Awareness and knowledge of female genital schistosomiasis in a population with high endemicity: a cross- sectional study in Madagascar

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Background

- Infections with the trematode *S. haematobium* are endemic in tropical regions
- Prolonged infection can cause Female Genital Schistosomiasis (FGS), possible long term effects of FGS: infertility or pain
- Awareness of FGS is thought to be scarce and information is scarcely included in medical training curricula
- Possible misidentification of FGS as sexual transmitted infections
- Adequate guidelines and public health strategies to manage the disease are missing in Madagascar

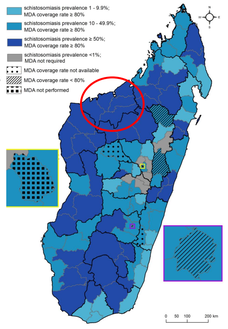


Figure 1: Coverage rate of mass drug administration (MDA) campaign carried out in 2021 in Madagascar by districts according to schistosomiasis prevalence. Rasoamanamihaja et. al., 2023

Methods

Cross-sectional survey:
- Convenience sampling of: N= 727 adult women and N= 93 health care workers (HCW)
- Sociodemographic background, FGS awareness, knowledge of transmission and symptoms

Study setting:
- Boeny region in Madagascar (Figure 1)
- One urban, one peri-urban two rural communities; hospitals & community setting (markets or participants homes)

Statistical investigation:
- Descriptive statistics
- Construction FGS knowledge score
- Binary poisson regression: Prevalence ratios FGS awareness

Results

Awareness and knowledge:
- Among women, 11.3% were aware of FGS, compared to the 53.8% of HCWs (Figure 2)
- Among women, 9.3% reached low knowledge scores, 1.9% medium and 88.8% had no knowledge
- In total 47.3% of HCWs had low knowledge of FGS, 6.5% had medium knowledge and 46.2% had no knowledge of FGS
- Neither women nor HCWs included in this study reached a high knowledge score

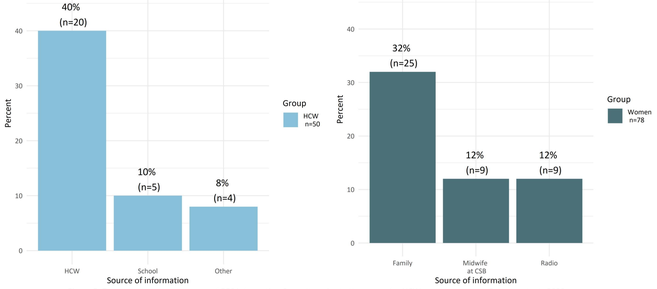


Figure 3: Three most common sources of FGS information 6 months prior to the survey for HCWs, and for women, Rausche et. al., 2023

Factors influencing awareness (Figure 4):

Peri-urban locations and rural locations had shown a reduced prevalence, statistically significant, of 74% and 63% reduction of FGS awareness respectively, when compared to the urban location of Mahajanga

Women who attended university or completed a vocational training had twice the prevalence, statistically significant, of FGS awareness when compared to the group with a primary education or less

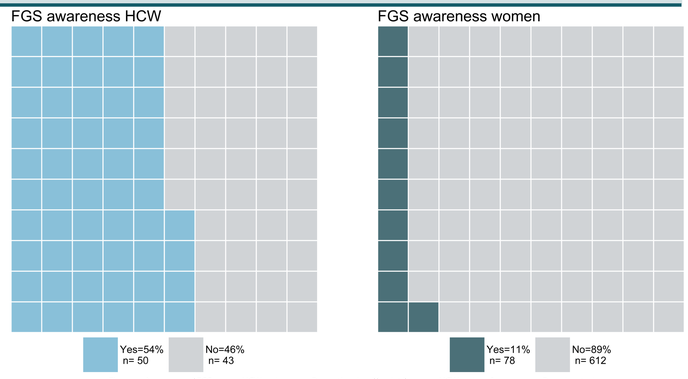


Figure 2: Awareness of FGS among HCW and women. Proportional waffle plot for n = 93 HCW and n = 690 women,, Rausche et. al., 2023

Sources of information (Figure 3):

FGS information women: Family, midwifes and the radio

FGS information HCW: Peers (other HCW), school curricula

	n	% with awareness	Crude PR (95% CI)	Adjusted PR (95% CI)
Setting				
Healthcare facility	116	11	Ref	
Community	574	11	1.01 (0.58; 1.77)	
Age Group				
18-25	247	9	Ref	
26-35	224	15	1.63 (0.99; 2.68)	
36-45	117	13	1.38 (0.75; 2.54)	
46+	102	6	0.63 (0.27; 1.50)	
Urbanization				
Urban	129	24	Ref	
Peri-Urban	284	7	0.27 (0.16; 0.47)	
Rural	277	10	0.42 (0.26; 0.67)	
Education				
Primary education and less	281	9	Ref	
Secondary education	353	11	1.19 (0.75; 1.91)	
University/Vocational-training	56	23	2.51 (1.38; 4.58)	
Occupation				
Non-Farmer/ -Fisher	261	14	Ref	
Farmer/ -Fisher	429	10	0.71 (0.47; 1.08)	

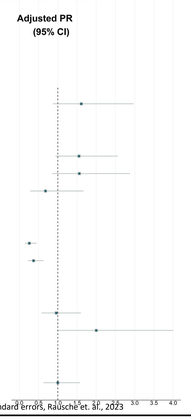


Figure 4: Prevalence ratios for FGS awareness among women (n = 690), based on binary Poisson regression models with robust standard errors, Rausche et. al., 2023

Conclusion

- Gaps in FGS-related knowledge exist in highly endemic areas
- Women in urban regions are more aware of FGS than in peri-urban or rural areas
- HCWs rely mostly on peer- communication to gain FGS knowledge
- Lack of FGS awareness and knowledge might present a barrier on the effective for prevention and control as well as threatening the goal of eliminating schistosomiasis as a public health problem until 2030



Figure 5: Village in rural Madagascar, Hameister, 2021

Recommendations for action

- Raising awareness and knowledge of chronic forms of NTDs can help address diseases that can silently affect individuals worldwide
- Elevating awareness as well as knowledge of the disease through targeted and locally adapted campaigns. These campaigns should include rural areas and divers educational levels
- Integrating training on FGS in medical curricula in endemic countries to counter misdiagnosis and mistreatment of affected women and girls

Link to the publication

You are a doctor, nurse or midwife? How much do **YOU** know about FGS? Fill out our survey!

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