

Evaluation of strategies for improved uptake of preventive treatment for intestinal schistosomiasis among school children in Jinja District, Uganda: a stratified cluster randomized trial

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Abstract **Background:** The main strategy for the control of schistosomiasis in low income countries is annual mass treatment using praziquantel. However, uptake of mass treatment among school-age children in Uganda is low. We assessed the effect of a pre-treatment snack on uptake of praziquantel.

Methods: In a stratified cluster randomized trial carried out in Jinja district of Uganda, 12 primary schools were randomized into two groups; the education group received specific messages for schistosomiasis prevention two months prior to mass drug administration (MDA), while the snack group, in addition to the specific messages for schistosomiasis prevention, received a pre-treatment snack shortly before MDA. Self-reported uptake of praziquantel was assessed among a random sample of 1,284 children; 689 in the education and 595 in the snack group, 4 weeks after MDA. The occurrence of side effects attributable to praziquantel and the prevalence and mean intensity of *Schistosoma mansoni* infection were determined.

Results: Uptake of praziquantel was more likely among children from schools in snack group 94.0% (95% CI 91.7%-95.7%) compared to those from schools in the education group 78.7% (75.4%-81.7%) ($\chi^2= 61.0$, $p<0.001$). The occurrence of side effects was more likely among children from schools in the education group 46.4% (95% CI 42.2%-50.7%) compared to those from schools in the snack group 35.6% (95% CI 31.5-39.8%) ($\chi^2= 13.3$, $p<0.001$). Prevalence and intensity *S. mansoni* infection were lower among children from schools in the snack group 1.3% (95% CI 0.6%-2.6%) and 0.7 eggs per gram of stool (epg) (95% CI 0.1-1.3) compared to those from schools in the education group 14.1% (95% CI 11.6%-16.9%) and 29.2 epg (95% CI 17.4-41.0) ($p<0.001$) respectively.

Conclusions: Our results suggest that provision of a pre-treatment snack during MDA for schistosomiasis among school children is effective in increasing uptake and reducing side effects attributable to praziquantel treatment. The increased uptake significantly reduces the prevalence and intensity of *S. mansoni* infection.

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Key words: Schistosomiasis, uptake of praziquantel, pre-treatment snack, school children.