

## **Plasmodium falciparum Infection and SARS-CoV-2 Immunoglobulin-G Positivity Rates Among Primary Healthcare Centre Attendees in Osogbo, Nigeria**

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**Abstract :** Lockdown imposed to control SARS-CoV-2 transmission hampered malaria control services in Nigeria. Considering COVID-19 vaccination, we assessed Plasmodium falciparum (Pf) antigen and SARS-CoV-2 immunoglobulin-G (IgG) positivity among adults in Osogbo, Osun State, Nigeria. Consenting attendees of four Healthcare Centres were consecutively enrolled for blood sampling; relevant socio-demographic/behavioral/clinical/environmental data were collected with a questionnaire. Samples were tested, using commercial rapid test kits, for Pf antigen and SARS-CoV-2 IgG and results were analyzed using logistic regression. Participants' mean age was 40.99 years (n=200), and they were predominantly females (84.5%), traders/businessmen/women (86.0%), with self-reported receipt of COVID-19 vaccine from 123 (61.5%). Pf antigen positivity was 17.5% (95% CI: 12.23-22.77%) with age (p=0.004), marital status (p=0.004), report of stagnant water around the workplace (p=0.041) and bush around homes (p=0.008) being associated. SARS-CoV-2 IgG positivity was 56.5% (95% CI: 49.63-63.37%) with age (p=0.012) and receipt of COVID-19 vaccination (p=0.001) being associated. Although the vaccinated had a 22.8 times higher likelihood of IgG positivity, no factor was predictive of COVID-19 vaccine receipt. We report 17.5% Pf antigen positivity with four predictors, and 56.5% SARS-CoV-2 IgG positivity with two predictors.

**Keywords :** COVID-19, vaccine, IgG, Plasmodium falciparum, SARS-CoV-2

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