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Research Article

Primary Schools Readiness for Health Emergencies among Primary Schools in Delta State, Nigeria

J. O. Ogbe, Ph.D

Department of Human Kinetics and Health Education,
Delta State University, Abraka, Nigeria

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Abstract

The study was meant to explore the readiness of primary schools toward school health emergencies in Delta State, Nigeria. The method was the use of exploratory / descriptive study design of the expost facto method. Three variables of personnel, equipment and environment were used, while three research questions and three hypotheses were used as a guide. Simple questionnaire of Yes or No was used to generate data. Descriptive statistics of frequency count, percentages and paired t-test statistics were used to analysed the data. It was found that personnel for school health emergency were not available in schools and were found to be negatively significant at -30.97 (p = 0.05) and had negative correlation of -1.00. Equipment was found to be available (at least, at the level of First Aid Box) and found significant at paired t - test value of 19.01 (p = 0.05) while environment for school health emergency was not available and negatively significant at paired t – test value of -111.891 (P = 0.05). The study concluded that readiness of primary schools in Delta state for health emergencies is still at its infancy. The study concluded that readiness of primary schools in Delta State is still at its infancy. It was recommended among others Government and stakeholders in primary school education should provide at least one school health Nurse in every primary school and school health teachers be provided with opportunity of training in First Aid and school health emergency.

Keywords: *Primary schools, Readiness, School Health Emergency, Delta State*

1. Introduction

A tropical diagrammatic representation of school health programme is in tripod stand, standing on three legs: school health instruction / skill development, school health services and school health living environment. The school health services provide both preventive and curative health services. It is concerned with health appraisal which determines the health status of pupils as a pre-entry condition and throughout a child stay in the school on daily basis. It determines learners' defect(s) and correction(s). It also control and prevent diseases among many other functions. One of such unique functions according to the National School Health Policy (2006) was provision of "Sick Bay, First Aid and Referral Services." Moronkola (2012) citing Udoh, Amusa, Sohi and Agbede (1981) stated that school health services provide emergencies care to learners in the event of sustaining injuries or taken ill suddenly while at school. Small, major, Allensworth, Farguhar, Kann and Peterman (1995) attempt to define school health services as a "coordinated system that ensures a continuum of care from school to home and to community healthcare provider and back." State of New Jersey: Department of Education: www.state.nj.us(education/students/safety/health/services/. Emphatically stated that:

> *"School Health Services: SHS contribute to the goal of education system and healthcare system by providing screening and referrals, administering medication and treatments, providing first aid…. The purpose of SHS is to ensure that all students are healthy and ready to learn."*

Parents are comfortable and reassured of the safety of their ward at school because of the existence of school health services. Hence, parents look for schools that provide the best of these services for their children and wards. Injuries at play in the school just as it is at home occur as children play, at times could be rough if not guided. It is also possible for learners to be suddenly sick while at school. These make the provision for emergencies services – a sine-qua-non in the school set up especially at the primary school level.

For school health services to succeed personnel are required. School health personnel include Medical Doctors, School Nurses, Health Educators/Teachers among others (National Health Policy (2006) ([1]. The National Policy of Education/Basic Universal Education Programme makes every child a beneficiary of basic education hence it has become necessary to assess the school level that attracts considerable percentage of children to determine to what extent are parents assured of the safety of their children either at injuries and fallen suddenly ill while at school. The focus of the study is to determine personnel availability, environment, equipment, and readiness for health emergencies in the public primary school system in Delta State. The statement of problem is to ameliorate fears that parents and guardians may have in sending their children to public schools and draw school management and government to the existing condition in order to correct deficiency.

The purpose of the study was to assess the status of emergency readiness in primary schools and determine the extent to which the conditions described as the quality of emergencies readiness were met in the schools as to portray the safety level of children at school. The study will be significant to health educators in the school system that will use the funding to improve the standard of practice of school health services. Headmasters and Teachers will use the information to seek for training in First Aid and health emergencies in schools. Schools policy formations and implementation will use the findings to better the existing school health services and the students will benefit as it will improve the health services at their disposal; especially on health emergencies. This will cumulate to better school performance for students and parents will be reassured of the safety of their children in school.

2. Conceptual Framework

The National School Health Policy (Nigeria) (2006) states that, safety issues in school are so important because it has to do with health and development of children. Thus readiness for emergencies involves the use of First Aid which is the immediate care given to the injured or suddenly fell ill before a transfer to the hospital. It reduces pains, prevent conditions from getting worse, promote quick recovery and save life. The availability of a First Aid Box with complete components and trained personnel to manage it becomes the first level of readiness for school health emergencies among others.

3. Review of Related Literature to School Health Emergency

Many studies are available on school health emergencies and disaster, though not in Delta State. One of such study is that of Olympia, Wan and Avner (1994) which assessed the pre-paredineess of schools to respond to emergencies in children. The study was a national survey of school nurses. A questionnaire was the instrument. It was found that; 68% of school nurses have managed a life – threatening emergencies during the past school year. Eighty-six percent (86%) of schools do not have Medical Emergency Respond Plan (MERP) thirty-five percent (35%) of schools do not practice the plan. Thirteen percent (13%) of schools do not identify authorized personnel to make emergency medical decision.

In a previous study Ogbe and Nwajei (2004) examined teachers' awareness of safety and disaster prevention measures in schools in Ethiope – East Local Government Area of Delta State and found that teachers were knowledgeable in disaster and First Aid but lack the skills and knowledge needed to affect First Aid in the event of disaster or health emergencies. They also found that all schools in the area were grossly ill-equipped for safety and disaster situations.

In another study, Al-Jundi, Al-Wareili and Khairalah (2005) studied the knowledge and

attitude of school Health Teachers of emergency management of dental trauma in North Jordan. The study was directed to immediate emergency management of tooth fracture, avulsion and loss of consciousness. It was found that 20% were officially trained in school health. Less than half of teachers received first Aid training only once in their teaching career, not as part of their training in school. Over half of the teachers have no knowledge of trauma cases emergency management in dental situation in School. In 2013, Olatosi, Iwuala, Isiekwe, Oredugba, Adenaike and Oluwo (2013) undertook a study of knowledge and attitude of some Nigerian school teachers in the emergency management of avulsed permanent incisor with 320 teachers, using a questionnaire. They found that only 30.9% were ever trained in First Aid including emergency treatment of dental trauma. Forty – two (42%) were not aware that avulsed permanent tooth could be replanted, about forty-four percent (44.4%) stated that toothbrush and toothpaste could be used to clean an avulsed tooth. The study saw association between the knowledge of teachers and the need to include First Aid training of teachers on emergency management of dental trauma. The conclusion was that teachers have insufficient knowledge of emergency management of avulused permanent tooth.

In similar study, Oluwakeni, Kayode and Taiwo (2015) studied the implementation of school health programme in South-West Nigeria and found that about 90% (180 out of 200) of the schools sampled have First Aid Box. Only 2% have sick bay while 5% have health personnel and 2.9% have trained First Aiders. Gadliardi, Neigbors, Spears, Byrd and Saarr (2016) assessed emergencies in the school setting and found that 33.3% (112) of the teachers were not specially trained in First Aid, never ever trained in cardiopulmonary resuscitation (CPR) was 40%. The study stated that 18% of the teachers have responded to more than 20 injuries or ill-health. However, as much as 87% teachers strongly agreed on the need for emergency care training as part of teacher's preparation.

4. Research Questions / Hypotheses

To affect the study, three research questions and three hypotheses were formulated:

1. What is the status of personnel in readiness for emergency care among primary schools in Delta State?
2. What is the status of Health equipment in readiness for emergency care among primary schools in Delta State?
3. To what extent does the school provide good environment in readiness for emergency care among primary schools in Delta State.

4.1 Ho

1. Personnel availability will not be significant in readiness for health emergency in primary schools in Delta State.
2. Health equipment will not be significant in readiness for health emergency in primary schools in Delta State.
3. Environment will not be significant in readiness for health emergency in Delta State.

5. Materials and Method

The exporatory and expost facto designs were used for the study. It was an explorative because it attempts to find out what exist while expost facto because the status-qua of the situation was not influenced. The population was 1,293 primary schools in Delta State with Headmasters strength of the same 1,293. (Vanguard February 28th, 2015). The sample size was determined by Areoye (2004) worked out formular for FAO formula for sample. Areoye (2004) stated that a sample size of 183 is enough for a population of less than 10,000 while 384 was recommended for a population of more than 10,000. Delta State, Nigeria is made up of 3 Senatorial District. Each Senatorial District is made up of three Federal Constituencies. Each Federal Constituency is made up of 2 or 3 Local Government Areas. Thus 25 Local Government Areas exist in Delta State. Two hundred and seven (207) was the initial sample for this study, making provision for loses in the field.

To obtain the sample, the state primary schools were clustered into the 9 Federal Constituencies in the state with each cluster having 2 or 3 Local Government Area Councils Eight primary schools were sampled form each Local Government Area using simple ballot method. Thus 207 primary school headmasters were sampled according to the primary schools sampled. The instrument was a self administered and self reporting questionnaire made of two sections: Section A; bio-data of the school – (rural or urban) and that of the Headmaster such as the years of experience as a teacher. Section B; was 20 question items requiring the response of either Yes or No. The questionnaire was validated by three experts, two in Health education and one in Test and Measurement. All three experts adjudged the questionnaire adequate for the study. Face and content validity were used to adjudged the questionnaire. The instrument was assessed for reliability using spilt – half. A spilt-half reliability of r = 0.89 was found. It was found to be good for the study.

The instrument was administered to the respondents by the research and his research assistants who were students on teaching practice in the various schools. The instrument was given to the Headmaster and retrieved the next day. Two hundred and ten questionnaires were given out, making provision for urban areas that have more schools and at the same time making provision for the likelihood of losses on the field. Of the 207 administered questionnaires, 204 were found adequate for use. A recovery rate 97.14%. The data were collated and descriptive and chi-square statistics were used to analyse the data at 0.05 level of significant.

6. Findings

It was found in the study that all respondents who were heads of primary schools have spent between 25 to 34 years in the primary schools as teachers and have taken part in various types of health emergencies in school children. Of the 204 Headmasters, 106 (51.96%) are males while 98 (48,.04%) were females).

Table 1: Descriptive Statistics of Personnel Availability in readiness for school health emergency among primary schools in Delta State.

		Yes		No	
	Personnel	No	%	No	%
1.	Is there a Health Education teacher in the school?	162	79.41	42	20.59
2.	Is the Health teacher specially trained in emergencies and First Aid?	18	8.82	186	91.18
3.	Is there a trained First Aider in the school?	15	7.35	109	92.65
4.	Does the school own a school Nurse?	0	0.00	204	100
5.	Does a school Nurse visit the school?	0	0.00	204	100
6.	Does the school have a visiting Doctor?	0	0.00	204	100
7.	When last the visiting Doctor did visit the school?	0	0.00	204	100
8.	Did the visiting Doctor suggest ways to improve the school readiness for health emergencies?	0	0.00	204	100
9.	Are there teachers trained in First Aid in the school?		83.33	33	16.67
10.	Are there teachers willing to be trained in First Aid and school emergencies?	204	100	0	0

Table 1; revealed that although there were Health education teachers in the schools, only 18(8.82%) were trained in First Aid. Only 15(7.35%) trained First Aiders in the schools. The school neither own a school nurse or a Doctor or a visiting Doctor (0.00%). However, it found that all respondents stated that their teachers were willing to be trained in First Aid and school health emergencies; 204 (100%).

Table 2: Descriptive Statistics on the availability of equipment in readiness for school health emergencies in Delta State.

		Yes		No	
	Equipment	**No**	**%**	**No**	**%**
1.	Does the school own a First Aid Box	202	99	2	1
2.	Does the First Aid Box contain simple treatment equipment like a pair of scissor, a pair of dressing forceps?	160	78.43	42	21.57
3.	Is there dressing lotion such as hydrogen peroxide, iodine, salvon among others	154	75.50	48	24.50
4.	Is there dressing materials such as cotton wool, guaze, bandages of various types	140	68.62	64	31.37
5.	Is there a vehicle (school or individual) to convey a child to the hospital in the event of injury or fall suddenly ill	204	100	00	0.00

Table 2; revealed that most schools own a First Aid Box, 202 (99%). Equipment in the school Aid Box were between 68.42% to 78.43% while vehicle that could be used to convey injured or sick child stood at 100% (all the schools).

Table 3: Descriptive Statistics of Environment in readiness for school health emergencies among Delta Primary schools, Delta State.

		Yes		No	
	Environment	**No**	**%**	**No**	**%**
1.	Is there a sick bay in the school	0	0	204	100
2.	Is the sick bay located a little outside the classroom or hostel	0	0	204	100
3.	Are there one or two beds in the sick bay	0	0	204	100
4.	Are there trained personnel to cater for the sick or injured in the sick bay or any place just for short time keep	22	10.78	182	89.22
5.	Can the sick bay be used as isolation in the event of communicable disease outbreak – such as measles or chicken pox	0	0	204	100

Table 3; revealed that no provision was made in the school for keeping children when they are sick or injured until parent come to pick them. Except only the headmaster's house as alternative to side bay 2 with 22 (10.78%) claiming providing such facilities. The schools have no sick bay nor sick bay attendant.

Table 4: A paired t – test of Availability and Non-availability of personnel in readiness for school Health emergency in Delta State, Nigeria.

Paired variables	**- X**	**SD**	**SD Errors**	**df**	**95% confidence interval**		**t – value**	**Sig. (2 tailed)**
					Lower	Upper		0.05
Personnel availability and Non availability	-4.392	2.025	.141	203	-4.671	-4.112	-30.975	.000

Table 4; revealed that a paired t-test analysis of personnel available for school health emergency was compared with non-available, it was found that a t-value of -30.975 was negatively significant at 0.05 alpha with a df of 203.

Table 5: A paired t – test of Availability and Non-availability of Equipment in readiness for school Health emergency in primary schools in Delta State, Nigeria.

Paired variables	**- X**	**SD**	**df**	**SD Errors**	**95% confidence interval**		**t – value**	**Sig. (2 tailed)**
					Lower	Upper		
Equipment availability and Equipment Non availability	3.411	2.562	203	.179	3.057	3.765	19.013	0.000

Table 5 showed a paired t-test analysis of equipment in readiness for school health emergency as compared with non-availability of equipment. It was found that availability of equipment was significant at a t – value of 19.0132 with a df of 203 at alpha 0.05.

Table 6: A paired t – test of availability and Non-availability of Environment in readiness for school Health emergency in primary schools in Delta State, Nigeria.

Paired variables	- X	SD	SD Errors	df	95% confidence interval		t – value	Sig. (2 tailed)
					Lower	Upper		
Paired T environment availability – environment Non availability	-4.789	.611	.042	203	-4.873	-4.704	-111.841	0.000

Table 6: showed a paired t-test analysis of environment such as sick – bay in readiness for school health emergency. It was found that environment (sick bay) was negatively significant at a test – value of -111.841, df of 203 and alpha at 0.05.

7. Discussion

The study used both descriptive and paired sample t-test to analyse the date. The date was derived from a Yes or No questionnaire in which available variables were indicated by respondent as Yes while non-available were indicated by respondent as No.

It was found descriptively that teachers in this study were not specially trained to manage school health emergencies with 18% of the teachers having being trained in First Aid, school Nurse was not available in any school nor does a Doctor occasional visit the school for any purpose of improving school health emergencies readiness. The availability and non-availability response of personnel availability in readiness for school emergency when assessed on a paired t – test reflected a significant negative samples correlation of -1.00. The paired t-test was negatively significant at -30.975. This finding correlates the findings of Al – Wareil and Khairalah (2005) who found in their study that only 20% of the teachers were officially trained in school health, not up to 50% of the teachers had been trained more than once in First Aid in their employment as teachers. Teachers in that study were deficient in knowledge of trauma cases. This present finding was in conosan with that of Oluwakemi, Kayode and Taiwo (2016) who found that health personnel (school nurse, Doctor and Environmental health officers were available in their study in South – West Nigeria schools at 5% of their 200 respondent schools. In their study 29% have ever had training as First Aiders.

On equipment, in readiness for school health emergency in primary schools in this study, it was found that 99% (202 of 204) had First Aid Box in their schools. The First Aid Boxes were equipped with between 68.62% to 78.43% of the tools expected in a First Aid Box. Vehicle with which to convey persons/children to hospital in emergency were available though there were staff owned vehicles at 100%. On statistical analysis, equipment availability for school health emergency was significant at t – value of 19.013 with alpha of 0.05. This findings correlates the findings of Oluwakemi, Kayode and Taiwo (2016) who found that First Aid Boxes were available in their schools of study at 90%.

On environment readiness for school health emergency, it was found that schools in Delta state have no provision for sick bay or who to manage such facility. All schools in the study recorded zero percent (0%) on sick bay or personnel on sick bay. However, headmasters 10.78% claimed that sudden ill or injured children could be kept in their home (as custody) until the parents come to take them. When equipment was subjected to statistics, it recorded a paired t-test, negatively significant of -111.841 at alpha of 0.05. This finding compared favourably with the finding of Oluwakemi, Kayode and Taiwo (2016) who found sick bay to be available at 2% in their study.

On the need to be trained, it was found that all headmasters on behalf of themselves and their teachers' exercised willingness to be trained in First Aid and school health emergency if provided with the opportunity. They also suggested that First Aid and emergency should be part of Teacher

training preparation. This finding correlates that of Gadliardi, Neigbors, Spearse and Byrd (1994) where 87% of their respondents strongly agreed that emergency can training should be required in the training of teachers in teachers programme.

8. Summary and Conclusion

The study assessed the readiness of Primary Schools in Delta State for school health emergency. It was an exploratory and expost facto in designs. It was found that personnel for school health emergency were not available in most schools. The schools lacked trained personnel such as school Nurses, visiting Doctors and trained First Aiders for school health emergency. It was also found that First Aid Boxes were available in most schools with their content intact. However, no environment such as sick bay or sick bay personnel was available in all the schools. Statistically, personnel and environment were negatively significant with school health emergency while equipment was significant with school health emergency ($p = 0.05$).

There is need for Government and all stakeholders in primary school education to look towards improving school health emergency to give parents confidence that their children and ward are safe at school.

9. Recommendations

Arising from the findings of this study, the followings were recommended:-

(1) Government should provide at least one school health nurse in every primary school in Delta State.
(2) There is the need to include First Aid and emergency training in the curricula of every Teacher preparation programme, be it teacher training, National Certificate of Education programme or degree programme in education as an escape route in absence of a school nurse in primary schools.
(3) Trained First Aider should be available in every primary school in Delta state.
(4) School Health teachers (Health educators) in schools should have practical training and hospital experience in First Aid and emergency to be more relevant when the need arises.
(5) School health environment such as sick bay no matter how small with trained personnel to be available in every primary school.
(6) School health policy should be specific on school health personnel necessary to run a school.

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