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Knowledge, attitudes, and practices on urogenital schistosomiasis among women of reproductive age in Kwale County - Kenya

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Abstract

Introduction: *urogenital schistosomiasis is one of the neglected tropical diseases common in developing countries. It is one of the thirteen most common chronic infections that affect poor people in many tropical countries. It is characterized by limited knowledge of the mode of transmission, negative social repercussions, and high morbidity which result in the manifestation of this infection in the female population. This qualitative cross-sectional study assessed knowledge levels, attitudes, and practices about women of reproductive age (WRA), in rural, resource-poor communities in Kwale County, Kenya.* ***Methods:*** *this study was conducted in Kwale County in the Coastal region of Kenya. Sixteen focus group discussions consisting of 10 to 12 participants per group were carried out. Data was audio recorded, transcribed, coded, and analyzed using NVivo 12 Pro software.* ***Results:*** *knowledge of disease aetiology was scanty despite urogenital schistosomiasis being endemic in the area. The majority of participants reported having heard about the disease, with hospitals as important sources of this information. There was a misconception about the infection being a sexually transmitted infection. Most of the participants perceived the infection as treatable and preferred medication from the hospitals.* ***Conclusion:*** *the community´s knowledge of transmission was minimal, although they were aware of the disease. The misconception on transmission confirms the need for the inclusion of health education and awareness creation in the current urogenital schistosomiasis interventions among the study communities.*

Introduction

Schistosomiasis is a major cause of morbidity in endemic areas and is estimated to affect some 250 million people in 78 countries globally [1]. The burden of schistosomiasis according to the WHO disability-adjusted life years contributes to 707 827 cases in women aged 15-49 years in Africa [2]. *Schistosoma haematobium* is the most common schistosome responsible for 67% of infections in sub-Saharan Africa [3]. Cases of schistosomiasis in women and girls are approximated at 67-200 million in endemic regions [4]. Among that, 33% to 75% suffer from female genital schistosomiasis (FGS) [5]. Female genital schistosomiasis (FGS) causes vaginal bleeding, pain during sexual intercourse, and nodules in the vulva and can be linked to other morbidities like HIV and cervical cancer [6]. Urogenital schistosomiasis (UGS) is more prevalent in the upper and lower Coastal regions [7] around Lake Victoria, in Central Kenya and Western Kenya [8]. Approximately 6 million people are infected, and another 15 million are at high risk of infection, especially in endemic areas where prevalence ranges from 5% to 65% in different communities [7,9].

Women of reproductive age (WRA) form a larger population of adults who are vulnerable to UGS due to daily water contact in their domestic and hygienic activities [10]. Further, they continue to be at a greater risk of infection due to; low level of education, lack of knowledge, negative attitudes, and beliefs about infection with schistosomiasis [10,11]. The degree of exposure to the risk of infection is related to age, environmental, sociocultural, economic, and religious factors [11]. Praziquantel treatment has not been recommended during pregnancy, and it is a common practice for women to avoid taking medications apart from those prescribed during their antenatal care [12]. In addition, a common belief is that medicinal drugs harm the development of the baby through varied reactions, due to hormonal imbalances experienced by pregnant women thereby influencing their perceptions [11].

The level of knowledge and practices towards an infection influences responses to preventive and treatment regimens. The success of controlling an infection depends on the communities´ perception and understanding [9,13]. Health-seeking perceptions also affect health-seeking behaviors [10]. It is important to understand the connection between knowledge, attitude, and

practices in controlling the spread of schistosomiasis infection in WRA [10]. The present study aimed at assessing the knowledge on the existence, transmission, signs and symptoms, control, and risk factors for infection, as well as attitudes, and health-seeking behavior towards UGS infection among WRA in rural endemic communities of Kwale County in the coastal region of Kenya.

Methods

Study design: this study adopted a descriptive cross-sectional design using qualitative methods. Four FGDs were conducted in four randomly selected villages of Bilashaka and Mwaluphamba in Matuga sub-county and Mwachinga and Dumbule in Kinango sub-county. Purposive sampling focused on a minimum of 10 and a maximum of 12 participants per FGD. As part of the FGDs, social-demographic information was collected. This included age, name of community, religious affiliations, the highest level of education attained, and occupation. The FGDs were conducted in the Swahili language in four level 2 government health facilities within the four selected villages. Community health workers (CHWs) familiar with the villages assisted with mobilizing participants for the study. This study was part of a bigger study on schistosomiasis, soil-transmitted helminths, and malaria [14]. Participants in the current study were randomly selected from the main study participants.

Setting: the FGDs were conducted between November to December 2018, in closed rooms to ensure the comfort of the participants, reduce interferences from onlookers, ensure confidentiality and privacy of information being discussed, and reduce external noise being captured by the recorder for quality sound. The discussions were steered by a trained moderator and a note taker, guided by a semi-structured FGD questionnaire. All voice data were recorded and later transcribed, coded, and analyzed.

Study area and study population: the study area is described in detail in a study by Jeza *et al*. [14]. Urogenital schistosomiasis (UGS) is endemic in Kwale County, but its burden on school children has recorded a significant decline during the period from 1984 to 2018 [8,15,16]. Prevalence of *S. haematobium* in WRA has also been declining from 2011 [17] from around 30% to about 4% in 2018 [14,18]. The study areas were selected because of the rural setting and endemic infection of *S. haematobium* [18,19]. The target population was made up of WRA (15-49 years) including pregnant and non-pregnant women.

Data measurement: emphasis was placed on the interpretation, description, and recording/writing of what was said. The discussions were transcribed verbatim in Swahili, then translated into English and back-translated to ensure that the two versions carry the same meaning as described by Musuva *et al.* [13]. The consistency of the transcripts was checked against the audio files to ensure the accuracy of data/information. This was then imported into qualitative text analysis software - NVivo 12 Pro version 3 (QSR International Pty Ltd, Information technology, Chadstone, Victoria, AU) - based on themes and sub-themes from the recorded data. Suitable codes identified from the transcripts were used to analyze data coded systematically [20]. In descriptive analysis, percentages were used to express the proportion of variable categories.

Ethics considerations: the study was approved by the Scientific and Ethics Review Unit of Kenya Medical Research Institute (Ref No. KEMRI/SERU/ESACIPAC/3684). The Kenya National Commission for Science, Technology, and Innovation (NACOSTI) certified the study according to the rules and regulations for carrying out field studies in Kenya. Permission to carry out the study in Kwale was granted by the Kwale County Government through the County Ministry of Health. Participation in the study was by informed consent. Informed consent was obtained from parents or legal guardians for those who were below the age of 18. For those who were illiterate,

the consent was read to them by a legal guardian, and their thumbprint was used in place of a signature.

Results

Participants: in total, sixteen FGDs were conducted with 181 WRA participating. The highest number of participants belonged to the 25-29 years age group making up 19%. Almost all the participants were Muslims, with only 6% being non-Muslims. There was almost equal representation of the participants reported to have no education (39.2%) and those attaining the primary level of education (45.3%). Farming was the dominant occupation (42%). There were very few participants in formal employment (Table 1).

Main results: the analysis identified four interlinked themes: knowledge, misconceptions, attitudes, health-seeking behavior, and practices. Table 2 presents a summary of the themes and sub-themes identified from the FGDs.

Knowledge on schistosomiasis: in the four areas, UGS was referred to as *Kisonono* or *Kichocho*. The communities in Matuga sub-county referred to the infection almost exclusively as *Kisonono* while those in the Kinango sub-county used either of the names. However, the most common of the two was *Kichocho*. The majority of the study participants agreed that they had heard about schistosomiasis before, some participants also had been infected at some point, and it was mentioned among the common infections in the area. A 36-year-old farmer with no formal education in Mwachinga said: *"Using river water, that´s how I got the infection due to the presence of snails, they have microorganisms that cause the infection, when you step in the water the microorganisms enter into your body".* The majority of the participants indicated that hospitals were the most important sources of information about schistosomiasis. A 22-year-old with secondary education in Bilashaka said: *"I got information when I was in primary school, from doctors in Kwale, they came to our school and tested us and gave us medicine, that´s how I knew there was a disease called schistosomiasis".* A minority of the participants had heard information about schistosomiasis from schools, media, and CHWs. However, participants were concerned that the information they had on schistosomiasis was inadequate. Others suggested regular awareness creation through the CHWs, as an appropriate channel of passing the information.

In the discussions, participants mention both accurate and inaccurate causes of schistosomiasis, exemplifying a poor understanding of disease transmission. A 32-year-old housewife with secondary education in Bilashaka said: *"Schistosomiasis is caused by a type of snail, that stays in the water, like freshwater, it lays its eggs there and when people, not only bath but also step in the water they get infected."* A 34-year-old participant with primary education from Mwaluphamba said: *"It can be possible to be infected because like here we use borehole water, recently we had a water shortage, and we were using stagnant water collected from the roadside...If you fetch the water and use it either to clean your utensils wash clothes or drink it without boiling it can lead to infection with schistosomiasis".* Bathing or swimming in infected water was the most mentioned correct cause of schistosomiasis. A few of the participants also indicated that they did not know how schistosomiasis was transmitted.

Overall, an average understanding of the symptoms of schistosomiasis was detected with ´burning or itching or painful urination´ and ´bloody urine´ being reported by almost all FGD participants. A few of the participants revealed that abdominal pain and frequent urination were also symptoms of schistosomiasis. A 22-year-old with secondary education in Bilashaka said: *"When you urinate at the end you´ll see drops of blood and frequent urination because the bacteria affects the urinary bladder, you urinate frequently, with little urine flowing out and you cannot control the flow, it´s also painful, the private parts also pain and you get irritation."*. A few participants were also aware of

some common symptoms, a 45-year-old small business owner with no formal education in Dumbule said: *"General body weakness, itching, and urinating blood."*One participant each in two FGDs admitted that they did not know the symptoms of schistosomiasis.

On prevention of schistosomiasis, a number of the participants believed building toilets/latrines was an appropriate intervention. A 16-year-old secondary school student in Dumbule said: *"People were told to build toilets so that we can avoid infection with schistosomiasis because they used to relieve themselves in the bushes, so when they use the toilets and keep them clean they could avoid the infection".*Others considered not bathing/swimming in infected waters as a method of infection prevention. A minority of the participants thought community health education would be an appropriate prevention method. Some participants held the opinion that killing snails would prevent and control infection. Even though a vast majority of the participants agreed that treatment of the disease was the most appropriate control method, an equal number of participants indicated that treatment of drinking water is also an appropriate control method. Others pointed out that the disease can be prevented by the provision of tap water to the community. A 23-year-old teacher in Mwachinga said: *"People should have tap water and tank water because the river water is a source of infection".* They also agreed that the infection is curable and the drugs readily available in the local health facilities either free of charge or if purchased prices were not expensive.

Participants held the opinion that children and women were the most at-risk groups in the population, due to their water contact activities such as bathing, swimming, and playing in the water, and domestic and hygienic activities respectively. A 35-year-old community health volunteer in Bilashaka said: *"Women who are in the reproductive age*(stating 15-49 years) *are at risk because they go to the river and use the dirty water or if the water has snails then they can get infected. Even those younger than the age I said are at risk."*A majority of the participants felt the infection had effects on unborn children during pregnancy. One of the participants identified anemia as one of the manifestations of chronic schistosomiasis suggesting highly varied knowledge on the at-risk populations and the impact of the infection among the participants. A 49-year-old teacher in Mwachinga said: *"Yes, they can be affected but not suffer from schistosomiasis, if the pregnant woman suffers from schistosomiasis for a long time, it can cause anemia which can affect the baby in the womb".*The only current schistosomiasis intervention efforts identified by the participants was the construction of two dispensaries by the Japan International Cooperation Agency (JICA) in the previous years.

Misconceptions: the majority of the participants had a wrong perception of the mode of transmission. Some of the incorrect causes of schistosomiasis espoused were, drinking untreated water, sexual intercourse with an infected partner, stepping on urine, and sharing the toilet with infected people. A 21-year-old housewife in Mwaluphamba said: *"The information I have is that if your husband has this disease if you engage in sexual intercourse you will get the infection, then going to the toilet without shoes you will get the infection and drinking unboiled, dirty water which has the microorganisms will infect you and the reproductive system will be affected and you cannot conceive".*Some participants also misconceived that schistosomiasis was transmitted by sharing undergarments, a 29-year-old hairdresser with primary education in Mwaluphamba said: *"You can get infected by bathing in the river and sharing internal clothes."*The responses on behaviors that led to infection varied from using untreated water to misconceptions of having many sexual partners. A 40-year-old farmer with no formal education in Dumbule said: *"In my opinion, I think that when a woman and the husband are together and he has extramarital affairs then when you have sexual intercourse you can get the infection".*Some participants suggested unrelated interventions. A 28-year-old housewife with primary education in

Mwaluphamba said: *"The toilets have to be cleaned well in order to use them so that we can avoid infection with schistosomiasis, this is because of the splatter of urine, from someone who is infected, by cleaning before use you can avoid infection."*

Attitudes towards schistosomiasis: more than half of the participants confided on having been infected either currently or in the past and/or they knew someone who had been infected. The participants´ attitude was that the disease is of low severity and is never considered a major threat to their health. When probed, on whether they considered the infection curable, a 21-year-old housewife in Mwachinga said: *"it can be treated when you go to the hospital, they test the urine and if you are sick it will be confirmed, then you are given medication".*Furthermore, the minority of them believed the infection could be avoided but were still at risk of being infected. This was reflected by sentiments from a 36-year-old farmer with no formal education in Mwaluphamba who said: *"You cannot avoid it because we use river water, so you have to boil it to wash with it, it´s impossible to boil the water every now and then and moreover we have children who get infected over and again."*Majority of the participants considered the infection normal like any other disease without stigmatization.

Health-seeking behaviours: most participants preferred government health facilities and would seek treatment immediately after they noticed the infection. However, government facilities with the capability for testing the disease were reported to be Kwale County and Kinango referral hospitals. Both hospitals were far from most participants and transport costs to the hospitals were a concern. A 30-year-old small business owner in Mwachinga Said: *"I go to the hospital because it´s closer to where I live and we also have a dispensary here, we can also go to either Kinango or Kwale hospital for treatment."*A few participants mentioned privately owned facilities as a preference, due to close proximities to their residences. A minority of the participants indicated they would self-medicate first and then seek treatment from a health facility if symptoms persisted. Reasons cited for self-medicating included treatment costs, transport costs to the hospital, and stigma associated with infection. A 17-year-old secondary school student from Dumbule said: *"Many people avoid being tested for schistosomiasis because they think it is shameful to get the infection because they say you bring your urine to be tested and some say they look at your private parts".*

The majority of the participants felt that nothing would stop them from seeking treatment on suspecting infection, citing reasons which included, good diagnosis, availability of medicines, and information from the medics. A 34-year-old cleaner with no formal education in Bilashaka said: *"There is a lot, when you go to the hospital you are investigated (collect urine and it´s tested), then you are given medication. When I was treated in Kwale the doctor explained to me what I was suffering from, the treatment is good, especially when you are pregnant everything is catered for and you do not pay."*When probed on the possibility of other treatments, participants in one FGD confirmed that some people rely on natural herbs or traditional healers before seeking a diagnosis in hospitals. A 45-year-old small business owner with no formal education in Dumbule said: *"Some do go to the traditional healers, when they go there they are misled because they are given roots to boil, but the disease will continue, so when they experience difficulty, that´s when they go to the hospital."* Another alternative treatment method also mentioned was adding salt to boiled drinking water. A 30-year-old housewife with primary education in Mwachinga said: *"we go to the chemist to buy drugs if they are available, if not we boil water and add salt to the water before drinking to see if it can help."*

Practices: piped water was accessed by very few participants, with most participants agreeing that boreholes and surface water sources such as streams/rivers, dams, and ponds were major sources of water for domestic and animal use in their communities. Participants associated drinking surface water with the disease. A 24-year-old with

secondary education from Machinga said: *"I usually use tap water, which I think they have treated using Chlorine, but when there is water shortage, I use borehole water which we share with animals and all others, and it´s not clean"*. Participants mentioned practices they thought contributed to the spread of schistosomiasis, and attributed this to community activities like washing, bathing, and urinating near the water sources. A 40-year-old farmer with no formal education in Dumbule also said: *"Maybe you might go to fetch water from the water pans and you feel pressed, so you relieve yourself near the water in the open..."*. Majority of the participants reported having access to toilets/latrines and would use them when at home. However, they also mentioned a possibility of not using them when not at home, and at night due to distance from the house. A minority of participants pointed they did not own toilets/latrines and always used the bushes.

Discussion

Statement of principal findings: this study revealed that most residents of the two sub-counties had some knowledge of UGS, and high levels of awareness of signs and symptoms due to the majority of the participants having either suffered from the infection or seen someone infected before. High awareness levels were also attributable to mass drug administration programs (MDA). However, there was also poor knowledge of causes, prevention, and control.

Strength and weaknesses of the study: the study population was WRA a high-risk group that misses out during MDA, in a known endemic area in Kwale County, Kenya. Data was gathered by means of verbatim recording to access their KAPs towards UGS.

Strength and weaknesses in relation to other studies: published studies on KAPs on UGS in WRA are few. However, we found studies on KAPs in communities, long term effects of the infection in women, and effects of the infection in pregnant women [17,18,21] which were comparable to the current study.

Discussion of important differences in results: in this study, participants had some knowledge of UGS and were aware of the signs and symptoms of the infection. A survey by Rassi *et al.* attributed high awareness of symptoms of UGS to MDA, but this has been coupled with poor knowledge of causes, prevention, and control [22]. These findings have been consistent in other surveys in Kenya, Swaziland, and Ghana [13,23,24] and were also mirrored in this study. WRA living in poor rural schistosomiasis endemic areas are among high-risk groups, due to frequent water contact during routine domestic chores. Participants in this study demonstrated adequate knowledge of schistosomiasis symptoms and prevention and control. However, knowledge of causes and modes of transmission was poor and confounded by several misconceptions. Use of surface water (streams/rivers, dams, and ponds) was prevalent despite participants being aware that it is risky behaviour for schistosomiasis transmission. These knowledge gaps were identified despite a successful MDA among school-age children that has been providing preventive anthelminthic chemotherapy since 2012 [8,16].

The finding that the participants demonstrated adequate knowledge of symptoms and on prevention and control, but not of aetiology is of concern. Knowledge of symptoms could explain the declared positive health-seeking behavior. The commonly cited symptoms were abdominal pain, blood in the urine, and problems passing urine. Though suggestive, these symptoms may not be due to a schistosome infection. High preference for government facilities as sources of medical care when suspecting UGS was encouraging, due to the availability of sensitive diagnoses, drugs, and health talk sessions. Knowledge on disease aetiology was scanty, despite UGS being endemic in the area. The majority of participants reported hearing about the disease, with hospitals as important sources of this information. Additionally, most reported having been infected. Given this finding, health-seeking

behaviour was positive with a preference to conventional medicine, as the preferred method of treatment. This was similar to a study by Odhiambo *et al.* [9] in a different endemic region in Kenya. The same was in line with previous studies in other endemic areas including Côte d´Ivoire [25], Yemen [26], and other endemic regions in Kenya [7] where high level of awareness of the infection was evident, but it recognition as a major health concern was limited [25,26].

In the current study, schistosomiasis was a relatively unimportant disease. Similar findings have been reported in UGS endemic areas [13,25]. The perception that the disease is of low severity and is curable explains these findings. Although a higher proportion of the participants were worried about the effects of the infection, the major worry was loss of blood, per micturition, and the effect on a pregnant woman´s blood level, but not disease severity, which can lead to FGS an after effect of infection in the woman [27]. This is similar to other studies where infections that do not harm or stop the victim from eating are not perceived as serious [7]. Access to safe water was highlighted as a significant problem in the communities. This suggests that ongoing preventive chemotherapy and health education alone will not be sufficient for transmission suppression. Continued utilization of high-risk water sources will maintain the transmission. Improvements in access to safe water and hygiene should be a priority. Moreover, the study participants provided practical suggestions on how health education can be provided. The utilization of community health volunteers in awareness creation of the disease was taunted appropriately.

The prevalent inaccurate beliefs on the mode of transmission where the participants associated the disease with promiscuity, drinking contaminated water, and sharing toilets with infected individuals was not unique and has been reported in other studies in Western Kenya [9,13] and in Côte d´Ivoire and southern Mauritania [25]. These misconceptions exemplify inadequate knowledge of the causes of schistosomiasis and represent an important hurdle to acquiring positive preventive behavior [10]. Symptoms of UGS and STIs are similar, leading to a source of popular misconception that schistosomiasis is sexually transmitted in most endemic areas [10]. This misconception is particularly pervasive in the study area because the local name for UGS (Kisonono) is coincidently the Swahili name for gonorrhea. Misconception usually creates a barrier to seeking treatment due to the social stigma associated with STIs [27]. Health education messages specifically targeting this misconception during Antenatal Care (ANC) activities are necessary. A recent study in pregnant women in DRC Congo found *Neisseria gonorrhoeae* and *Trichomonas vaginalis* significantly associated with concurrent *S. haematobium* infection [28]. Co-existence of UGS and STIs such as *Neisseria gonorrhoeae, Chlamydia trachomatis*, and *Trichomonas vaginalis* was also reported in schistosomiasis endemic areas previously, suggesting that the reported perception in the current study is not groundless [24,29].

Limitations: the study depended on self-reporting of health-seeking behaviors among the participants, and this could have led to over-reporting of positive practices as we relied on what they said. Socially desirable responses of participants could have affected information on attitudes towards the infected because the discussions were held in groups of mixed ages. The findings of this study cannot be generalized to the urban settings in Kwale, as the study was carried out in a rural setting.

Conclusion

Our findings showed relatively good knowledge on signs and symptoms of UGS, but a lack of knowledge on aetiology and transmission of the infection. The study population recognized the need for information on the consequences of UGS. This would improve their health-seeking behaviour, knowledge of the aftereffects of infection, and water contact practices. Continuous awareness of water contact behaviours, basic environmental

education, availability of safe water supply, and adequate sanitation services, could be impactful in reducing infections and prevention practices.

What is known about this topic

- *UGS is endemic in Kwale; however, the current prevalence of schistosomiasis in the study area was 3.8%;*
- *WRA miss out on MDA due to either pregnancy or when lactating.*

What this study adds

- *This study revealed gaps in knowledge on UGS etiology and transmission, which needs to be addressed for effective control and prevention programs;*
- *It also revealed the need for information on the consequences of long-term infection with UGS in WRA;*
- *It further revealed the need to address misconceptions that create a social barrier to seeking treatment due to stigma.*

Competing interests

The authors declare no competing interests.

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Authors' contributions

Elizabeth Lai, Victor Tunje Jeza, Francis Mutuku, Janet Masaku, and Jimmy Hussein Kihara designed the study. Elizabeth Lai, Victor Tunje Jeza, Francis Mutuku, Lydia Kaduka, Charles Mwandawiro, Janet Masaku, Collins Okoyo, Henry Kanyi, Joyce Kamau, Zipporah Ng'ang'a, and Jimmy Hussein Kihara were involved in the acquisition of the data. Elizabeth Lai, Victor Tunje Jeza, Collins Okoyo, Shadrack Yonge, Janet Masaku, and Jimmy Hussein Kihara analyzed and interpreted the results. Elizabeth Lai wrote the initial draft. Elizabeth Lai, Victor Tunje Jeza, Francis Mutuku, Lydia Kaduka, Charles Mwandawiro, Janet Masaku, Collins Okoyo, Henry Kanyi, Joyce Kamau, Zipporah Ng'ang'a, Shadrack Yonge, and Jimmy Hussein Kihara substantively revised the manuscript and approved the final version for submission. All the authors have read and agreed to the final manuscript.

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Tables

Table 1: socio-demographic characteristics of study participants
Table 2: themes and sub-themes identified in focus group discussions

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Table 1: socio-demographic characteristics of study participants		
Variable	**Description**	**Frequency N (%)**
Age group (years)	15-19	26(14)
	20-24	30(17)
	25-29	34(19)
	30-34	32(18)
	35-39	27(15)
	40-44	15(8)
	45-49	17(9)
Education level	No education	71(39.2)
	Primary	82(45.3)
	Secondary and above	28(15.5)
Religious affiliation	Muslim	170(93.9)
	Christians	11(6.1)
Occupation	Farmers	76(42)
	Housewives	46(25.4)
	Unemployed	19(10.5)
	Informal employment & small business	18(9.9)
	Students	17(9.4)
	Formal employment	5(2.8)

Table 2: themes and sub-themes identified in focus group discussions	
Themes	**Sub-themes**
Knowledge about UGS	Local name
	Any episodes of infection, current or previous
	Modes of infection/ transmission
	Signs and symptoms that signify infection
	Suggestions on prevention and control
	Availability of treatment
	Most at risk of infection
	Effects on unborn child during pregnancy
	Any current intervention
	Sources of information on infection
Attitudes towards UGS	Suggestions on the impact of disease
	Risk of infection
	Is infection curable
	Community perceptions of the infected
	Behaviours that lead to infection
	Any worries concerning the infection
Health seeking behaviour	Visit health facility on suspecting infection, self-medicate, or any other alternative treatment
	Point of seeking treatment when suspecting infection
	Reasons for not seeking treatment in active infection or when suspecting infection
	Action taken if infected or on anyone suspected to be infected
Practices towards infection	Sources of water in the community
	Indication that water sources are associated with infection
	Suggestions for solutions to water sources as sources of infection
	Assistance from government or donors as perceived by prerequisite
	Sanitary management indication of the building of toilets/latrines
Misconceptions	On causes of infections
	Disease transmission
	Understanding of the symptoms of infection
	Control of the spread of infection
UGS: urogenital schistosomiasis	