



Preventive behaviour of malaria infection among undergraduates residing in the hostels in Ignatius Ajuru University of Education, Port Harcourt (IAUE) Rivers State, Nigeria.

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Abstract

The study investigated on the preventive behaviour of malaria infection among undergraduates residing in hostels of Ignatius Ajuru University of Education Port Harcourt. A descriptive cross sectional design was adopted for the study with population of 4080. A sample size of 600 was determine using Taro Yamane method. Multi-stage sampling procedure was adopted to select the sample of the study. The instrument for data collection was a self-structured questionnaire titled Malaria Infection and Prevention behaviour questionnaire (MIPBQ). The validated instrument had a reliability index of 0.74 using PPMCC. Data collected was analyzed using Statistical Products Service Solution (SPSS) version 25.0. The findings of the study showed that high prevalence of malaria disease was 529 (96.2%) and low prevalence of malaria disease was 21(3.8%). The finding of the study showed that good preventive behaviour against malaria was 253 (46.0%) and poor preventive behaviour against malaria was 297(54.0%). The result showed that there was a significant difference between age and preventive behaviour ($p<0.05$).The result showed that there was a significant difference between level of study and preventive behaviour ($p<0.05$). The result depicted that there was a significant difference between access to health facility and preventive behaviour ($p<0.05$). It was concluded that the prevalence of malaria disease was significantly high among undergraduates residing in the hostels while they exhibit good preventive behaviours against malaria infection. The study recommended that management of the university should ensure that fumigation service is done quarterly around the school community so that mosquito and others vectors may be destroy to reduce exposure to bite.

Keywords: preventive behavior, malaria infection, undergraduates, IAUE.

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I. Introduction

In spite of its prevalence, malaria continues to pose a threat to public health. In areas where malaria is prevalent, such as Nigeria, it has a significant impact. According to the WHO (2013), malaria affects 50% of Nigerians annually, resulting in roughly 110 million clinical cases and an estimated 300,000 deaths. When infected female anopheles mosquitoes transmit plasmodium falciparum, the sickness known as malaria is transmitted to humans. Due to a lack of usage of preventative measures, malaria continues to be a problem in Nigeria, where the disease is hyper-endemic (WHO, 2019). The control and prevention of malaria sickness has been hindered by a lack of understanding and negative health-seeking habits on the part of most individuals. The findings of Yaya, et al. (2017) show that behavioral communication intervention is needed to improve the public's understanding of malaria sickness. A person's response to malaria parasite control techniques determines whether or not the disease is present in the area.

Plasmodium parasites of the genus plasmodium are responsible for the spread of malaria, which is transmitted by mosquitoes. Plasmodium falciparum, plasmodium vivax, plasmodium ovale, and plasmodium malariae are four of the most frequent types (Kebede, et al, 2017). The prevalence of malaria in Sub-Saharan Africa, including Nigeria, is high. 90 percent of the world's malaria cases occur in 15 Sub-Saharan countries, which account for 80 percent of the global malaria burden, according to WHO (2017). A well-organized and well-delivered intervention program is needed to help individuals shift their attitudes toward malaria prevention and treatment, which is a treatable and preventable disease at this level. Insecticide-treated mosquito nets (ITNs) are widely thought to have adverse effects on the body that cannot be accounted for in health outcomes while preventing another disease. People's attitudes toward malaria treatment may be influenced by the amount of information they've learned about the disease. People who are well-versed in malaria infection control techniques are more likely than those who aren't to make use of preventive devices or materials. If you'd like to lower your chance of being bitten by mosquitoes and getting sick, you should invest in insecticide-treated bed nets (ITMNS). According to Munisi et al. (2019), a large percentage of the population (88.09 percent) who self-reported using a mosquito net had a lower risk of contracting malaria. Malaria is a serious threat to many students, but those who know how to use preventive equipment like mosquito nets are less likely to be infected than those who don't. Students, particularly those in their first years in college, may behave differently than their female counterparts. In order to limit the risk of malaria infection, mosquito bed nets and sanitary procedures in the surrounding area must be used. An individual's risk of exposure to mosquitoes and benefits of using a mosquito net are both influenced by their personal preferences, according to Kolan et al (2019). 50 percent of participants used diverse malaria prevention methods such as mosquito nets, coils, insecticide spray, water stagnation cleaning and prevention, and the use of ding therapy/vaccine, according to Korlan et al. (2019). Of the 95.8% of women who participated in Yasuoka, et al. (2018) study, 95% reported using preventative measures such as sleeping under mosquito-treated nets. Long-acting insecticide-treated bed nets, indoor spraying, and other preventative measures have lowered the malaria incidence in the area. According to Michael, et al. (2017), the gender of the sample is of little consequence because there was no statistical link between gender and knowledge or preventive behavior in this study. In Nigeria, the prevalence and fatality rates of malaria infection have consistently climbed. In Sub-Saharan Africa, where Nigeria is located, the best way to prevent malaria is to expose yourself to the parasites that cause the disease on a regular basis. Negative preventative practices, particularly among students from at-risk populations, have resulted in the deaths of tens of millions of people over the years from malaria. The lack of mosquito-treated nets in the hostels and poor sanitation standards have contributed to an increase in the risk of malaria infection among students. The student's hostel lacks basic facilities and safety procedures, exposing them to parasites. Students living in university dormitories have been plagued by malaria because of claims from the institution's healthcare facilities that there have been numerous cases of the disease, with the majority of sufferers being undergraduates. Accordingly, the researcher is on the prowl for ways to better understand how malaria spreads in the residence halls of Ignatius Ajuru University of Education in Port Harcourt and how to avoid it.

Objectives of the Study

The objective of this study was determine the preventive behaviours of malaria infection among undergraduates residing in the hostels in Ignatius Ajuru University of Education, Port Harcourt. In specific terms, this study seeks to;

1. Determine the preventive behaviour against malaria infection among undergraduates residing in hostels in Ignatius Ajuru University of education, Port Harcourt.
2. Examine the preventive behaviours against malaria infection among undergraduates residing in hostels in Ignatius Ajuru University of education, Port Harcourt based on age
3. Study the preventive behaviour against malaria infection among undergraduates residing in hostels in Ignatius Ajuru University of education, Port Harcourt based on level of study;
4. Ascertain the preventive behaviour against malaria infection among undergraduates residing in hostels in Ignatius Ajuru University of education, Port Harcourt based on access to health care facility.

Hypothesis

The null hypotheses of this study were tested at 0.5 level of significance.

1. There is no significant difference between age and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt.
2. There is no significant difference between level of study and preventive behaviour of undergraduates in Ignatius Ajuru university of Education, Port Harcourt.
3. There is no significant difference between access to the health facility and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt.

Research design

A descriptive cross sectional survey was adopted for this study. The goal of this design was to describe, explore, explain, and evaluate events in their natural setting with no purpose of manipulating any variables. " It is for these reasons that this study aims to investigate the incidence of infection and prevention practices for malaria among students at the Ignatius Ajuru University of Education in Port Harcourt All of the students (undergraduates) living in the hostels made up the study's total population of forty-eight (4080). (Hostel Warden office IAUE, 2021). In the case of a huge population, the taro Yamene method was used to determine the sample size. There were 600 participants in this study. In two rounds, a multi-stage method was used to narrow the pool of potential participants down to 15. During the first stage, we employed a simple random sampling technique to choose five IAUE Port Harcourt hostels by balloting. The hostels chosen are Stella, Salvation, A, C, and F. Non-proportional sampling was utilized to choose 100 students from five hostels at IAUE, PH, in stage two of the study Structure questionnaire is an instrument for gathering data. Questionnaire for the assessment of risk factors for malaria infection and prevention (MIPBQ). A and B were two of the three sections. Infection A, it provides detailed information about the participants based on their socio-demographic factors, such as age, gender, mental status, class level, access to health faculty, and religious affiliation. A four-point similar item was utilized as a response option in Section B, which included information on preventive behavior. With a dependability rating of 0.74, it was determined that there was a strong link between the two variables. As a result, people trusted the device and it was put to good use in research. SPSS version 25.0 was used to analyze the data acquired in the study.

II. Results

The return rate of the instrument after field work was approximately 92% (550) which was used for data analysis for the study.

Table 1: Socio-demographic data

Variables	Frequency (n=550)	Percentages
Age		
15-20 years	154	28.0
21-25 years	228	41.5
26-30 years	158	28.7
31 years and above	10	1.8
Marital status		
Single	473	86.0
Married	37	6.7
Divorced	20	3.6
Separated	20	3.6
Level of study		
100 level	140	25.5
200 level	145	26.4
300 level	160	29.1
400 level	105	19.1
Religious affiliation		
Christians	478	86.9
Muslims	3	.5
Traditional	69	12.5
Access to health facility		
Too far	64	11.6
Far	49	8.9
Too close	179	32.5
Close	258	46.9

Table 4.1 shows the socio-demographic data of respondents. The results showed that 154(28.0%) are 15-20 years, 228(41.5%) 21-25 years, 158(28.7%) years and 10(1.8%) years. On marital status, 473(86.0%) are singles, 37(6.7%) married, 20(3.6%) divorced and 20(3.6%) separated. Based on school level, 140(25.5%) are in 100 level, 145(26.4%) 200 level, 160(29.1%) 300 level and 105(19.1%) 400 level. 478(86.9%) are Christians, 3(0.5%) are Muslims while 69(12.5%) are traditional worshippers. 64(11.6%) are too far from the health facility, 49(8.9%) are far, 179(32.5%) are too far and 258(46.9%) are close.

Hypothesis 1: There is no significant difference between age and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt.

Table 2: Chi-square test showing significant difference between age and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt

Variables	Preventive behavior			df	X ² -value (p-value)
	Good	Poor	Total		
Age					
15-20 years	69(44.8)	85(55.2)	154(100)	3	20.038
21-25 years	90(39.5)	138(60.5)	228(100)		
26-30 years	84(53.2)	74(46.8)	158(100)		
31 years and above	10(100)	0(0.0)	10(100)		
Total	253(46.0)	297(54.0)	550(100)		

*Significant. $p < 0.05$. $\chi^2 = \text{Chi-Square}$; $\alpha = \text{Fishers Exact } p$

Table 2 showed the chi-square test of significant difference between age and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt. The result showed that there is a significant difference between age and preventive behaviour (X^2 -value= 20.038; df =3; $p < 0.05$). Thus, the null hypothesis which states that there is no significant difference between age and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt was rejected.

Hypothesis 2: There is no significant difference between level of study and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt.

Table 3: Chi-square test showing significant difference between level of study and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt

Variables	Preventive behavior			df	X ² -value (p-value)
	Good	Poor	Total		
Level of study					
100 level	32(22.9)	108(77.1)	140(100)	3	47.214
200 level	66(45.5)	79(54.5)	145(100)		
300 level	96(60.0)	64(40.0)	160(100)		
400 level	59(56.2)	46(43.8)	105(100)		
Total	253(46.0)	297(54.0)	550(100)		

*Significant. $p < 0.05$. $\chi^2 = \text{Chi-Square}$; $\alpha = \text{Fishers Exact } p$

Table 3 showed the chi-square test of significant difference between level of study and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt. The result showed that there is a significant difference between level of study and preventive behaviour (X^2 -value= 47.214; df =3; $p < 0.05$). Thus, the null hypothesis which states that there is no significant difference between level of study and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt was rejected.

Hypothesis 3: There is no significant difference between access to health facility and preventive behaviour of undergraduates in Ignatius Ajuru university of Education, Port Harcourt.

Table 4: Chi-square test showing significant difference between access to health facility and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt

Variables	Preventive behavior			df	X ² -value (p-value)
	Good	Poor	Total		
Access to health facility					
Too far	0(0.0)	64(100)	64(100)	3	146.128
Far	49(100)	0(0.0)	49(100)		
Too close	84(100)	95(53.1)	179(100)		
Close	120(46.5)	138(53.5)	258(100)		
Total	253(46.0)	297(54.0)	550(100)		

*Significant. $p < 0.05$. $\chi^2 = \text{Chi-Square}$; $\alpha = \text{Fishers Exact } p$

Table 4 showed the chi-square test of significant difference between access to health facility and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt. The result showed that there is a significant difference between access to health facility and preventive behaviour (X^2 -value= 146.128; df =3; $p < 0.05$). Thus, the null hypothesis which states that there is no significant difference

between access to health facility and preventive behaviour of undergraduates in Ignatius Ajuru University of Education, Port Harcourt was rejected.

III. Discussion of Findings

Preventive Behaviour against malaria infection

The study's findings showed that students living in hostels had low levels of good malaria prevention behavior. Malaria is more prevalent in dormitories because students are to blame, according to the implication. Yaya et al (2017), Singh et al (2014), and Konlan et al (2017) all found similar results in their studies (2019). Research in Sub-Saharan Africa found few ways to combat malaria. Also, Ahmed et al. (2009), Hartjes and colleagues (2009), and Eclarke and colleagues (2010) found similar results (2008). The prevention of malaria in these trials was shown to be adequate, but it still has to be improved, as was found in the current study. In line with Adebayo et al. (2015), the findings of this study show that respondents exhibit low adherence to malaria prevention strategies such as disregarding the use of mosquito-treated nets. Adebayo et al. These investigations, which were also carried out in Africa, revealed that there is little that can be done to prevent malaria. Malaria still affects a large number of university students in many African nations including Nigeria. Students' current performance may be explained by the quality of the educational system and infrastructure in place. Students' sanitation and personal hygiene, as well as their attitude toward preventing malaria, may also play a role in their lack of preventive measures.

Age and Preventive behaviour of malaria

Preventive behavior and age differ significantly ($p < 0.05$), according to the results of the study. Maturity has always been linked to advancing years. As a result, it's likely that it could raise the bar for appropriate conduct and thinking. According to the findings of Ipa et al (2020), Vareta et al (2020), and Buchwald et al (2017), people's preventative behavior changes as they become older, and our study supports those findings. The study's findings are also consistent with those of Yaya et al. (2017) and Nankabirwa et al. (2016). (2015). According to their findings, a person's maturity level affects how they approach malaria prevention. One explanation for the striking resemblances seen in these research is the fact that wisdom and sound judgment are closely linked to advancing years. As a result, older kids are more likely than younger ones to engage in excellent preventive behavior. However, factors such as upbringing in the family and other influences might have an impact.

Level of study and Preventive behaviour of malaria

The results indicated a significant difference between the degree of study and malaria infection prevention behavior among university undergraduates in IAUE ($p < 0.05$). By implication, it demonstrates that as kids progress through the grades, they gain an awareness of what occurs in schools. As a result, individuals may also build capacities to assist them in maintaining their health in order to engage in academic pursuits. This is consistent with the findings of Andronescu et al. (2019), Yangzom et al. (2012), and Yaya et al (2017). Their study discovered that taking into account one's age and class enables the development of beneficial preventive measures against malaria in order to maintain one's health. This may be explained by the fact that each level of pupils brings a unique set of skills and information to the table, enabling them to make sound decisions.

Access to health facility and Preventive behaviour of malaria

The findings indicated a significant difference between access to health facilities and malaria infection prevention behavior among undergraduates at IAUE Port Harcourt ($p < 0.05$). This is expected because when undergraduates visit the university health facility for diagnosis or any other medical check-up, they become aware of various methods for preventing infections such as infection. The study's findings corroborate those of Singh et al. (2014) and Kolan et al. (2019), who indicated that access to health facilities may promote malaria prevention behavior among students. The study's findings are also consistent with those of Ahmed et al. (2009) and Isah and Nwobodo (2009). Their research indicated that access to health care facilities may influence malaria prevention behavior. However, these trials were conducted on pregnant women. This may be because those with access to health facilities may obtain knowledge on how to prevent malaria. Thus, routine malaria testing and treatment may demand health education from healthcare providers. However, lifestyle choices and other negative attitudes may continue to obstruct these protective behaviors.

IV. Conclusion

In light of the study's findings, it was concluded that undergraduate students at IAUE Port Harcourt exhibited favorable preventative behaviors against malaria infection. However, undergraduate students' good preventative behavior varies according to their age, degree of study, and access to a university health facility.

The university administration was urged to undertake frequent or quarterly cleanliness and fumigation to combat mosquito infestations on campus.

V. Recommendations

In regards to the outcome of this present study, the following recommendations were made:

1. The university management should call for all-inclusive sanitation around the nooks and crannies of the school to minimize the infestation of mosquitoes vector. This in turn may enhance general hygiene practice to promote good behaviour of the students especially undergraduates.
2. Undergraduates residing in the hostel should ensure that solid wastes are properly disposed to reduce the level of mosquito breeding.
3. Management of the university should ensure that fumigation service is done quarterly around the school community so that mosquito and others vectors may be destroyed to reduce exposure to bite.
4. The university health service and management should make malaria vaccine available and administered to students every academic session to reduce its manifestations.

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