Original Research Article

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Frequency and determinants of asymptomatic malaria infection among adults in Bouar, Western Central African Republic

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Abstract

Background: Asymptomatic malaria infections are hidden reservoirs that sustain transmission cycles and thwart elimination efforts in endemic communities. The study aimed to determine the prevalence and determinants of asymptomatic malaria infection among Bouar adults in the Western Central African Republic (CAR).

Methods: A comparative cross-sectional study was carried out among 234 adults aged ≥18 years in Bouar, Western CAR, from June 2024 to November 2024. Participants were enrolled using systematic random sampling from the health camps. Sociodemographic data, medical history, and preventive measures were obtained using structured questionnaires. Clinical examination and venous blood sampling for hematological and biochemical tests were undertaken. Malaria infection was diagnosed by rapid diagnostic tests and confirmatory light microscopy. Asymptomatic malaria was defined as microscopic parasite detection in afebrile individuals. Data were analyzed in the Statistical Package for the Social Sciences version 26, including descriptive statistics, bivariate analysis using Chi-square tests, and multivariable logistic regression to identify independent predictors.

Results: Asymptomatic malaria frequency was 10.3% (24/234). Rural residence was the strongest predictor of infection (adjusted odds ratio [aOR] = 4.10, 95% confidence interval [CI]: 1.28–13.2, $P = 0.010$). Both use of mosquito nets (aOR = 0.38, 95% CI: 0.16–0.91, $P = 0.030$) and repellents (aOR = 0.42, 95% CI: 0.18–0.97, $P = 0.040$) were significantly protective. All microscopy-positive participants resided in rural areas and did not use mosquito nets or repellents. Anemia was more prevalent in infected participants (16.7% vs. 11.4%, $P = 0.02$).

Conclusion: Asymptomatic malaria exists in one in ten Bouar adults, with rural residence being the primary risk factor. Vector control measures provide strong protection but are ominously underused. Rural-specific strategies for vector control use and socioeconomic barriers are needed to reduce this hidden reservoir of transmission.

Keywords: Asymptomatic malaria, rural health, vector control

Introduction

Malaria remains a significant public health issue, particularly in Africa, where the continent carries the largest burden of the disease. Falciparum malaria causes the majority of deaths in Africa, and its transmission is influenced by climate, economics, geography, human activities, and unstable security conditions.[1] The World Health Organization's 2024 report places the estimate of 263 million cases and 597,000 deaths worldwide in 2023 at 11 million higher than in 2022.[2] The African continent remains the most affected region, with 94% of all malaria cases in the world and 95% of all malaria deaths in 2023 being reported there, with children under 5-years-old accounting for 76% of malaria deaths.[3] The Central African Republic is facing particular difficulties in managing malaria due to repeated sociopolitical instability, weak healthcare infrastructure, and widespread poverty. *Anopheles gambiae* is the main vector of malaria, and 99.6% of malaria cases are caused by *Plasmodium falciparum* in the country.[4] All these factors create a "fragile state" context that makes it, especially difficult to eradicate malaria. In addition to this, asymptomatic malaria infection, where people carry the parasite without appearing to have symptoms, is a major obstacle for control and elimination. These people, usually being partially immunized, lead to transmission of malaria since they are not detected and treated.[5] Asymptomatic carriers are not detected by regular surveillance, which acts as an obstacle to malaria eradication.[6] Where transmission is intense, adult individuals are likely to develop incomplete immunity to *P. falciparum*, resulting in low-density parasitemia but without symptoms.[7] This creates a reservoir of infectious people who remain untreated and continue causing ongoing transmission and posing a barrier to elimination.[8] Understanding the prevalence and determinants of asymptomatic malaria is thus of critical concern to establish effective policies that target both symptomatic and asymptomatic transmission. Insecticide-treated bed nets (ITNs) and indoor residual spraying remain the major prevention measures today but are dependent on proper use, which in turn is dependent on economic status, educational level, and accessibility to resources.[9] Rural communities are particularly hindered in their capability of utilizing such preventive measures, leading to continued transmission in some areas.[10] Despite the huge investment in malaria control, the progress toward elimination has stalled in most African countries, especially in rural and impoverished populations, where biological, environmental, and socioeconomic drivers reinforce each other to sustain transmission.[11] The objective of this study is to assess the prevalence and determinants of asymptomatic malaria infection among adults in Bouar, Western Central African Republic. Across identification of significant risk factors and protective practices associated with asymptomatic infection, this study aims to provide evidence toward evidence-based control and elimination programs against malaria in this challenging setting.

Methods

This community-based cross-sectional comparative study was conducted among adult residents of Bouar, Western Central African Republic, to assess the frequency and determinants of asymptomatic malaria infection. Data were collected from June 2024 to November 2024, with a total of 234 participants aged over 18 years were recruited from the health camps at Bouar, Central African Republic, through systematic random sampling. After obtaining informed consent, information on sociodemographic background, socioeconomic status, medical history, and preventive practices was collected using a structured questionnaire. Clinical examination was performed for all participants, and venous blood samples were obtained for hematological and biochemical analyses. Malaria infection was diagnosed using rapid diagnostic immunochromatographic tests and confirmatory light microscopy. Asymptomatic malaria was defined as the presence of malaria parasites on microscopy in individuals without fever.

Data were entered into Microsoft Excel and analyzed using the Statistical Package for the Social Sciences version 26. Descriptive statistics were used to summarise categorical variables as frequencies and percentages. Bivariate analysis using chi-square tests was performed to compare sociodemographic, clinical, and preventive practice variables between microscopy-positive and microscopy-negative groups. Pearson correlation was applied to assess relationships between demographic and laboratory variables. To identify independent predictors of asymptomatic malaria, multivariable logistic regression was conducted. Odds ratios (OR) with 95% confidence intervals (CI) were reported, and statistical significance was set at $P < 0.05$.

Results

Table 1 represents the sociodemographic characteristics of the study population by microscopic positive and negative status. The age groups show that the 21–30 years age group is the most prominent in both groups (41.6% vs. 46.2%). The gender distribution was nearly equal, with a mild female preponderance. Educational levels were high for illiteracy rates (66.7% vs. 59.0%), with manual labor being the most frequent occupation. Income analysis revealed that poverty and non-poverty denote both 50% of cases. Notably, all microscopy-positive cases resided in rural areas (100% vs. 84.8%, $P = 0.010$), with rural residence representing a risk factor for asymptomatic malaria infection in this cohort [Table 1].

Table 2 demonstrates clinical features and laboratory parameters between microscopy-positive and microscopy-negative groups. Anemia (hemoglobin [Hb] <11 g/dL) was more frequent in microscopy-positive individuals (16.7% vs.

Table 1: Sociodemographic characteristics by microscopy status (*n*=234)

Variable	Category	Microscopy positive (*n*=24) (%)	Microscopy negative (*n*=210) (%)	*P*-value
Age group	≤20	2 (8.3)	30 (14.2)	0.900
	21–30	10 (41.6)	111 (46.2)	
	31–40	8 (33.3)	48 (22.8)	
	41–50	3 (12.5)	15 (7.1)	
	51–60	1 (4.2)	6 (2.5)	
Gender	Male	11 (45.8)	94 (44.8)	0.930
	Female	13 (54.2)	116 (55.2)	
Education	None	16 (66.7)	124 (59.0)	0.490
	Primary	1 (4.2)	15 (7.1)	
	Secondary	4 (16.7)	34 (16.2)	
	Graduate and above	3 (12.5)	37 (17.6)	
Occupation	Manual worker	14 (58.3)	108 (51.4)	0.540
	Sedentary worker	6 (25.0)	70 (33.3)	
	Housewife	3 (12.5)	19 (9.0)	
	Other	1 (4.2)	13 (6.2)	
Religion	Christian	22 (91.7)	176 (83.8)	0.310
	Muslim	2 (8.3)	34 (16.2)	
Marital	Married	21 (87.5)	173 (82.4)	0.550
	Unmarried	3 (12.5)	37 (17.6)	
Income	Poverty (<12000 CFA)	12 (50.0)	76 (36.2)	0.190
	Non-poverty (≥12000 CFA)	12 (50.0)	134 (63.8)	
Family	Nuclear	15 (62.5)	131 (62.4)	0.990
	Joint	9 (37.5)	79 (37.6)	
Residence	Rural	24 (100.0)	178 (84.8)	0.010*
	Urban	0 (0.0)	32 (15.2)	

Table 2: Clinical and comorbidity profile by microscopy status (*n*=234)

Variable	Category	Microscopy positive (*n*=24) (%)	Microscopy negative (*n*=210) (%)	*P*-value
Hypertension	Present	3 (12.5)	41 (19.5)	0.410
	Absent	21 (87.5)	169 (80.5)	
Diabetes	Present	2 (8.3)	3 (1.4)	0.09
	Absent	22 (91.7)	207 (98.6)	
Chronic kidney disease	Present	1 (4.2)	9 (4.3)	0.980
	Absent	23 (95.8)	201 (95.7)	
Ischemic heart disease	Present	1 (4.2)	11 (5.2)	0.840
	Absent	23 (95.8)	199 (94.8)	
Chronic obstructive pulmonary disease	Present	0 (0.0)	6 (2.9)	0.420
	Absent	24 (100.0)	204 (97.1)	
Chronic liver disease	Present	0 (0.0)	8 (3.8)	0.330
	Absent	24 (100.0)	202 (96.2)	
Peptic ulcer disease	Present	1 (4.2)	13 (6.2)	0.710
	Absent	23 (95.8)	197 (93.8)	
Hemoglobin<11 g/dL	Yes	4 (16.7)	24 (11.4)	0.02
	No	20 (83.3)	186 (88.6)	
White blood cell abnormal	Yes	2 (8.3)	16 (7.6)	0.930
	No	22 (91.7)	194 (92.4)	
Platelet low	Yes	2 (8.3)	12 (5.7)	0.660
	No	22 (91.7)	198 (94.3)	
Creatinine high	Yes	1 (4.2)	9 (4.3)	0.980
	No	23 (95.8)	201 (95.7)	
Liver function test deranged	Yes	1 (4.2)	11 (5.2)	0.840
	No	23 (95.8)	199 (94.8)	

11.4%, $P = 0.02$), suggesting a potential link between asymptomatic malaria and low Hb. The rest of the comorbidities, such as hypertension, chronic kidney disease, ischemic heart disease, chronic obstructive pulmonary disease, chronic liver disease, and peptic ulcer disease, did not have any significant relationship. Laboratory derangements in white blood cell count, platelet count, creatinine, and liver function tests (LFT) were equally distributed in both groups [Table 2].

Table 3 reveals the disparities in malaria preventive measures between microscopy-positive and microscopy-negative groups. None of the microscopy-positive patients used mosquito nets (0% vs. 9.5%, $P = 0.02$) or repellents (0.0% vs. 1.9%, $P < 0.001$). Prophylaxis use was also significantly less among positive cases (4.2% vs. 6.2%, $P = 0.03$). These low rates of net use and repellent use overall in both groups indicate substantial gaps in the adoption of malaria prevention that must be urgently closed through targeted public health interventions [Table 3].

The multivariable analysis in Table 4 indicates independent predictors of asymptomatic malaria after controlling for confounding factors. Rural residency was the most predictive, with rural adults having more than four-fold increased odds of infection compared to urban residents (adjusted OR [aOR] = 4.10, 95% CI: 1.28–13.2, $P = 0.010$). Mosquito net usage had significant

Table 3: Preventive practices by microscopy status (*n*=234)

Variable	Category	Microscopy positive (*n*=24) (%)	Microscopy negative (*n*=210) (%)	*P*-value
Mosquito net use	Yes	0 (0.0)	20 (9.5)	0.02
	No	24 (100.0)	190 (90.5)	
Repellent use	Yes	0 (0.0)	4 (1.9)	<0.001
	No	24 (100.0)	206 (98.1)	
Prophylaxis use	Yes	1 (4.2)	13 (6.2)	0.03
	No	23 (95.8)	197 (93.8)	

Table 4: Multivariable logistic regression analysis for predictors of asymptomatic malaria (*n*=234)

Variable	Category	Adjusted odds ratio	95% Confidence interval	*P*-value
Residence	Rural versus urban	4.10	1.28–13.2	0.010
Mosquito net use	Yes versus No	0.38	0.16–0.91	0.030
Repellent use	Yes versus No	0.42	0.18–0.97	0.040
Age group	>40 versus ≤40	1.12	0.56–2.26	0.740
Gender	Male versus Female	0.94	0.47–1.88	0.870
Diabetes	Present versus Absent	1.31	0.42–4.07	0.640
Hypertension	Present versus Absent	0.89	0.33–2.41	0.820
Hemoglobin<11 g/dL	Yes versus No	1.56	0.52–4.64	0.430

protection, reducing the odds of infection by 62% (aOR = 0.38, 95% CI: 0.16–0.91, P = 0.030). Repellent usage also provided substantial protection, with a 58% decreased risk of infection (aOR = 0.42, 95% CI: 0.18–0.97, P = 0.040). Notably, demographic factors of gender and age, and clinical diagnoses of anemia, hypertension, and diabetes, were not independently significantly associated [Table 4].

The forest plot in Figure 1 illustrates that rural residence was a strong and statistically significant predictor of asymptomatic malaria, with adults in rural areas having more than fourfold higher odds of parasite positivity compared to urban residents (OR = 4.10, 95% CI: 1.28–13.2, P = 0.01). In contrast, preventive practices, such as mosquito net use (OR = 0.38, 95% CI: 0.16–0.91, P = 0.03) and repellent use (OR = 0.42, 95% CI: 0.18–0.97, P = 0.04) were protective, significantly reducing the odds of asymptomatic infection. Other factors, including age, gender, diabetes, hypertension, and low Hb, did not show significant associations [Figure 1].

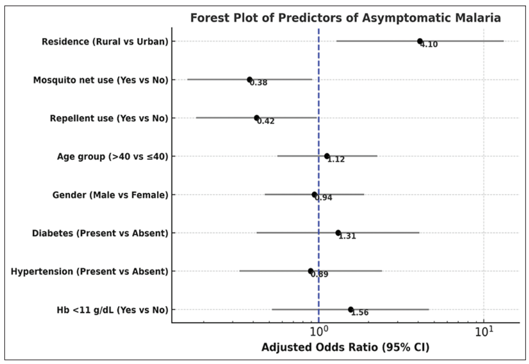

Figure 1: Forest Plot of predictors of asymptomatic malaria among adults in Bouar, Western Central African Republic (*n*=234)

The Pearson correlation heatmap in Figure 2 depicts the linear relationships among demographic, clinical, and laboratory variables in the study cohort. Blue intensity shows the strength of correlation (darker = stronger), while the values inside each box represent the correlation coefficients (R-values). Moreover, most correlations were weak to moderate. Hb, platelet count, and white blood cell count showed mild positive associations,

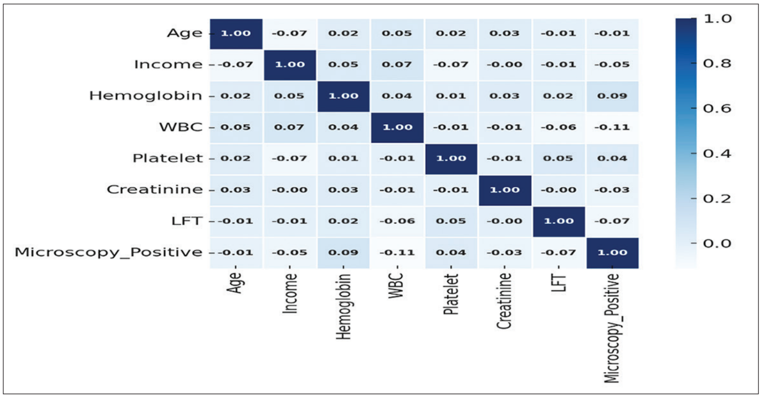

Figure 2: Pearson correlation heatmap of clinical, laboratory, and demographic variables (n=234)

while age and income demonstrated negligible correlations with laboratory measures. Creatinine and LFTs also correlated only weakly with other parameters. Notably, microscopy positivity for asymptomatic malaria showed minimal linear correlation with the evaluated demographic and laboratory variables, reinforcing that residence and preventive practices, rather than baseline clinical parameters, were the main drivers of infection risk in this population [Figure 2].

The framework in Figure 3 demonstrates that rural residence, poverty, and low education increase the risk of asymptomatic malaria (10.3%), while mosquito net and repellent use are protective. The findings highlight the role of asymptomatic carriers as a reservoir for transmission, emphasizing the need for targeted rural interventions [Figure 3].

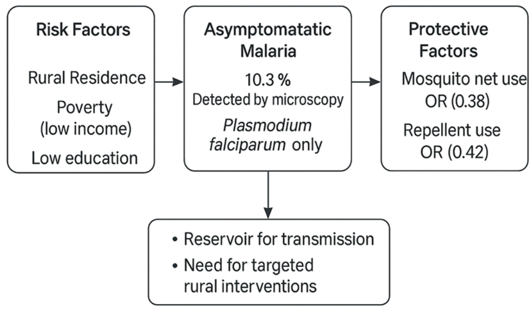

Figure 3: Conceptual framework of asymptomatic malaria infection in Bouar, Western Central African Republic

Discussion

This community-based cross-sectional study provides significant epidemiological data on asymptomatic malaria among adults in Bouar, Western Central African Republic, with a frequency of 10.3% and risk and protective determinants. The findings are in agreement with the overall African context in which malaria remains a significant public health issue and where transmission patterns are dictated by climate, economics, geography, and human activity.[1] The 10.3% asymptomatic malaria among adults is consistent with regional studies in the Central African Republic. Another study by Korzeniewski *et al*.[12] and during the COVID-19 pandemic[13] has demonstrated that asymptomatic infections are a significant reservoir of the parasite for transmission by Anopheles mosquitoes. This hidden burden of infection is a central challenge to malaria elimination efforts because asymptomatic infection is difficult to diagnose, yet represents an important potential source and reservoir of malaria transmission in Africa.[14] The strongest predictor of asymptomatic malaria was rural residence, with rural residents experiencing more than 4 times greater odds of infection compared to urban residents. This finding corroborates present evidence of intense transmission of malaria in rural compared to urban areas,[15] based on multiple factors, such as proximity to vector breeding sites, limited access to health care, and reduced implementation of control measures. In the Central African Republic alone, transmission of malaria is intense, with the main vector being *A. gambiae* and *P. falciparum* responsible for 99.6% of the infections.[16] The protection afforded by mosquito nets (OR = 0.38) and repellents (OR = 0.42) confirms the continued importance of vector control measures. However, the extremely low levels of use detected in this study – particularly the complete absence of protective measures in infected subjects – demonstrate worrying shortcomings in the application of malaria prevention. Similar findings in Central African Republic refugees indicated that inappropriate use of ITNs was amenable to correction by sensitization campaigns.[17] The low uptake of prevention interventions might be attributable to socioeconomic constraints, as half of the infected respondents lived in absolute poverty. Adults were previously found to be at increased risk of clinical malaria events due to waning antimalarial immunity from decreased parasite exposure,[18] suggesting complex interactions between host factors and infection risk. The association of asymptomatic malaria with reduced Hb level ($P = 0.02$) indicates subclinical influences on hematological parameters. The finding has important ramifications for the comprehension of the overall health impact of asymptomatic infections, which may contribute to the anemia burden in endemic populations despite the absence of any clinical symptoms.[19] This study emphasizes that malaria continues to exact a severe toll on African public health due to complex, interconnected biological, environmental, and socioeconomic determinants.[1] The findings corroborate this multifactorial etiology, showing how geographical, behavioral, and socioeconomic determinants combine to determine infection risk. Recent worldwide reports indicate that case incidence rates have leveled off in Africa and, with the population at risk increasing quickly, the absolute number of *P. falciparum* cases in Africa remains comparable to pre-investment levels.[20] The study's implications extend from individual-level health outcomes to community-level transmission dynamics. Asymptomatic carriers are silent reservoirs that sustain transmission cycles and thwart elimination, and their concentration in rural populations suggests the need for geographically targeted interventions that address both vector control and socioeconomic determinants of health.

Limitations of the study

This cross-sectional study design limits causal inference regarding observed risk factors and asymptomatic malaria infection. The study's focus on a single geographic location may limit generalizability to other parts of the Central African Republic or to larger sub-Saharan African contexts. The relatively small sample size of microscopy-positive cases ($n = 24$) may also have reduced statistical power to detect associations with less common risk factors or comorbidities.

Conclusion

This study reveals a high frequency of asymptomatic malaria (10.3%) among adults in Bouar, Western Central African Republic, with rural residency being the predominant risk factor that confers four-fold increased infection chances. The complete absence of vector control measures in infected individuals, in contrast to the intense protection provided by mosquito nets and repellents, indicates a pressing need for deficiencies in the implementation of malaria prevention. The grouping of asymptomatic infections within rural communities, together with their position as occult transmission reservoirs, underscores the importance of geographically targeted interventions. The findings emphasize that successful malaria elimination programs must prioritize rural communities by enhancing access to vector control, implementing public awareness campaigns, and addressing the underlying socioeconomic drivers that persistently expose populations to infection in endemic settings.

Recommendations

Future studies should utilize longitudinal study designs to establish temporal relationships between risk factors and asymptomatic malaria acquisition, scaling to multiple geographic locations for increased generalizability. Implementation research is also desperately needed to develop and evaluate culturally appropriate, low-cost interventions to increase vector control uptake among rural populations.

References

1. Li J, Docile HJ, Fisher D, Pronyuk K, Zhao L. Current status of malaria control and elimination in Africa: Epidemiology, diagnosis, treatment, progress and challenges. J Epidemiol Glob Health 2024;14:561-79.
2. Chaturvedi R, Rahi M, Sharma A. The disparities in funding of wars versus elimination of malaria. Med Confl Surviv 2025;41:108-18.
3. Zhang SX, Yang GB, Yang J, Wei FN, Lv S, Duan L, *et al*. Global, regional, and national burden of malaria, 1990-2021: Findings from the global burden of disease study 2021. Decoding Infect Transm 2024;2:100030.
4. Ndoula ST, Mboussou F, Njoh AA, Nembot R, Baonga SF, Njinkeu A, *et al*. Malaria vaccine introduction in Cameroon: Early results 30 days into rollout. Vaccines (Basel) 2024;12:346.
5. Afful P, Abotsi GK, Adu-Gyamfi CO, Benyem G, Katawa G, Kyei S, *et al*. Schistosomiasis-microbiota interactions: A systematic review and meta-analysis. Pathogens 2024;13:906.
6. malERA Refresh Consultative Panel on Characterising the Reservoir and Measuring Transmission. malERA: An updated research agenda for characterising the reservoir and measuring transmission in malaria elimination and eradication. PLoS Med 2017;14:e1002452.
7. Langhorne J, Ndungu FM, Sponaas AM, Marsh K. Immunity to malaria: More questions than answers. Nat Immunol 2008;9:725-32.
8. Bousema T, Okell L, Felger I, Drakeley C. Asymptomatic malaria infections: Detectability, transmissibility and public health relevance. Nat Rev Microbiol 2014;12:833-40.
9. Bhatt S, Weiss DJ, Cameron E, Bisanzio D, Mappin B, Dalrymple U, *et al*. The effect of malaria control on *Plasmodium falciparum* in Africa between 2000 and 2015. Nature 2015;526:207-11.
10. Tusting LS, Willey B, Lucas H, Thompson J, Kafy HT, Smith R, *et al*. Socioeconomic development as an intervention against malaria: A systematic review and meta-analysis. Lancet 2013;382:963-72.
11. Feachem RG, Chen I, Akbari O, Bertozzi-Villa A, Bhatt S, Binka F, *et al*. Malaria eradication within a generation: Ambitious, achievable, and necessary. Lancet 2019;394:1056-112.
12. Korzeniewski K, Bylicka-Szczepanowska E, Lass A. Prevalence of asymptomatic malaria infections in seemingly healthy children, the rural Dzanga Sangha region, Central African Republic. Int J Environ Res Public Health 2021;18:814.
13. Bylicka-Szczepanowska E, Korzeniewski K. Asymptomatic malaria infections in the time of COVID-19 pandemic: Experience from the Central African Republic. Int J Environ Res Public Health 2022;19:3544.
14. Bashir SG, Ahmed NI, Abdullahi YB, Abdi YH, Abdi MS, Musa MK. The burden of malaria in East Africa: Prevalence, risk factors, and control strategies. Malar J 2025;24:255.
15. Doumbe-Belisse P, Kopya E, Ngadjeu CS, Sonhafouo-Chiana N, Talipouo A, Djamouko-Djonkam L, *et al*. Urban malaria in sub-Saharan Africa: Dynamic of the vectorial system and the entomological inoculation rate. Malar J 2021;20:364.
16. Serengbe GB, Moyen JM, Fioboy R, Beyam EN, Kango C, Bangue C, *et al*. Knowledge and perceptions about malaria in communities in four districts of the Central African Republic. BMC Res Notes 2015;8:162.
17. Nematchoua Weyou Z, Djemna Djieyep F, Ning Teh R, Lontsi-Demano M, Dieng CC, Bamou R, *et al*. Malaria parasite burden and heterogeneity of risk factors among Central African Republic refugees: A cross-sectional study in the Gado-Badzere refugee camp in Eastern Cameroon. Front Trop Dis 2024;5:1508750.
18. Nkumama IN, O'meara WP, Osier FH. Changes in malaria epidemiology in Africa and new challenges for elimination. Trends Parasitol 2017;33:128-40.
19. Fogang B, Biabi MF, Megnekou R, Maloba FM, Essangui E, Donkeu C, *et al*. High prevalence of asymptomatic malarial anemia and association with early conversion from asymptomatic to symptomatic infection in a *Plasmodium falciparum* hyperendemic setting in Cameroon. Am J Trop Med Hyg 2021;106:293-302.
20. Weiss DJ, Dzianach PA, Saddler A, Lubinda J, Browne A, McPhail M, *et al*. Mapping the global prevalence, incidence, and mortality of *Plasmodium falciparum* and *Plasmodium vivax* malaria, 2000-22: A spatial and temporal modelling study. Lancet 2025;405:979-90.

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