



Common Health Problems and Use of School Health Clinics among Boarding Secondary Students in Kano, Nigeria

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Abstract

Background: Health problems exist within the school that affects school students and their learning performance such as; physical injuries, malaria, various worm infestations, diarrhoea, asthma etc. Therefore, students are expected to visit their school health clinics in order to receive health care services. The Utilisation of health clinics within the school can serve as a source of primary care for students who do not have access to consistent care or lives within the school premises (boarding schools). Hence, the use of health clinics by pupils might increase the opportunity of visiting a physician/nurse which gives them the opportunity of having regular health care. **Methods:** a cross sectional descriptive survey design was used for the study. A sample size of 403 respondents was derived using Cochran formula. Multi-stage sampling technique was used to select respondents in the study. Data was collected with the aid of a structured interviewer administered questionnaire and review of health record from Jan 2014 - Dec 2016. Questionnaires were distributed to JSS 2 to SSS 3 students. Data were analysed using Statistical Package for Social Science (SPSS) software version 22.0. Results were presented using frequency, percentages and logistic regression. **Results:** Majority (65.60%) of public boarding school students had malaria while 6.09% of private boarding school students had malaria. The findings also show that 46.4% of the students received wound care, 72.0% were treated for headache and 69.0% received malaria treatment. More than half (69.0%) of the students indicated that the health clinics were not open for 24 hours daily. **Conclusion:** The study concludes that malaria is the most common health problems of the students and majority of the students used the school health clinics whenever they were sick in school during the day but not at night. It is therefore recommended that measures should be employed by the school management to ensure that students are free from mosquito bite. The school health clinics should be made open for 24 hours because of emergency health problems that can occur at night that requires urgent medical attention

Keywords: *Health problem, Health Clinic, Boarding, Secondary School*

Introduction

Health problems exist within the school that affects students and their learning performance (Akani, Nkanginieme, & Oruamabo, 2001). Oghenewogaga and

Margaret (2014) observed that the availability of health services in schools will help in the prevention of diseases and correct defects among school students through early detection.

They added that health service provision in school will also improve student's awareness of health problems.

Physical injuries such as; wounds/falls, burns, fits, poisoning, insect stings, and animal bites were reported by (Al-Samghan, Al-Shahrani, & Al-Shahrani, 2015) as the common health problems among students in their study setting. Contrary to this finding, Ayogu, Okafor and Ene-Obong (2015) reported that malaria, entamoeba histolytica, hookworm, tapeworm, whipworm and roundworm are the common health infections among school students. According to them, some of the school students were also found to be anaemic as a result of these infections. Chukwuocha, Ashiegbu, Dozie and Aguwa (2009) also share some students' perspective in a boarding secondary school in Owerri, which revealed that malaria was the most common disease experienced by the students.

A similar study in Sudan by Salwa (2005) reveals that malaria; sore throat, psychosocial problems, dental caries, diarrhoea, oxyuris worm, pneumonia, measles infection, asthma, and visual defects were the common health problems among school students. According to O'Reilly, Freeman, Ravani, Migele, and Mwaki (2008), contaminated drinking water accounts for about 3-5 billion cases of diarrhoea annually, 80% of which occur among school children killing over 2million people. Chukwuocha *et al* (2009) reported that diarrhoea was the second disease after malaria among boarding secondary school students in Owerri. Thus, improving access to safe drinking water and adequate sanitation in schools is important in the prevention of diarrhoea. This was in line with the development of Safe Water System (SWS) in preventing diarrhoea through the promotion of household water treatment, safe water storage and behaviour change communication (O'Reilly *et al*, 2008). However, only a few studies if any exist on the health problems of boarding secondary school students in the current study setting.

Health services in schools bring critical, developmentally appropriate services to students where they spend most of their working hours (Keeton, Soleimanpour & Brindis, 2012). The Utilisation of health clinics within the school can serve as a source of primary care for students who do not have access to consistent care or lives within the school premises (boarding schools). According to Hutcherson and Johnson (2006), school students visited health clinics in their school for the purpose of health supervision, respiratory diseases, skin conditions, injuries, and poisonings. Health services in schools provide essential primary health care for students and are in a unique position to reduce barriers to care for disadvantaged students (Guo, Wade & Keller, 2008). Hence, the use of health clinics by pupils might increase the opportunity of visiting a physician/nurse which gives them the opportunity of having regular health care.

Materials and Methods

Study Setting and Design

Kano State is located in North-Western Nigeria on longitude 11° 30'N 8° 30'E / 11.5° N 8.5° E. The State was created on May 27, 1967, from part of the Northern Region and covers an area of about 20,131 km² (7,772.6Sq mi). Kano State borders Katsina State to the North-West, Jigawa State to the North-East, Bauchi State to the South-East and Kaduna State to the South-West. The capital of Kano State is Kano. The State has a total population of 13,076,892 (projected 2016 size) and ranked second most populated State in Nigeria with 44 Local Government Areas. Kano State has a total number of 834 public secondary schools and 472 private secondary schools which gives a total of 1306 secondary schools. The total number of student enrolment in public secondary schools is 491,505 and 128,655 students in private secondary schools. Out of this number, Kano State has 42 public boarding secondary schools with a student enrolment of 47,693 and 14 private boarding secondary schools with a student enrolment of 6,017 (Kano State Ministry of Education, 2013). There are 26,

16 and 14 boarding secondary schools in Kano Central, Kano North, and Kano South senatorial districts respectively in Kano State. A cross-sectional descriptive survey design was used for the study.

Sampling

A sample size of 366 for the student's population was derived using Cochran (1963) formula and was increased by 10% to 403 to make up for non-response (Bhaumik, Roy, Aryal, Hur, & Brown, 2008; Sullivan, 2011). A multi-stage sampling technique was used to select boarding secondary schools for the study.

Stage 1: Stratified sampling technique was used to stratify L.G.A. that has boarding secondary school.

Stage 2: Simple random sampling technique by balloting was used to select 15 L.G.A from 30 L.G.A. with boarding secondary schools. This represents 50% of the L.G.As that has boarding secondary schools.

Stage 3: proportionate allocation was used to select 5 public and 4 private boarding secondary schools from selected L.G.As in Kano Central, 6 public and 1 private boarding secondary school from selected L.G.As in Kano North while 7 public and 1 private boarding secondary schools from selected L.G.As in Kano South. This is because the boarding secondary schools were not distributed equally in the L.G.As. Some L.G.As had more boarding secondary schools than others in the State.

Stage 4: Selection of respondents from selected boarding secondary schools

The list of all the students from the selected boarding secondary schools was obtained and proportionate allocation was also used to randomly select 343 respondents from selected public boarding secondary schools and 60 respondents were selected from

selected private boarding secondary schools in Kano State. This is because public boarding secondary schools have more student enrolment than private boarding secondary schools in a ratio of 7:1 respectively.

Inclusion Criteria

Only public and private boarding secondary schools that are registered with Kano State Secondary School Management Board were included in this study.

Instrument and Data collection

Data for the study was collected with the aid of two instruments; a structured interviewer administered questionnaire was used to obtain information on health service Utilisation by the students while health records of the schools were reviewed from January 2014 to December 2016 with the aid of a check-list to obtain data on common health problems of the students. The structured interviewer administered questionnaire comprises of close-ended questions that were used to obtain information on health care Utilisation by the students. It comprises of three (3) sections. Section A; socio-demographic characteristics, section B; health services available for the students in the past 12 months within the school and section C; health services accessibility by the students within the school. In order to ensure face and content validity, abridge copy of research work with objectives and instrument was subjected to vetting by five (5) senior academic researchers in the field of study.

Questionnaires were distributed to JSS 2 to SSS 3 students. The questionnaires were distributed to 16 - 17 students in each of the selected boarding secondary schools. Information was collected from the students using interviewer administered questionnaire. The data collection was conducted by the researcher and three other research assistants with a degree in Nursing Science who were instructed on how to guide the students to fill the questionnaires correctly. Health masters in each of the selected boarding secondary schools introduced the researcher and

assistants to the students and the purpose of the study was explained to the students. The researcher explained to the health masters that all questions should be filled uninterrupted and questionnaires were retrieved before leaving each school premises at a point in time. The data collection procedure lasted for 3 hours per day and the duration of data collection lasted for eight (8) weeks.

Data analysis

Data obtained were analysed using the Statistical Package for Social Sciences (SPSS) software version 22.0. The results were presented using descriptive statistics such as frequencies and percentages. Logistic regression was used to identify the predictors of health service Utilisation among students.

Ethical Consideration

Ethical clearance from Kano State Ministry of Health with Ref no: MOH/off/797/T.I/145 was obtained to conduct the study. The consent and co-operation of each school head, health personnel, and health master were sought by explaining the purpose of the research work to them and seeking their approval to conduct the study. Confidentiality was assured by not indicating the name of the school and student’s name during the period of data collection but was coded in case any problem was encountered. Consent of each student/participant was obtained by explaining the purpose of the study to them and seeking

their approval to participate in the study willingly. Consideration was given to the timing and conduct of the study so that normal teaching period was not unduly affected and there was no adverse effect on learning.

Results

The study indicated that majority (65.60%) of public boarding school students had malaria, 12.1% had lower abdominal pain and 2.91% had an injury while 6.09% of private boarding school students had malaria and 2.75% had lower abdominal pain (Table 1).

Majority of the students in public (90%) and private (97%) boarding schools reported to have utilised the school clinic whenever they are sick in school (Table 2). About one-quarter (39.7%) of the students indicated to have received education on personal hygiene while 18.6% received oral care. The findings show that 46.4% of the students received wound care, 72.0% were treated for headache and 69.0% received malaria treatment (Table 3).

The majority (83.4%) of the students indicated that the distance of their hostel to a health clinic by walk is ≤ 30 mins and 69.0% of the students indicated that the health clinics were not open for 24 hours daily (Table 4). The odds ratio for the independent variable (age=1.6, sex=1.4, clinic location=2.0) revealed that age, sex and clinic location had positive values (Table 5).

Table 1: Common Health Problems among Boarding Secondary School Students in Kano State, 2016

Health Problem	Public		Private	
	F	%	F	%
Malaria	12536	65.60	1163	6.09
Typhoid Fever	107	0.56	108	0.57
Lower Abdominal Pain	2314	12.1	525	2.75
Injury	556	2.91	315	1.65
Rhinitis/Catarrh	93	0.49	0	0
Diarrhoea	549	2.87	10	0.05
Peptic Ulcer Disease	364	1.90	0	0
Conjunctivitis	315	1.65	0	0
URTI	83	0.43	0	0
Skin Diseases	72	0.38	0	0

Table 2: Health Clinic Utilisation by the Students in Boarding Secondary Schools of Kano State in 2016 (n= 403)

School clinic	Public		Private	
	Yes (%)	No (%)	Yes (%)	No (%)
Utilisation of school clinic when sick	343 (90)	34 (10)	58 (97)	2 (3)

Table 3: Type of Health Services Utilised by the Students in Boarding Secondary Schools of Kano State in 2016 (n= 403)

Health Services	Yes		No	
	F	%	F	%
Health Promotion available for students				
i. Personal Hygiene	160	39.7	243	60.3
ii. Healthy eating habit	58	14.4	345	85.6
Routine screening & examination				
i. Physical examination				
ii. Oral examination	237	58.8	166	41.2
iii. Eyes examination	75	18.6	328	81.4
iv. Ear examination	113	28.0	290	72.0
v. Skin examination	56	13.9	347	86.1
vi. Nasal examination	104	25.8	299	74.2
vii. Pregnancy test	141	35.0	262	65.0
First aid treatment	13	3.2	390	96.8
i. Wound dressing				
ii. Headache				
iii. Malaria	187	46.4	216	53.6
iv. Diarrhoea	290	72.0	113	28.0
v. Abdominal pain	278	69.0	125	31.0
vi. Menstrual Problem	110	27.3	293	72.7
Counselling services	121	30.0	282	70.0
i. Physical abuse Counselling	94	23.3	309	76.7
ii. Emotional abuse Counselling				
iii. Counselling on birth control methods				
	109	27.0	294	73.0
	31	7.7	372	92.3
	8	2.0	395	98.0

Table 4: Accessibility to Utilisation of Health Clinic by the Students in Boarding Secondary Schools of Kano State (n= 403)

Item	Frequency	Percentage (%)
Walking distance to health facility from hostel/ dormitory		
i. ≤ 30mins	336	83.4
ii. > 30mins	67	16.6
Health facility open for 24 hours daily		
i. Yes	125	31.0
ii. No	278	69.0

Table 5: Determinants of Health Clinic Utilisation by the students in Boarding Secondary Schools of Kano State

Determinants	B	Df	P	OR
Age	0.48	1	0.47	1.6
Sex	0.35	1	0.58	1.4
Clinic Location	0.71	1	0.51	2.0

Reference Category: Female and Clinic location >30mins

Discussion

The most common health problem of boarding school students is malaria. More than two-thirds of the students had malaria. Salwa (2005), Chukwuocha *et al* (2009) and Ayogu *et al* (2015) all reported that malaria was the most prevalent health problem among students. This report is not surprising because the environment of some of the schools have lots of grasses around the school premises and therefore provide a breeding zone for mosquitoes to thrive more in a country that is already endemic to the malaria parasite. In addition, the school health record in most schools did not provide any evidence of a complete dosage regimen of students that had malaria. This practice may potentiate drug resistance and relapse among students with the malaria parasite. Another common health problem of the students was abdominal pain which was more common among the female students. The study also revealed that students had various forms of physical injuries which were more prevalent among the male students.

This was in line with the study conducted by Al-Samghan *et al* (2015) which showed that students with injuries should be properly cared for by qualified health personnel. Thus, there's the need for more availability of tetanus toxoid vaccines in schools especially in schools with male students who engage in various physical activities. Diarrhoea occurrence was also experienced occasionally by some of the students. This was attributed to a particular type of food preparation in some of the schools and some students from the anecdotal report also store cooked foods they brought from home for days before consumption.

Majority of the students were not given oral care, care of the eyes, education on personal hygiene as well as physical and emotional abuse Counselling by the school health clinic. These findings from the students further buttress the observation that the school health clinics were more concerned with the treatment of sick students with little preventive and promotive care. This may be as a result of the fact that the majority of the school health clinics had health assistants providing health services and not nurses. According to Gordon (2010), school nurses' role is not limited to delivering emergency care and administration of medications but also engage in identifying vision and hearing problems, providing health Counselling and developing wellness programmes for the students.

Hence, it is imperative that qualified nurses should also be available in school clinics in adequate number in order for the students to benefit from optimal health care. The students benefited from the availability of a school clinic within their school premises by receiving various forms of treatment such as; wound care, treatment for headache, malaria, abdominal pain and diarrhoea. Although the study observed that despite the fact that the majority of the sampled population were females, care of menstrual problem was among the least care received by the students. This may be due to cultural beliefs that usually prevented some of the students with such problems reporting to the clinics for treatment.

The study revealed that majority of the school clinics were located ≤ 30 mins walk from the student's hostel. This report is good because it

will enhance the use of the clinic by the students due to closer proximity to their hostel. This is in line with Andersen and Newman (1973) model of health care Utilisation which shows that the location of a health facility is an individual enabling determinant to health service use. The finding further showed that more than half of the school health clinics were not open for 24 hours daily. This implies that students whose illness occur at night and does not necessitate the need for referral are subjected to treatment by the school health prefect in the hostels who in most cases are the custodians of the school first aid boxes. In order situations, such a student will have to wait until the next morning before they are treated. This calls for concern because such students will have to wait for long hours without receiving proper medical care.

The determinants of school clinic Utilisation by the students are age, sex, and clinic location. The study observed that the students were more likely to use the clinic with an increase in age and male students were also more likely to use the clinic than female students. This is despite the fact that the population of female students is more than male students in the study setting. This finding is therefore in agreement with the conceptual model of Andersen and Newman (1973) which stipulated that age and gender influences an individual's propensity to use a health facility. The study further reported that students were two (2) times more likely to use a clinic located \leq 30mins walking distance to their hostel than when it is located $>$ 30mins. This finding also supports Andersen and Newman (1973) conceptual model that identifies health clinic location as an enabling

factor that determines the use of a health clinic services.

Limitation of the Study

Junior Secondary School1 (JSS 1) students were not included in the study because the data of the study were collected at the beginning of a new session and JSS 1 students were not available at that point in time.

Conclusion and Recommendations

The study concludes that malaria is the most common health problems of the students and the majority of the students used the school health clinics whenever they were sick in school during the day but not at night. Boarding secondary school students will not benefit optimally from health services if the school clinics are not operating on a 24- hour basis.

It is therefore recommended that measures should be employed by the school management to ensure that students are free from a mosquito bite. This can be achieved by proper and frequent environmental sanitation; school authority should provide nets to all windows in students' hostels as well as the provision of insecticide-treated nets by the State government and/or Non-governmental organizations. The school health clinics should be made open for 24 hours because of emergency health problems that can occur at night that requires urgent medical attention. This can be achieved by ensuring that there is electricity supply to the health clinics at night, medical personnel should have accommodation within the school and be on shift duty.

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