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## Knowledge, attitude and practice of school health among primary school teachers in Ogun State, Nigeria

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**Abstract:** *Background:* The School health programme is designed to promote the optimal physical, emotional, social and educational development of students. Teachers play a major role in the promotion and successful implementation of the Programme.

*Objective:* To determine and compare teachers knowledge, attitude and practice of the school health programme in urban and rural schools in Ogun state, Nigeria.

*Methodology :* This cross sectional descriptive study was conducted in public primary schools in Ifo (urban) and Ikenne (rural) Local Government Areas (LGAs) of Ogun State. A multistage sampling method was used to select teachers in each Local Government Area. Data was collected using self administered questionnaires and analysed using the EPI-Info 6 statistical software.

*Results:* Although majority of the respondents in both LGAs were aware of the school health pro-

gramme, (Ifo 97.4%, Ikenne 97.3%), more than half of the respondents, (Ifo 57.0%, Ikenne 54.5%) had poor knowledge of school health. Majority of the respondents in Ifo (98.7%) and Ikenne (98.3%) felt that the school health programme is desirable and necessary. School health programme is in place in most schools in both LGAs ( Ifo 77.3%, Ikenne 73.2%). However many key components are poorly practiced.

*Conclusion:* There was no statistically significant difference in the knowledge ( $p=0.209$ ) and practice ( $p=0.313$ ) of school health in rural and urban LGAs. In service training on school health should be provided for teachers and the needed resources should be made available for the full implementation of all components of school health in all schools.

**Key words:** School health, teachers, primary school, knowledge and practice

### Introduction

School Health Programme (SHP) refers to all aspects of the school programme which contributes to the understanding, maintenance and improvement of the health of the school population. Children spend a considerable part of their life in school exposed to a variety of environmental, physical, emotional and social influences. With an increasing number of students with health conditions requiring health services during the school day, the school health service programme works in ensuring that efficient and standard care are implemented.<sup>1,2,3</sup> An effective school health programme is one of the most cost effective investments a nation can make. It is therefore a strategic means to preventing important health risks among children and youths.<sup>4</sup>

School-age children account for about 23 percent of the population in the average community in Nigeria and

their health status and indices are useful in determining a nation's state of development.<sup>5</sup> A school age child in a developing country like Nigeria with high infant and under-five mortality rate is a survivor of the major childhood diseases. If they are to attain their maximum potential and development, their quality of life must be improved upon.<sup>6</sup> Supporting school health programs to improve the health status of our nation's young people is very important.<sup>15</sup> A large proportion of the mortality and morbidity in school-age children is preventable. Schools are the only institutions that can reach nearly all young people; they are in a unique position to improve the health status of young people throughout the nation.

The role of teachers in the school health programme is very central. They are the resource people responsible for the promotion and successful implementation of the school health programme. Teachers are well respected and are viewed as role models by their students and they

therefore have an important impact on their learning and action.<sup>7,8</sup> The success of school based health programme relies on their personal knowledge, attitude and perspective on the health needs of students. This study examines the knowledge attitude and practice of school health programme among teachers in rural and urban LGAs in Ogun State.

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## Materials and method

### *Description of study area*

Ogun State is a state in South-western Nigeria and comprises of 20 Local Government Areas (LGAs). The study was conducted in two LGAs; Ifo LGA which is predominantly urban and Ikenne LGA which is predominantly rural. Ifo LGA has 95 public primary schools and 10 public secondary schools with a teacher population of 930. Ikenne LGA has 22 public primary schools and 11 public secondary schools with 475 teachers.

### *Study population*

The study population were school teachers working in public primary schools in Ifo and Ikenne LGAs. Teachers who were less than one year on the job were excluded.

### *Study design*

This study was a comparative, cross sectional study. Sample size determination -To calculate n the formula used was<sup>9</sup>

$$n = \frac{(p_1q_1 + p_0q_0) + (Z + Z')^2}{(p_0 - p_1)^2}$$

Where:

n = the desired sample size

Z = the percentage point of the normal distribution corresponding to the (two sided) 5% significance level = 1.96

Z' = critical value corresponding to the power of the study at 80%  
= 0.84

p<sub>0</sub> = teachers with good knowledge of school health programme in a study carried out in an urban area  
= 0.72

q<sub>0</sub> = 1.0 - p<sub>0</sub>

p<sub>1</sub> = teachers with good knowledge of school health programme in a study carried out in a rural area  
= 0.52<sup>11</sup>

n (minimum acceptable sample size) = 207 per group

### *Sampling procedure*

A list of the schools in the two LGAs was obtained and served as sampling frame. Simple random sampling method was used to select the schools in both LGAs. Schools were selected from the listed schools till the sample size was attained. In Ifo LGA, 14 Schools were

selected by balloting while in Ikenne LGA, 12 schools were selected to make up the sample size. In the selected schools, all the teachers were recruited into the study

### *Data collection and analysis*

Data was collected using pre-tested, self administered, semi-structured questionnaires. Informed consent was obtained from each teacher. Ethical approval was obtained from ethical committee of the Lagos University Teaching Hospital. The data obtained was analysed using the EPI - Info 6 statistical software. To assess knowledge, a scoring system was used based on 25 questions. Grades were assigned based on marks scored. Chi Square test was used for comparison. Level of significance was set at 0.05

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## Results

There were 228 respondents in Ifo LGA and 231 respondents in Ikenne LGA. Majority of the respondents were females (Ifo 81.1%, Ikenne 77.1%), and majority of the respondents in both LGAs had professional training in education. (Ifo 85.5%, Ikenne 87.0%). There was no statistical difference in the kind of professional training they received (p=0.052).

Almost all the respondents in both LGAs were aware of school health programme (Ifo 97.4%, Ikenne 97.3%). The major component of school health programme known was school health services (Ifo 75.3%, Ikenne 65.3%), followed by school health instruction (Ifo 36.7%, Ikenne 41.5%). Healthful school environment was the least known (Ifo 38.6%, Ikenne 43.8%).

More teachers in Ifo (35.8%) than in Ikenne (24.0%) knew that one of the benefits of school health programmes was promoting the development of school children (p=0.007). Slightly more teachers in Ifo (48.8%) than in Ikenne (46.5%) knew that school health programme prevent health risks in children. (p = 0.633)

The overall knowledge on school health was poor in both LGAs. More than half of the respondents in Ifo (57.0%) and Ikenne (54.5%) had poor knowledge of school health programme. Only 18.4% of respondents in Ifo and 14.3% of respondents in Ikenne had good knowledge of school health programme. There was no statistical difference in the level of knowledge of school health programme in the LGAs. (p=0.209)

Majority of the respondents in both LGAs had a positive attitude to school health programmes. (Ifo 98.7% and Ikenne 98.3%). In both LGAs, teachers felt that school health programme was desirable and necessary. All the respondents in Ifo and 96.5% of the respondents in Ikenne agreed that school health programme will improve the academic performance of school children.

More than half the respondents in both LGAs (Ifo 77.3%, Ikenne 73.2%) had school health programme in operation in their school. There was no statistical difference between the two LGAs ( $p=0.313$ ). In Ifo 68.9% of the respondents had a school health curriculum compared to the 89.5% in Ikenne ( $p=0.000$ ). In Ifo local government 43.8% of the respondents said health education is taught as a separate subject compared to 71.6% in Ikenne. There was a statistically significant difference between the LGAs ( $p=0.000$ )

There was a statistically significant difference in the practices of pre admission medical examination in the LGAs ( $p=0.010$ ). Majority of the respondents in Ifo (70.4%) said pre admission medical examination was not compulsory compared to the 57.7% in Ikenne .

The main school health services available were; having a functional first aid box (Ifo 95.6%; Ikenne 79.6%) , and having a nurse/ staff in charge of the school clinic (Ifo 72.2%; Ikenne 67.0%). There was a statistical difference in the availability of functional first aid box in the schools in Ifo and Ikenne LGAs ( $p=0.000$ )

Food is provided mainly by food vendors in the schools in the study sites. ( Ifo 99.6%; Ikenne 99.6%). There was no statistical difference in the type of school meal service in Ifo and Ikenne LGAs ( $p=0.993$ ). More than half of the respondents (63.0%) in Ikenne said they carry out screening of food vendors as part of their infection control practices compared to the 42.1% in Ifo LGA. ( $p=0.000$ )

Pipe borne water supply to schools in both LGAs was very poor. However pipe borne water was available in more schools in Ifo (14.0%) than in Ikenne (3.9%). Bore hole was that main source of water in both Ikenne (40.8%) and Ifo ( 20.0%). Majority of the schools in both LGAs disposed their refuse by burning (Ifo 92.9%; Ikenne 93.9%).

In both LGAs there was a statistically significant association between the respondents' sex and their knowledge of school health programme. Male teachers had better knowledge than the females. (Ifo, $p=0.023$ ; Ikenne,  $p=0.046$ ). However sex was not significantly associated with their attitude to school health programmes and there was no statistically significant association between type of professional training and knowledge of school health programme. Similarly, there was also no statistically significant association between the respondents' professional training and their attitude towards school health programme. (Ifo, $p=0.096$ ; Ikenne, $p=0.258$ )

**Table 1:** Respondents' Knowledge, attitude and practice of School Health

Variable	Ifo	Ikenne	X <sup>2</sup>	P value
Level of knowledge				
Poor	130 (57.0)	126 (54.5)		
Fair	56 (24.6)	72 (31.2)	3.1	0.209
Good	42 (18.4)	33 (14.3)		
Total	228 (100)	231 (100)		
SHP is desirable				
Positive	222 (98.7)	226 (98.3)		
Negative	3 (1.3)	4 (1.8)	0.1	1.000*
Total	225 (100)	230 (100)		
SHP will improve the academic performance of school children				
Agree	228 (100)	223 (96.5)		
Disagree	0 (0.0)	7 (3.0)	8.0	0.000*
Uncertain	0 (0.0)	1 (0.4)		
Total	228 (100)	231 (100)		
Have SHP in the school				
Yes	174 (77.3)	167 (73.2)		
No	51 (22.7)	61 (26.8)	1.0	0.313
Total	225 (100)	228 (100)		
Have a school health education curriculum				
Yes	155 (68.9)	204 (89.5)		
No	68 (30.2)	16 (7.0)	42.	0.000*
Don't know	2 (0.9)	8 (3.5)	5	
Total	225 (100)	228 (100)		
How Health Education is taught				
Not taught at all	7 (3.1)	1 (0.4)		
As a separate subject	99 (43.8)	161 (71.6)	46.	0.000*
Integrated into other compatible subjects	85 (37.6)	35 (15.6)	2	
Both as a separate subject & integrated	35 (15.5)	24 (10.7)		
Others	0 (0.0)	4 (1.8)		
Total	226 (100)	225 (100)		
Physical education/sport is in the timetable				
Yes	227 (100)	230 (99.6)		
No	0 (0.0)	1 (0.4)	1.0	0.504*
Total	227 (100)	231 (100)		

\*fishers exact test

**Table 2:** School Health Services in Respondents' school

Variable	IFO	Ikenne	X <sup>2</sup>	P value
School health services	N=227	N=231		
Have a clinic/health post	124 (57.9)	106 (46.7)	5.6	0.018
Have a functional first aid box	217 (95.6)	184 (79.6)	28.5	0.000
Have a nurse/staff i/c of SHP	164 (72.2)	155 (67.0)	1.0	0.315
Maintain Health records	146 (64.3)	149 (64.5)	0.1	0.703
Type of school meals				
Free school meal services	1 (0.4)	1 (0.4)	0.0	0.993*
Food vendors	225 (99.6)	228 (99.6)		
Total	226 (100)	229 (100)		
Pre-admission medical exam is compulsory				
Yes	58 (26.7)	79 (35.6)	9.2	0.010
No	153 (70.4)	128 (57.7)		
Don't know	6 (2.8)	15 (6.8)		
Total	217 (100)	222 (100)		
Type of infection control practices	N=228	N=230		
None	25 (11.0)	27 (11.7)	0.1	0.794
Exclusion of sick pupils	79 (34.6)	67 (29.1)	1.6	0.205
Closure of school during epidemic	5 (2.2)	1 (0.4)	2.7	0.098
Screening of food vendors	96 (42.1)	145 (63.0)	20.1	0.000
Periodic medical exams of staff	26 (11.4)	10 (4.3)	7.9	0.005
Don't know	5 (2.2)	10 (4.3)	1.7	0.195

\*fishers exact test

**Table 3: School Health Environment**

Variable	Ifo	Ikenne	X <sup>2</sup>	P value
Mean no. of toilets for students' use per school (SD)	2.3 (1.9)	4.7 (3.6)	8.8	0.000
Mean no. of toilets for staff's use per school (SD)	1.3 (1.0)	2.8 (2.8)	7.5	0.000
School source of water				
None	140 (62.8)	88 (38.6)		
Pipe-borne	9 (14.0)	9 (3.9)		0.000
Dug well	13 (5.8)	6 (2.6)		
Bore hole	49 (22.0)	93 (40.8)		
Others	12 (5.4)	32 (14.0)		
Total	223 (100)	228 (100)		
Method of refuse disposal				
None	4 (1.8)	2 (0.9)		
Burying	6 (2.7)	5 (2.2)	4	0.362*
Burning	210 (92.9)	215 (93.9)	37.1	
PSP	4 (1.8)	1 (0.4)	.6	
Others	2 (0.9)	6 (2.6)		
Total	226 (100)	229 (100)		
Mean Max. student/class (SD)	56.4 (29.1)	29.0 (6.7)	13.7	0.000

\*fishers exact test

## Discussion

School health programmes are a critical means of improving both educational performance and the well-being of children and the adults they will become. The school health programme has been part of the educational system in Nigeria for decades. In Ogun State, School Health Services Programme under the State Ministry of Health has been in place since 2007 in all public primary and secondary schools in all the 20 LGAs in Ogun State.<sup>10</sup> Therefore it was not surprising that almost all the teachers in both Ikenne (94.3%) and Ifo (94.7%) were aware of the school health programme. In a study conducted in Edo state, Nigeria, fewer teachers (76.7%) were aware of school health programme.<sup>11</sup>

The school health programme is a promising framework which would enable schools and teachers integrate health initiatives in such a way as to address many of society's health issues. This would only be possible if teachers have adequate knowledge of school health such that they understand the programme, can interpret it and shape it to meet the needs of their school community. Many teachers rely on their initial teacher education for most of their knowledge with regard to school health. Despite their high level of awareness, over half of the respondents in this study had poor knowledge of school health. There was no statistical difference in knowledge between teachers in the two LGAs. This is similar to findings in another study in Nigeria in which majority of the teachers had poor knowledge of school health.<sup>11</sup> This poor level of knowledge among teachers about school health could be due to the fact that aside from their professional training in education, the teachers receive no special training on school health issues. Appropriate training in school health needs to be provided for school teachers to fill their gaps in knowledge. A study carried out in Australia showed that while teachers have some understanding of school health programmes, much needs to be done in helping teachers play their role in the implementation of school health programme.<sup>12</sup> Since teachers are programme implementers, the provision of

adequate training increases the likelihood that they would fully implement the curriculum. Trained teachers are more likely to continue implementing the programme later than teachers who receive programme materials but are not trained.<sup>13</sup> In the United States, evaluation of a comprehensive health education curriculum showed that trained teachers were better prepared, implemented the curriculum with more fidelity and achieved more positive effects on students.<sup>49</sup> Similarly, a study carried out in Northern Ireland highlighted the need for ongoing in-career development for teachers.<sup>14</sup> A Jordanian study showed that only 20% of teachers were officially trained in school health.<sup>15</sup>

In order for a school health programme to be effective, the teachers must make sincere efforts at implementing it. The programme must be acceptable to the teachers before they would be willing to implement such a programme. In both local governments under study, most of the teachers, had a positive attitude towards the school health programme. This is a desirable finding.

The traditional model of a school health program, consist of the following three basic components; health education, health services and healthful environment. In Nigeria like in most countries in Sub Saharan Africa, there is the need for a well organized school health programme. A study carried out in Edo State, Nigeria showed that only 38.3% of the schools had a school health programme in place.<sup>11</sup> In this study, majority of the respondents said they had a school health programme in their school. However, some of the components of school health programme were not fully implemented. For example, 11.0% of the respondents in Ifo local government area said they did not practise any form of infection control in their school similar to the 11.7% of teachers in Ikenne. About half the schools in Ifo and Ikenne had a clinic/health post.

The proportion of respondents who said pre admission examination was compulsory in their school was low in both LGAs. The practice of this important school health component needs to be improved upon as pre admission school based screening is important for early detection of anomalies and treatment to prevent impairment and health complications. In another study conducted in Nigeria only 11.6 % of schools were reported to carry out pre-school medical examination.<sup>17</sup> Schools that provide health services not only benefit school-age children, but also the entire community. Screening of food handlers is important to protect staff and students from food borne illnesses. Not all food vendors in the studied schools were screened. However, the number of respondents in Ikenne who said that food vendors were screened in their schools was significantly higher than those in Ifo. Similar to our finding that some components were not fully implemented, a study conducted in Denmark reported that the schools under study did not fully implement all the components of school health programme.<sup>18</sup> In contrast, a study in schools in a province in China found the schools used their full organizational potentials to implement all components of school health pro-

gramme.<sup>19</sup> In a study conducted in Lao, urban and rural schools were compared, there was a statistically significant difference between urban and rural schools for all three components of school health.<sup>20</sup> In this study, there was no difference in the overall practice of school health programme in urban and rural schools.

Availability of sanitary facilities is a pre-requisite for creating a healthy environment in a school. Provision of Safe clean drinking water, appropriate toilet facilities adequately spacious classrooms, comfortable seating arrangements and playgrounds contribute in creating a conducive environment for the children in the school.<sup>16</sup> Access to safe water and sanitation remains a major challenge in Nigeria. Majority of the respondents said there was no regular source of water for their school compounds. Similarly in other studies in Nigeria the school environment in most of the schools was reported to be poor.<sup>11,17</sup> This is not surprising as water and sanitation coverage rates in Nigeria are amongst the lowest in the world. Estimates show that improved drinking water and sanitation coverage rates are low nationwide and Ogun state has one of the highest coverage rates at 65.1 %, above the national average of 51.4%.<sup>21</sup> This lack of water supply hinders proper practice of hygiene and puts the school children at risk of infectious diseases. Many childhood diseases endemic throughout the country are generally associated with unsatisfactory drinking water supplies, poor sanitation conditions and inadequate health education. These include diarrhoea, dysentery, gastro-enteritis, infectious hepatitis, hookworm, guinea worm, and other parasitic infections.<sup>22</sup> The direct health repercussion the situation imposes, especially on children, is often underestimated. Improving

water supply infrastructure will help improve the social well-being of the population directly. It has been shown, for example, that better access to potable water can relieve about the same total burden of disease (measured in daily-adjusted life years) as do improvements in public health care.<sup>22</sup>

## Conclusion and recommendation

There was a high level of awareness of school health among all respondents. However, more than half of the respondents in both urban and rural schools had poor knowledge about school health. Majority of the respondents had a positive attitude to school health. The School health programme is being run in most schools however, in both LGAs, not all components of school health programme were fully implemented. In-service training programmes on school health should be provided to better equip the teachers to play their role in implementing school health programmes. All components should be fully implemented

### Authors contribution

KAO: Contributed to the concept, design, definition of intellectual content, literature search/review, data analysis and manuscript preparation

CEE: Contributed to the concept, design, literature search/review, data collection, data analysis and manuscript preparation

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