



MALARIA PREVALENCE AMONG MALES AND FEMALES IN KANO CITY, NIGERIA

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ABSTRACT

Nigeria the 14th largest country in Africa has a total land area of 923,768 square kilometers. Nigeria lies in sub-Saharan Africa and has a population of approximately 177.1 million making it the 7th largest country in the world. According to the Centers for Disease Control and Prevention (CDC), Nigeria has the most significant number of malaria cases. In Nigeria alone, 60 million people experience Malaria attacks at least twice a year, with no less than 80% of the population exposed to the disease (WHO, 2009). Malaria is one of the most important public health problems in Nigeria and the world. It is a leading cause of death and disease in many developing countries, especially among young children because they have not developed immunity to malaria yet and pregnant women due to decreased immunity (CDC, 2018). According to the Malaria Report 2018 of the World Health Organization, 219 million malaria cases and 435 000 malaria deaths were reported worldwide in 2017 by stockholders as opposed to the interest of the people who are in desperate need of the drugs. Resultantly, these dilemmas notions of guilt and fault often accompany global ethics and initiatives. Therefore, this study will examine whether there is a difference in malaria prevalence between males and females in Kano City, Nigeria.

KEYWORDS: Malaria, Plasmodium infection, Widespread, Women, Men, Prevalence.

Section II: MATERIALS AND METHODS

Study sample: The study population consisted of 280 fever-related patients attending the General out-patient department (GODP) of Murtala Muhammad Specialist Hospital Kano city, Kano state Nigeria between 2010 and 2015. With informed consent, a total of 280 blood samples were collected in anticoagulant (EDTA) and taken to the Parasitology Laboratory for analysis. This study involved two hundred and eighty (280) individual patients, 131 males (47.6%) and 149 females (52.4%), with ages ranging from 18 – 65 years.

Data collection: Clinical data were collected from chart review. Demographic information was obtained through a self-reported questionnaire. Variables included Malaria (dependent), male and female (independent).

Statistical analyses: Mean were performed to describe the sample population, potential risk factors, and disease outcomes. The dependent variable was considered (malaria) (disease=1, no disease=0). The independent variables were considered: gender (male=0, female=1). Chi-square was used to determine the difference between males and females regarding malaria. Statistical analysis was performed using SPSS software

version 21 and $p < .05$ for statistical significance. The mean of the data obtained from the subjects was analyzed by using Chi-square to determine the significant difference between the data obtained.

Section III: RESULTS

Findings: The final project data set included 280 valid cases. 147 males (52.5%) and 133 females (47.5%) as shown in figure 1 with ages ranging from 18 - 73years. Overall, 98 participants (35%) out of the total (280) were found to be positive for malaria while 182 subjects (65%) were negative for malaria as shown in figure 2. Chi-square analysis showed that there is no statistically significant association between malaria prevalence and gender, $\chi^2 (1, N=280) = 0.132, p = .716$ see Table 1.

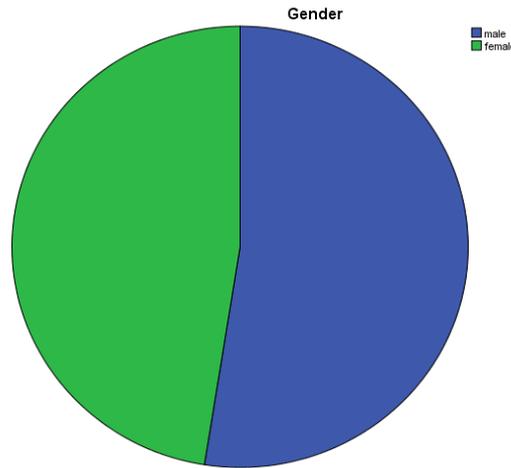


Figure 1

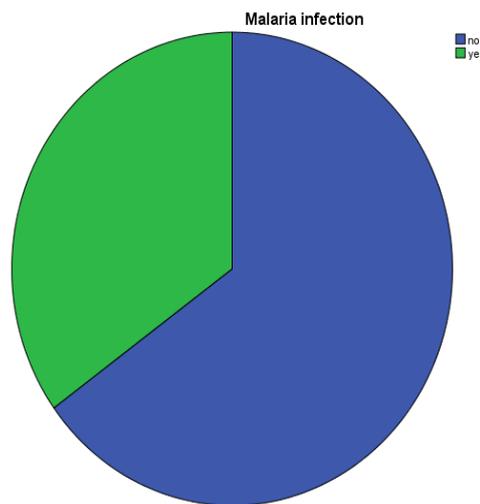


Figure 2

Table 1: Cross Tabulations and Chi-square results for malaria by gender.

Gender	Malaria infection			χ^2 df p
	No	Yes	Total	
Male	97	50	147	0.132 1 .716
Female	85	48	133	
Total	182	98	280	

Section IV: CONCLUSIONS AND DISCUSSION

This study involved two hundred and eighty (280) individual patients, 147 males (52.5%) and 133 females (47.5%) with ages ranging from 18 - 73years. Overall, 98 participants (35%) out of the total (280) were found to be positive for malaria while 182 subjects (65%) were negative for malaria. Therefore, the overall prevalence of 35% reported in this study was quite low. The disease was found to affect both males and females with prevalence and incidence rates of 49% and 47.04% respectively. The results of the Chi-square analysis revealed a nonsignificant association between gender and malaria [χ^2 (1, N = 280) = 0.132, p = .716]. Thus, I conclude that there is not a statistically significant association between gender and malaria, and the null hypothesis that there is no difference in malaria prevalence between males and females in Kano City,

Nigeria cannot be rejected. This study supports the findings of Nmandu and colleagues (2015) who found that there is no significant difference in prevalence among males (67%) and females (61%).

A gender approach helps in both understanding and combating malaria. Understanding the gender-related dynamics of treatment-seeking behavior, as well as resource allocation, financial authority, and decision-making within households is vital to ensuring effective malaria control programs. It is, therefore, necessary that gender and malaria issues are incorporated into malaria control strategies to improve their effectiveness and coverage. Women’s household responsibilities such as cooking the evening meal outdoors or waking up before sunrise to prepare the household for the day may put them at greater risk of malaria infection than men in their

societies (WHO 2006). Insecticide Treated Net (ITN) use is also subject to gender norms.

The implications for social change for these results indicate the need for targeted interventions for both males and females in Kano City, Nigeria. We might suggest the following:

Individual level: Home visits to educate the people of Kano City, Nigeria about the importance of malaria prevention for everybody is needed.

Interpersonal level: Acceptability and use of ITN are strongly linked to culturally accepted sleeping patterns, in which gender plays an important role in who uses the nets. In some instances, young children sleep with their mother and are, therefore, protected by her net if she has one. Or, if a household only has one net, priority may be given to the male head of household as he is often considered the primary breadwinner. In other contexts, men have very little access to ITN if they sleep predominantly outside. Hence, understanding how gender patterns of behavior influence exposure to mosquitoes, including the use of ITN, can assist in developing more effective recommendations for the prevention of malaria infection. Therefore, there is a need for malaria prevention education in Kano City, Nigeria among the locals to help change their beliefs.

Community level: For control measures to be effective, community health officials have to look at ways of addressing women's relative lack of power and financial resources.

Societal level: Equally important is the need to target men for malaria control education and sensitization (WHO, 2006) in society.

Future research on the prevalence of Malaria concerning age and socioeconomic status needs to be carried out in Nigeria to help in malaria prevention and treatment.

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