

**AN EVALUATION OF THE DETERMINANTS OF EFFECTIVENESS OF
BILHARZIA AWARENESS CAMPAIGNS IN KISUMU WEST
SUBCOUNTY, KENYA**

BY

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ABSTRACT

Schistosomiasis (Bilharzia), is a one of the major tropical diseases affecting many people in developing countries, and is considered the second most important human parasitic disease after malaria in terms of morbidity and mortality. The availability of effective and safe drugs for treatment has led to its use in the global implementation of mass drug administration (MDA), at the recommendation of World Health Organization. Despite many studies advocating the success of MDA programs for control, successes are often short-lived because of a variety of mitigating factors that include knowledge sharing with affected communities and effective communication. A study was conducted in Kisumu West Sub-County, Kenya, with the broad objective of evaluating the effectiveness of pre-study health information communication on Bilharzia control, to the study community. Specifically the study sought to determine post study community perception on bilharzia and to identify and describe factors for acceptance of information provided during the health information campaigns in the study site. This was both a qualitative and quantitative study, adopting the health belief model which operates at the intrapersonal level and attempts to predict health related behaviour. The study population comprised 134 key informant respondents drawn from teachers of primary school teachers, parents' school representatives, head of households, village elders, public health officers and local administration officers. A total of 25 interviews were conducted with 16 primary school teachers, 8 parents' representatives, 87 heads of households, 13 village elders, 1 public health officer, and 9 local administration officers. Teachers, local administration and parents' representatives were purposively sampled and randomly selected from the schools and community. The questionnaire was pre-tested to ensure the validity and reliability of the results. Post study appreciation of MDA and the level of knowledge on bilharzia was low for a community that had just undergone MDA for five years, and who had undergone pre-study training. 56% of respondents found the educators very competent; a small section (4%) of the respondents were unsure of competence of health educators. Only 27.7% of respondents saw MDA as necessary, while 30% of the respondents reported no knowledge of schistosomiasis. Strategies, like radio call-in sessions and involving health officers, church leaders, and village elders in the community offered collateral benefits, such as perceived security for the CHWs during the exercise. However, some of the respondents still believe that religion and traditional doctors could cure bilharzia. Print and electronic media was reported as the main source of information (42.2%). 30% and 21% of the respondents who participated in the schistosomiasis campaign found it to be satisfactory and very satisfactory respectively. The involvement of church leaders and other key community decision makers in the campaign was found to be key. The study concluded that the effectiveness of awareness campaigns on bilharzia in Kisumu West Sub-County is commendable. The study recommends use of age specific materials on future bilharzia awareness campaigns.

CHAPTER ONE:

INTRODUCTION

1.1 Background to the Study

In his 1976 evaluation of the communication field, scholar Everett Rogers predicted that in the years that would follow, communication research would “illuminate the new pathways to development” (Rogers, 2006). Forty years after his assertion was made, research indicates that his foresight was accurate. This is evidenced by numerous communication studies and programmes that have led to major social change breakthroughs (Gumucio-Dagron & Tufte, 2006). This study aimed to further demonstrate the accuracy of Rogers’s words by exploring the possible social change achievements that can be realised when the communication and bio-medical fields are combined. This was done by interacting and researching with Kisumu West Sub-County residents and utilizing their feedback in order to suggest communication considerations that can be factored into the production of a public health communication campaign.

Public communication campaigns use the media, messaging, and an organized set of communication activities to generate specific outcomes in a large number of individuals and in a specified period of time (Rogers & Storey, 1987). Public communication campaigns are an attempt to shape behaviour toward desirable social outcomes (Weiss & Tschirhart, 1994). Those behaviours might include bilharzia treatment, polio vaccination, and breastfeeding. The outcomes of those behaviours, the campaigns’ ultimate goals, may produce healthier individuals, families, and communities or specific policy results that lead to better outcomes for individuals, families, or communities. New public health mass media campaigns are often launched

attempting to change health behaviour and improve health outcomes. These campaigns enter a crowded media environment filled with messages from competing sources. Public health practitioners have to capture not only the attention of the public amid such competition, but also motivate them to change health behaviours that are often entrenched or to initiate habits that may be new or difficult. Bilharzia is a disease caused by worm parasites transmitted by snails, which live in rivers, streams, lakes, dams or ponds. People who come into contact with infested water can get infected when the worm parasites enter the body through the skin. Bilharzia can sometimes be serious and if not diagnosed and treated properly can lead to death. Bilharzia is the second most devastating parasitic disease after malaria, and close to 800 million people globally are at risk of the infection (Steinmann et al., 2006). Bilharzia control and Elimination are tasks of extra ordinary magnitude; estimates suggest that an alarming 201.5 million cases of bilharzia may occur in Africa alone and that over 90% of all bilharzia cases are found in sub-Saharan Africa (Steinmann *et al*, 2006; Utzingeretal, 2009). A study conducted in Brazil shows bilharzia is accepted as a condition that is “restricted to populations of the less affluent classes and is related to poor life conditions and to areas lacking basic services” (Schall, 1995). As a result, it is ignored instead of being acknowledged as a serious medical problem (Kjetland *et al.*, 2012).

Awareness campaigns in the community were used as one of the intervention measures to contain public anxiety related to the Mass Drug Administration (MDA) in Kisumu West Sub-County. The radio, flyers, pupil consent forms, parents meetings and community meeting (*barazas*) were used to disseminate information to the public during the Mass Treatment Campaign (MTC) (Odhiambo, 2014). The messages serve to inform and educate the public with the aim of changing their attitudes and behaviour of the masses to accept the Mass Drug

Administration program. For instance, Kisumu West District is one of the study sites on the SCORE research that has an average prevalence of 19% with a range of 10-90% (Verani *et al.*, 2011).

Health communication campaigns include public service announcements (PSA) delivered through a diverse mix of communication channels, such as road shows, radio, posters, booklets, and brochures. The intervention strategies can be interpersonal or community-based to extend the reach and frequency of the campaign messages and increase the probability that messages will have an effect (Donovan *et al.*, 2005). Over the past few decades, health communication campaigns have been used in an attempt to affect behaviours related to general health topics or specific diseases, such as reproductive health, human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), malaria, child survival, and sex-related behaviours (Wakefield MA *et al.*, 2010). However, very little experience with these interventions has been documented with Mass Drug Administration for the control of bilharzia. Communication interventions intended to influence health behaviour was an important strategy for improving health. It is in this light that the residents of Kisumu West may have had a negative impression about the health information tools that were used, for instance, the community and parents' meetings, the radio, pupil consent forms and flyers. Health communications campaign in Kenya has mainly been on HIV and AIDS, Malaria, TB, polio and typhoid, (Media Coverage of HIV and AIDS & Health Issues in Africa', 2012). Research by James Carey 1989 on cultural approach to communication found that the media is a leading source of health information for many people. The media, especially newspapers have done well in flagging off important science issues and raising social public health awareness. For instance, most media houses often carry

stories on public health issues and have devoted special pages and airtime to HIV and AIDS, malaria, TB, polio and typhoid.

The media also alerts the public of potential health hazards such as outbreaks of communicable diseases. Although media is usually seen as an important tool in improving public health through education and awareness creation, some policy makers, media practitioners and health professionals warn that the media can also play a negative role. Due to the profit-orientation of most media houses, they focus on what is fashionable and sensational even in health topics so as to increase sales. Real public health issues get very little coverage. The media has been accused of reporting catastrophes and epidemics affecting public health rather than preventive reportage on the perspective of the epidemics before they occur. While some stakeholders recognize the role played by the media in educating the public on HIV and AIDS, malaria and typhoid, there is consensus that a lot still needs to be done (Carey, 1989).

Communication in research should be an interactive and multi-directional process that involves a wide range of stakeholders from planning, through to design, implementation, monitoring and evaluation (Dragon, 2001). Hyman and Sheatsley (1947) explored the reasons why some information campaigns fail in the short and long run. The modern communication campaign has been attributed to being influential and these has been attributed to changes in behaviour. It is very important that the campaign planners set modest goals that can be achieved but at the same time provide a challenge. The study will seek to assess the effectiveness of health information campaigns in Kisumu West Sub-County. This study seeks to make recommendations as to how improvements can be made to the formative processes of the bilharzia mass treatment campaign. Health information campaigns such as mass media campaigns, patient information leaflets and

community meetings play an important role in public health. It may contribute to citizen empowerment and could help them make informed decisions in health matters.

However, community health communication can lead to adverse effects on both individual and societal levels, for example by inaccurate or partial information on bilharzia prevention, discriminatory messages on bilharzia patients, inadequate message delivery on bilharzia treatment to relevant target groups (Ajzen & Fishbein, 1980; Bandura, 1986). The findings will go a long way in establishing the public pillar in the 2030 vision (Ministry of Planning, National Development and Vision 2030, 2007) which seeks to have individuals in clean and safe environment. In Kenya's Vision 2030, a model that focuses on where Kenya should be socially and economically should envision schools as key settings for health promotion. One of the strategies to be put in place for enhancing school health is to improve the teachers health practices and promote a healthy school environment (MOPND, 2007). The research evidence shows that the most effective campaign programmes are carried out at the government level, supported by society in general, and promote national policies to decrease poverty and increase social equality (Geissler, 2005). The second most effective interventions are coordinated government policies such as pricing, legislation and other policies. (E.g. the most effective interventions against tobacco use are increasing the price of tobacco, banning tobacco product advertising, banning smoking in public places and legislation prohibiting the sale of tobacco products to young people.)

There is also evidence that simultaneous, multidimensional inputs at national, local and individual level increase the effectiveness of general health promotion campaigns. The health

promotion interventions that are least likely to work are ones that deal with single issues, are 'negative in the message', and delivered at only one level of society. Previous studies have shown that participation in health campaigns can be adversely affected when insufficient knowledge or information leads to inaccurate theories about the health interventions being delivered (Geissler, 2005). Hence, interventions for control of bilharzia and other diseases may benefit from health education and promotion activities that use locally developed information, education, and communication materials. Increasing the community's level of awareness about the disease and heightening their understanding of the benefits of the medicine and participation in the mass drug administration can lead to closure of the knowledge–practice gap, resulting in, behavioural change, and better control of bilharzia.

Despite awareness campaigns conducted in Kisumu West Sub-County Kenya, the impact of communication remains unknown. As such, the current study assessed the effectiveness of community health information campaign during mass drug administration for bilharzia treatment in Kisumu West Sub-County, Kenya. The evidence suggests that the following characteristics are the key elements for success in changing behaviour: Using theoretical models in developing interventions; intervening at multiple levels when appropriate; targeted and tailored (in terms of age, gender, culture), making use of needs assessment or formative research; providing basic, accurate information through clear, unambiguous messages and; using behavioural skills training, including self-efficacy (Hornik, 1993).

1.2. Statement of the Problem

Health communication has been identified as very important in attaining an effective healthcare system that can efficiently and effectively deal with existing health issues such as bilharzia pandemic in the society. Kenya continues to be weighed down by disease burden due to numerous challenges facing the communication systems that inform the masses. Health awareness has developed over the years. Some of these challenges have not been fully explored to establish the root causes. However, this has been concerned with the interaction of people involved in the health care process, dissemination and interpretation of health-related messages by individuals, groups, organizations and the general public. Failure to analyse the root causes of a health problem continue to be ineffectiveness of prevention strategies put in place.

Schistosomiasis or bilharzia is a disease affecting many people in the developing countries and is one of the major parasitic diseases of huge public health importance today. It is the second most important human parasitic diseases after malaria in terms of morbidity and mortality (Odhiambo *et al*, 2014). In many areas within sub Saharan Africa, bilharzia continues to drain the socio-economic development of already impoverished rural communities. There is therefore need for responsive strategies in its control and prevention. In spite of campaigns and the availability of effective and safe drugs for treatment of the community, bilharzia infections are still reported in Kisumu West Sub-County. Bilharzia is one of the neglected tropical diseases (NTDs) around the lake basin region. There has been evidence of inland transmission within the rural settlements of Kisumu County (Odhiambo *et al*, 2014). Bilharzia is one of the NTDs that is associated with chronic and acute morbidity especially among children in whom the highest intensities of bilharzia is found. Bilharzia is a global public health concern and although the disease affects all

populations, children, especially adolescents are particularly vulnerable. Its severity calls for effective response in terms of prevention and control.

It is estimated that 16 million people in 56 out of 158 Sub-Counties are at risk of the disease and over 9.1 million are infected in Kenya, while Kisumu West-Sub County has an average prevalence of 19% in children and 17% in adults, while infections continue to be reported (Kickbusch, 2001; Hornik, 1993). With quick and effective response, the high figures are controllable. Despite these high figures, bilharzia does not obtain as much public coverage as other diseases such as perhaps malaria (Hotez *et al.*, 2009). Raising public coverage of bilharzia amongst the community members will reduce its morbidity. Moreover, the little knowledge that exists about bilharzia appears to be based on unsubstantiated stereotypes as opposed to concrete medical facts. The communication approaches that are used in Kisumu West Sub-County have been ineffective and not in tune with the audience needs since they might have taken the top down approach where the audience was not involved and the messages were just presented to the audience for consumption.

The strategies on bilharzia communication might have been ineffective in the past terms of poor timing, low access of information on bilharzia and inappropriate mechanism for dissemination of bilharzia information in the past in Kisumu West Sub County; attributing to high prevalence of bilharzia in the region (MOH, 2008). The success of bilharzia campaign depends on proper communication approaches, which is solely hinged upon the community knowledge and practices towards bilharzia. Proper communication strategies must be integrated in control and elimination programmes to assure their effectiveness. This research therefore investigated the degree of effectiveness and efficiency of the programs implemented to communicate about bilharzia to the society in Kisumu West Sub-County, Kenya

1.3 Research Questions

- i. How effective were the communication strategies used in the formative process of mass treatment campaigns on bilharzia in Kisumu West Sub-County?
- ii. What is the community perception on the health information on bilharzia in Kisumu West Sub-County?
- iii. What are the factors that determine acceptance of information provided during the health information campaigns in Kisumu West Sub-County?

1.4. Research Objectives

1.4.1. Aim of the study

To evaluate the effectiveness of community health information campaign during mass drug administration for bilharzia treatment in Kisumu West Sub-County.

1.4.2. Specific Objectives

In order to investigate the effectiveness of bilharzia awareness campaigns in Kisumu West Sub-County this study had the following research objectives:

- i. To evaluate the effectiveness of the communication strategies used in the formative process of the mass treatment campaign on bilharzia in Kisumu West Sub-County.
- ii. To determine community perception on health information on bilharzia in Kisumu West Sub-County.
- iii. To identify and describe the factors that determine acceptance of information provided during the health information campaigns in Kisumu West Sub-County

1.5. Significance of the Study

The findings of this study will inform different stakeholders how to use appropriate communication strategies in promote preventive healthy attitudes and to influence individuals and community decision making process and improve the communication process during community bilharzia awareness campaigns to address the health needs of the community and schools in Kisumu West Sub-County. The study will assess the effectiveness of bilharzia awareness campaign in order to give feedback on the best way to conduct the awareness campaigns so that the intended audience are reached and they respond in a positive manner to health messages. Finally, the findings will go a long way in establishing the public pillar in the 2030 vision (MOPND, 2007) which seeks to have individuals in clean and safe environment. This study will propose considerations to be taken in future in the formulation of health campaign messages to reach those infected. The result will be gains in the health, education, economic and social well-being of entire populace and will help policy makers and health practitioners improve the existing systems.

1.6 Theoretical framework

Behavioural and health promotion theories have been adapted from social and behavioural sciences. They help to illustrate relationships between variables. This study adopted the health belief model that operates at the intrapersonal level and attempts to predict health related behaviour. The model is one of the more commonly used theories amongst public health practitioners and many of its major tenets have been incorporated into social marketing projects (Lefebvre, 2001). The HBM has been seen as the best model for bilharzia campaign due to its emphasis of behavior change. The model explains that when people perceive that they are risk of bilharzia and its perceived severity, they are more likely to take preventive measures towards

bilharzia. In this case, the model will be used to educate the public on the causes of bilharzia and how it can be prevented (Champion & Skinner, 2008).

HBM is deemed best for bilharzia campaign because when people perceive that they're at risk of bilharzia, they will take quick measures to prevent it. In this case, health belief model will be used to provide for public education on causes and prevention of bilharzia. The model is one of the oldest m oldest health models yet very effective in executing a long-term behaviour change campaign that would in return help in healthy living. HBM is the is deemed the best in effective health campaign due to its capability to addresses health behavior grounded on numerous beliefs about the Schistosomiasis, such as perceived susceptibility to bilharzia. The model also pays much attention to perceived severity of bilharzia. Third, the model also identifies the perceived benefits of behavior change in order to reduce the risk of bilharzia. Reduction of risk would involve behaviour change. Fourth, the application of the model would highlight any perceived obstacles of behaviour change considered to decrease the risk of bilharzia. Using the health belief program-planning model will contribute to the effectiveness of the health campaign in many ways since it is an education based program.

The model first takes the approach of educating people on bilharzia in newspaper, magazines, radio, and TV. Second, as per the model, the campaign discusses the possible effects of the diseases on a person's quality of life. The model would be the best suited for the behaviour change campaign as in the next step it will help enlighten individuals on the benefits of responsible behaviours and reducing the potential risk of bilharzia. Lastly, the health belief model will encourage people to discuss potential obstacles to good health other than bilharzia prevention. In order to design the health communication campaign, two behavioral constructs of the HBM might be of use. This involves two constructs: self-efficacy and cues to action. Cues to

events refer to events that propel people towards action. For example, a person may see a TV advert featuring a cancer survivor talking about how he or she quit excessive intake of alcohol and smoking (Rimer, Glanz & Lewis, 2008). On the other hand, self-efficacy is concerned with a person's confidence that he or she can effectively execute the indicated actions. The action here is applying the strategies of draining waterlogged areas to decrease the risks of bilharzia. However, if a person believes that he cannot successfully initiate a behavior change then he or she might not succeed (Rimer & Glanz , 2005).

CHAPTER TWO:

LITERATURE REVIEW

2.1. Introduction

This section presents literature review of provision of health information campaigns in the global and national scene. In addition it will look at health promotion, prevention, and community perception of health information on Bilharzia, and the effect of researchers and opinion leaders on Community Health Campaigns.

2.2. Communication Strategies Used In Health Information Campaigns

Public health communication is a process that is intended to intensify the impact of public health initiatives (Bernhardt 2004). Early public health practitioners claimed that efficient communication was “the backbone of health promotion and disease prevention” (Plimpton and Root, 1994:86). During the development of public health communication strategies it is important to differentiate between behaviour change communication (BCC) and social change communication (SCC). Behaviour change communication is “results oriented, science based, project oriented, client centred, cost effective...[and], tries to encourage people to make informed choices” (Deane 2002:1).

...social change communication is based on the belief that people are agents of their own change... [It] emphasizes community empowerment, creates an environment of change, is process oriented, and provides a voice for communities and opportunities for dialogue and is based on a belief that behaviour change is dependent on social change and is a long term process (p 1)

Health promotion campaigns are one aspect of health communication. In his classic article on research in mass-mediated health communication campaigns, Atkin (1980) argues that health communication involves health-related persuasion strategies employed in mass media. However,

today, health communication and coordinated communication efforts that focus on health utilize a wide range of communication channels. Mass media health campaigns have been an important strategy for health promotion and disease prevention since the 1940's. Health communication campaigns use mass media and an organized set of activities to generate specific outcomes or influence a large number of individuals. They are often the leading sources of information about important health issues. For this reason, health communication is often used as a method by those who wish to influence the behaviour of health professionals and community members (Grilli, *et al.*, 2002). Mass media health communication campaigns frequently take the form of a series of television and radio public service announcements (PSAs) with collateral print materials such as posters, booklets, and brochures. Other organizations are often involved as intermediaries to help disseminate campaign messages. Mass media campaigns have been conducted on topics ranging from general health issues to specific diseases, including the following: cardiovascular health; smoking; alcohol and drug abuse; nutrition; safety; family planning; cancer control; immunization; and AIDS (Flay, 1987; Hornik, 1993). Health communication campaigns have been explored and the influence it has on the targeted audience.

Public health communication is a process that is intended to intensify the impact of public health initiatives (Bernhardt, 2004). Early public health practitioners claimed that efficient communication was "the backbone of health promotion and disease prevention" (Plimpton and Root, 1994). During the development of public health communication strategies it is important to differentiate between behaviour change communication (BCC) and social change communication (SCC). Behaviour change communication is "results oriented, science based, project oriented, client-centred, and cost effective and tries to encourage people to make informed choices" (Deane, 2002). Conversely, social change communication is based on the

belief that people are: Agents of their own change and emphasizes community empowerment, creates an environment of change, is process oriented, provides a voice for communities and opportunities for dialogue and is based on a belief that behaviour change is dependent on social change and is a long term process (Deane 2002:1). Given that the Bilharzia campaign aspires to work together with the community to raise individual awareness about Bilharzia and equip them with correct information in the hope that it will promote informed decision making. The infusion of information into a social system via the mass media can play an important role in closing the existing knowledge gaps in the society concerning health information. Controversies have developed concerning the public information communications and the roles they play to serve the interests of the government as compared to public interest.

Studies on various specific aspects of health communication in Africa tend to explain the existing gaps in health communication. A study conducted in Ghana to assess the effective communication strategy indicates that communicating to rural Ghanaians requires integration into a community that includes presenting material in a manner that rural persons are familiar with and allowing for discussion and input from community members (Aries *et al.*, 2007). Cultural familiarity often affects the way that medical information is effectively communicated in Ghana. For instance, when comparing the usage of traditional medicine versus Western biomedical medicine, Ghanaians typically tend to use traditional medicine because it is more fully integrated in Ghanaian lifestyles and is more familiar than biomedical medicine (Aries *et al.*, 2007). This preliminary understanding of the weight given to known information sources is the first aspect of Ghanaian culture that needs to be understood when communicating biomedical health information to the population. As a result, this norm of sticking with traditional medicine usage is expanded to being applicable to behavioural change in Ghana. Among adults and

adolescents, peer education increases the chances that individuals will change their behaviour by 1.74 times the normal amount simply due to the similarities that can exist between the educator and the target. Essentially, the higher the demographic similarities between the educator and the target group, the larger the increase in behavioural change towards the desired result (Wolf & Bond, 2002).

Atkin (1981) also argues that research into the use of mass media to improve public knowledge about health was one-dimensional because it focused on what was the most effective media channel – radio, newspapers or television – to create persuasive communications. Few studies tend to examine how various publics acquire health knowledge or how they were motivated to attend to public health campaigns. Most studies on communication approaches used in health communication outline socio demographic factors such as education and age affect individuals' use of and access to communication channels as strategies to health communication. This study seek to address the communication strategies used in the formative process during the mass drug administration and more specifically, the issues surrounding the development, implementation, and effects of mass media health communication campaigns.

In recent years, the strategy for control of bilharzia has placed emphasis on the role of health education, public information and communication aimed at bringing specific changes in behaviour aiming at disease prevention, but also participation of the community in the health programs. Although documentation has been done on mass drug administration and its contribution towards bilharzia reduction, there is hardly information on health promotion, community perception of health Information and the effects of opinion leaders on Community Health Campaigns in Kisumu West Sub-County (Odhiambo *et al*, 2014). As such the current study sought to determine factors influencing effectiveness of community health information

campaign during mass drug administration for bilharzia treatment in Kisumu West Sub-County, Kenya.

2.3 Community Perceptions of Health Information

Rogers and Storey (1987) trace the history of communication campaigns, and offer a set of generalizations based on campaign research and evaluation. These campaigns strive to generate specific outcomes or effects in a relatively large number of individuals usually within a specified period of time and through an organized set of communication activities. The success of social change interventions is determined by altering behaviour at an individual level first (Parker, 2004). Communication experts unanimously agree that “behaviour communication is notoriously difficult to initiate and sustain” .This difficulty is encountered in almost all health interventions (Panter-Brick *et al.*, 2006), whether it is attempts to persuade the public to quit smoking, adopt an active lifestyle, or practice safer sex, it remains a challenge (Barnsteiner & Prevost, 2002). However, it has been established that there needs to be a “compelling element inherent in every campaign in order to mobilize communities wholesale, rather than effecting behaviour change in piece-meal fashion with the hope of trickle-down or trickle-up effects.

The need for compelling change in health communication means that every health intervention needs to contain a key element that is powerful enough to motivate its intended audience in its entirety to adopt the behaviour change it promotes. It needs to refrain from selecting a portion of the audience to address, with the hope that if their behaviour changes, the other people in the population will follow suit. Based on this logic, the project’s communication strategy needs to be tailored to have an impact on the community it treats as opposed to a select few. In order to demonstrate the importance of social and physical factors on the adoption of behaviour changes (Noar, 2006), made reference to a communication intervention in The Gambia, the smallest

country on mainland Africa. It was intended to persuade locals to make use of mosquito nets in order to minimize the risk of contracting Malaria. The researchers discovered that in a rural setting such as The Gambia, a mosquito net held a lot of cultural significance. As a result, encouraging what seemed like responsible behaviour would mean forcing people to drastically modify their way of life. For instance, in the area, the practice of polygamy is accepted and a net is used to signify different matters such as a wife's ranking in a household.

Wakefield (2010) points out that it was used to denote the power dynamics within the community because the men of the households were given first priority when it came to the allocation of the nets. Through this intervention, the researchers realized that by promoting mosquito net use, to a large degree they were failing to understand all these external elements and were infringing on the community's way of life. They came to the conclusion that for health initiatives to attain success they: "should build on existing practices, skills and priorities, recognize the constraints on human behaviour... and engage local communities and nestle within social and ecological landscapes" (Panter-Brick *et al.*, 2006).

2.4 Influence of Opinion Leaders on Community Health Campaigns

Shiavo (2007) defined health communication as: "a multifaceted and multidisciplinary approach to reach different audiences and share health-related information with the goal of influencing, engaging, and supporting individuals, communities, health professionals, special groups, policymakers and the public to champion, introduce, adopt, or sustain a behaviour, practice, or policy that will ultimately improve health outcomes, and opinion leaders remain an overlooked yet necessary resource". Until only very recently, public communication initiatives have ignored the special individuals across communities and social groups that can serve as vital go-betweens

and information brokers, passing on messages about health directly to their otherwise inattentive peers, co-workers, and friends.

Since as early as the 1940s, scholars have understood the general importance of opinion leaders in shaping public preferences, informing fellow citizens, and altering behaviour. Tracing the diffusion of news and advertising messages within local communities, identified certain individuals who paid close attention to an issue, frequently discussed the issue, and considered themselves more persuasive in convincing others to adopt an opinion or course of action. The two step-flow of information, opinion leaders did not necessarily hold formal positions of power or prestige in communities but rather served as the connective communication tissue that alerted their peers to what mattered among political events, social issues, and consumer choices (Lazarsfeld *et al.*, 1948). Cullum (2000) points out that opinion leaders say the health providing institutions should have more influence on increasing healthcare quality, promoting wellness of individuals and view nurses as the most trusted sources of health information.

Opinion leaders have an intense involvement with specific issues or topics, characterized by greater levels of media attention and issue-specific knowledge. Originally in surveys, opinion leaders were identified by just two self-designating items. However, this scale was later extended to a more robust 7-item scale with each item including five response categories (Childers, 1986). Not only are audiences fragmented and difficult to reach but they are also increasingly distrustful of both news and advertising, preferring instead recommendations from friends, family, co-workers, and peers (Keller & Berry, 2003). Few studies document the manner in which opinion leaders are identified, how they are trained to promote health, the methods they used to catalyse wider community engagement on mass drug administration. The study will review gaps stated above and outline relevant categories of self-designated opinion-leaders, detailing their role in

recruitment, message development and informing the community about the Mass Drug Administration.

2.5 Theoretical framework

Behavioural and health promotion theories have been adapted from social and behavioural sciences. They help to illustrate relationships between variables. This study adopted the health belief model that operates at the intrapersonal level and attempts to predict health related behaviour. The model is one of the more commonly used theories amongst public health practitioners and many of its major tenets have been incorporated into social marketing projects (Lefebvre, 2001). The model was originally designed to explain why individuals did not participate in programs to prevent or detect diseases. The health belief model proposes that an individual will take action to prevent, screen for, or control a disease or condition based on the following factors (Kotler, 2002; Rosenstock, 1988):

- i. Perceived susceptibility: The subject's perception of the likelihood of experiencing or developing a condition that will adversely affect one's health.
- ii. Perceived severity: the belief of the individual about the seriousness of the consequences of developing a specific health problem.
- iii. Perceived barriers: the extent to which the treatment or preventive measure may be seen as expensive, inconvenient, unpleasant, painful or upsetting. Age and level of education is a factor that shapes perceived barriers.
- iv. Cues to action: bodily or environmental events that trigger action. Cues to action may be internal cues like a bodily symptom, or external cues like mass media campaign.

According to the concepts of the model, parents and various stakeholders are likely to accept health information if it is provided by a research expert or a teacher who will most likely make them believe that they are susceptible to illnesses that are brought about by Bilharzia. In case the information is from the researchers to the parent's through the children, parents may decide whether the information is correct to influence their decisions. The intensity of health belief model depends on how much people perceive that the media they choose is meeting their goals.

It can be noted that more than one kind of goal can be activated and satisfied by the same medium (Robertson, Zielinski & Ward, 1984). Parents and stakeholders are likely to accept the health information messages on bilharzia if there are frequent reminders of cues to action. All the components of the Health Belief Model predict the likelihood of a defined action or behaviour, in this context, the likelihood that the parents and stakeholders will accept the health information messages on bilharzias (DeFleur *et al.* , 1989). However, the Health Belief Model left out an important and integral component, which acts as a mediator between the perceived factors and behaviour. The model was developed in response to a failed free tuberculosis (TB) health screening program. Since then the program has been adapted to deal with a range of health behaviours; short term and long term. This includes also the sexual risk behaviour and transmission of sexual diseases like HIV and AIDS.

Individuals are the primary targets for health education that is acted out as health-seeking behaviour. This theory explores factors that affect behaviour, knowledge, attitude, beliefs, motivation, self-concept just to mention a few. The current study explored participants' knowledge, source of information in relation to this model (Figure 2.1). Health-belief model is used to formulate action plans that meet a person's capability in relation to behaviour change (Edelman and Mandle, 2006).

2.10.1 Conceptualization of Health Belief Model

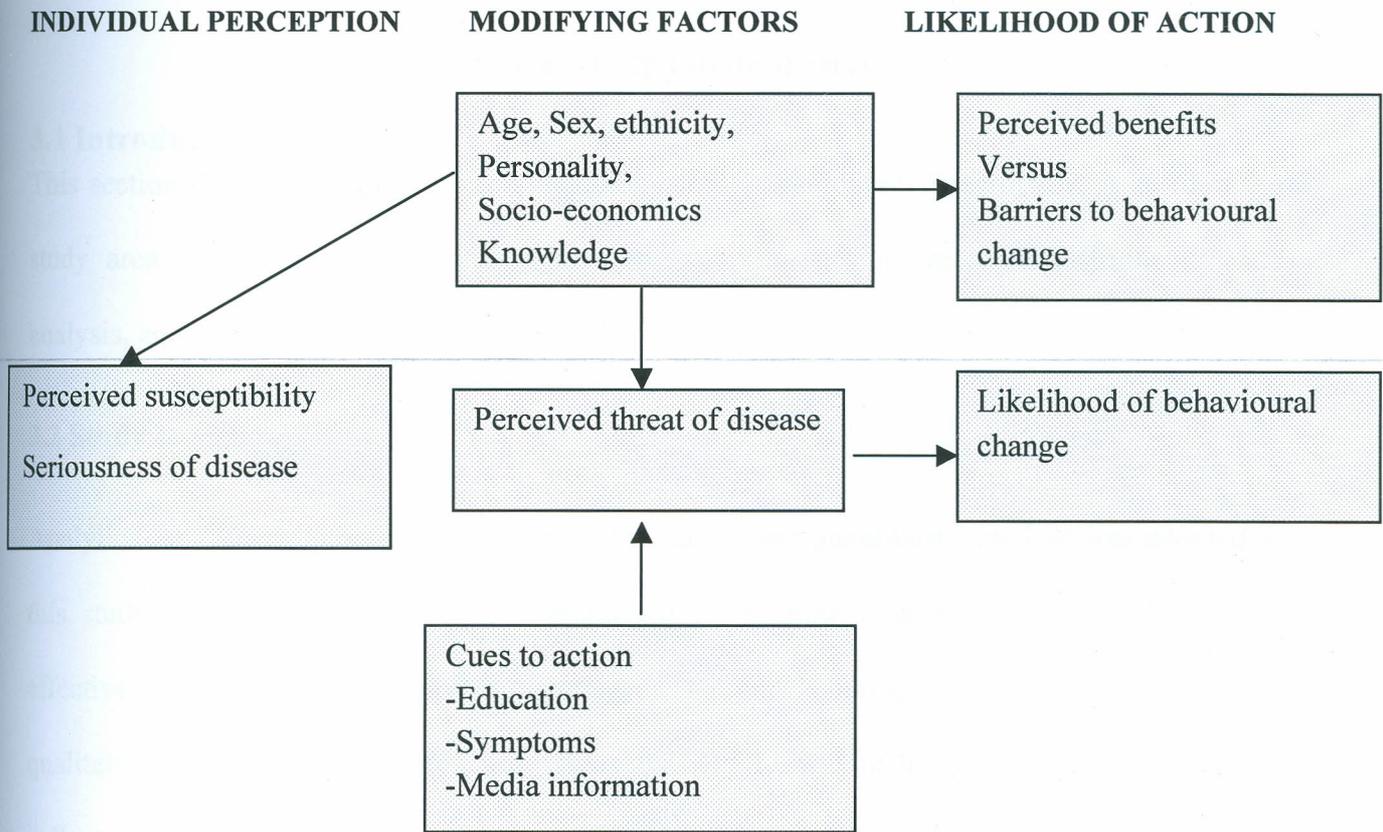


Figure 2. 2 Health Belief Model (Rosenstock, 1974)

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This section discusses the research methodology that was adopted. Specifically, it outlines the study area, research design, target population, sampling design, research instruments, data analysis, and ethical considerations.

3.2 Study Design

Analytical study research design using both qualitative and quantitative method was adopted in this study. The design was generally employed to examine over one specific objective on effectiveness of the communication strategy. The data obtained was explored mainly in qualitative manner. Focus group discussions and Key Informant Interview (KII) were used to collect mainly the respondents' opinions on how information on bilharzia changed their perception. Semi-structured interviews helped to get quantitative data like health interventions and barriers to dissemination of bilharzia.

3.3 Study Area

This study was conducted in Kisumu West Sub-County (Appendix I) and is located on the North Eastern shores of Lake Victoria and covers an area of 369km². Kisumu West Sub-County was created out of Kisumu District in the year 2012. The study area was randomly selected among three other sites that were involved in mass drug administration within Kisumu County. The Sub-County has two divisions, Maseno and Kombewa and is characterized by undulating topography and the general drainage is westwards. The Sub-County is good for the growing of maize, beans, groundnuts, and livestock keeping and fishing. The population of the two divisions, as per the

2009 population census is 68,814 males and 76,093 females. Kombewa division has a population density of 404 persons per square kilometre. Government health facilities located in the two divisions are one (1) hospital and a number of dispensaries. There are 139 public primary schools and 3 private primary schools respectively. The region is also served by a dense network of rural access roads. Kisumu West District is one of the Districts that received MDA for bilharzia control by the National School De worming Program (NSDP) and one of the study sites on the Schistosomiasis Consortium for Operational Research and Elimination (SCORE). Kisumu West has an average prevalence of 19% with a range of 10-90% (Verani *et al.*, 2011) which stands high compared to other moderate prevalence areas around the lake shore. Forty one schools in this district were enrolled in the SCORE study following results of an eligibility survey. At the time of the current study, the schools had undergone two rounds of MDA.

3.4 Study Population

The study population comprised of a total of 160 participants drawn from 16 primary school teachers, 8 parents' representatives, 87 heads of households, 13 village elders, 1 public health officer, and 9 local administration officers in Kisumu West Sub-County. There are 139 public and 3 private (registered) primary schools in this Sub-County with a total population of 1,126 teachers (671 males and 455 females) with a population of 131,246. There are 139 public primary schools and 3 private primary schools, with a total population of 1,126 teachers (671 males and 455 females) respectively. Pupil enrolment stands at 43,747 (boys-21,485, girls-22,262). The schools are divided into two divisions according to the ministry of education boundaries notably Maseno and Kombewa. The schools in the current study fall in Kombewa

division which lies around the lake region. Kombewa Division lies around the lake region. Bilharzia prevalence is highest in people living within proximity of up to four kilometres from the water source hence the selection of schools in Kombewa Division that participated in the Mass Treatment Campaign in Kisumu West Sub-County (MoH, 2015).

3.5 Sampling procedure and sample size

Data was collected using Key Informant Interviews (KIIs) with eight parents' representatives, sixteen teachers and eight community leaders', and one public health officer, all whom were purposively sampled. A purposive sample is a non-probability sample that is selected based on characteristics of a population and the objective of the study. Purposive sampling is also known as judgmental, selective, or subjective sampling (Neuman, 2006). This type of sampling can be very useful in situations when you need to reach a targeted sample quickly, and where sampling for proportionality is not the main concern. There are seven types of purposive samples, each appropriate to a different research objective. Purposeful sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources. This involved identifying and selecting individuals or groups of individuals that are especially knowledgeable about bilharzia. In addition to knowledge and experience, the availability and willingness of the school teachers, parents' representatives and community leaders to participate, and the ability to communicate experiences and opinions in an articulate, expressive, and reflective manner were also considered.

The study deployed four focus group discussions with the community to get the community's perception on health information on bilharzia. A total of 25 semi-structured interviews were conducted on key informants who were purposively sampled from sixteen school teachers, eight parents' representatives and eight community leaders who were the key informants for the study.

The study included administrative officers of Kisumu West Sub-County (chiefs, village elders), residents of Kisumu West Sub-County and health teachers from the randomly selected primary schools that participated in the Mass Treatment Campaign in Kisumu West Sub-County. The researcher used simple random sampling to select the schools that participated in the study, the names of 139 public primary schools in Kisumu West sub-county were written on pieces of papers, folded and shuffled. Thereafter, 8 schools were drawn from the shuffle without replacement. Two health teachers were randomly picked from each of the eight schools without replacement; totalling to 16 teachers. In the same way, one PTA was randomly picked from each of the eight schools with replacement; totalling to 8 slots for PTA representatives for KII.

3.6 Reliability

Reliability in a study ensures that its results are dependable and consistent. It indicates that the same thing will occur under identical or similar conditions. "Measurement reliability means that the numerical results produced by an indicator do not vary because of characteristics of the measurement process or measuring instrument itself" Neuman (2006: 189). However, sometimes it is important to show internal consistency by measuring the same thing using multiple indicators. This equivalence reliability applies when a construct is measured with multiple specific methods. If the different indicators point to the same construct, then a reliable measure will give the same results with multiple indicators. Validity and reliability increased the internal validity of a research study and ensured that no one derived other possible interpretations from the results (Rubin *et al.* 2005). The test-retest method of reliability check was used to ascertain the functionality and clarity of the questionnaire. After the pre-test, amendments were made, and the reliability and validity index calculated.

3.7 Validity

With any research, measurements and analysis need to be both valid and reliable. According to Rubin *et al.* (2005), measurement validity refers to measuring what is intended to be measured, and suggests truthfulness. If the index, text, or scale were used to measure a particular construct, then the measure should include questions about all aspects of the construct. Referred to as content validity, these measures should sample or represent all ideas or areas in the conceptual space of the definition represented in the measure (Neuman, 2006). The measure should also relate to similar measures or predict future behaviour Rubin *et al.* (2005). The tools of this study were therefore pre-tested to check their efficacy. The questionnaires were administered on a pilot basis to the respondents. The pilot phase involved 30 questionnaires to that group of respondents. The pilot was conducted in Nanga area, Kisumu Central a month prior to the actual study, because of the climatic similarities of Nanga area to the study area (Kisumu West). Their feedback was merged to adjust the questionnaire and make it more accurate to prevent confusion. The results were comparable to those of the actual data that were collected for the main research stage. All the objectives of this study were covered by the tools of the research, and the content validated by the same.

3.8. Data Collection Techniques

3.8.1 Questionnaire

Structured questionnaire (appendix I, II, III, IV) was developed to gather quantitative data while semi-structured questionnaires (appendix VI) were used for focus group discussions. Research assistants were trained for this activity and a pre-test of the structured questionnaire conducted on a total of 30 residents from four different locations and necessary corrections were done respectively. The questionnaire contained information on demographic data, education level,

other sources of income, and sources of information for bilharzia treatment. It also had information on where they heard the health messages about bilharzia treatment and from who they preferred to hear the health messages, their suggestion of the appropriate time to disseminate the health messages. Lastly it had information on why some community members withdrew their children from the treatment of bilharzia among other questions.

3.8.2 Focus Group Discussion

The focus group discussions were used to acquire additional, more detailed information on health interventions. The idea was to help draw in-depth information on their sources of information and accessibility of health information. The interviews also sought insight into the health messages that appealed to the residents and helped identify what the residents thought was lacking in the health messages. Twelve focus group discussions were conducted, and a random selection of designated adults from the community was done comprising eight (8) to twelve (12) persons per group, both the questionnaires and the focus group discussions were conducted in English so there was no need for translation.

3.9 Data Analysis and Presentation

Quantitative data collected through the interviews were first verified to ensure completeness. In order to determine proportions on knowledge levels; source of information and factors determining health-seeking behaviour in the study population, logistic regression was used. Focus group discussion data was collected through a voice recorder and later transcribed as a word document. Themes were categorized and analysed utilizing the principle of grounded theory without the aim of developing a theory (Braun, 2006; Callaghan-Koru *et al.*, 2012). The findings from the group discussion were then interpreted with a view to provide possible and plausible explanations by choosing examples of extracts from the transcript to illustrate elements

of the themes. Soft copy of all the interviews and the survey were protected using a password while the hard copies were stored in data storage room only accessible to the investigator.

3.10 Ethical issues

Permission for the study was obtained from the local administration following briefing on the study. The study team was then introduced to the village elders who assisted in mobilizing adult household members from the various sub-units ensuring representation of at least one participant in each FGD group. The participants were screened for eligibility before the discussion commenced to avoid selection bias. The criteria was that one must have lived in the study area for more than one year, be an adult and able to articulate their speech bearing in mind the representation from all the subunits. The FGDs lasted one and half hours and the KII took about one hour. Socio-demographic profile questionnaire was administered to all the participants. Permission to conduct the study was sought from the study participants before participation and the participants were informed that it was voluntary. In carrying out the study, informed consent was sought (attached to every questionnaire).

CHAPTER FOUR:

DATA PRESENTATION ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter analyses and discusses the data collected from the respondents in relation to research objectives and questions. It contains the response rate, qualitative analysis and quantitative analysis. The qualitative data analysed is presented in tables, percentages and charts in this chapter. The study sought to evaluate the effectiveness of community health information campaign during mass drug administration for bilharzia treatment. From the in-depth discussions it was reported that not all residents attended chief's baraza and parents' meeting in schools; a fact that could affect the spread of information in the community. The respondents comprised of primary school teachers, adult residents, village elders, public health officers and local administration officers in Kisumu West Sub-County.

4.2 Socio demographic characteristics of the respondents

This section contains analysis of data obtained through closed ended questions in the questionnaires and in the focus groups. It also covers the background information of the respondents.

4.2.1 Response Rate

Table 4.1 Response Rate (Source: Field Survey, 2016)

Response Category	Frequency	Percentage
Actual Response	134	83.75
Non-response	16	10
Invalid response	10	6.25
Total	160	100

In conducting the survey, a total of 160 questionnaires were issued. Out of 160 questionnaires, 16 of them were never returned. From the returned 144 questionnaire forms, 10 of them contained invalid data which could not be used to arrive at conclusive findings. In terms of composition, the respondents comprised of 16 primary school teachers, 8 parents' representatives, 87 heads of households, 13 village elders, 1 public health officer, and 9 local administration officers.

4.2.2: Age of the Respondents

As demonstrated in Table 4.2, the respondents that were between the ages of 26 and 35 years were the majority (54.7%). Those aged 25 years followed with 27.7 %, while those above 35 years were the least at 17.6 percent.

Table 4.2 Respondents' age groups

Age group	Frequency	Percentage
25 years and below	37	27.7
26 -35 years	74	54.7
Above 35 years	23	17.6
Total	134	100.0

Source: Field Survey (2016)

This age distribution of the respondents conforms to the thumb rule of normal distribution curve, where most (54.7% for this case) of the respondents should fall in the mid-section of the curve. The finding concurs with the finding of a study by Doucette and Andersen (2005) who found that success of a communication strategy is dependent on age of the recipient. According to the finding of (Vintila *et.al.*, 2011), a good communication strategy must consider age composition of the community being targeted with health information. According to perceived-barriers

construct of the Health Belief Model, age is a factor for success of a communication strategy. Adults play a key role in shaping health practices and attitude of the community towards health information (Kulakçı & Emiroğlu, 2011). Consequently, this will help in improving how the community consumes health messages. Therefore, using age specific campaign approaches when constructing a communication strategy for use will further help in understanding specific needs of different groups as far as health promotion is concerned. Age specific form of communication strategy will also help the implementers in invoking interactive discussions with different groups. This will help in understanding specific needs of each group and consequently a successful communication of health information.

The aging population plays a key role in success of a communication strategy. The study found that a considerable proportion (23.8%) of the respondents was aged above 35 years. Comparatively, (64.3%) of the elderly population had little or no awareness on bilharzia. A study by Shen *et al.* (2006) found that most of preventive health communication strategies targeting the elderly in China failed to hit the commendable threshold because old age increased attention for medical treatment instead of preventive behaviours that are modifiable through health campaigns (Shen *et al.*, 2006). In studies conducted in different parts of the world, there is a need for serious educational programs related to old age (Liu & Wong, 1997; Kahn *et al.*, 2004; Doucette & Andersen, 2005; Koh, 2011; Vintila *et al.*, 2011). Health care provider's personal belief that elderly people have poor understanding and learning ability has been an important obstacle in providing elderly people with an effective awareness. In Health Belief Model, perceived threat construct explains that age dictates whether an individual will respond to health information they have received. At old age, an individual is contented with their health condition and sees no need for responding to preventive health information (Smith, 2006). The implication of this is reduced

intake of key health information as well as reduced modification of the community perception towards preventive health. Future consideration of the elderly population when formulating a communication strategy to be used in health campaign will help in ensuring successful behaviour modification and positive community perception of health information disseminated.

4.2.3 Respondents' Levels of Education

The study realised that 34.3% of the total respondents had secondary level of education while 39.5% had college education, 15.6% had university education and others were represented by 10.4% as shown in Table 3.

Table 4.3 Respondents' Levels of Education

Education Level	Frequency	Percentage
Secondary	46	34.3
College	53	39.5
University	21	15.6
Others	14	10.4
Total	134	100

Source: Field Survey (2016)

From the findings, majority of the respondents were adequately educated according to the country's levels of literacy. A person who has attained at least secondary education is able to read and write, and has critical problem solving knowledge as well as positive thinking (Kickbusch, 2001). Positive thinking is the first step towards positive perception modification in health promotion. The finding of a study by Baker *et al.* (2011) strongly links education to determinants of health such as health behaviours, beliefs and preventative service use. The study

found that highly educated individuals are healthier, readily consume health messages during awareness and live longer (Baker *et al.*, 2011). Although previous studies report that education plays a role in modification of knowledge, attitude and perception towards health information, the findings show considerably low awareness level compared to high level of education by the respondents. Of the respondents, 22 percent still showed no awareness on bilharzia compared to 65 percent of respondents who reported to have at least secondary level of education. According to the Health Belief Model, level of education shapes one's perception of the consequences of a threat and motivates him to act to health information (cue-to-action construct). He or she will act after learning of the consequences of a health condition (Smith, 2006). However, a large percentage of the respondents still showed lack of full awareness on bilharzia in spite of their high level of education.

Low level of awareness compared to high level of respondents' education is a factor for future consideration while coming up with a communication strategy. Planners should consider strategies that would help in strengthening health education system within Kisumu West Sub-County such as face-to-face. Face-to-face communication is an effective strategy in this case. Using face-to-face communication with the community, educator is able to determine that the audience has incorrect beliefs. In their study to compare different communication strategies during awareness on smoking among the elderly, (Baker et al 2011) found that one-on-one interaction with the clients is the most effective communication approach because the clients were able to share their beliefs about smoking and how they were. The aim of face-to-face strategy should be determining the reasons for such fallacy and help the community to overcome misconceptions through provision of correct information. In a study by Baker *et al.*, face-to face strategy based on the constructs of Health Belief Model such as perceived threat to the elderly

was evaluated as an effective way to a reduction of smoking compared with the elderly in the control group (Baker *et al.*, 2011). Face-to-face communication strategy would help in addressing illiteracy related barriers to health promotion. In their study, Liu & Wong (1997) conclude that integration of culture in health promotion establishes an appropriate and holistic communication strategy that goes beyond individual's illiteracy level. There is a need for more longitudinal evidence on education and awareness across a greater range of counties such that arising differences can be modelled and tested with reference to different communication strategies for different groups. Such would enable assessment of the importance of specific communication strategies in terms of their effects on health.

By focusing on how our target audience or audiences typically find, use and communicate, it is possible to prepare and present health information that is better suited to their preferences. Using children in health education has been proven to be effective. According to the findings of the National Disaster Education Coalition, (2004), in terms of health benefit, using school going population is not only a personal resource which leads to personal benefits; but helps in achieving higher levels of health literacy among a greater proportion of the population. What is learned by this group at school can be taken home and communicated to family and friends. In this way, school going population becomes credible educators, helping to change attitude and beliefs of their families and communities on bilharzia and other public health concerns.

4.3 Effectiveness of Communication Strategies

In order to evaluate the effectiveness of the communication strategies during the bilharzia campaign in Kisumu West, the respondents were asked to comment on their participation in the campaign, appropriateness of time and duration of the information, clarity and appropriateness of the messages, barriers to bilharzia messages and what was lacking in the messages. Most (63%) of the respondents were involved in the bilharzia campaigns.

Table 4: *Were you involved in the previous bilharzia campaign?*

Response	Frequency	Percentage
Yes	84	63
No	40	30
No response	10	7
Total	134	100

Source: Field Survey (2016)

In their report, Vintila *et al.* (2011) suggest that success of a health communication strategy such as campaigns and radio adverts starts with the participation of the target population. This also concurs with the findings of National Disaster Education Coalition (2004), where they reported that for a community to embrace a communication strategy, they must be involved right from planning to implementation of a strategy. Community-targeted health communication strategies often struggle to be successful when not part of a broader community engagement process. According to Ofcom, (2006), community engagement in planning and implementation should be seen as an integral component of an effective communication strategy. Therefore, community members should be involved in any health communication strategy that affects them right from planning, development, management, to evaluation. For example, program initiators should have considered sitting with community-nominated health committee to discuss key issues as far as

bilharzia awareness is concerned before implementation. In addition, an effective community engagement strategy on health information will be commensurate of community resources that can be used support it. Lastly, feedback from all parties will be helpful in setting up an effective communication strategy for bilharzia. This would then be used to form decisions and shape communication strategies used for other health information.

Of the respondents who participated in the bilharzia campaigns, most (74%) of them said that time and duration for the dissemination of these messages to the pupils and parents was effective. They suggested that for the children, information on bilharzia can be passed during morning and evening assemblies, while evening hours are the best time for reaching bilharzia information to adults.

Table 5: Was the time and duration for the dissemination of these messages to the pupils and parents appropriate?

Response	Frequency	Percentage
Yes	62	74
No	17	22
No response	5	4
Total	84	100

Source: Field Survey (2016)

This finding concurs with Vintila *et al.* (2011), who found that for a strategy to be adopted by a community, it requires repeated, intensive contacts with intended consumers over a period of time, and is influenced by peer support and community norms. Respondents in employment reported that they were busy during the day to concentrate on the recently concluded bilharzia campaign. In this case, identifying alternative communication strategies such as over radio and television adverts would be better. In a paper *Multi-criteria decision analysis to prioritize health*

interventions: Capitalizing on first experiences, Baltussen *et al.* (2010) conclude that process evaluation of a communication strategy guides the use of limited time. In evaluating the feasibility of a communication strategy, time should be taken to understand the audience and use multiple systems to extend the effect of an intervention. Evaluation of any health communication strategy is attainable overtime by comparing likelihood to behaviour change before, versus the expected outcome of the strategy.

Various constructs of the Health belief model are applicable in achieving an effective communication strategy in health education. According to the Health Belief Model's self-efficacy construct, awareness and efficiency of a communication strategy is dependent on the patient's self-efficacy and perceived benefits as well. Efficacy expectation is the intrinsic conviction that one successfully executes positive intake of health information. The distinction between the expected behavioural outcome and efficacy of communication is important because both are required for behaviour modification (Rogers & Storey 1987; Rimal, & Lapinski, 2009). For people to positively respond and act on the health information disseminated; (behaviour), they must believe that the change will benefit them (expected outcome) and they must be willing and capable of embracing the behaviour change (efficacy expectation). For a communication strategy to succeed, people must (as HBM theorizes) feel threatened by their current behavioural patterns (perceived susceptibility and severity) and believe that change aimed by health information will result in a valued outcome at an acceptable cost (perceived benefit). They also must feel themselves competent to overcome perceived barriers to take action (Rosen stock, 1997).

A likert scale (1= Least Satisfactory; 2= Less Satisfactory; 3= Average; 4=Satisfactory; 5= Very Satisfactory) was used to gauge the level of satisfaction of the respondents who participated in the bilharzia campaign in Kisumu West Sub-County as shown in Table 4.4 below.

Table 4.4 Level of satisfaction on bilharzia campaigns (Source: Field survey, 2015)

Campaign Rating	Frequency	Percentage
Least Satisfactory	12	8.9
Less Satisfactory	26	19.4
Average	49	36.5
Satisfactory	34	25.3
Very Satisfactory	13	9.7
TOTAL	134	100

Beneficiary community participation is considered critical to the success of communication strategy wellbeing because it is valued as one of the key ingredients of empowering development. Youngkong *et al.* (2009) found that such community participation can greatly contribute to effectiveness and efficiency of projects as well as help to improve the living conditions of low-income communities. Community-driven development approach has control of the development processes, resources and decision making, responsibilities and resultant benefits directly placed in the hands of beneficiary communities and community groups and in this approach, beneficiary community participation is a central principle, philosophy, fundamental and tenet. Communities who participate in development initiatives report better success than those that only pay lip service to this important principle. Success of any community based program requires support, ownership and participation of the community. The development and support of community networks, linkages, partners, and coordination is necessary to enable a

comprehensive community-participation approach for better health. There is a need for intense enlightening and participation of the community in various community-based strategies. Community Health Committees (CHCs) and other local governance structures can be effective mechanisms to ensure local communities' participation in health promotion.

The body of research in health behaviour and health education has grown rapidly over the past two decades, and health education and health promotion are recognized increasingly as ways to meet public health objectives and improve the success of communication intervention in the world. Successful communication strategy depends on a sound understanding of the patient's view of the world (Glanz and Oldenburg, 2001). For individuals at high risk due to family history or identified risk factors, health communication interventions may have heightened salience when linked to strategies for reducing individual risk. Even so, strategies used to enable initial behaviour change, such as quitting smoking, may be insufficient to maintain behaviour change over the long term, even in these people. Models and theories of health behaviour can suggest strategies to prevent relapse and enhance maintenance of recommended practices for high-risk individuals (Glanz and Oldenburg, 2001). In Health Belief Model, Rosen Stock (1997) posit that success of a communication strategy is triggered by readiness to take action (perceived susceptibility and perceived benefits) and could be potentiated by other factors such as *cues* to instigate action through bodily events, or by media publicity. Indeed, although the concept of cues as triggering mechanisms is appealing, cues to action are difficult to study in explanatory surveys; a cue can be as fleeting as a sneeze or the barely conscious perception of a poster (Rosen stock, 1997).

4.3.1 Level of Bilharzia Awareness

The findings of the study indicated that the respondents who had in-depth knowledge on Bilharzia were below average (36%) while 49% of the respondents confirmed that they had little information on the disease, whereas 15% did not have knowledge on the disease as shown in Table 4.5. Of the 32 respondents who had no awareness on bilharzia, most (81%) of them were household heads who have not been reached with any bilharzia information training.

Table 4.5 Respondents' Level of Bilharzia Awareness (Source: Field Survey, 2015)

Awareness extent	Frequency	percentage
Full awareness (<i>Aware of both spread and control of bilharzia</i>)	43	32.0
Partial awareness (<i>Aware of either spread or control of bilharzia; but not both</i>)	59	44.0
No awareness (<i>Not aware of both spread and control of bilharzia</i>)	32	23.8
Total	134	100

Most 44.0% of the respondents had at least partial awareness on Bilharzia. This calls for more awareness on bilharzia. Odhiambo et al. (2008) recommends that raising awareness on a disease of public health concern helps in its control. Communicating the correct message or messages about a topic or issue is absolutely critical to the success of an awareness-raising campaign (Koh, 2011; Vintila *et.al.* 2011). Quite often, specific awareness-raising messages and approaches will only work effectively in the context of a particular language, culture or community identity. The effective reach of these messages is thus limited. Consideration should be given to defining

campaign messages that can be communicated quickly, clearly and widely in multiple languages and to different cultural traditions. An effective campaign message should also have some personalisation (us, our, me) and minimal scope for linguistic or cultural misunderstanding and it is helpful to pre-test a message using focus groups comprised of representatives from the intended target audiences (Koh, 2011). Focus groups should last no more than an hour and usually involve a facilitator and 10-12 participants. It is generally helpful to devise a series of simple questions to encourage and guide the feedback from participants.

The National Disaster Education Coalition identifies two main types of campaign messages; and awareness messages and action messages. Awareness messages provide general (background) information about an issue and can be used to reinforce the importance of informed action and behavioural change while action messages describe in detail what actions people should take to adjust or adopt particular behaviours (National Disaster Education Coalition, 2004). Raising public awareness of any issue or topic typically requires a mix of awareness and action messages to be effective. Both types of message should also be designed to be very positive, looking out for example on the opportunities and benefits provided by new behaviours rather than risks and sanctions associated with current practices. Awareness messages should also be empowering for them to be effective.

In the Health Belief Model, The cues-to-action construct refers to anything that may heighten awareness or trigger interest of the community in performing the necessary health related activity to prevent, control, treat or elevate the health problem. The cue to action could take the form of a message on a poster, calendar, placards, vehicles or a message reminder on the radio. Communication strategies through electronic and print media may be powerful means to present cues. Bilharzia messages based on HBM constructs may be formatted in the style of a one line or

short public announcement or as a dialogue public announcement especially for radio broadcasting. According to HBM, people will take action to bilharzia control if the benefits of taking action outweigh the barriers (Vintila *et al.*, 2011). Therefore, communication messages designed through HBM constructs may be used to communicate awareness about bilharzia and its control. Furthermore, the HBM constructs may be applied as cues-to-action in Kisumu West Sub-County's cultural context to address bilharzia control issues.

4.3.2 Respondents' Source of Information on Bilharzia

Majority 40.8% of the respondents obtained information on bilharzia from the print/electronic media. Other key sources of information on bilharzia include lessons learnt while in primary school, health professionals 25.7% and from awareness meetings during *barazas* 13.2%. Due to contribution of *barazas* to awareness of bilharzia, the village elders and some community members felt that sensitization needs to be intensified. As they recommend, *barazas* will help some community members who have refused to take the medication on the grounds that they were not aware of the MDA. Of the entire respondents, 20.1% reported to have access to all the sources as illustrated in Table 4.6.

Table 4.6 Effectiveness of Sources of Information on Bilharzia (Field Survey, 2016)

Source of information	Frequency (n=132)	Percentage (%)
Media (Electronic and print media)	65	40.8
Health Professionals	41	25.7
Community awareness meetings (barazas)	21	13.2
All of the above	32	20.1
Total	134	99.8%

A 2006 report published in the UK on the 'media literacy' of adults concluded that "television remains the most familiar, and popular, media platform for most people". It is found that mobile telephone technology is fast eclipsing traditional mass media (Ofcom, 2006). Latest electronic media like mobile telephones and SMS, Facebook, Twitter, blogs and RSS news feeds are relatively recent innovations but have the potential to greatly assist awareness-raising campaigns in regions and communities where the Internet is available in institutions like health facilities, churches, schools and libraries, if not private homes. RSS or 'Really Simple Syndication' is a method of summarizing the latest news and information from a website in a lightweight form that can be easily read online using news readers. The aim of internet sources like Facebook, Twitter, blogs and RSS is to give users the ability to quickly obtain the latest news and updates from a website in a headline or news digest format and have rapidly become the most popular and effective source of information of all sorts for the youths. Younger people have embraced the enhanced functionality of mobile phones. The popularity of such online sources of information such as RSS, Facebook, SMS services needs to be highly considered during formulation of policies and awareness messages. This will help target and reach out to the youths who happen to be common users of such platforms.

Qualitative data show that (70%) of respondents had secondary school level knowledge as the main source of information, while a few reported that their relatives had suffered from bilharzia disease as shown in the following statements derived from focus group discussions. Some of the participants of the FGD said that there is lack of awareness on what one can do to know if they have bilharzia. They also state that bilharzia should be given priority like other public health problems such as malaria and cholera. Door to door campaigns and extensive sensitization on bilharzia by community health workers can be used for increased awareness on bilharzia

(Omotara *et al.*, 2004; Rogers and Storey, 1987). These opinions explain the need for expanded screening as well as health education and promotion on bilharzia at the tier one level.

The influence of the television, print and radio messages in terms of coverage, listenership of the target group, and effects of communicated messages was also apparent from the response by the listeners who called in during the campaigns. The radio announcement, especially in the vernacular stations, reached all the districts that were targeted for treatment. The main concern of the callers from the non-intervention areas was why they were not receiving treatment, although they live in the same environment as those being treated. The main concern of radio listeners from the targeted area was to know how bilharzia is controlled and prevented. Others wanted to know the side effects of the bilharzia drugs while some asked clarification about myths and misconceptions associated with bilharzia in their community.

The involvement of church leaders and other key community decision makers in the campaign was acknowledged by the respondents as very important since they helped to mobilize the community and provided forums for communicating the mass drug administration activities to the general public and providing health education.

“...what made me very happy during the mass drug administration is the fact that assistant chiefs, clan elders and the chief also participated by talking positively on the activity. When I went to church on Sunday, I found that some people were complaining that their children fell sick after taking the bilharzia medicine. My pastor gave me an opportunity to teach about bilharzia and the drug and this made it easy to address the concerns and belief by the congregation was also commendable.” Respondent (KII).

Local leaders such as clan elders, assistant chiefs and chiefs, and religious leaders and clergymen are considered as key opinion leaders in a community. When they embrace and preach any type of health intervention activity at the community level, the chances of intake of that intervention also increases (Omotara *et al.*, 2004; Berner *et al.*, 2003). They also create the forum for health education through *Barazas* and religious gatherings. Therefore, bringing such opinion leaders on board and training them on bilharzia awareness is likely to increase acceptance of interventions in the community which would also be a long term intervention measure as well.

Table 4.7 Local leaders' Involvement in Campaigns (Source: Field Survey, 2016)

Leader	Frequency	percentage
Chiefs/assistant chiefs	40	29.5
The clergy(church leaders)	24	17.6
School teachers	49	37.1
Others	21	15.7
Total	134	100

From Table 4.7, 29.5% participants acknowledged the chief's office as being very actively involved in Bilharzia awareness campaigns. 17.6% respondents indicated that the clergy and church leaders took a greater role. A section of the participants 37.1% explained that school teachers were active participants. 15.7% members acknowledged the health workers as the most active group in creating awareness. These findings further explain the need of actively including community opinion leaders on implementation of key interventions on bilharzia.

4.3.3 Information on Bilharzia Control

Participants mentioned various ways that they believed could cure bilharzias, which included: treatment in schools and in other medical facilities 20.1%, health education through Community Health Workers and other stakeholders 27%, prayers and traditional options 12%. A good number 23.8% of the respondents quoted environmental conservation as an effective control mechanism to bilharzia while 16.9% of the participants also highlighted access to clean water in combating the infection as shown in Table 4.8.

Table 4.8 Awareness on Bilharzia Effective Control Mechanisms

(Source: Field Survey, 2016)

Mechanism	Frequency	Percentage
Treatment in schools and in medical facilities	27	20.1
Health education	36	27
Traditional practices and prayers	16	12
Environmental conservation	32	24
Access to clean water	23	16.9
Total	134	100

In reference to Awareness on Control of bilharzia the participants had this to share:

“...we didn't get news even from the village elders, newspaper or from the radio that this treatment was going to take place. So next time this exercise is going to take place, information should be considered first. The community should be aware that the exercise is going to take place, because some people cannot be convinced by word of mouth.”
Adult Male (FGD).

This excerpt of the FGD emphasizes the need for prior sensitization before any form of community health activity for its efficacy to be realized. Such sensitizations also help in increasing acceptance of the educative, promotive and preventive services by the Ministry of Health. Some of the preventive messages that may help on increasing bilharzia awareness include educating the public on the need of treating water and controlling the snails that carry the bilharzia parasite.

“...I think we can't just say we are going to avoid interacting with water because that is where most of us get our livelihood and we have to drink that water because we don't have another water. We have to go and fetch fish because that is where we are getting our income generating activity... If you are told not to go into the stagnant water, then what is the way out? ... If we tell our men not to go and bring fish, then how will they eat?” Adult female (FGD).

In as much as interacting with stagnant water inhabited with snails is an inevitable fact in the area of Seme, awareness will enlighten the residents on the best precautionary practices that would help them minimize bilharzia infection. Wang *et al.* (2009) posit that in order to control schistosomiasis (bilharzia), sufficient health education and awareness creation is paramount. In addition, the public awareness should also be created on the need of eliminating cattle as a source infection by snails. This can be achieved by prohibiting open grazing in the grasslands (Wang *et al.*, 2009). The role of toilets in prevention of bilharzia was also mentioned by some of the FGD participants. This points out on the need for extensive creation of awareness on the public health importance of toilets in terminating the life cycle of *Schistosoma* worms.

The findings of this study on perception of the community on health information agrees with other studies that the use of mass media communication strategies awareness-creation is essential to health behaviours change and increased uptake of healthcare interventions (Omotara *et al.*, 2004; Berner *et al.*, 2003). The increased compliance with bilharzia treatment is attributable to the intensive mass media campaign that was implemented before the MDA. Raising the level of awareness amongst the Kisumu West community members as well as the control programs, and intervention may be a mediator of actions, since those who are more aware and perceive to be at risk of bilharzia are more likely to engage in behaviour change and healthcare-seeking behaviours (Baltussen and Niessen, 2006; Youngkong *et al.*, 2009). Some of the community members who are involved in fishing activities recognized their increased risk of infection and responded to the media campaign by seeking out the CHWs to obtain the praziquantel.

Control and Prevention of bilharzia can be explained and effected using the Health Belief Model. Health Belief Model suggests that control for any health condition like bilharzia is based on an instigator such as awareness provoked by learning new information through media serves as a cue to action. In the long run, Self-efficacy is more important for a change in lifestyle or behavioural factors as control mechanism than for one-time actions, such as attending screenings, as adjustments in behaviour changes require further confidence in one's ability to change, for example in the cases of smoking behaviour and exercise (Strecher and Rosenstock, 1997). The involvement of stakeholders, like Provincial Administrators, church leaders, BMU leaders, women's group leaders, and other community leaders in the campaign, was noted to be effective in dissemination of information on bilharzia. These stakeholders helped to mobilize the community and provided forums for communicating the MDA activities to the general public

and providing health education; they also provided security to the disseminators during bilharzia campaigns (Davies, 2009).

4.4 Perception of the community on health information

The researcher sought to establish the respondents' opinions on the competence levels of the campaign educators during campaigns on drug administration. Majority (53.5%) of respondents found the educators very competent, whereas a fraction (30.2%) of the respondents saw the educators as moderately competent. Another proportion (10.6%) of the respondents stated that the educators were incompetent with 5.6% of respondents stating they are unsure of the competency of the educators.

Table 4.9 Public Perception on Educators' Competence in Mass Drug Administration Campaigns (Source: Field Survey, 2014)

Perception level on competence	Frequency (n=141)	Percentage
Very competent	72	53.5
Moderately competent	40	30.2
Incompetent	14	10.6
Unsure	8	5.6
Total	134	99.9%

From the findings presented in Table 4.9, it is apparent that majority of the respondents deemed the educators as very competent in the campaigns. Nutbeam, (2000), in his report "*Health Literacy as a Public Health Goal: A Challenge for Contemporary Health Education and Communication Strategies into the 21st Century*", discusses the need for health education in prevention and control of diseases. He puts more emphasis on personal forms of communication, political approach to health education as well as community-based communicational outreach. A

small section (4%) of the respondents who are unsure of competence of health educators could be as a result of prevailing health illiteracy levels in the community. Health illiteracy remains a challenge to better equipment of people to overcoming structural barriers to health (Nutbeam, 2000).

The study acknowledged the need of integrating various communication channels, because people could get the information from different sources. Strategies, like radio call-in sessions and involving health officers, church leaders, and village elders in the community offered collateral benefits. Material in the health messages was presented in ways that were familiar to persons living in rural areas and allowed for discussion and input from community members. This led to increased community participation in the campaigns. The study could have been strengthened if we had also been able to assess the perceptions of the targeted treatment groups with respect to the impact of the health communications strategy.

4.3.1 Uptake of information on Mass Drug Administration for Bilharzia

The finding revealed that source of information was an important factor for determining reception of the mass drug administration. The one who receives information through print media or electronic media (especially television, radio and Internet) is more likely to accept the mass drug administration more than one who gets information through other means. Greater availability of health information via the Internet might lead to the emergence of a more informed community who are better able to assess the risks and benefits of different health interventions for themselves (Henwood, 2003).

Results from focus group discussions showed that most media outlets and health campaigns did not view bilharzia as a serious disease. They felt that since the government organs do not talk

about bilharzia as other diseases, it was less serious, thus giving an impression that the perceived severity was not high as revealed:

“...I can also support him because I also learnt of it and I didn’t know about the bilharzias until I met the NGO people. I think the government is also not serious about bilharzia. It has focused on other diseases like AIDS and Malaria while forgetting that bilharzia is more common around the lake region. They have diverted that attention to other diseases, more than this, because I have never seen them taking any initiative around the area or the community that live around, until you came around with this program.” Adult male (FGD).

This statement reveals that a significant number of communities living in wetlands might be suffering from bilharzia while government is doing nothing about it. Most of the government health interventions are ad-hoc and fail to prioritize, using more heuristic or intuitive approaches instead of more transparent and rational approaches (Baltussen and Niessen, 2006; Baltussen *et al.*, 2010; Youngkong *et al.*, 2009). This explains need of prioritization by the government in terms of health education and promotion, with more emphasis to the Kenyan wetlands that might be at risk of bilharzia attack. In their study, Youngkong *et al* (2009) found that multilevel strategies such as individual-based and community based communication strategies are necessary depending on who is being targeted and this can be achieved by use of tailored messages at the individual level, targeted messages at the group level, health education and promotion at the community level, media advocacy at the policy level and mass media campaigns at the population level (Wakefield *et al.*, 2010). For each level of the strategies, perceived threat of health belief model is a modifying factor that effectively shapes personal and community’s

perception of bilharzia. In order to achieve effective behaviour modification, the information must target an individual with an aim of expanding to cover the community.

The Health Belief Model's construct of perceived severity speaks to an individual's belief about severity of a disease. Such perception is often based on health information an individual has towards a disease. However, it may also come from socio-cultural beliefs about a condition such as bilharzia and the effects it has in an individual's life. Most of the community members viewed bilharzia as a minor disease, therefore no need for adopting adoptive behaviour towards bilharzia. This negatively influenced their perception of the seriousness of bilharzia, hence no need for bilharzia health information. A person makes a decision (cue to action) based on intrinsically-triggered factors such as perceived benefits and their perceived susceptibility. Individual-targeting communication strategy will be more effective in addressing severity of bilharzia since and individual makes a preventive decision based on intrinsic factors like benefits of since needs to be enlightened of the threats associated with exposure to contaminated water. Some of the risks of contaminated water include contracting bilharzia, cholera and typhoid. When told of this during the health campaign, the community acts by seeking knowledge on how to prevent such risks (cues to action). However, this is effective when coupled with the expected benefits of controlling and preventing bilharzia (perceived benefits). Self-efficacy in health communication will be achieved when the community is left to decide based on their personal expectation and perceived benefits.

4.3.2 Community Beliefs on religion and traditional medicine as cure for bilharzia

Some of the respondents also believed that religion and traditional doctors could handle bilharzia: “... *I just wanted to say that there are specific herbs that when used, can cure bilharzia. Some people here also believe in treatment with herbs so they treat bilharzia using it. They drink the herbs from witchdoctor.*” *Adult female (FGD).*

FGD sessions also revealed that some community members refused to allow their children to take the drugs for reasons such as their religious affiliation, belief in traditional herbalists for treatment of bilharzia, suspicion that the drugs were anti-retroviral drugs, or that it was a government conspiracy to decimate the ethnic communities in that region, related to some level of mistrust toward the government. Participants mentioned various ways of bilharzia treatment, these included prayers and herbal remedies. Some participants mentioned that health education about bilharzia would also help in stopping the spread of the disease. The findings of the study on influence of cultural and religious beliefs on success of a communication strategy concur with Noar (2006) who found that for a successful health communication, each component of the communication strategy should take into consideration other modifying factors such as religious and cultural beliefs of a community. A good communication strategy should be physically integrated into the settings where people live their lives (their religion and culture) for it to be successful.

In order to achieve this modification, the planners should consider involvement of the traditional herbalists and religious leaders in the campaign. In order to have a significant impact on an entire community, a health communication programme must be able to alter community norms and standards of behaviour (Wolf, & Bond, 2002). This requires that a substantial proportion of the

community's members be exposed to programme messages or, preferably, be involved in programme activities in some way. According to HBM, modifying factors like culture, religion and environment can be used in positive culture adoption by approaching and involving opinion leaders on the campaign (Henwood *et al.*, 2003). Community members should be involved in all phases of a campaign programme development: identifying community needs, enlisting the aid of community organizations, planning and implementing programme activities, and evaluating results. They should also be involved in planning by identifying the health problems in the community that are preventable through community intervention, formulating goals, identifying target behaviour and environmental characteristics that will be the focus of the intervention efforts, deciding how stakeholders will be involved, and building a cohesive planning group.

Table 4.10 Effectiveness of strategies used in Mass Drug Administration

Effectiveness of strategies	Frequency (n=159)	Percentage (%)
Very effective	51	38.3
Moderately effective	60	44.6
No effect	23	16.9
Total	134	99.8%

Collectively, these results show that source and the availability of credible information and understanding of bilharzia as a serious condition are key factors in accepting the mass drug administration. (38.3%) of the respondents saw it very necessary for the mass administration of bilharzia drug to be done while (44.6 %) thought that it was moderately necessary to administer mass drug administration while some (16.9%) of the respondents were of the opinion that the administration of the drug was unnecessary. The findings concur with study findings by Noar

(2006) who found that for comprehensive communication strategy with the greatest promise should deal with multiple risk factors of a health problem such as bilharzia, use several different channels of communication, target several different levels (individuals, families, social networks, organizations, the community as a whole) and are supposed to be designed to change not only risk behaviour, but also the factors and conditions that sustain this behaviour (motivating factors, social environment). Health education programs should be designed to produce stable and lasting changes in health behaviour. This requires longer-term funding of programs and development of a permanent health education infrastructure within the community. Upon implementation of a communication strategy, comprehensive evaluation and research process is necessary, not only to document programme outcomes and effects, but to describe its formation and process and its cost-effectiveness and benefits.

4.5 Factors for acceptance of health information provided during campaign

For a communication campaign to be successful it must reach the audience, attract the audiences' attention, present an understandable message, promote change, and produce a change in behaviour for better health (Hubley, 1993). The independent communication variables for health messages include: the source, the message, the channel and audience. The audience, the media, the strategy, and the messages should interact with one another to create a successful campaign (Day and Monroe, 2000). It is crucial that health consumers have the behavioural intention to embrace and adopt health information. A better understanding of audience intention and behaviour would aid the acceptance and utilization of health information. Thus, identifying the factors influencing acceptance of health information by the community would enable the development of a theoretical model to successfully describe their intentions and actions. This requires defining the interrelationships among the factors for acceptance of health information. A health communication campaigns should seek to: identify the channels used; establish the extent

of audience exposures to the message formats; determine the impacts the campaigns; rank the effectiveness of the channels used in the campaigns; establish community participation in the process; relevance of the channels, and the message reach among the audiences (Okaka, 2006). To investigate this, the researcher categorized the influential factors affecting the acceptance of health information into; perceived threat, government intervention, the appeal of community health extension workers among others. These factors follow different intervening processes that lead to positive behaviour modification towards acceptance of health information.

Perceived threat as a factor for acceptance of health information during campaigns verifies the description of behavioural intention in the HBM, where attitude leads to behavioural intention (cue to action). This suggests that communication and psychological incentives such as health belief of the audience and concerns may motivate people to take action toward treatment of bilharzia. For example, outcome evaluation has a slight effect on the health belief and concerns, triggering behavioural intention in health consumers. Most (53.4%) of the respondents perceive bilharzia as a threat to their health as per table 4.13.

Table 4.61 Bilharzia as a health hazard

Responses	Frequency (n=159)	Percentage (%)
Yes	72	53.4
No	45	33.3
Not sure/No response	17	13.2
Total	134	99.9%

The study revealed community's perceived threat which is measured by perceived susceptibility and perceived seriousness, had a somewhat significant impact on health information acceptance. However, perceived threat had an indirect effect on attitude through perceived usefulness aimed at increasing the behavioural intention. This indirect relationship is illustrated by the tendency of respondents to actively adopt preventive health behaviour whenever they perceive a potential threat to their health. This result is consistent with the model reported by Noar (2006), where perceived threat leads to information-seeking behaviour. One possible explanation for the relatively increased impact of perceived threat on perceived usefulness found in this study may be that some respondents considered the issue of susceptibility to and seriousness of disease apply to themselves.

Perceived usefulness is significantly sensitive to subjective norms, such as social pressure or community competition, resulting in the audience developing a positive attitude towards health information. According to Baker *et al* (2011), behavioural intention is a direct determinant of behaviours, arguing that attitude, subjective norm, and perceived behavioural control of the action are the most powerful predicting factors for acceptance of health information. The results suggest that using appropriate communication strategy during health campaigns involves promoting and teaching information literacy skills within communities, often starting with children in schools. By focusing on how the target audience or audiences typically find, use and communicate information it is possible to prepare and present awareness-raising information that is better suited to their preferences; and thus more likely to be accepted and understood. Developing the information literacy skills of children in the first instance is an important strategy for increasing awareness on bilharzia since children are recognized the world over to be very effective communicators as shown in the Table 4:14.

Table 4.72 In your opinion, what do you think about health information on bilharzia

Responses	Frequency (n=159)	Percentage (%)
Very useful	48	35.8
Useful	66	49.0
Not sure/no response	20	15.0
Total	134	99.8%

In this study perceived usefulness is the perception of community on how well health information will benefit them. In Davis *et al.* (2009), the relationship between acceptance of health information and perceived usefulness shows significant results. In their study, Baker *et al* (2013) confirmed that perceived usefulness of health information had significant effects on its health information acceptance. According to HBM, perceived usefulness of benefit is defined as the perception of an individual on using a system and achieving the required result with little impact compared to its alternative (Liu & Wong, 1997). In as much as it should be shared, health information needs to be controlled and protected from manipulation (Davies, 2009). Perceived usefulness of health information will help in prioritisation of health messages.

Mass immunization also played a role in acceptance of health information for instance use of mass immunization as seen during polio and measles immunization formed basis for reliability on health information. The survey revealed that, although mass immunization has led to positive behaviour modification of the community towards acceptance of health information, its implementation in the rural areas has been limited.

When asked during the focused group discussion a mother, said;

I really thank the county government for bringing mass immunization to our doorsteps. As my child was visited for immunization, one of the immunization team engaged me in a lengthy conversation on how to prevent diarrhoea by boiling drinking water, washing before and after eating, after visiting toilet and changing baby's nappies. It is during door to door vaccination that I learnt of how to controlling snails which are the reservoirs for bilharzia.

Through mass immunisation as a government intervention, the initiators can decide to provide key health messages as a package. During interview with key informants, one of the community members said that through his wife, he was able to learn a lot of control measures on bilharzia. This is because every time his wife visited maternal clinic, the nurse would teach her hygienic measures which she would also share with her husband. Furthermore, even in the rapid advancement of information technology and its subsequent impact on health management as reported by Vintila *et al.* (2011), an improved model of immunization that captures and predicts various aspects of community acceptance is lacking. According to HBM, deploying similar effort of integrating health information-seeking activities during mass immunisation will increase self-efficacy, perceived threat; leading to applicability and predictive capability. To address this gap, the research has provided a robust foundation for future research on improvement of health communication during mass immunization. Previous studies have shown that participation in health campaigns can be adversely affected when insufficient knowledge or information leads to inaccurate theories about the health interventions being delivered. Usually, health communication campaigns include public service announcements delivered through a diverse mix of communication channels, such as road shows, radio, posters, booklets, and brochures.

The intervention strategies can be interpersonal or community-based to extend the reach and frequency of the campaign on bilharzia treatment messages and increase the probability that messages will have an effect to the targeted audience.

4.5.1 Appeal by the Community Health Workers

Studies have indicated that CHWs offer unique opportunities for integrating community-based participatory approach in health campaigns by their unique position as a link between various stakeholders. Therefore, CHWs can bring the end users' angles to campaigns and successful health campaign strategies often integrate feedback from communities to solve challenges that arise during implementation of such community interventions (Youngkong *et al.*, 2009). According to Baltussen *et al.* (2010), the motivation for performing the communications campaign are often based on the experiences that the CHWs reported from their household visits.

Implementing public health interventions, such as mass drug administration, in the community setting is complex and challenging, because there are numerous cultural and individual factors that directly or indirectly influence treatment delivery, (Parker, 2011). Health communication interventions can be used to help overcome misconceptions about public health interventions, such as mass drug administration, or the purpose of treatments for example the perception that they are family planning pills) by improving knowledge and awareness of these public health interventions. The respondents felt that community awareness would have increased if there was an intensive health communication campaign on the mass drug administration. The findings of this study are consistent with other studies showing that the use of mass media communication strategies to raise awareness is essential to impact health behaviours and increase the use of healthcare interventions. The appeal by the community health workers (CHEWs) may lead to a

mediating process of perceived threat toward the community health. When the CHEWs extensively appeal to the community, they may influence the community acceptance to health information (Smith, 2006). According to HBM, community appeal also leads to the community determining the perceived usefulness of health information on bilharzia as well as other diseases. In the case of positive appeal, it results in positive attitude, which ultimately leads to their acceptance of the communication. One of the FGD members said;

“In this fight against bilharzia, we can't succeed without accepting the fact that the health workers in the community help in changing the behaviour concerning health in the community. When something is good I will confirm with her first like that tetanus injection. They are very important in our community and have information concerning health issues.”

According to Vintila *et al* (2011) health information acceptance is a need-fulfilment behaviour whereby health information is obtained from diverse sources, such as media, and has emerged as an important issue within the community. However, little is known about appeal of the CHEW in health education that affects health information acceptance and its associations, as well as the outcome because health information acceptance can differ according to individuals' social contextual conditions. The HBM model argues that individuals' evaluations on the severity and the vulnerability of the potential threats (threat appraisals) and the extent to which they can cope with the threats by conducting certain health behaviour (coping appraisals) will determine their community's acceptance of health information (Rogers, 2013). Here, the health information acceptance is regarded as behaviour to cope with the potential threats to health. Health communications campaigns should be driven by relevant communication theories and models. It is also important to develop an understanding of the audience, and at each stage in the

communications campaign check that the message design, delivery, monitoring, and evaluation process are purposely defined to understand gender. For instance, through priming theory, the media can raise awareness about the mass drug administration. Priming theory in media is also related to the health belief model and agenda setting theory (Figueroa, 2002). Priming is most important when issues are political, new, or where information is about a rare issue like the mass drug administration on bilharzia.

CHAPTER FIVE:

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of the study findings, how it was conducted, conclusions and recommendation for further study. The chapter puts in perspective the effectiveness of bilharzia awareness campaigns in Kisumu West Sub-County and recommendations.

5.2 Summary of findings

This study was conducted to evaluate the effectiveness of community health information campaign during mass drug administration for bilharzia treatment in Kisumu West Sub-County, an activity that is well supported by World Health Organization. Objectives of the study were to assess community perception of health information on bilharzia, to evaluate the influence of opinion leaders on the information provided during the health information campaigns, to evaluate the effectiveness of communication strategies used in the formative process of the Mass Treatment Campaign in Kisumu West Sub-County.

5.2.1 Effectiveness of communication Strategies Used in the Formative Process of the Mass Treatment Campaign

The first objective was to evaluate the communication strategies used during the formative process of the mass treatment campaign. This study showed that the level of awareness of bilharzia was low in Kisumu West Sub County. The study realized that regardless of age and gender, the participants in the study had almost similar level of knowledge attitudes and practices on bilharzia control. In addition, time and duration of disseminating key health messages during

the campaign is an important factor for effective health education and promotion. Generally, the community of Kisumu West were satisfied with the way bilharzia campaign was conducted; which is important for success of a communication strategy. The source of the information on health awareness is key for successful health promotion. As the study found out, awareness meetings such as barazas intensified sensitization on bilharzia. Baraza as a medium can be more effective if coupled up with strategies such as involvement of health professionals and use of community road shows and print media. Door to door campaigns and extensive sensitization on bilharzia by community health workers can also be used for increased awareness on bilharzia. For effective health campaign as seen in bilharzia campaign, involvement of key community decision shapers such as church leaders, clan elders and administrative leaders in awareness is essential.

5.2.2 Community Perception on Health Information on Bilharzia

Objective two was to determine community perception on health information on bilharzia. The study found that the community perceptions could be affected by socio-demographic factors, knowledge and that some residents had negative attitudes towards control interventions and education programs. With health illiteracy as a key impediment to health education, there is need for intensive use of personal forms of communication, political and community based communication approaches to shape the community perception on campaign on bilharzia control. Source of information was a vital factor for effective health campaign. Bilharzia was not perceived as a serious disease as compared to for instance malaria and with availability of traditional and spiritual treatment; however, the study realized that there was a general feeling that women were more concerned about health issues of their children than their male counterparts. In order to achieve a physically integrated approach to the health campaign, the

planners should consider involvement of the religious leaders in the campaign. Moreover, source and availability of credible information and understanding of severity of bilharzia is key for acceptance of mass drug administration by the community.

5.2.3 Factors that determine acceptance of Information provided during the Health Information Campaigns

Objective three of the study aimed to determine the acceptance of information provided during the health information campaigns. The study showed that the source of information was an important factor for determining reception of the mass drug administration and that various health messages did not influence change in behaviour of residents of Kisumu West Sub-County. Perceived threat had an indirect effect on attitude through perceived usefulness aimed at increasing the behavioural intention as illustrated by the tendency of respondents to actively adopt preventive health behaviour whenever they perceive a potential threat to their health. The community also perceived health education as very useful based on its perceived benefits. However, the current study established that there existed a knowledge gap on bilharzia and the existence of limited sources of information. Religious beliefs and availability of traditional care were noted as barriers to acceptance of the mass drug administration in Kisumu West Sub-County. The respondents felt that community awareness would have increased if there was an intensive health communication campaign on the mass drug administration.

5.3 Conclusions

The first objective aimed at evaluating the success of communication strategies used in Mass Treatment Campaigns within Kisumu West Sub County. Communication strategies in Kisumu West Sub-County have been successful in mass treatment campaigns due to high level of community involvement in campaigns and appropriate duration of information dissemination. However, the timing of health information dissemination is poor. The level of awareness of residents of Kisumu West Sub County on bilharzia is still low.

The second objective of the study was to investigate community perception on health information on bilharzia in Kisumu West Sub-County. The perception of the residents of Kisumu West on health information is influenced by level of competence of health educators, perceived severity, community beliefs and religion. Increased competence of health educators improved the community perception on health information on bilharzia. Perceiving bilharzia as a less severe disease by the community led to poor intake of health information on bilharzia. Strong cultural and religious beliefs affected negatively the community perception on health information on bilharzia.

The third objective of the study was to investigate the factors for acceptance of information provided during the health information campaigns in Kisumu West Sub-County. Factors for acceptance of health information on bilharzia by the community include perceived threat, perceived usefulness, mass immunisation, and community health and extension workers. Psychological incentives such as health concerns, and addressing bilharzia as a threat, increases community's acceptance to health information. Highlighting the significance or usefulness of consuming health information increases the community acceptance to health information.

5.4 Recommendations

The study recommends a number of issues as far as bilharzia awareness campaigns are concerned.

On the success of communication strategies, various stakeholders should diversify the IEC materials on bilharzia in terms of the language of the message to ensure that every member understands and interprets the health message on the materials, the timing of health information dissemination should also be reviewed based on the community availability and contribution by the ministry of health to increase the success rate of communication strategy.

On community perception on health information, the study recommends increased campaigns and community involvement on bilharzia to modify the perception and knowledge on bilharzia will help in successful uptake of the campaign messages, there is need for increased campaigns and community involvement on bilharzia to positively modify the perception and knowledge on bilharzia health information, opinion leaders such as village elders, assistant chiefs, chiefs and religious leaders should also be trained on prevention and control of bilharzia since they may be influential in reshaping the communities' perception on bilharzia.

The study further recommends that there is need for use of various age-specific materials on bilharzia to capture the attention of every member of the society regardless of the age. Provision of accurate, timely information and communication materials by health practitioners in the community on bilharzia control will also help in increased awareness. In addition, there is need for continuous feedback to the community through community meetings. Lastly, future studies need to be done on the health communication strategies on bilharzia campaigns in Kisumu West Sub-County.

5.5 Suggestions for further study

This study is not a complete depiction of the effectiveness of community health information campaign yet it provides a wish for future studies of health information campaigns. This study did not consider which health communication approaches are most appropriate, effective and efficient when evaluating the impact of bilharzia health education.

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