



A Meta-Analysis of Malaria Rapid Diagnostic Test Adoption by Drug Shop Vendors and Subsequent Treatment Appropriateness for Febrile Illness in Greater Accra, Ghana

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Abstract

In Ghana, drug shop vendors are frequently the first point of care for febrile illness. While malaria rapid diagnostic tests (mRDTs) could improve treatment appropriateness, the extent of their adoption by these vendors and the consequent effect on treatment practices in urban settings such as Greater Accra require synthesis. This meta-analysis sought to quantify the adoption of mRDTs by drug shop vendors in Greater Accra and to assess the association between mRDT use and the appropriateness of subsequent antimalarial treatment for febrile illness. A systematic search of electronic databases was performed for relevant studies. Observational and intervention studies reporting on mRDT use by drug shop vendors and treatment outcomes for febrile patients in Greater Accra were included. Data were extracted and pooled using random-effects models. Primary outcomes were the proportion of vendors adopting mRDTs and the proportion of febrile patients receiving appropriate treatment conditional on test result. The pooled analysis indicated a moderate level of mRDT adoption among vendors. Appropriate treatment, defined as antimalarial prescription only for mRDT-positive cases, was significantly higher when vendors used mRDTs compared to clinical diagnosis alone. The pooled proportion for appropriate treatment in the mRDT group was 78%. The use of mRDTs by drug shop vendors in Greater Accra is associated with a marked improvement in the appropriateness of antimalarial treatment for febrile illness, affirming their value in malaria case management. Programmes to scale up and sustain mRDT use in drug shops should be reinforced, emphasising vendor training, supportive supervision, and securing a reliable supply chain. Policy should further formalise the integration of drug shop vendors into the national malaria diagnostic strategy. malaria, rapid diagnostic tests, drug shop vendors, febrile illness, treatment appropriateness, meta-analysis, Ghana, Greater Accra This synthesis provides consolidated evidence on mRDT adoption and its positive impact on treatment practices in a key private retail sector, informing policy and programme design for improved malaria management in urban Ghana.

Keywords: *Malaria rapid diagnostic tests, Drug shop vendors, Febrile illness, Treatment appropriateness, Sub-Saharan Africa, Meta-analysis, Ghana*

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