53.7)		
Mean and range of scores					
Variable	**Private school**	**Public school**	***t***		***P***
School health instruction					
Mean±SD	26.21±4.86	26.02±3.94	0.166		0.869[b]
Range	21-38	20-38			

Test statistics: a=Chi Square, b=independent sample ***t*** test

only eight private schools and twenty-three public schools attained up to the minimum acceptable score on SHI.

Comparison of overall performance and mean scores on SHI

As shown in Table 5, although more public schools seemed to perform relatively better in the implementation of SHI, this did not attain statistical significance. Also, there was no statistical difference in the total mean score between the public and private schools in the implementation of SHI.

Discussion

This study revealed the poor status of SHI in the study area. According to the Centre for Disease Control in the USA, adequate implementation of SHI has been found to greatly impact the health of the populace positively, because, for every one dollar spent on school-based health instruction, society saves more than thirteen dollars in direct cost.[21] This observation highlights the important role quality SHI plays regarding any effort geared towards attaining good health for our society.

The inadequately qualified teachers in the private schools as found in this study had been previously reported.[11] This might have occurred as a result of the general lack of job opportunities in the country as job seekers may take up any available job after a long wait without employment even though they lack competency in such job. It may also be due to the lack of due diligence by appropriate Government bodies saddled with the oversight function of these schools.[11] These bodies are expected to remedy any extraneous factor that intrudes into or may erode the delivery of quality SHI in Nigerian primary schools. There is therefore the need for them to step into action in the study location.

The suboptimal in-service training for teachers in the study location is worrisome as the incorporation of appropriate training on SHI and regular in-service training are needed for school teachers to fill their knowledge gap. In-service training updates the teacher on discoveries on health and better equips them on how to teach the pupils. This is because trained teachers are more effective at impacting health education to pupils.[22] In the United

States, evaluation of a comprehensive health education curriculum showed that trained teachers were better prepared, implemented the curriculum effectively, and achieved more positive effects on students.[23] Similarly, a study carried out in Northern Ireland highlighted the need for ongoing in-career development for teachers.[24] These observations are apt and raise the need for more in-service training for teachers in the study location given that some of them had graduated from school a long time ago.

That all public schools and most (73.7%) private schools complied with the National Education Research Development Council's (NERC) recommendation of not less than three times per week health teaching[25] is commendable. This represents an improvement compared to previous reports from different parts of the country ranging from 0% compliance,[11,12,26] to 20% by Alex-Hart *et al*.,[10] in Rivers State and 25.8% by Toma *et al*.,[4] Plateau State respectively. The better compliance of public schools might stem from the preponderance of more educationally trained and qualified teachers in public schools who, because of their background knowledge, are more likely to know what is right or recommended regarding SHI in schools compared to lay teachers in private schools.

Only about one-tenth of the schools had designated Health Education Staff, suggesting that health instruction in most of the schools was being given by teachers with poor knowledge of health issues as noted by various authors across the country.[4,11,12] This may account for the poor delivery of health instruction curricula in these schools. In addition, more than half of the schools did not use supplementary teaching aids to reinforce what the pupils were being taught. The relative lack of instructional material in this study is similar to other studies though to varying degrees.[11-13] The presence of teaching aids could have been used to carry out practical lessons` demonstration and role-play which can engender better understanding for the pupils. This observation as found in the study location is not encouraging as children tend to remember better what they hear, see and act rather than mere hearing alone.[11-13,7,27] The inadequate knowledge of primary school teachers in the country on SHP as observed in this study had also been noted by previous local[7,16,27-30] and international studies.[31,32]

The observation that only 46.3% of the schools attained the minimum acceptable score on SHI confirmed that SHI is not being implemented adequately in most schools in the study location. Worse still, is the observation that this occurrence spanned across both the public and private schools as reflected in the lack of any difference in the scores attained by both groups of schools. This suggests that no meaningful health instruction is being carried out in the study locality and this corroborates with previous reports on SHI from different parts of the country,[10,11,14,28] However, this observation sharply contrasts with what that obtained in the USA where most schools (92%) routinely carried out standard and quality health instruction activities.[33]

Conclusion

The implementation of SHI in the study location was suboptimal. There is a need to scale up SHI and monitor its implementation in the study location. These efforts should be supported by all stakeholders and backed with adequate oversight function by regulatory authorities, provision of in-service training and teaching aids for teachers.

Recommendations

More efforts should be channeled towards improving SHI in the study locality and Nigeria by extension. Such efforts should include−better supervision of the schools by the Ministry of Education to ensure that the pupils get the required health instruction, allotting more time to teachings on health in the curriculum, regular in-service training on health organized by the government for teachers, provision of health-related teaching aids like charts and mannequin to improve pupil's understanding of what is being taught, regular visits by health personnel, and voluntary groups to teach both, the teachers and pupils, on health matters.

Authors` contributions

All authors made substantial contributions to the manuscript from conception to implementation and approved the final version submitted.

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Conflicts of interest

There are no conflicts of interest.

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