

Developing and Evaluating the Impacts of Specialized Health Education Modules on Malaria Prevention for Pregnant Women: a Randomized Controlled Trial

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Abstract : The World Health Organization prescribes that women living in malaria-endemic regions sleep under an insecticide-treated net (ITN) and comply with intermittent preventive treatment in pregnancy (IPTp). However, compliance with these measures is generally poor in Nigeria, despite the high burden of malaria and its complications in pregnancy, as well as the proven efficacy of these preventive measures. This study aimed to develop, implement, and evaluate the impacts of information-motivation-behavioral skills-based health education modules (IMB-HEMOD) on malaria prevention among pregnant women in Borno state, Nigeria. A parallel-group randomized controlled trial was conducted, enrolling 372 pregnant women (186 participants each in the intervention or control groups) at an antenatal clinic in Borno state, Nigeria. IMB-HEMOD on malaria prevention were delivered to the intervention group. This comprised four sessions, and was conducted over four hours. Session one comprised lectures on malaria causative agent, transmission, symptoms, complications, and prevention. Session two was a facilitated interactive session, where participants brainstormed through the potential barriers to compliance with these preventive measures, and collectively developed solutions to them. Sessions three and four entailed practical demonstrations of how to use these preventive measures. Participants in the control group received a dummy intervention in the form of health education on breastfeeding, delivered by the same facilitator, for a similar duration, and using a similar approach as the experimental intervention. Validated questionnaires were used to collect baseline and follow-up data (at two months and four months post-intervention) on the dependent variables - malaria prevention knowledge, motivation, behavioral skills, practices and clinical outcomes. The generalized linear mixed-models analysis was used to test the effects of the intervention on the dependent variables. The total knowledge, motivation, and behavioral skills scores of the intervention group were significantly higher by 12.8% (95% Confidence Interval [CI]: 9.50 - 16.01), 8.6% (95% CI: 6.74 - 10.36), and 6.4% (95% CI: 4.41 - 8.29) respectively over the control group. The results also showed that 32% (95% CI: 6 - 59) and 37% (95% CI: 26 - 47) of participants in the intervention group slept at least one day more frequently under an insecticide-treated net (ITN), and took one dose more of intermittent preventive treatment in pregnancy (IPTp), compared to the control group. The intervention group also achieved 0.8% (95% CI: 0.53 - 1.07) higher hematocrit levels compared to the control group. Overall, the study results revealed the promising potential of the modules for not only boosting compliance with the prescribed malaria preventive measures, but also improving clinical outcomes. It is thus recommended to adopt the modules into routine antenatal care health education.

Keywords : health education intervention, insecticide-treated net, intermittent preventive treatment, malaria, pregnant women

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