
Knowledge of Causes of Malaria and Use of Insecticide-treated Nets: A Comparative Analysis of Female Residents in Urban Slums in Makoko, Iwaya and Bariga, Lagos State, Nigeria

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ABSTRACT

This study examined the knowledge of the causes of malaria, and the use of insecticide-treated nets among female residents of three urban slums in Lagos State, Nigeria. A cross-sectional study design was adopted for the study. The population comprised 195 female residents aged between 18 to 59 years in Makoko, Iwaya, and Bariga urban slum communities. Data were collected using a structured questionnaire adapted from standardized instruments, with Cronbach's Alpha score of 0.746. The data were analyzed using descriptive and inferential statistics. Four research hypotheses were tested using Analysis of Variance and Chi Square Analysis at 0.05 level of significance. The results showed that female residents across the three slum communities had good knowledge of the causes of malaria (67.2%), but poor use of insecticide-treated nets to prevent mosquito bites at night (19.5%). Misconceptions on the causes of malaria remain a concern. The study recommends the distribution of insecticide-treated nets in the slum communities supported by periodic health education interventions to encourage consistent use of the insecticide-treated nets.

Keywords: *Insecticide-treated nets, ITNs, Knowledge, Malaria, Urban slums.*

1.0 INTRODUCTION:

Malaria is a disease of major concern in Nigeria. Its transmission is high in urban slum communities because of environmental and socio-economic factors that contribute to year-round mosquito breeding sites thus predisposing residents to malaria. Malaria remains a disease of public health concern especially in sub-Saharan Africa. In 2022, there were 249 million cases of malaria worldwide and 608,000 malaria deaths across 85 countries, with the WHO African Region accounting for 94% of cases and 95% of deaths globally (Omidiji et al, 2025). According to the 2024 World Malaria Report, Nigeria accounts for 25.9% of global estimated

malaria cases and 30.9% of estimated deaths, as well as approximately 55% of malaria cases in West Africa in 2023 (WHO, 2024). The disease accounts for 60% of outpatient visits to hospitals and contributes to approximately 11% of maternal mortality and 30% of child mortality, particularly among children under five years of age (Dawaki, et al., 2016). The current 2021-2025 National Malaria Strategic Plan (NMSP) has the vision of achieving a malaria-free Nigeria with a goal of reducing malaria morbidity to less than 10% of parasite prevalence and mortality attributable to malaria to less than 50 deaths per 1000 by 2025 (NMEP, 2021).

While malaria transmission occurs broadly across Nigeria, its burden is not evenly distributed. Compared to the highest socioeconomic group, prevalence among children in the lowest socioeconomic group is seven times higher (Obasohan et al., 2021). This disparity is pronounced in urban slum settings, where overcrowding, poor sanitation, and inadequate drainage create conditions that are conducive to mosquito breeding and sustained transmission (Akinwale et al., 2023; De Silva & Marshall, 2012).

Insecticide-treated nets (ITNs) remain one of the most cost-effective tools for malaria prevention. However, their impact is constrained by persistent gaps between ownership and actual use. In Nigeria, although households with access to an ITN rose from 47% in 2018 to 56% in 2021, the proportion of the population that slept under an ITN the previous night decreased from 43% to 36% over the same period (Barrow, et al., 2025). These figures underscore the need to understand the behavioural and knowledge-related factors responsible for non-use of ITN. Women play a crucial role in household health management, including malaria prevention, yet their knowledge of effective prevention methods such as ITN use, indoor residual spraying, and environmental management has not been adequately documented in many Nigerian communities (Nzoputam et al., 2024). Among women, education is a strong predictor of malaria prevention awareness (Alao et al., 2025; Solanke et al., 2024), yet paradoxically, ITN use has been shown to decrease as education increases, suggesting that behavioural and contextual factors modulate preventive practice despite greater awareness (Alao et al., 2025).

Nigeria bears a disproportionate proportion of the global malaria burden, accounting for 25.9% of global estimated malaria cases and 30.9% of estimated deaths (WHO, 2024). A study by Liu et al., (2020), in informal settlements in Lagos State, determined that malaria was reported as the most prevalent disease affecting children (58.3%) and adults (40.0%). A search of Nigerian malaria literature on knowledge of causes of malaria reveals that while awareness that mosquitoes transmit malaria is generally high, misconceptions about alternative or additional causes persist, often coexisting with correct knowledge rather than replacing it. Wakai et al. (2025), in their study in Ota, Nigeria, determined that 93.6% of the participants had good knowledge of mosquitoes as the primary cause of malaria (n=483). Similarly, Adeleke et al (2025) in four states of Southwest Nigeria (Ondo, Ogun, Oyo, and Osun) determined that 90% of the participants (n=797) identified mosquitoes as the cause of malaria.

Evidence from the communities shows that even where knowledge of malaria is high, significant gaps persist in appropriate preventive practices, particularly the use of ITNs (Dawaki et al., 2016). A substantial body of literature has documented that ITN ownership does

not reliably translate into consistent use. Even though households with access to an ITN in Nigeria rose from 47% in 2018 to 56% in 2021, the proportion of the population that slept under an ITN the previous night decreased from 43% to 36% over the same period (Barrow, et al., 2025). According to the 2021 National Malaria Indicator Survey, Lagos State has an ITN use of 10% compared to the national average of 36% (NMEP, NPC & IFC, 2022). Such low level of ITN use leaves much to be desired, particularly in urban slum communities, where environmental factors favour year-round breeding of mosquitoes. However, in all the literature reviewed, it was observed that there was paucity of studies on knowledge of malaria and use of ITNs specifically among female resident across multiple urban slum communities in Lagos State, namely, Makoko, Iwaya, and Bariga.

Studies in Nigeria have consistently revealed significant gaps between malaria knowledge and preventive practice. The weighted prevalence of good knowledge of malaria prevention among Nigerian women has been estimated at 43.5%, meaning more than half of women demonstrated poor knowledge of malaria prevention (Nzoputam, et al., 2024). Such gaps are likely to be more pronounced in urban slum communities, such as Makoko, Iwaya, and Bariga in Lagos State, which are characterized by socioeconomic deprivation, limited health literacy, and constrained access to health information converge (Akinwale et al., 2013; Isiugo-Abanihe et al., 2020; Onifade et al., 2022). Poor literacy levels within the slum communities fuel misconceptions on the causes of malaria and encourage the use of unorthodox methods to treat malaria in those communities (Afolabi et al., 2006; Chizoba et al., 2024; Adeyemi et al., 2025). Evidence from Nigerian communities shows that even where knowledge of malaria is high, significant gaps persist in appropriate preventive practices, particularly the use of ITNs (Dawaki et al., 2016). It is within this context that this study set out to assess the knowledge of causes of malaria and the use of insecticide-treated nets among female residents of these three urban slum communities in Lagos State, Nigeria, with a view to generating evidence that can inform targeted public health interventions.

Research Objectives

The objective is to assess and compare the knowledge of causes of malaria and the use of insecticide-treated nets among female residents of urban slums in Makoko, Iwaya and Bariga, Lagos State, Nigeria. Specifically, the study sought to:

- 1) Assess the knowledge on the causes of malaria among female residents of the three urban slums
- 2) Examine the difference in knowledge of causes of malaria among female residents of Makoko, Iwaya and Bariga urban slums.
- 3) Determine the extent to which female residents of the urban slums sleep inside insecticide-treated nets to prevent mosquito bites at night.
- 4) Assess the difference in the rate of use of insecticide-treated nets to prevent mosquito bites at night among female residents of Makoko, Iwaya and Bariga urban slums?

Research Hypotheses

The following hypotheses were formulated and tested in the study:

1. Female residents of the urban slums will not be knowledgeable on the causes of malaria.
2. There will be no significant difference in the mean knowledge score of causes of malaria among female residents of Makoko, Iwaya, and Bariga urban slums.
3. There is no significant difference between the observed and expected frequencies of female residents of the urban slums who sleep inside an ITN and those who do not.
4. There will be no difference in the rate of use of ITNs to prevent mosquito bites at night among female residents of Makoko, Iwaya and Bariga urban slums.

2.0 METHOD

Study Design: A descriptive cross-sectional design was adopted for the study.

Population of the Study. The study population comprised 195 female residents of the three urban slum communities aged between 18 and 59 years who had been residents for at least six months in the communities and were willing to participate in the study. The Makoko and Iwaya urban slums are situated within the Yaba Local Council Development Areas of the Mainland Local Government Area, Lagos State, while the Bariga slum area is situated in the Bariga Local Council Development Area of Somolu Local Government Area, Lagos State.

Research Instrument: The questionnaire used for this study was a structured instrument adapted from two standardized instruments. First, the questionnaire used for the Nigerian Malaria Indicator Survey (MIS), conducted every five years by the NMEP and the National Population Commission (NMEP, NPC & IFC, 2022), and second, the questionnaire used for the Thailand National Malaria Knowledge, Attitudes, and Practices Survey, conducted by Malaria Consortium in 2014 (Malaria Consortium, 2015). The validity and reliability of the instrument was considered by the researchers and other experts in the field of statistics at the University of Lagos, Nigeria. Psychometric evaluation using Cronbach's Alpha was done, resulting in an average reliability score of 0.746, hence the instrument was considered reliable for the study.

Method of Data Analysis. All retrieved questionnaire were analyzed. Respondent's answers were scored, with correct answers scored one point and incorrect or no answers scored zero. Scores of ≥ 50 were termed as good while scores of <50 were termed as poor. Demographic data was analyzed, using descriptive statistics of frequency count and percentages. The hypotheses were analyzed, using ANOVA and Chi-Square at 0.05 level of significance.

3.0 RESULTS AND DISCUSSION

Demographic Information of Respondents

Table 1: Distribution of Respondents by Age

	Age					Total
	18-19	20-29	30-39	40-49	50-59	
Makoko	4 2.1%	36 18.5%	9 4.6%	8 4.1%	8 4.1%	65 33.3%
Iwaya	4 2.1%	5 2.6%	31 15.9%	8 4.1%	17 8.7%	65 33.3%
Bariga	1 0.5%	22 11.3%	21 10.8%	7 3.6%	14 7.2%	65 33.3%
Total	9 4.6%	63 32.3%	61 31.3%	23 11.8%	39 20.0%	195 100.0%

Participants aged 20–29 years (32.3%) participated mostly in the study, closely followed by participants aged 30-39 (31.3%).

Table 2: Distribution of Respondents by Marital Status

	Marital status		Total
	Single	Married	
Makoko	1 0.5%	64 32.8%	65 33.3%
Iwaya	21 10.8%	44 22.6%	65 33.3%
Bariga	0 0.0%	65 33.3%	65 33.3%
Total	22 11.3%	173 88.7%	195 100.0%

Females who were married participated more in the study (88.7%).

Table 3: Distribution of Respondents by Number of Children

Group	Number of children			Total
	0-2	3-4	above 4	
Makoko	30 15.4%	12 6.2%	23 11.8%	65 33.3%
Iwaya	16 8.2%	35 17.9%	14 7.2%	65 33.3%
Bariga	17 8.7%	22 11.3%	26 13.3%	65 33.3%
Total	63 32.3%	69 35.4%	63 32.3%	195 100.0%

Respondents with 3–4 children (35.4%) participated mostly in this study.

Table 4: Distribution of Respondents by Education

	Education				Total
	Primary	Secondary	Higher	None	
Makoko	4 2.1%	31 15.9%	0 0.0%	30 15.4%	65 33.3%
Iwaya	22 11.3%	20 10.3%	18 9.2%	5 2.6%	65 33.3%
Bariga	22 11.3%	11 5.6%	0 0.0%	32 16.4%	65 33.3%
Total	48 24.6%	62 31.8%	18 9.2%	67 34.4%	195 100.0%

Participants who had no formal education (34.4%) participated mostly in this study.

Table 5: Distribution of Respondents by Occupation

	Occupation				Total
	Student	Trader	Civil servant	Other	
Makoko	0 0.0%	49 25.1%	0 0.0%	16 8.2%	65 33.3%
Iwaya	8 4.1%	40 20.5%	8 4.1%	9 4.6%	65 33.3%
Bariga	0 0.0%	55 28.2%	0 0.0%	10 5.1%	65 33.3%
Total	8 4.1%	144 73.8%	8 4.1%	35 17.9%	195 100.0%

Traders (73.8%) participated mostly in this study.

Table 6: Distribution of Respondents by Ethnicity

	Ethnicity		Total
	Yoruba	Egun	
Makoko	4 2.1%	61 31.3%	65 33.3%
Iwaya	58 29.7%	7 3.6%	65 33.3%
Bariga	30 15.4%	35 17.9%	65 33.3%
Total	92 47.2%	103 52.8%	195 100.0%

With respect to ethnic background, Egun respondents (52.8%) participated mostly in this study.

Table 7: Distribution of Respondents by Religion

	Religion		Total
	Christianity	Islam	
Makoko	65 33.3%	0 0.0%	65 33.3%
Iwaya	39 20.0%	26 13.3%	65 33.3%
Bariga	63 32.3%	2 1.0%	65 33.3%
Total	167 85.6%	28 14.4%	195 100.0%

With respect to religion, 85.6% of the respondents were Christians while 14.4% were Muslims.

Table 8: Knowledge of Causes of Malaria among Respondents (N = 195)

S/N	Perceived Causes of Malaria	Yes	No	Don't know	Total
1	Working too hard	87 (44.6%)	71 (36.4%)	37 (19.0%)	195 (100%)
2	Spiritual attack	82 (42.1%)	76 (39.0%)	37 (19.0%)	195 (100%)
3	Drinking dirty water	54 (27.7%)	93 (47.7%)	48 (24.6%)	195 (100%)
4	Mosquito bite	131 (67.2%)	38 (19.5%)	26 (13.3%)	195 (100%)
5	Eating oily food	38 (19.5%)	104 (53.3%)	53 (27.2%)	195 (100%)
6	Staying too long under the sun	65 (33.3%)	87 (44.6%)	43 (22.1%)	195 (100%)

As shown in Table 8, overall, the study participants had good knowledge of the cause of malaria as mosquito bite (67.2%). However, a considerable number of respondents still believed that malaria could be caused by working too hard (44.6%), spiritual attack (42.1%), staying too long under the sun (33.3%), drinking dirty water (27.7%), or eating oily food (19.5%).

Table 9: Differences in Knowledge of Malaria Causation among Residents of Makoko, Iwaya, and Bariga (N = 195)

Community	Working too hard	Spiritual attack	Drinking dirty water	Mosquito bite	Eating oily food	Staying too long under the sun
Makoko	Yes: 30 (45.8%)	Yes: 28 (43.1%)	Yes: 22 (33.1%)	Yes: 43 (66.2%)	Yes: 12 (18.5%)	Yes: 23 (35.4%)
	No: 25 (38.9%)	No: 24 (37.2%)	No: 31 (48.1%)	No: 13 (20.0%)	No: 35 (53.8%)	No: 30 (46.2%)
	Don't know: 10 (15.4%)	Don't know: 13 (19.7%)	Don't know: 12 (18.5%)	Don't know: 9 (13.8%)	Don't know: 18 (27.7%)	Don't know: 12 (18.5%)
Iwaya	Yes: 28 (43.1%)	Yes: 28 (43.1%)	Yes: 17 (26.2%)	Yes: 43 (66.2%)	Yes: 14 (21.5%)	Yes: 20 (30.8%)
	No: 22 (33.8%)	No: 22 (33.8%)	No: 32 (49.2%)	No: 11 (16.9%)	No: 33 (50.8%)	No: 28 (43.1%)
	Don't know: 15 (23.1%)	Don't know: 15 (23.1%)	Don't know: 16 (24.6%)	Don't know: 11 (16.9%)	Don't know: 18 (27.7%)	Don't know: 17 (26.2%)
Bariga	Yes: 30 (46.2%)	Yes: 26 (40.0%)	Yes: 19 (29.2%)	Yes: 46 (70.8%)	Yes: 15 (23.1%)	Yes: 24 (36.9%)
	No: 27 (41.5%)	No: 35 (53.8%)	No: 31 (47.7%)	No: 15 (23.1%)	No: 36 (55.4%)	No: 29 (44.6%)
	Don't know: 8 (12.3%)	Don't know: 4 (6.2%)	Don't know: 15 (23.1%)	Don't know: 4 (6.2%)	Don't know: 14 (21.5%)	Don't know: 12 (18.5%)

As shown in Table 9, respondents from all three communities had good knowledge of the cause of malaria as mosquito bites with slightly higher awareness in Bariga (70.8%) compared to Makoko (66.2%) and Iwaya (66.2%).

Table 10: Sleeping inside ITNs to prevent mosquito bites at night (N = 195)

S/N	Statement	Yes	No	Total
1	I have ITN in my household	60 (30.8%)	135 (69.2%)	195 (100%)
2	I sleep inside an ITN last night	38 (19.5%)	157 (80.5%)	195 (100%)

Table 10 shows that residents of the urban slums have poor ownership and use of ITNs. Only 19.5% of respondents slept inside an ITN the night before the survey, hence, residents of the urban slums seldom sleep inside ITNs, thereby making them vulnerable to mosquito bites and malaria transmission.

Table 11: Differences in ITN Use among Residents of Makoko, Iwaya, and Bariga (N = 195)

S/N	Community	I have ITN in my household		I slept inside an ITN last night	
1	Makoko	Yes: 15 No: 50 (76.9%)	(23.1%)	Yes: 10 No: 55 (84.6%)	(15.4%)
2	Iwaya	Yes: 26 No: 39 (60.0%)	(40.0%)	Yes: 14 No: 51 (78.5%)	(21.5%)
3	Bariga	Yes: 20 No: 45 (69.2%)	(30.8%)	Yes: 12 No: 53 (81.5%)	(18.5%)

As revealed in Table 11, results show poor use of ITNs across the three urban slum communities, with Makoko having the lowest ITN usage (15.4%), followed by Bariga (18.5%) and Iwaya (21.5%).

Table 12: Chi-Square Analysis showing whether female residents of urban slums will be knowledgeable on the causes of malaria.

Variable	N	Df	Mean	SD	χ^2 -calc	Sig.
Female residents of urban slums being knowledgeable on the causes of malaria.	195	10	1.99	0.92	75.39	0.000

$P < 0.05$; χ^2 -critical = 5.991

As shown above in Table 12, the calculated chi-square (χ^2) value of 75.39 with 10 degrees of freedom is substantially higher than the critical value of 5.991 at the 0.05 level of significance. In addition, the p-value of 0.000 is less than 0.05. Therefore, null hypothesis female residents of urban slums will not be knowledgeable on the causes of malaria is rejected, indicating that there is a statistically significant relationship between female residents and knowledge of malaria causes. This implies that female residents of the urban slums are significantly knowledgeable about the causes of malaria, and this level of awareness is unlikely to be due to chance.

Table 13: Descriptive analysis showing difference among female residents of Makoko, Iwaya and Bariga in the knowledge of malaria causation

Group	N	Mean	SD
Makoko	65	0.60	0.524
Iwaya	65	0.67	0.474
Bariga	65	0.88	0.326
Total	195	0.72	0.465

Table 13 shows that the mean score of participants in the knowledge of malaria causation was 0.60(SD =0.534) for Makoko residents; 0.67(SD=0.474) for Iwaya residents; and 0.88(SD=0.326) for Bariga residents respectively. As revealed from the above table, Bariga residents had the highest knowledge of malaria causation; then followed by Iwaya residents; and lastly by Makoko residents.

Table 14: One-way ANOVA of difference among female residents of Makoko, Iwaya and Bariga in the knowledge of malaria causation.

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.591	2	1.295	6.354	.002
Within Groups	39.168	192	.204		
Total	41.759	194			

$P < 0.05$; $F(2, 192) = 3.04$

From the data in table 14, there is a significant difference among the female residents of the three locations (Makoko, Iwaya, and Bariga) in the knowledge of malaria causation, because the calculated F-value of 6.354 is greater than the critical value $F(2, 192)=3.04$ at 0.05 level of significance. Therefore, the researcher concluded that there is a significant difference among female residents of Makoko, Iwaya and Bariga in the knowledge of malaria causation in Lagos state, hence null hypothesis was rejected.

Based on the significant F-value obtained, a Post-Hoc analysis was done using Least Significance Difference (LSD) method to determine which of the groups differs from the other in the knowledge of malaria causation and the trend of the difference.

Table 15: Post-Hoc analysis showing pair-wise comparison between the groups in the knowledge of malaria causation.

(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Makoko	Iwaya	-.073	.380
	Bariga	-.281*	.001
Iwaya	Makoko	.073	.380
	Bariga	-.209*	.015
Bariga	Makoko	.281*	.001
	Iwaya	.209*	.015

From Table 15, the pair-wise comparison of the group showed that the Bariga female residents differed from Makoko and Iwaya female residents in the knowledge of malaria causation in Lagos State ($P = 0.001$ and $0.015 < 0.05$). Meanwhile, Makoko female residents did not differ in the knowledge of malaria causation in Lagos State ($P=0.380>0.05$)

Table 16: Chi-Square Goodness-of Fit Analysis of female urban slum residents sleeping inside ITNs to prevent mosquito bites at night.

Variable	N	Df	Mean	SD	X^2 -calc	Sig.
Female residents of the urban slums sleeping inside ITNs to prevent mosquito bites at night	195	1	0.252	0.430	66.36	0.000

$P < 0.05$; X^2 -critical = 3.841

As shown in Table 16, the result shows a calculated chi-square (χ^2) value of 66.36 with 1 degree of freedom, which is far greater than the critical value of 3.841 at the 0.05 level of significance. Additionally, the p-value of 0.000 is less than 0.05. Based on these findings, the null hypothesis that there is no significant difference between the observed and expected frequencies of female residents who sleep inside and ITN and those who do not was rejected, indicating that there is a statistically significant difference between the observed pattern of ITN use and the expected.

Furthermore, only 19.5% of female residents of the urban slums sleep inside ITNs to prevent mosquito bites at night, while 80.5% do not suggesting poor ITN use in the communities.

Table 17: Chi-Square Analysis showing difference in the rate of use of ITNs to prevent mosquito bites at night among residents of Makoko, Iwaya and Bariga.

Variable	N	Df	Mean	SD	X ² -calc	Sig.
Difference in the rate of use of ITNs to prevent mosquito bites at night among residents of Makoko, Iwaya and Bariga	195	2	0.184	0.387	0.822	0.664

$P < 0.05$; X^2 -critical = 5.991

From table 17, there is no statistically significant difference in ITN use among residents of Makoko, Iwaya, and Bariga, because the calculated value (0.822) is less than the critical value (5.991) given 2 degrees of freedom at 0.05 level of significance. Hence, there is no significant difference in the rate of use of ITNs to prevent mosquito bites at night among the residents of Makoko, Iwaya and Bariga. The null hypothesis that there will be no difference in the rate of use of ITNs to prevent mosquito bites at night among residents of Makoko, Iwaya and Bariga therefore failed to be rejected. The result suggests that the likelihood of sleeping inside an ITN at night is similar across the three communities.

The hypothesis one was tested using Chi-Square analysis and the result indicated that female residents of the urban slums had good knowledge of the causes of malaria. In all, 67.2% of the respondents (n=195), correctly identified mosquito bites as the primary cause of malaria. This result is in line with Wakai et al (2025) in their Ota, Ogun State, Nigeria study which determined that 93.6% of the participants had good knowledge of mosquitoes as the primary cause of malaria (n=483). The marked difference in percentage may be due to the higher educational level of participants in the Ota study, in which 13.7% had completed tertiary education and the minimum education level was primary, compared to this study, where 9.2% had tertiary education and 34.4% had no formal education. A similar study by Adeleke et al (2025) in four states of Southwest Nigeria (Ondo, Ogun, Oyo, and Osun) determined that 90% of the participants (n=797) identified mosquitoes as the cause of malaria.

The above contrasts with the findings from an earlier study in Ogun state involving pregnant women in which only 36.3% correctly identified mosquito bites as a cause of malaria (Runsewe-Abiodun, et al, 2012). This suggests that knowledge of malaria has improved overtime in Southwest Nigeria. A study in the Eastern Province of Ghana by Lopez & Brown (2023) determined that 69.9% of the participants correctly identified mosquitos as the vector for malaria. The demography showed that 19.6% of the respondents had no formal education compared to 34.4% of the respondents in this study. Knowledge of malaria causation is critical in the prevention of malaria and therefore where the population is unaware of what causes malaria, it can negatively affect malaria prevention and control efforts as well as encourage negative health seeking behaviour such as resort to using local herbs which have not been tested and verified to cure malaria.

In this study, a considerable number of respondents still believed that malaria could be caused by working too hard (44.6%), spiritual attack (42.1%), staying too long under the sun (33.3%), drinking dirty water (27.7%), or eating oily food (19.5%). This points at the need for further health education intervention in the slum communities to reduce misconceptions and myths about the cause of malaria

The hypothesis two was tested using one-way ANOVA, which showed that there was statistically significance difference in the mean knowledge score of cause of malaria among the female residents of the slum communities with Bariga residents at 0.88(SD=0.326) having the highest mean knowledge score, followed by Iwaya residents at 0.67 (SD=0.474) and Makoko with 0.60(SD =0.534). From the result, Makoko, should be the immediate priority of the health education intervention, even though all three slum communities require such interventions to further raise the level of knowledge of malaria causation in the communities while also addressing misconceptions on the cause of malaria.

The hypothesis three was tested using a one sample Chi square goodness-of-fit analysis and it revealed that there is a significant difference between the observed use of ITNs and the expected. The null hypothesis was rejected because the calculated chi square value of 66.36 with 1 degree of freedom was greater than the critical value of 3.841 at 0.05 level of significance. Furthermore, the p-value of 0.000 is less than 0.05. The result showed that a significant portion of the residents do not sleep inside an ITN (80.5%) compared to those who do (19.5%). For urban slum conditions, where the water-logged environment with poor refuse disposal facilities encourage the breeding of mosquitoes, the 19.5% of respondents who slept inside an ITN the night before the survey leaves much to be desired. However, this result is a significant improvement over the ITN use result of the Malaria Indicator Survey conducted in 2021(NMEP, NPC & IFC, 2022), which determined that ITN use in Lagos State is 10%. This contrasts with the national average ITN use of 36% according to the same report. The use of ITNs is an important malaria vector control strategy which has been proven over time to result in reduction of malaria burden, since the nets act as physical barrier, repel mosquitoes and also kill mosquitoes that come in contact with the impregnated net fibre (Birget & Koella, 2015). Nigeria currently has the greatest global malaria burden (WHO, 2024) and there is therefore the need to intensify ITN distribution in malaria hot spots such as urban slums and follow it through with behaviour change communication aimed at ensuring that residents sleep inside the distributed ITNs.

The hypothesis four was tested using Chi-square analysis and the result showed that there is no significant difference in the rate of use of ITNs to prevent mosquito bites at night among residents of Makoko, Iwaya and Bariga, with Makoko having the lowest ITN usage (15.4%), followed by Bariga (18.5%) and Iwaya (21.5%). All three slum communities would therefore benefit from an ITN distribution intervention and behaviour change communication to encourage use of ITN by the community members.

4.0 CONCLUSION

This study assessed and compared the knowledge of causes of malaria and use of insecticide-treated nets among female residents of urban slums in Makoko, Iwaya and Bariga communities in Lagos State, Nigeria. The study concluded that female residents of the urban slums are significantly knowledgeable about the causes of malaria, with residents of Bariga been significantly most knowledgeable, and Makoko being significantly least knowledgeable. The study further determined that there is a significant difference between the observed and expected frequencies of female residents who sleep inside an ITN to prevent mosquito bites at night and those who do not, with the observed frequency being poor across the three slum communities. However, there was no significant difference in the rate of use of ITNs to prevent mosquito bites at night among female residents of the three slum communities.

5.0 RECOMMENDATIONS

1. Distribution of ITNs by government and non-governmental organizations should be prioritized in slum communities.
2. Periodic health education interventions should be undertaken by the government and non-governmental organizations in the slum communities to promote knowledge on the causes of malaria, address misconceptions, and encourage the consistent use of ITNs.
3. Government should partner with and engage popular music artistes and social media influencers to serve as malaria ambassadors with a view to encouraging the use of ITNs.
4. Government should partner with “Nollywood” to fund and produce movies aimed at enhancing public knowledge about malaria, addressing misconceptions, and promoting the consistent use of ITNs.

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