

IMPROVING UPTAKE OF PREVENTIVE TREATMENT FOR INTESTINAL SCHISTOSOMIASIS AMONG SCHOOL CHILDREN THROUGH TEACHER MOTIVATION: SERIAL CROSS SECTIONAL STUDIES IN JINJA DISTRICT, UGANDA.

By

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Background - I

- Schistosomiasis is one of the most important parasitic infections in children in Uganda
- The national Health Sector Strategic and Investment Plan (HSSIP, 2010) underscores schistosomiasis as one of the diseases targeted for elimination by the year 2015
- Annual Mass Drug Administration (MDA) with praziquantel, guided by the empirical evidence of the epidemiological distribution of the infection and WHO recommendations is ongoing in the country.
- Realization of the public health benefits of MDA depends on achieving a high annual treatment coverage. Recommendation is to treat 75% of school-age children at risk of morbidity (WHO, 2010)

Background - II

- Implementation of the schistosomiasis control program in Jinja district started in 2003
- Main activities:
 - Preventive measures focusing on raising awareness through IEC and health education
 - Mass treatment with praziquantel & albendazole
- Target population: school-age children and adults at risk of infection
- Treatment is distributed by trained teachers and community drug distributors (CDDs) in schools and communities respectively
- MDA activities are supported by MoH with external funding USAID channeled through Research Triangle Institute (RTI) International₈

Background III

- Recent studies undertaken among adults in high endemic districts reported unwillingness to take preventive treatment
- A particular study conducted in primary schools of Jinja district showed that only 30% of school children took praziquantel during the 2011 MDA.
- Objective of the study:

To report on the effectiveness of a new strategy in improving uptake of preventive treatment among school children in Jinja

Methods

- Serial cross sectional surveys were carried out in 2011 and 2012 in 12 primary schools in Jinja district, Walukuba Division.
- A baseline survey was conducted in 2011, six months after the 2010 MDA. A follow-up survey was conducted in 2012, three weeks after MDA
- A random sample of 1,010 and 1,020 children were involved in the baseline and follow-up studies respectively
- **Measures:** Uptake levels, occurrence of side effects, reasons for non-uptake, knowledge of schistosomiasis control and transmission and prevalence and intensity of *S. mansoni* infection

Strategies to improve uptake

- Following the low uptake in 2011, the national control program attempted to remedy the situation by adopting new strategies for distribution of praziquantel
- Multisectoral collaboration between health, education and community development was strengthened
- ✓ Training of Trainers (TOT) by the Vector Control Division, MoH to the district – cascade training to sub county supervisors
- ✓ All teachers received a one day's refresher training, a “small allowance” of 2 US \$ per teacher and T-shirts
- ✓ Adequate logistics: registers, tally sheets, dose poles and drugs
- ✓ District health teams facilitated to conduct support supervision

MDA

Teacher training



Drug distribution



Results I

Demographic characteristics

- Children in the baseline and follow-up surveys were comparable in terms of sex , age and prevalence of infection with schistosomiasis

Variable	Baseline 1,010 (%)	Follow-up 1,020 (%)	P-value
Sex			
Female	555 (55.0)	543(53.2)	0.55
Age (years)			
12-16	535 (53.0)	538 (52.7)	0.92
Prevalence of <i>S. mansoni</i> infection			
+ve schistosomiasis status	354 (35.0)	332 (32.6)	0.50

Results II

Self-reported uptake of praziquantel

School (no)	Baseline (N=1,010)			Follow -up (N=1,020)			P value
	n	Uptake	% uptake, 95% CI	n	Uptake	% uptake, 95% CI	
1	70	12	17.1 (2.08-48.4)	75	44	58.7 (43.2-73.7)	0.011
2	61	16	26.2 (7.27-52.3)	70	39	55.7 (39.6-72.2)	0.047
3	75	19	25.3 (9.14-51.2)	70	44	62.9 (47.8-77.6)	0.006
4	55	38	69.0 (51.3-82.4)	71	28	39.4 (21.5-59.4)	0.017
5	31	20	64.5 (40.7-84.6)	73	30	41.4 (22.6-59.4)	0.109
6	104	26	25.0 (11.5-47.8)	100	45	45.0 (29.6-60.0)	0.093
7	107	25	23.4 (9.35-45.1)	100	53	53.0 (38.6-66.7)	0.014
8	107	12	11.2 (0.21-38.4)	92	56	60.9 (46.7-73.5)	0.002
9	82	48	58.5 (43.2-72.4)	71	42	59.2 (43.2-74.4)	0.946
10	104	17	16.3 (3.70-43.4)	101	55	54.5 (40.5-68.0)	0.006
11	110	28	25.5 (10.6-44.9)	98	13	13.3 (1.90-45.4)	0.377
12	104	24	23.1 (9.77-46.7)	99	50	50.5 (35.5-64.5)	0.025
Total	1,010	285	28.2 (22.9-33.6)	1,020	499	48.9 (44.4-53.4)	<0.001

Results III

Knowledge of schistosomiasis transmission and control, occurrence of side effects and reasons for non uptake

- No change in knowledge on transmission and control and occurrence of side effects
- Proportion of children reporting fear of treatment as a major reason for non-uptake significantly reduced

Variable	Baseline (N=1,010)		Follow-up (N=1,020)		P value
	n	% (95% CI)	N	% (95% CI)	
Knowledge on schistosomiasis transmission and control	463	45.9 (42.7-48.9)	450	44.1 (41.0-47.2)	0.42
Fear of treatment as a major reason for non-uptake	572	78.9 (72.8-79.1)	341	65.5(61.2-69.5)	<0.001
Occurrence of side effects attributable to praziquantel	142	49.8 (43.8-55.8)	233	46.6 (42.1-51.2)	0.55

Discussion

- Self-reported uptake of praziquantel among school-age children modestly increased from 28.2% to 48.9% between the two surveys
- The increase is however, unlikely to have public health impact as observed by the persistent high prevalence levels of infection
- Some schools with moderate uptake at baseline did not improve or even declined at follow-up.
- Inadequate knowledge about schistosomiasis transmission and control, fear of treatment and occurrence of side effects are major contributors to non-uptake

Conclusions

- Increasing teacher motivation to distribute treatment alone is not enough in improving uptake of praziquantel among school children
- The conventional school-based MDA programs for schistosomiasis control that focus on the logistical aspects of drug delivery are not enough to increase uptake
- There is need to reflect on actions performed to control the infection if the objective of the national HSSIP of eliminating the infection by 2015 is to be achieved:
 - Improving communication with the target populations
 - Implementing measures to mitigate side effects of PZQ, such as providing a snack prior to MDA

Recommendations

- Undertaking a more in-depth anthropological study to further explore the underlying perceptions and beliefs towards praziquantel among school children is needed
- Randomized controlled trial studies should be undertaken to evaluate interventions for improving uptake

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