

# Awareness, Acceptance and Potential Hesitancy Towards the Malaria Vaccine Among Caregivers of Under-Five Children and Healthcare Providers in FCT, Abuja

Joseph C. Oguegbulu\*, John Bimba

Department of Community Medicine and Primary Health Care

\*Corresponding Author

## ABSTRACT

About 76% of global malaria deaths occur in children under five years old (U5s) and despite existing solutions, malaria-related deaths account for 20% of U5 mortality in Nigeria. In 2024, Nigeria received 1 million doses of the newly developed R21/Matrix-M vaccine with a view to full implementation in 2025. Yet, previous experiences intimate that any vaccine rollout would be met with significant hesitancy especially in the wake of recent global vaccine controversies. This study aims to generate useable empirical data to guide vaccine policy and planning by assessing local populations in Abuja, Nigeria. Our mixed-methods approach combined structured self-administered questionnaires of caregivers (CGs) (n = 246) and key informant interviews (KIIs) of health care providers (HCPs) (n = 20), all stratified across 11 facilities in 3 area councils (AMAC, Bwari, and Gwagwalada). Qualitative data was analysed using the Braun and Clark Framework for thematic analysis while quantitative data used SPSS vs25 for descriptive and inferential statistics. New variables, awareness scores, acceptance scores, hesitancy scores, trust scores, perceived benefits, and perceived barriers were computed as composites of the respective appropriate variables. Of the 246 CGs, 52.4% had heard of a malaria vaccine, 72% were unaware it was in Nigeria. Although 79.27% indicated a willingness to vaccinate their U5s, computed acceptance scores showed majority (45.12%) were in the low acceptance category. Only 29.26% indicated hesitancy towards the vaccine, and computed hesitancy scores showed majority (40.65%) in the low hesitancy category. Fear of side effects (50.0%), religious/cultural beliefs (26.5%) and lack of information about the vaccine (8.8%) were the primary concerns driving hesitancy, while health worker advice (51.6%) and getting more information (15.9%) were the major acceptance factors. Pearson's Chi-square test revealed low-effect significant associations ( $p < 0.05$ ) between acceptance and age, marital status, devoutness to religion, level of education, and number of U5's malaria episodes, but the strongest association with acceptance was source of health information  $\chi^2(4, N = 246) = 9.514, p = 0.049, \text{Cramer's } V = 0.49$ ). Binary logistic regression analysis revealed that caregivers aged 26-35 were 16 times more likely (AOR = 15.914, 95% CI [1.646 - 153.859],  $p = 0.017$ ) to accept the vaccine than other age groups, and those who received their health information via TV and radio were 6 times more likely (AOR = 5.988, 95% CI [1.061 - 33.798],  $p = 0.043$ ) to vaccinate their U5 children than others. The odds of acceptance were also reduced with lower education levels (AOR = 0.195, 95% CI [0.044–0.863],  $p = 0.031$ ). Thematic analysis revealed themes of 1) 'Awareness without knowledge'; 2) 'Critical training gaps/needs'; 3) 'Strong support despite hesitation'; 4) 'Malaria burden as primary motivator' etc. as key themes among HCPs. These findings buttress the pivotal influence of HCPs on CGs health decisions as well as health information sources as important factors in malaria vaccine acceptance. This underpins the need for HCP training and full participation in targeted vaccine education, as a recipe for successful rollouts and uptake in this and similar settings.

**Keywords:** R21/Matrix-M; Vaccine Hesitancy; Under-Five Children; Mixed Methods Study; Qualitative Study; Thematic Analysis; Malaria Burden; Regression Analysis

