ABSTRACT

Schistosomiasis, soil transmitted helminthiasis, and malaria co-infections among women of reproductive age in rural communities of Kwale County, coastal Kenya

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Background: *Schistosoma haematobium*, soil transmitted helminthes (STH), and malaria lead to a double burden in pregnancy that eventually leads to poor immunity, increased susceptibility to other infections, and poor pregnancy outcomes. Many studies have been carried out on pre-school and school aged children but very little has been done among the at risk adult population including women of reproductive age (WRA). Our current study sought to establish the risk factors and burden of co-infection with *S. haematobium*, STH, and *Plasmodium* sp. among WRA in Kwale County, Coastal Kenya.

Methods: A total of 534 WRA between the ages of 15–50 were enrolled in this cross-sectional study from four villages; Bilashaka and Mwaluphamba in Matuga sub-County, and Mwachinga and Dumbule in Kinango sub-County. Socio-demographic information was collected using a pre-tested standardized questionnaire. Parasitological examination was done using urine filtration method for *Schistosoma haematobium*, Kato Katz for STH (*Ascaris lumbricoides*, Hookworm, *Trichuris trichiura*), and standard slide microscopy for *Plasmodium* sp. Statistical analyses were carried out using STATA version 15.1.

Results: The overall prevalence of *S. haematobium* was 3.8% (95% CI: 2.6–5.4) while that for malaria was 4.9% (95% CI: 2.0–11.7). The prevalence of STH was 5.6% (95% CI: 2.8–11.3) with overall prevalence of 5.3% (95% CI: 2.5–10.9) for hookworm and 0.6% (95% CI: 0.2–1.9) for *T. trichiura.* The occurrence of co-infection was low and was recorded between *S. haematobium* and *P. falciparum* (0.6%), followed by *S. haematobium* and STH (0.4%).Among pregnant women, 2.6% had co-infection with *S. haematobium* and *P. falciparum.* Only 1.3% had co-infection with *S. haematobium* and hookworm or *T. trichiura*. Among non-pregnant women, co-infection with *S. haematobium* and *P. falciparum* was 0.2%. Similarly, co-infection with *S. haematobium* and hookworm or *T. trichiura* was 0.2%.Bed net ownership and usage among pregnant women was 87.8 and 96.6%, respectively. 66.3% of the women reported using improved water sources for drinking while 78.1% reported using improved sanitation facilities.

Conclusion: The use of improved WASH activities might have contributed to the low prevalence of STHs and *S. haematobium* infections. Further, bed net ownership and usage might have resulted in the low prevalence of *Plasmodium* sp. infections observed.

Keywords: S. Haematobium, STH, Malaria, Co-infections, WRA, Coastal Kenya