

## Effectiveness of Health Education Interventions to Improve Malaria Knowledge and ITN Ownership Among Populations of Sub-Saharan Africa: Systematic Review and Meta-Analysis

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**Abstract :** Introduction: Global estimates of malaria indicate that at least 3.3 billion people are at risk of being infected with malaria and 1.2 billion are at high risk. The review investigates the effectiveness of health education strategies to increase the level of malaria knowledge and ITN ownership among the populations of sub-Sahara African countries. Methods: A literature search was conducted using Science direct, CINAHL, PubMed, Prisma, Pico, Cochrane library and PsycINFO databases to retrieve articles published between 2000 until 2020. Eleven studies that reported on malaria prevention and intervention using health education strategies conducted in sub-Saharan Africa were included in the final review. Results: Four studies used educational interventions to teach appropriate ITN strategies and promote ITN usage. Two others focused on improving knowledge of malaria transmission, prevention, treatment, and its signs and symptoms. The remaining five studies assessed both ITN use and malaria knowledge. Of these, 10 were eligible for meta-analysis. On average, health education interventions significantly increase the odds of a person in the intervention group to report better malaria knowledge (odds ratio 1.30, 95% CI: 1.00 to 1.70, P= 0.05) and higher ITN ownership (odds ratio 1.53, 95% CI: 1.02 to 2.29, P= 0.004) compared to those in the control group. The odds of ITN ownership also substantially increases when the intervention was based on a theory or model (odds ratio 5.27, 95% CI: 3.24 to 8.58, P= 0.05). Conclusion: Our review highlights the various health education strategies used in sub-Saharan Africa to curb malaria over the past two decades. Meta-analysis findings show that health education intervention is moderately effective in improving malaria knowledge and ITN ownership and has contributed to the effort of global malaria strategy.

**Keywords :** malaria, health education, insecticide treated nets, sub-Saharan Africa, meta-analysis

**Conference Title :** ICPH 2023 : International Conference on Public Health

**Conference Location :** London, United Kingdom

**Conference Dates :** May 15-16, 2023