

Schistosomiasis treatment impact survey in selected districts in Ghana 2022-2023



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Presentation outline

- Background
- Objectives
- Results
- Conclusion
- WHO SCH roadmap

SCH Control in Ghana

- The aim of the GHS Schistosomiasis Programme is to control/ eliminate schistosomiasis as a public health problem by 2030
- The main strategy is annual mass drug administration for the school-age and high-risk adults
- Nationwide mapping was carried out in 2008, with surveys conducted in schools across the country

Results-Prevalence of Schistosomiasis – 2008 & 2015

Prevalence	2008	2015
High(>50%)	47	3
Moderate(10-50%)	138	54
Low(0-10%)	31	159

SCH Control in Ghana

- Mapping was used to classify districts as requiring treatment every year, or every two or three years
- Since then, the GHS/NTD Programme has delivered treatments through either school- or community-based deworming campaigns
- In total, nearly 20 million treatments have been provided since 2008

SCH Control in Ghana

- Over 15 years, Ghana has successfully delivered control of SCH using PZQ
- As a result, the burden of schistosomiasis in our communities may have reduced
- But by how much?
- What is the prevalence of SCH in the unmapped/ mapped areas
- We urgently need surveys to tell us about the current situation

Goal of survey

- To provide a detailed understanding of the distribution/prevalence of Schistosomiasis and Soil Transmitted Helminths in school aged children (5 to 14 years)

Specific Objectives

- Determine the prevalence of infection for SCH species in 22 districts in Ghana
- Describe *S. haematobium* intensity among school age children in 22 districts in Ghana (based on quantitative egg counts)
- Determine the prevalence of STH types (Hookworm, *Ascaris*, *Trichuris etc*) in 22 districts in Ghana
- To measure the prevalence of macro and micro haematuria in study participants

Methods-Study Design

- Cross-sectional survey among SAC
- Interview with semi-structured questionnaire and lab diagnosis
- Kobo collect was used for data collection

Methods

- Two-stage cluster surveys surveying 15 schools per district and 24 children (5 to 14 years) per school
- Stool and urine collection from selected school children
- Kato Katz method for STH and intestinal schistosomiasis (*S.mansoni*)
- Urine filtration to examine for urogenital schistosomiasis (*S.haematobium*)

Ethics And data analysis

- Permission from RDHS, DDHS, Headteachers, Parents & children

Data analysis

- Descriptive analysis
- Bivariate and multivariate analysis

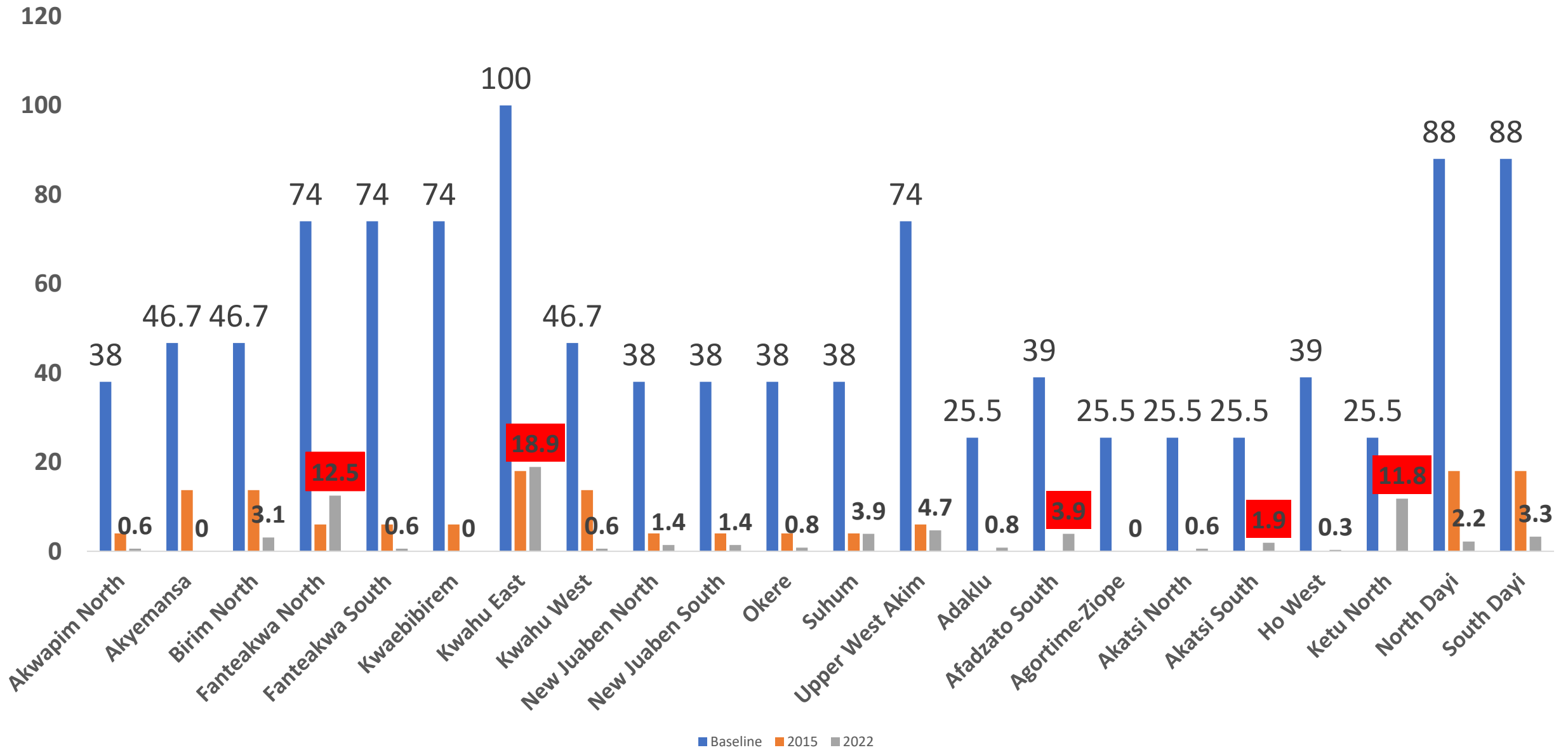
Distribution of districts, schools and specimen, SCH treatment impact assessment, 2023

Region	District	No. of Sub Districts	Number of Schools Sampled	Urine samples collected	Stool samples collected
EASTERN	AKWAPIM NORTH	6	15	361	361
EASTERN	AKYEMANSA	7	15	361	361
EASTERN	BIRIM NORTH	5	15	360	360
EASTERN	FANTEAKWA NORTH	6	15	360	360
EASTERN	FANTEAKWA SOUTH	5	15	360	360
EASTERN	KWAEBIBIREM	8	15	360	360
EASTERN	KWAHU EAST	9	15	360	360
EASTERN	KWAHU WEST	11	15	359	359
EASTERN	NEW JUABEN NORTH	5	15	360	360
EASTERN	NEW JUABEN SOUTH	6	15	360	360
EASTERN	OKERE	3	15	360	360
EASTERN	SUHUM	9	15	360	360
EASTERN	UPPER WEST AKIM	8	15	360	360
VOLTA	ADAKLU	5	15	360	360
VOLTA	AFADZATO SOUTH	6	15	360	360
VOLTA	AGORTIME-ZIOPE	5	15	360	360
VOLTA	AKATSI NORTH	5	15	360	360
VOLTA	AKATSI SOUTH	5	15	360	360
VOLTA	HO WEST	6	15	360	360
VOLTA	KETU NORTH	6	15	363	363
VOLTA	NORTH DAYI	5	15	360	360
VOLTA	SOUTH DAYI	5	15	450	450
	Grand Total	136	330	8014	8014

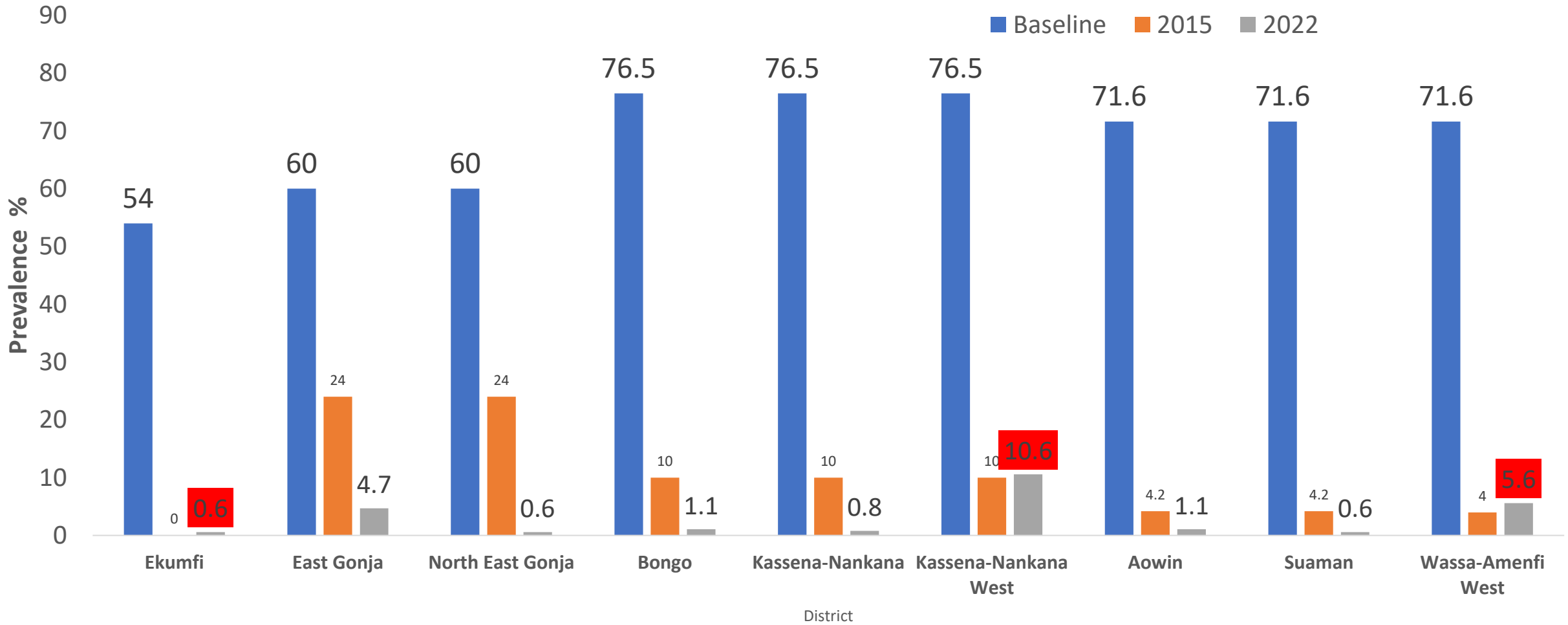
Prevalence of S Haematobium and Mansonia in 22 districts-2013

Count of child_id	Heama				Manso			
Districts	Neg	Pos	Grand Total	Prevalence	Neg	Pos	Grand Total	Prevalence
ADAKLU	357	3	360	0.8%	360		360	0.0%
AFADZATO SOUTH	346	14	360	3.9%	360		360	0.0%
AGORTIME-ZIOPE	360		360	0.0%	359	1	360	0.3%
AKATSI NORTH	358	2	360	0.6%	359	1	360	0.3%
AKATSI SOUTH	353	7	360	1.9%	360		360	0.0%
AKWAPIM NORTH	359	2	361	0.6%	361		361	0.0%
AKYEMANSA	361		361	0.0%	360	1	361	0.3%
BIRIM NORTH	349	11	360	3.1%	359	1	360	0.3%
FANTEAKWA NORTH	315	45	360	12.5%	360		360	0.0%
FANTEAKWA SOUTH	358	2	360	0.6%	360		360	0.0%
HO WEST	359	1	360	0.3%	358	2	360	0.6%
KETU NORTH	320	43	363	11.8%	363		363	0.0%
KWAEBIBIREM	360		360	0.0%	358	2	360	0.6%
KWAHU EAST	292	68	360	18.9%	358	2	360	0.6%
KWAHU WEST	357	2	359	0.6%	359		359	0.0%
NEW JUABEN NORTH	355	5	360	1.4%	360		360	0.0%
NEW JUABEN SOUTH	355	5	360	1.4%	360		360	0.0%
NORTH DAYI	352	8	360	2.2%	359	1	360	0.3%
OKERE	357	3	360	0.8%	360		360	0.0%
SOUTH DAYI	435	15	450	3.3%	450		450	0.0%
SUHUM	346	14	360	3.9%	360		360	0.0%
UPPER WEST AKIM	343	17	360	4.7%	359	1	360	0.3%
Grand Total	7747	267	8014	3.3%	8002	12	8014	0.1%

Distribution of SCH Prevalence:2008, 2015 and 2023



Distribution SCH prevalence in nine (9) districts in Ghana :2008, 2015 and 2022



	Ascaris				Hookworm				Trichuris				H.Nana			
District	Neg	Pos	Grand Total	Prevalence	Neg	Pos	Grand Total	Prevalence	Neg	Pos	Grand Total	Prevalence	Neg	Pos	Grand Total	Prevalence
ADAKLU	360		360	0.0%	360		360	0.0%	359	1	360	0.3%	360		360	0.0%
AFADZATO SOUTH	360		360	0.0%	360		360	0.0%	360		360	0.0%	360		360	0.0%
AGORTIME-ZIOPE	360		360	0.0%	360		360	0.0%	360		360	0.0%	360		360	0.0%
AKATSI NORTH	360		360	0.0%	360		360	0.0%	359	1	360	0.3%	360		360	0.0%
AKATSI SOUTH	359	1	360	0.3%	360		360	0.0%	359	1	360	0.3%	360		360	0.0%
AKWAPIM NORTH	361		361	0.0%	361		361	0.0%	361		361	0.0%	361		361	0.0%
AKYEMANSA	361		361	0.0%	361		361	0.0%	361		361	0.0%	361		361	0.0%
BIRIM NORTH	359	1	360	0.3%	359	1	360	0.3%	360		360	0.0%	360		360	0.0%
FANTEAKWA NORTH	360		360	0.0%	360		360	0.0%	360		360	0.0%	360		360	0.0%
FANTEAKWA SOUTH	359	1	360	0.3%	360		360	0.0%	358	2	360	0.6%	360		360	0.0%
HO WEST	360		360	0.0%	360		360	0.0%	360		360	0.0%	360		360	0.0%
KETU NORTH	362	1	363	0.3%	362	1	363	0.3%	362	1	363	0.3%	363		363	0.0%
KWAEBIBIREM	359	1	360	0.3%	360		360	0.0%	360		360	0.0%	360		360	0.0%
KWAHU EAST	359	1	360	0.3%	359	1	360	0.3%	360		360	0.0%	360		360	0.0%
KWAHU WEST	359		359	0.0%	359		359	0.0%	359		359	0.0%	359		359	0.0%
NEW JUABEN NORTH	360		360	0.0%	360		360	0.0%	360		360	0.0%	360		360	0.0%
NEW JUABEN SOUTH	359	1	360	0.3%	360		360	0.0%	360		360	0.0%	360		360	0.0%
NORTH DAYI	360		360	0.0%	360		360	0.0%	360		360	0.0%	360		360	0.0%
OKERE	360		360	0.0%	360		360	0.0%	360		360	0.0%	360		360	0.0%
SOUTH DAYI	449	1	450	0.2%	450		450	0.0%	450		450	0.0%	450		450	0.0%
SUHUM	359	1	360	0.3%	360		360	0.0%	360		360	0.0%	360		360	0.0%
UPPER WEST AKIM	356	4	360	1.1%	360		360	0.0%	360		360	0.0%	360		360	0.0%
Grand Total	8001	13	8014	0.2%	8011	3	8014	0.0%	8008	6	8014	0.1%	8014		8014	0.0%

Association between participants and school characteristic and *S. Heamatobium* status

	S. Heamatobium		Binary Logistic Regression model	
	Negative	Positive	p-value	
	n (%)	n (%)		aOR (95% CI) p-value
Sex			0.049	0.121
Male	3907 (96.3)	151 (3.7)		1.00
Female	3840 (97.1)	116 (2.9)		0.82 (0.64 - 1.05)
Age			<0.001	<0.001
5-9	2742 (98.4)	45 (1.6)		1.00
10-14	4880 (95.9)	207 (4.1)		2.53 (1.82 - 3.52)
>14	125 (89.3)	15 (10.7)		7.62 (3.38 - 17.19)
Region			0.023	0.332
EASTERN	4507 (96.3)	174 (3.7)		1.00
VOLTA	3240 (97.2)	93 (2.8)		0.72 (0.38 - 1.39)

Distribution of S. haematobium Intensity-SCH treatment impact Survey

Row Labels	Light	% Light	Heavy	% Heavy
EASTERN	75	43.10%	99	56.9%
AKWAPIM NORTH	2	100.00%		0.0%
AKYEMANSA				
BIRIM NORTH	6	54.55%	5	45.5%
FANTEAKWA NORTH	22	48.89%	23	51.1%
FANTEAKWA SOUTH	2	100.00%		0.0%
KWAEBIBIREM				
KWAHU EAST	21	30.88%	47	69.1%
KWAHU WEST	2	100.00%		0.0%
NEW JUABEN NORTH	4	80.00%	1	20.0%
NEW JUABEN SOUTH	3	60.00%	2	40.0%
OKERE	3	100.00%		0.0%
SUHUM	5	35.71%	9	64.3%
UPPER WEST AKIM	5	29.41%	12	70.6%
VOLTA	52	55.91%	41	44.1%
AFADZATO SOUTH	7	50.00%	7	50.0%
AGORTIME-ZIOPE				
AKATSI NORTH	2	100.00%		0.0%
AKATSI SOUTH	5	71.43%	2	28.6%
HO WEST		0.00%	1	100.0%
KETU NORTH	24	55.81%	19	44.2%
NORTH DAYI	5	62.50%	3	37.5%
SOUTH DAYI	8	53.33%	7	46.7%
Grand Total	127	47.57%	140	52.4%

Conclusion

- Drastic decline of SCH/STH prevalence
- Resurgence in some districts
- More than half of the respondents were of heavy intensity of infection

Way forward

- Implementation of WHO's new recommendations for treatment of SCH
- Research into the resurgence of SCH in some districts

Acknowledgment

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Ghana Education Service

Thank you