SCHISTOSOMIASIS SITUATION IN UGANDA:
A REVIEW OF KNOWLEDGE, ATTITUDES AND PRACTICES (KAP) ASSOCIATED WITH
SCHISTOSOMIASIS INFECTION AND PREVENTION

Report submitted to

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# TABLE OF CONTENTS

ACKNOWLEDGEMENTS .................................................................................................................. ii
LIST OF ABBREVIATIONS ......................................................................................................... iv

1.0 INTRODUCTION TO SCHISTOSOMIASIS ............................................................................ 1

2.0 SCHISTOSOMIASIS SITUATION IN UGANDA ................................................................. 2
   2.1 Distribution of schistosomiasis in Uganda ................................................................. 2
   2.2 Schistosomiasis control strategies in Uganda .......................................................... 2
   2.3 Challenges associated with schistosomiasis control in Uganda ............................. 3

3.0 KAP ASSOCIATED WITH SCHISTOSOMIASIS INFECTION AND ITS PREVENTION IN UGANDA ...... 4
   3.1 Individual and intrapersonal factors ......................................................................... 4
      3.1.1 Knowledge and beliefs on schistosomiasis infection and its prevention in Uganda .... 4
      3.1.2 Attitudes and perceptions towards schistosomiasis infection and prevention practices ..... 5
      3.1.3 Practices associated with schistosomiasis infection and prevention practices in Uganda .... 6
      3.1.4 Social and behaviour change communication efforts for schistosomiasis prevention in Uganda .............................................................. 7
   3.2 Institutional, policy and community factors ............................................................... 9

4.0 KEY FINDINGS ON KAP RELATED TO SCHISTOSOMIASIS INFECTION AND PREVENTION IN UGANDA ........................................................................................................... 10

5.0 RECOMMENDATIONS FOR THE MASS MEDIA SCHISTOSOMIASIS PREVENTION CAMPAIGN..... 11

6.0 BIBLIOGRAPHY .................................................................................................................. 12
**LIST OF ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD</td>
<td>Community Medicine Distributor</td>
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<tr>
<td>DALYs</td>
<td>Disability-Adjusted Life Years</td>
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<td>DFID</td>
<td>UK Department for International Development</td>
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<td>DHO</td>
<td>District Health Officer</td>
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<td>DHT</td>
<td>District Health Team</td>
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<td>DVC0</td>
<td>District Vector Control Officer</td>
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<td>GBD</td>
<td>Global Burden of Disease</td>
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<td>GOU</td>
<td>Government of Uganda</td>
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<td>ICOSA</td>
<td>Integrated Control of Schistosomiasis in sub-Saharan Africa</td>
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<tr>
<td>KAP</td>
<td>Knowledge, Attitudes and Practices</td>
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<td>MDA</td>
<td>Mass Drug Administration</td>
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<td>MoH</td>
<td>Ministry of Health</td>
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<td>NTD</td>
<td>Neglected Tropical Disease</td>
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<td>RTI</td>
<td>Research Triangle Institute International</td>
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<tr>
<td>SCI</td>
<td>Schistosomiasis Control Initiative</td>
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<td>SCP</td>
<td>Schistosomiasis Control Program</td>
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<tr>
<td>STH</td>
<td>Soil Transmitted Helminth</td>
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<tr>
<td>HSDP</td>
<td>Health Sector Development Plan</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<td>VCD</td>
<td>Vector Control Division</td>
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<td>VCP</td>
<td>Vector Control Program</td>
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<td>WASH</td>
<td>Water, Sanitation and Hygiene</td>
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<td>WSP</td>
<td>Water and Sanitation Program</td>
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<td>WHO</td>
<td>World Health Organization</td>
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1.0 INTRODUCTION TO SCHISTOSOMIASIS

Schistosomiasis (also known as bilharziasis) is a tropical water-borne parasitic disease caused by blood dwelling worms of the genus Schistosoma which are hosted by freshwater snails. There are three major Schistosoma species of particular public health importance in humans, namely S. mansoni and S. japonicum which cause intestinal schistosomiasis and S. haematobium which causes urogenital schistosomiasis. The transmission cycle of schistosomiasis requires contamination of surface water by excreta specific freshwater snails as intermediate hosts and human contact. The eggs hatch into free-swimming larva (miracidia) which penetrate specific freshwater snails where they develop into infective cercariae which penetrate the human skin and are transported via the blood stream to the liver and other major body organs (Gryseels, 2012; Gryseels, Polman, Clerinx, & Kestens, 2006).

Schistosomiasis is one of the neglected tropical diseases (NTDs) that causes significant morbidity among the politically and economically marginal populations (King, 2010). According to the World Health Organization (WHO), more than 218 million people in 52 countries are estimated to be infected and require treatment; 85% of these populations live in low income countries of sub-Saharan Africa. A review of the disease burden estimated that more than 200,000 deaths per year in sub-Saharan African are due to schistosomiasis (WHO, 2016). According to the Global Burden of Disease (GBD) Study, schistosomiasis alone is responsible for an estimated 3.3 million disability-adjusted life years (DALYs) (Murray et al., 2012). The DALYs loss attributable to NTDs (44 million) are more than those due to malaria (36 million) and tuberculosis (33 million) (Hotez et al., 2008; Hotez et al., 2006) (Figure 1).

![Figure 1. The global burden of neglected tropical diseases](image)

The infection is particularly more important in early childhood and peaks in school-age children (Gryseels et al., 2006) among whom it causes subtle morbidity including growth stunting, anaemia, diminished physical fitness, impaired memory and cognition which combine to reduce educational performance, future adult productivity and wage-earning capacity (King & Dangerfield-Cha, 2008; Secor, 2012). The age-related patterns of water contact have been used to explain the high prevalence rates and intensities in children (N. B. Kabatereine, Brooker, Tukahebwa, Kazibwe, & Onapa, 2004; Ximenes, Southgate, Smith, & Guimaraes Neto, 2003).
2.0 SCHISTOSOMIASIS SITUATION IN UGANDA

2.1 Distribution of schistosomiasis in Uganda

According to unpublished data from the Ministry of Health, schistosomiasis is currently reported in 81 out of 116 districts (MOH 2017, unpublished), where 4 million people are estimated to be infected and about 55% of the population are thought to be at risk (Loewenberg, 2014). The infection rates vary widely from 100% in some areas to as little as 2% in others. The disease is widespread along large lakes and rivers including Lake Albert, Victoria, Kyoga and the Albert Nile (Figure 2) (MOH 2017, unpublished).

Figure 2. Map of Uganda showing distribution of schistosomiasis by district

Schistosoma mansoni (widespread all over) and S. haematobium (in Apac, Lira, Kole and Otuke) are the two major species of particular importance in the country (MOH 2017, unpublished). Poor sanitation and hygiene, inadequate access to safe and clean water, unnecessary contact with contaminated water and low uptake of preventive treatment explain the high infection rates in some areas (Freeman et al., 2013; Loewenberg, 2014).

2.2 Schistosomiasis control strategies in Uganda

In 2003, the Ugandan Ministry of Health, with funding from the Gates Foundation, launched a national schistosomiasis control program (SCP) whose goal is morbidity control through annual mass treatment in endemic areas using praziquantel and albendazole to treat schistosomiasis and soil transmitted helminths (STH), respectively. The SCP is managed centrally by the Vector Control Division, Ministry of Health and implemented by districts using school teachers in primary schools and community medicine distributors (CMDs) in the communities (Fleming et al., 2009). At the district level, the vector control officer under the district health office is the focal person for the program. The districts cascade training and supervision duties to the sub-county health inspectorate staff and inspector of schools who in turn, train and supervise the CMDs and the school teachers.

The target of the SCP is to provide regular treatment of at least 75% of school-age children and adults at risk of morbidity. The design and implementation of the mass treatment program is informed by
periodic nationwide parasitological surveys. In line with the World Health Organisation (WHO) guidelines, communities are classified into three categories for annual treatment: category I (high prevalence ≥50%); category II (moderate prevalence 10–<50%) and category III (low prevalence <10%). In moderate to high prevalence districts, treatment is provided to school-age children and adults once a year while in low prevalence districts, only school-age children are treated bi-annually.

Currently, mass treatment is implemented in all the 81 districts. During community-based mass treatment, praziquantel is distributed by trained CMDs (majority of whom are members of the village health teams) while in school-based mass treatment, the drugs are distributed by trained teachers. In addition, prevention measures focusing on raising awareness about schistosomiasis are provided. These activities are supported by the Ministry of Health with external funding from the United States Agency for International Development (USAID) channelled through Research Triangle Institute (RTI) International (ENVISION/NTD control Programme).

The current national health sector development plan (HSDP) underscores schistosomiasis as one of the diseases targeted for prevention and control (reduction in burden). The plan further highlights the key interventions required for schistosomiasis prevention and control. They include community sensitization on safe water use, promotion of improved hygiene and sanitation at household level and public places, mass screening and prevalence assessments as well as mass deworming (M.O.H, 2015).

More recently, there has been a deliberate effort by the national NTD program to develop and roll out a 5-year communication strategy to guide design and implementation of interventions for supporting individuals, families and communities to adopt and sustain health practices for prevention and control of NTDs (M.O.H, 2017). The communication strategy objectives include achieving (i) 90% of the population knowledgeable about NTDs and perceived risks related to individual or communal behaviours, (ii) 80% of the population voluntarily adopting and sustaining practices for prevention and control of NTDs and (iii) 80% of stakeholders at all levels involved and support prevention, control and elimination of NTDs.

2.3 Challenges associated with schistosomiasis control in Uganda

A great deal of optimism for the SCP has been reported in many parts of the country. In some locations, infection rates are very low (Loewenberg, 2014; Savioli, Gabrielli, Montresor, Chitsulo, & Engels, 2009). However, there are a number of challenges associated with the current modes of implementing the schistosomiasis control strategies. These include (i) undermining the already fragile and overstretched health care systems with the introduction of large internationally funded mass treatment programs (Coulibaly, Cavalli, van Dormael, Polman, & Kegels, 2008; Gryseels et al., 2006), (ii) difficulties with relying on volunteers (VHTs and school teachers) to assist with the distribution of drugs in targeted communities (Parker & Allen, 2011), (iii) limitations in knowledge of schistosomiasis prevention and control, including knowledge surrounding the safety of praziquantel due to limited access to information about schistosomiasis (Muhumuza, Olsen, Katahoire, & Nuwaha, 2013; Muhumuza, Olsen, Nuwaha, & Katahoire, 2014; Parker, Allen, & Hastings, 2008) and (iv) the underprivileged socio-economic context in which mass treatment is rolled out profoundly affect the uptake of schistosomiasis preventive measures including preventive treatment (Allen & Parker, 2011; Parker & Allen, 2011). These challenges are discussed in the subsequent sections of this report.
3.0 KAP ASSOCIATED WITH SCHISTOSOMIASIS INFECTION AND ITS PREVENTION IN UGANDA

Health behaviours are thought to be influenced by multiple factors. These multiple levels of influence often include intrapersonal, interpersonal, institutional, community and environmental factors. The most effective approach leading to the adoption of healthy behaviour is a combination of individual, interpersonal, institutional, and community level intervention strategies (Michael & Madon, 2017). This review therefore focuses on the individual characteristics and skills (intrapersonal factors), proximal influences such as family and social support (interpersonal factors), health systems and access to services (institutional factors), society norms, cultural values, economic factors and policies/guidelines (community and environment factors) that are thought to influence health behaviour with respect to schistosomiasis infection and its prevention.

3.1 Individual and intrapersonal factors

The individual and interpersonal factors thought to influence behaviour towards schistosomiasis include knowledge and skills; beliefs, attitudes and perceptions; and practices towards the infection and its prevention and control.

3.1.1 Knowledge and beliefs on schistosomiasis infection and its prevention in Uganda

Inadequate knowledge about schistosomiasis infection and its prevention may result in practices that predispose communities to the infection. There is no doubt that health education facilitates a better understanding of the obvious risks to health, encourages community participation and enhances the knowledge of preventing parasitic infections (Lansdown et al., 2002; Yuan et al., 2005). However, communication about schistosomiasis prevention, including its mode of transmission and the rationale for repeated mass treatment of the targeted population remains a low priority (Parker & Allen, 2011).

Many communities in schistosomiasis endemic areas continue to engage in practices which expose them to the infection because they are not aware of how schistosomiasis is transmitted (M.O.H, 2017). Recent studies conducted among school children and adults at risk of infection in 14 districts in north western, eastern and central regions of Uganda show that knowledge of schistosomiasis transmission and prevention is very low (N. Kabatereine et al., 2014; Muhumuza, Olsen, Nuwaha, et al., 2014; Parker & Allen, 2011; Tuhebwe et al., 2015). Very many people do not know how schistosomiasis is acquired, transmitted and how it can be prevented. In a particular study conducted in 9 districts that surround Lake Victoria, nearly half of the household heads did not know how schistosomiasis is acquired and how it can be prevented. It is surprising that knowledge of schistosomiasis transmission and prevention was also low among the biomedical staff. More than 60% of the health workers did not know the signs and symptoms of the disease, neither did they know that poor methods of faecal disposal and contact with lake water were associated with schistosomiasis transmission. For example, very few biomedical staff could associate the symptoms of diarrhoea and abdominal pain to schistosomiasis (N. Kabatereine et al., 2014), a manifestation of inadequate preparation of the biomedical staff to support behaviour change in schistosomiasis endemic areas (M.O.H, 2017).

A divergence between the local and biomedical understanding of schistosomiasis exists in many parts of the country. Myths and misconceptions surround schistosomiasis as many people believe it is caused by misfortunes or violation of traditional taboos (M.O.H, 2017). In some areas, the local understandings of the symptoms associated with schistosomiasis intersects with other local affiliations and are interpreted as a sign of witchcraft or a local ailment rather than manifestations of
a parasitic infection (Anguzu, Oryema-Lalobo, Oundo, & Nuwaha, 2007; Parker & Allen, 2011). As such, some community members seek help from traditional healers. By way of illustration, during an anthropological study conducted in Nebbi district, one Catholic priest advised a man who was vomiting blood and passing blood in his stool to see a local traditional healer because he had been bewitched (Parker et al., 2008). In Busia district, the causes and transmission of schistosomiasis were used interchangeably, with the infection mainly thought to be caused by drinking dirty or un-boiled water (Anguzu et al., 2007).

In more recent studies, the inadequate understanding of schistosomiasis transmission and control was evident among school children, teachers and household heads. The children mentioned that schistosomiasis can be prevented by cleaning compounds, cutting figure nails and getting immunized. The teachers reported that they did not know why children develop side-effects after taking treatment for schistosomiasis (Muhumuza, Olsen, Nuwaha, et al., 2014). Among the household heads, fishing, poor sanitary conditions and health education were considered less important in as far as schistosomiasis prevention is concerned. Knowledge of schistosomiasis infection and prevention was more likely among older respondents (≥ 25 years), in males and among respondents who had stayed on the islands for more than 2 years (N. Kabatereine et al., 2014).

Exposure to information through mass media can affect individuals’ perceptions and behaviours, including those related to health. Frequent media engagement is important for continuously engaging the target population and stimulating communities and their leaders to adopt healthy prevention and control practices. Although access to all three media (television radio and in print) is generally low in Uganda, more people have access to radio (UBOS, 2011). According to the 2011 Uganda Demographic and Health Survey (UDHS), more than 73% of the urban and rural population listen to radio at least once a week (UBOS, 2011). Thus, the radio can be used as important tool to reach many people with information and education messages on schistosomiasis infection, transmission and prevention.

3.1.2 Attitudes and perceptions towards schistosomiasis infection and prevention practices
Perceptions about an intervention are shaped by factors including how benefits are communicated, how they conform to the prevailing beliefs, and the perceived legitimacy of the intervention (Atun, de Jongh, Secci, Ohiri, & Adeyi, 2010a, 2010b). The health belief model asserts that when people perceive themselves to be at risk of acquiring a disease and the benefits of the intervention are known, and there are no barriers, the intervention is adopted (Glanz, Rimer, & Viswanath, 2008). Communities that live along water bodies are aware of the increased likelihood of acquiring the infection and the majority of the CMDs in these areas are willing to continue performing their roles (Anguzu et al., 2007; N. Kabatereine et al., 2014; Tuhebwe et al., 2015). In addition, the benefits of the control program in terms of improved health and well-being of the affected communities are apparent to the program managers, partners and the beneficiaries (Brooker, Kabatereine, Fleming, & Devlin, 2008; N. B. Kabatereine et al., 2007; Savioli et al., 2009; Zhang et al., 2007).

Unfortunately, communities continue to engage in risky lifestyles that expose them to schistosomiasis infection (Njomo D.W., Amuyunzu-Nyamongo M., Mukoko D.A., Magambo J.K., & S.M, 2012). In some areas, it is not possible for communities to avoid contact with possible sources of infection with schistosomiasis such as the lakes and rivers since the water bodies are directly linked to the livelihoods of people who reside around them (Anguzu et al., 2007; Bruun & Aagaard-Hansen, 2008). In communities surrounding Lake Victoria, the majority of the residents believe that everyone should use a latrine but very few have latrines at their homes (N. Kabatereine et al., 2014). A review of the
existing formative research studies on water and sanitation in eight countries, including Uganda by the Water and Sanitation (SWAP) of the World Bank showed that access to functional latrines, perceptions on cleanliness, durability and affordability of latrines, and social norms around open defaecation are the salient factors influencing rural sanitation behaviours (O’Connell, 2014). The review established that improved latrine ownership in Uganda was only 35% and that open defaecation was often the alternative in homesteads with no access to latrines. The review also demonstrated that owning a latrine did not guarantee its use. Negative perceptions regarding the quality, safety, comfort and hygiene of latrines reinforce open defaecation and hinder decisions to invest in latrines. Unimproved latrines are perceived as unsafe and risky because they are poorly constructed, dilapidated, often overflowing and are often filthy (N. Kabatereine et al., 2014; O’Connell, 2014). Given these negative perceptions, open defecators describe their behaviour as a more pleasant and comfortable experience. In addition, latrines are perceived as very expensive to construct and repair due to lack of availability of free construction materials and labour and the soft soils which collapse easily in some areas (Tyndale-Biscoe, Bond, & Ross., 2013; USAID, 2009).

The barriers to treatment cannot be ignored. The facility based management of schistosomiasis is poor due to the attitude of healthcare staff who seem to be over burdened with other illnesses such as malaria and HIV, which limit their participation in treatment for NTDs. Praziquantel, the only anti-schistosomal drug available in the country, is widely perceived to be a strong drug that causes transient side-effects and occasional fatalities (Hodges et al., 2012; Muhumuza, Olsen, Katahoire, Kiragga, & Nuwaha, 2014; Njomo et al., 2010). The occurrence of side-effects of praziquantel unquestionably generates a lot of apprehension and aversion towards swallowing the drugs and contributes to rejection of treatment (Muhumuza, Olsen, et al., 2013; Parker et al., 2008). The common side-effects attributed to praziquantel include abdominal pain, nausea, vomiting, diarrhoea, dizziness and headache (Castro, Medina, Sotelo, & Jung, 2000; N’Goran, Gnaka, Tanner, & Utzinger, 2003; Njomo et al., 2010). In the recent past, the mass treatment program was perceived as an intervention to weaken the population, cause infertility, miscarriages and death (Muhumuza, Olsen, Nuwaha, et al., 2014; Parker et al., 2008). The administration of treatment to adults and children irrespective of their infective status further leads to unnecessary exposure to side-effects and increased risk of rejecting treatment. It has been suggested that better compliance to preventative measures for schistosomiasis, including taking treatment can be achieved through implementing carefully designed health education programs (Yuan et al., 2005). The knowledge that praziquantel should be taken with food to mitigate its side effects is low among the target populations (Muhumuza, Olsen, Nuwaha, et al., 2014). Thus, there is a great need to inform populations targeted for mass treatment about the disease, its prevention, the rationale for mass treatment, and how to prevent side effects from mass treatment.

3.1.3 Practices associated with schistosomiasis infection and prevention practices in Uganda

Reducing unnecessary contact with contaminated water, cessation of poor sanitation practices such as urinating and defaecation in open water sources and improved compliance to treatment for schistosomiasis are effective strategies for infection prevention and morbidity control. Whereas improved sanitation and restricting contact with contaminated water reduces transmission of the infection (Freeman et al., 2013), increased treatment coverage keeps the worm burden in individuals low and confined, reducing further transmission (WHO, 2006).

The differential risk for children through various occupations such as domestic work, washing, swimming, fishing and recreation exposes them to infection (Muhumuza, Kitimbo, Oryema-Lalobo,
Nuwaha, 2009; Ximenes et al., 2003). In the same vein, gender relations have considerable impact on exposure to infection and access to treatment. The higher infection rates in men than women are attributable to the differences in the social and occupation levels (such as swimming and fishing) taken up by men (Bruun & Aagaard-Hansen, 2008)

According to the 2011 UDHS, 10% of the households, mainly in the rural areas did not have toilet facilities (UBOS, 2011). The 2016 annual health sector performance report indicates that more than 30% of the households on islands in the country do not have toilet facilities, functional hand washing facilities and have no access to safe water (M.O.H, 2016). In some areas, latrine coverage is as low as 11%. Besides, among communities with latrines, they are often either communal or shared between many families; many are poorly constructed, dilapidated and dirty with stool scattered in the surroundings (N. Kabaterine et al., 2014). This implies that people residing in these areas continue to practise unsanitary behaviours such as open defaecation. In some communities, open defaecation is a common behaviour that is rooted in the culture and tradition and learned since childhood. For example, sharing a latrine with parents in-laws is viewed as a violation of traditional taboo (Tyndale-Biscoe et al., 2013).

The lack of good sanitary facilities and safe water supply in some areas means that people continue to spread the infection. Many people know the hazards that accrue from their unsanitary behaviour but have no control over the situation. Most of the land on the islands belong to a few land lords and the majority of the inhabitants are mere tenants with no space, resources and authority to construct a latrine (N. Kabaterine et al., 2014).

As earlier discussed, due to the perceived fear of side-effects of praziquantel, uptake of treatment is low in some areas. The administration of praziquantel should be accompanied by concomitant administration of food to reduce the risk of side effects of the drug (Castro et al., 2000; Mandour et al., 1990). However, in many parts of the country, many households go without meals and children go to school without eating anything because their parents cannot afford to meet the cost of a daily meal for their children while at school (Acham, Kikafunda, Malde, Oldewage-Theron, & Egal, 2012; GCNF, 2006). This implies that in areas where mass treatment is implemented, most children take the treatment on empty stomachs with the risk of widespread side-effects. High coverage of praziquantel treatment and considerable reduction in occurrence of side-effects and prevalence of infection were reported in Sierra Leone (Hodges et al., 2012), Kenya (Njomo et al., 2010) and Uganda (Muhumuza, Olsen, Katahoire, et al., 2014), where a special feeding program for the children to mitigate the side-effects was provided. The provision of food is an incentive for children to participate in school activities including health intervention programs (Acham et al., 2012).

3.1.4 Social and behaviour change communication efforts for schistosomiasis prevention in Uganda

Health education is a major control strategy recommended as a first step towards creating an enabling environment in which other interventions can thrive (WHO, 2013). In Uganda, information on NTDs is provided through radio talk shows and spot messages, jingles and massive distribution of print materials such as posters, banners, brochures, training manuals, advocacy booklets, treatment charts, fact sheets, flip charts, field guides for supervisors and teachers and trainer’s manuals (Agunyo S, personal communication, February 9, 2017). However, it was observed that there are few materials that focus exclusively on schistosomiasis; most of the information about schistosomiasis is integrated with information about other NTDs. RTI International (ENVISION/NTD control Programme) supports
radio and television messaging, printing and distribution of materials shortly before and during mass treatment. In addition, RTI supports training of CMDs, VHTs, teachers, health workers and supervisors at the different levels. For advocacy reasons, district and sub county leaders are also sensitized. As a result, improvements in treatment coverage have been noted over the years (Agunyo S, personal communication, February 9, 2017). For instance, treatment coverage increased from 68.7% in 2011 to 74.0% in 2012 (N. Kabaterine et al., 2014). In 2015 alone, a total of 4,772,703 people received treatment (MOH 2016, unpublished).

The health education provided for schistosomiasis awareness and prevention is inadequate as many studies show (Allen & Parker, 2012; N. Kabaterine et al., 2014; Muhumuza, Olsen, Nuwaha, et al., 2014; Parker & Allen, 2011; Tuhebwe et al., 2015). In a study conducted among household heads from fifteen villages on Koome Island, Mukono district, the majority (75%) indicated that they had not received any health education on schistosomiasis prevention, drug treatment, sanitation and re-infection. Nearly half of the respondents reported that they had not seen a poster on schistosomiasis (Tuhebwe et al., 2015). In a related study conducted in 9 districts along Lake Victoria, only 5% reported to have acquired it from radio/talk shows, jingles and print materials (N. Kabaterine et al., 2014). These findings are consistent with those reported from other parts of the country (Muhumuza, Katahoire, Nuwaha, & Olsen, 2013; Parker & Allen, 2011).

It has been previously reported that some of the print materials on schistosomiasis are confusing (Parker & Allen, 2011). One striking example is that posters relating to schistosomiasis show a person standing in water with a worm next to the individuals heal in a circle. However the foot is not magnified. A typical response by those who see the picture is: “we don’t have worms like that” (Parker & Allen, 2011). It goes without saying that the quality of health education materials should be improved. Revising the current print materials and developing new materials are some of the priority activities listed in the current national communication strategy for NTDs (M.O.H, 2017).

The health education provided is also considered insufficient (Muhumuza, Olsen, Nuwaha, et al., 2014; Parker & Allen, 2011). The materials and messages delivered do not adequately address some of the key issues that affect uptake of treatment. For instance, the reasons as to why some people suffer serious side effects and others do not and why people should take the treatment even when they feel well, especially when the drugs cause undesirable effects are not explained. Information about the rationale for repeated mass treatment and measures for mitigating the side-effects of the drugs is not provided (Muhumuza, Olsen, Nuwaha, et al., 2014; Parker & Allen, 2011). To enhance health education in some areas, the use of local public address systems to mobilize and educate the communities on the islands prior to mass drug administration has been suggested by district staff (Tuhebwe et al., 2015). Reinforcing community messages through health workers and CMDs is also thought to be effective because messages given to large numbers of school children are known to quickly spread beyond the schools to the community, particularly to mothers (Magnussen et al., 2001). Thus, school health education should be strengthened (N. Kabaterine et al., 2014; Magnussen et al., 2001),
3.2 Institutional, policy and community factors

The expenditure on health as a percentage of the total government expenditure was only 6.4% in 2016 (M.O.H, 2016) and this is far below the Abuja target of 15% (WHO, 2011). More than 30% of the approved posts are not filled by health workers in public health facilities. The VHT concept which is promoted through building capacity of VHTs has an estimated coverage of 75% trained VHTs; more than 25% of the villages in the country do not have trained VHTs. VHTs form the lowest structure in the Ugandan health care system and play a pivotal role in mobilizing communities for health interventions, distribution of drugs and health education of the communities (M.O.H, 2016). However, the lack of training and facilitation allowances discourages VHTs from performing their roles and often drop out of the program (N. Kabatereine et al., 2014; Tuhebwe et al., 2015).

The direct and indirect costs associated with mass treatment involving school and community population are substantial, especially at national level where many schools and communities are targeted (Stothard, 2009). Thus, screening and treatment of positive cases is a good strategy of ensuring efficient use of scarce resources, rational use of praziquantel and reducing the risk of development of resistance to the drug (Adriko et al., 2014; Panic, Duthaler, Speich, & Keiser, 2014). Currently, there is not sufficient financial resources to procure enough praziquantel for nationwide mass treatment in low-income countries (Webster, Molyneux, Hotez, & Fenwick, 2014). In Uganda, routine screening for schistosomiasis within the national health care system is not done (N. Kabatereine et al., 2014). Moreover, praziquantel is not included in the essential medicine and health supplies list for Uganda and is therefore not available in the facilities (G.O.U, 2012).

A multi-pronged control strategy through provision of effective anti-schistosomal drugs, investments in prevention measures such as improvements in water, sanitation and hygiene (WASH), health education and appropriate health-seeking behaviour is necessary for achieving sustained control and elimination of many NTDs, including schistosomiasis (Freeman et al., 2013). Each of these strategies is important but not sufficient when applied in isolation. The WHO 2020 goals for NTD control emphasize the need for both treatment and prevention of infection through improvements in WASH (WHO, 2012). Regrettably, socio-economic development in schistosomiasis endemic areas is slow and improvements in social services such as access to safe water and sanitation facilities go hand in hand with a general increase in economic development. Without these developments, morbidity control of schistosomiasis, rather than elimination, will remain the main target in Uganda (N. Kabatereine et al., 2014).
4.0 KEY FINDINGS ON KAP RELATED TO SCHISTOSOMIASIS INFECTION AND PREVENTION IN UGANDA

- Knowledge of schistosomiasis infection, transmission and prevention is low. Myths and misconceptions surround the disease as some people believe that the disease is caused by witchcraft, misfortunes or violation of traditional taboos.

- Poor sanitation practices such as open defecation in some communities due to lack of toilet facilities and cultural beliefs lead to contamination of soils and water sources with schistosomiasis.

- Repeated contact with contaminated water bodies due to lack of knowledge about infection exposes individuals to schistosomiasis and is likely to reverse the achievements of the SCP so far realized in an effort to control the infection.

- Fear of taking treatment because of the perceived and/or experienced side effects of praziquantel and the misconception that the drug causes infertility, miscarriages and death undermine the mass treatment program.

- The current media messaging and health education programs for raising awareness about schistosomiasis infection are insufficient and could be contributing to the low knowledge of schistosomiasis transmission and prevention in the target population.
5.0 RECOMMENDATIONS FOR THE MASS MEDIA SCHISTOSOMIASIS PREVENTION CAMPAIGN

- There is need to increase community awareness on schistosomiasis through designing appropriate health education messages. Such messages should address key issues concerning transmission, prevention, and treatment of the infection. Prevention messages should promote limiting contact with water particularly among children, using latrines for defecation and urination, getting treatment for schistosomiasis and measures to mitigate the side-effects of treatment.

- Mass media campaigns on good sanitation practices and use of safe water should also address the socio-cultural beliefs that hinder adoption of healthy sanitation practices. Promoting awareness of actual latrine costs coupled with messaging that improved latrines are safe, durable and hygienic should be a priority. Linking latrine use with healthy children is a compelling argument for latrine use.

- Messaging on schistosomiasis prevention should target specific sub-populations including school children, teachers and health workers.

- Mass media messages on schistosomiasis prevention should supplement and reinforce community based and interpersonal communication about Schistosomiasis prevention.

- The content of the existing health education materials should be reviewed and updated to eliminate misunderstandings about schistosomiasis transmission.


Glanz, K., Rimer, B. K., & Viswanath, K. (2008). Health Behavoir and Health Education. Theory, Research and Practice (4th ed.).


