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Perspectives of Women in Nairobi Kenya Toward Malaria Control

Catherine Kisavi-Atatah
Walden University

Walden University

College of Health Sciences

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Catherine Kisavi-Atatah

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Review Committee
Dr. Cheryl Anderson, Committee Chairperson, Health Services Faculty
Dr. Scott Hershberger, Committee Member, Health Services Faculty
Dr. Vibha Kumar, University Reviewer, Health Services Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

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2014

Abstract

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MA Prairie View A&M University, 2007

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

Malaria infection has been and continues to be a serious public health concern that has mystified many in the public health care industry. One area in Sub Saharan Africa that continues to feel the devastating effects of malaria is in Nairobi, Kenya. This qualitative research study explored the attitudes of women in Nairobi, Kenya and how they view intervention measures already introduced by public health care experts in fighting malaria. The phenomenological research approach used purposeful sampling to recruit 16 women from Nairobi, Kenya to participate in semi-structured, open-ended interviews. The ecological systems theory was used as a lens of analysis to help illuminate the views of women on already-introduced malaria intervention measures in Nairobi, Kenya. Nvivo 10 helped manage data and the interpretative phenomenological analysis was used to analyze data and identify themes and subthemes through coding. The findings from this study indicate that (a) there is a disconnect within the systems, especially between public health officials and ordinary citizens, and (b) ordinary citizens felt that intervention measures already introduced have not been effectively implemented. The recommendations derived from the study will improve relationships between public health officials and ordinary citizens in order to effectively implement malaria control measures already introduced. This study will benefit public health officials, ordinary citizens in Nairobi, and other health care providers all over the world. This study contributes to social positive change by providing greater insight on already-introduced mosquito intervention measures.

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ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

Dedication

This dissertation is dedicated to God who gave me the strength, the health, the spirit and drive to keep pushing even when I wanted to give up. This dissertation is also dedicated to my wonderful husband Dr. Park Atatah (PhD) for keeping me focused and encouraged. Also, this dissertation is dedicated to my children (Irene and Brumel Atatah) who might not have understood what I was doing but always celebrated with me when I successfully completed each milestone. My father John Kisavi Katusya cannot be forgotten as he encouraged me through his words of wisdom. My father kept me pushing forward and always reminding me that nothing in life is promised to me and only through prayer, dedication, hard work, sacrifice, and perseverance that my dreams would be met. This dissertation is also dedicated to my siblings especially my elder brother Mr. Ted Kisavi for supporting me all through the process and providing me with the help that I needed in order to ensure that I completed this process successfully. Also, this dissertation is dedicated to my friend Easter Ogunjimi who spent many days discussing research and challenging me to work harder, remain focused and prayerful.

Also, all my friends (committee of friends) that stood by me in good as well as bad times, and helped me unwind by providing me the opportunity to relax when I felt overwhelmed and stressed. I want to thank the committee of friends, from the bottom of my heart. This dissertation is also dedicated to all my supervisors Mr. Raymond Turner who always pushed for success and self improvement. Ms. Katherine Spencer who always encouraged me to remain focused. I also want to thank Ms. Shannon Butler for her beautiful spirit and also Ms. Hazel Piggee for her kind nature. I mostly want to

dedicate this dissertation to my mother Grace Kivuva Kisavi, who is now in heaven and left me warning and wanting more out of life. I want to thank my mother for always pushing me to be the best I can be. I also want to thank my mother for depositing in me the spirit of love and care for others. I miss you dearly mum but I know spiritually who are here to see me shine.

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Chapter 1: Introduction to the Study

Introduction

Malaria is an infection that has affected the lives of many all over the world. Historically, many studies have been conducted to help address the spread of this infection (Bongus et al., 2010; Deressa, Ali, & Hailemariam, 2008; Eisele et al., 2012). Western countries have been successful in the partial control and eradication of malaria; however, this is not the case in many African countries (Gratz, 2006; Lindemann, 1999). African countries, especially those in Sub-Saharan Africa, continue to suffer the devastating implications associated with malaria.

Ejik et al. (2011) noted that by 2010, malaria was attributed to the death of one child every 30 seconds. Additional studies have signified that pregnant women have a higher chance of developing anemia, miscarriages, and low birth rates due to malaria infection (Raimi & Kanu, 2010; Taylor et al., 2011). Children especially under the age of 5 suffer serious health implications, including death, if infected by malaria (Houeto et al., 2007; Osonuga, Osunuga, Osunuga, Osunuga, & Kwarteng, 2011; Pardo et al., 2006;). Intervention measures to combat malaria include mosquito treated nets, education, spraying, medications, and just recently, the introduction of malaria vaccine (Tarning et al., 2012; Taylor et al., 2011;Yangzon et al., 2011;). Despite public health efforts, malaria infection rates continue to be a serious threat to health in many regions of Africa.

The introductions of malaria fighting intervention measures have not eradicated malaria in Africa. The most affected by malaria infection are children, women, and individuals with compromised immune systems (Omalu et al., 2012; Peter, Manuel, &

Shetty, 2011; Smereck, 2011). A review of literature found that even though several studies have been conducted in the attempt to address malaria infection all over the world, especially Africa (Breeveld, Vreden, & Grobush, 2012; Okiro & Snow, 2010; O'Meara, Mangeni, Steketee & Greenwood, 2010) limited literature exists on how women specifically view the current intervention measures used in fighting malaria.

The views of those most affected by malaria and the current interventions are missing from the literature. To respond to this current gap in the literature, I conducted a qualitative research study. It is arguable that the views of ordinary citizens on already implemented measures in fighting malaria are important in the fight to eradicate this disease. It is ordinary citizens who are expected to assimilate the interventions and hold the responsibility for leading the fight against malaria infections. This is the case because ordinary citizens are heavily impacted by the health implications associated with malaria infection.

This qualitative research study was conducted to explore the attitude of adult women in Nairobi, Kenya on how they view the intervention measures already implemented in this area in the efforts in fighting malaria. New knowledge was found to add to already existing literature on malaria control measures. Secondly, this study helped public health care policy makers understand the attitude of the general population, especially women, on the effective as well as the ineffective measures already implemented associated with malaria control. Finally, this study served as a tool to Nairobi public health policy makers when dealing with decision making processes that impacts malaria control in Nairobi, Kenya.

Background

Malaria infection is responsible for negatively impacting the quality of life (QOL) of many people in Africa. Despite all the strides taken to help control or eradicate this infection, public health care experts have not been successful in their efforts. Furthermore, major health organizations such as the World Health Organization (WHO) as well as the Center for Disease Control and Prevention (CDC) have played and continue to play active roles in trying to address the spread of malaria, especially in the continent of Africa (CDC, 2012; WHO, 2013). It appears that their efforts have not yielded the results so desperately needed. For example, the CDC (2012) reported that in 2010, 655,000 deaths worldwide were attributed to malaria infection while 91% of these deaths reported were from Africa.

Additionally, numerous studies have been conducted to help address the spread of malaria especially in the continent of Africa (Bongus et al., 2010; Coleman et al., 2010; Dube, Ismail, & Hoosen, 2008), the majority of these studies recommended that additional efforts are needed. According to Meyrowitsch et al. (2011), in light of these overwhelming research studies, malaria infection is still harshly felt in Africa in general and Sub Saharan Africa in particular. It should be noted that literature reviewed up to this date showed several intervention measures have been introduced, especially in this region, to address the spread of malaria (Akeny, Shiferaw, Ambachew, & Hamid, 2012; Alemu, Shiferaw, Ambachew, & Hamid, 2012; Eisele et al., 2012; Meyrowitsh et al., 2011; Omumbo, Waweru, Conner, & Thomson, 2011) However, the majority of these intervention measures have been practically ineffective. Massad, Behrens, Cautinho, and

Behrens (2011), Mabaso and Ndlovu (2012), and Jambo, Araoye, and Damen (2011) argued that economics, climatic factors, and limited knowledge on malaria infection are just some of the reasons as to why these measures have proved ineffective in many regions. This study addressed the gaps that currently exist in already implemented malaria control measures by public health officials in their efforts in addressing malaria control in Nairobi, Kenya from the perspective of ordinary citizens.

Problem Statement

Malaria infection has been and continues to be a serious public health concern that has concerned many in the public health care industry. Over the years, significant efforts have been introduced to help address malaria infections (Aide et al., 2011; Jambo et al., 2010; Osonuga, et al., 2011; Talisuna, Adibaku, Dorsey, Kamya, & Rosenthal, 2012). Recently, it was reported by the WHO (2012) that there is a new strain of malaria that is not responding to traditional treatment. This is a new concern that is fundamental to this dyer problem. Intervention measures already employed over the years by many health care experts have helped control the level of the spread of malaria to a certain degree. However, the spread of malaria continues to affect many.

One area in Sub Saharan Africa that continues to feel the devastating effects of malaria is in Nairobi, Kenya. This area has suffered significantly from the serious health implications associated with malaria infection. Treatment modalities such as spraying highly infected regions, education, climatic intervention, and the introduction of mosquito nets are just some of the efforts employed in Nairobi, Kenya in particular and many malaria affected countries in Africa in the effort of fighting malaria (Ejik et al.,

2011; Kihara, Haan, Garrashi, Neville, & Newton, 2010; Mabaso, & Ndlovu, 2012; Meyrowitsh et al., 2011; Rabarijaona, et al., 2009). These treatment modalities have proven to be practically ineffective, inefficient, and in some cases, insufficient in Sub Sahara Africa.

Consequently, to this date, Nairobi, Kenya citizens continue to be victims of malaria infection in light of these treatment modalities. It is important to introduce additional measures to effectively address malaria infection in this region. This study explored the views of women in Nairobi, Kenya on how they view intervention measures already introduced by public health care experts in fighting malaria in relationship to their effectiveness as well as infectiveness. The reviewed literature, found in Chapter 2, demonstrates that a limited amount of data exists on the views of ordinary citizens on already implemented measures in fighting malaria. This is an area that my study explored.

Purpose of the Study

The purpose of this study was to explore the attitude of women in Nairobi, Kenya on intervention measures already employed by health care policy makers on methods of controlling malaria. Research paradigms are often used to understand peoples' beliefs or assumptions on how various things work in society. Schmidt (2013) asserted that in research, paradigms help guide or provide a framework for researchers as they try to understand how things work. The interpretivism paradigm is often utilized in qualitative research as it enables participants to express their reality on a phenomenon as they experience them (Schmidt, 2013). The interpretivism paradigm was utilized in this study

as it enabled women in Nairobi, Kenya to openly express their experiences and views on how they view already implemented intervention measures in fighting malaria in relationship to their effectiveness or ineffectiveness.

Research Questions

Central or Primary Research Question

RQ1 The overarching research question is the following.

What are the perspectives of women in Nairobi, Kenya toward malaria control? Sub-questions include the following:

How do women in Nairobi, Kenya perceive the intervention measures already implemented in controlling malaria?

What are the experiences of women in Nairobi, Kenya on the already implemented measures in controlling malaria?

Framework

The ecological systems theory by Bronfenbrenner (1979) was used as a theoretical framework to conduct this study. The ecological systems theory by Bronfenbrenner asserted that human behavior is influenced by various systems in the environment. The ecological system theory is based on five fundamental premises. These premises are the microsystem, mesosytem, exosystem, macrosystem, and chonosystem. According to Bronfenbrenner, the microsystem deals with primary relationships within the system while the mesosystem deals with two party relationships, for example an individual and his/her immediate community. On the other hand, the exosystem deals with an individual and systems outside their immediate environment,

such as the workplace. The macrosystem is composed of individual relationships with the law or customs, and finally the chronosystem deals with human experiences over time.

Bronfenbrenner (1979) believed that each system is interdependent on one another. Bronfenbrenner further believed that the major premise of the ecological systems theory is to improve people's interactions with various systems in their environment, such as improving how community health programs operate in their environment. Bronfenbrenner argued that for a system to work effectively, all systems have to play integral as well as active roles in order to achieve equilibrium. To understand human views or perception of events as they occur in their environment, it is important to understand the role various systems play.

This study used the ecological systems theory as a lens analyses to understand how women in Nairobi, Kenya view the intervention measures already implemented by public health decision makers towards malaria control in relationship to their effectiveness as well as ineffectiveness. Therefore, based on the above analysis, the ecological system theory was selected as a theoretical lens of exploration of how women in Nairobi, Kenya view public health policies geared towards malaria control.

Nature of the Study

In qualitative research there are various designs. These designs include case study, narrative, grounded theory, ethnographic, and phenomenology (Creswell, 2009; Denzil, & Lincloln, 2000; Frankfort-Nachmias, & Nachmias, 2008; Patton, 1990, 2002). While some of these designs could be used for this study, it is highly advisable for

researchers to pick a design that is most applicable and appropriate for a study. Malaria is a phenomenon that has plagued populations for generations in the past. Over the years, control as well as eradication modalities have been implemented to address this phenomenon.

In order to conduct this study, the most appropriate and applicable design has to be chosen. While some of the approaches might be reasonably appropriate for this study, phenomenology was more appropriate and applicable in this study; hence, this was the approach I selected. Phenomenology design enables individuals to relay their social as well as physiological experiences as they perceive them (e.g., Kruger, 1998; Maypole & Davis, 2001). As such, the phenomenology design was chosen over its counterparts.

Furthermore, the qualitative research method was used to complete this study. The qualitative research approach allows the researcher to gather in depth understanding of human behavior and provide reasons for their behavior (Creswell, 2007; Frankfort-Nachmias & Nachmias, 2008; Patton, 2002;). Data were collected using audio tapes during interviewing. Journaling was also be used to gather relevant qualitative data during interviewing. Finally, NVivo 9 software was used to analyze collected qualitative data upon the completion of interviews.

Definitions

Protists: A type of microorganism of the genus Plasmodium (U.S. National Library of Medicine, 2013).

Plasmodium: A protozoan parasite causes malaria (WHO, 2013).

Treatment modalities: Methods of different treatments (U.S. National Library of Medicine, 2013).

Morbidity: An analysis of disease condition (U.S. National Library of Medicine, 2013).

Plagued: Epidemic (WHO, 2013).

Paradigm: A set of beliefs or assumptions (Patton, 1990).

Assumptions

Researchers are encouraged to remain aware of assumptions as research is conducted (Creswell, 2007, 2009; Frankfort-Nachmias & Nachmias, 2008). Unlike a quantitative study, in qualitative studies, there are no hypotheses. As such, this study was conducted with three assumptions in mind. These assumptions are as follows:

- Women in Nairobi, Kenya have an unfavorable perception on how public health officials in Nairobi, Kenya have controlled malaria.
- Women in Nairobi, Kenya believe that through a systematic collaboration between public health policy decision makers and the citizens of the cities, mosquito/malaria infections in the city can be effectively controlled.
- Women in Nairobi, Kenya believe that public health officials are not doing enough to control malaria.

The assumptions are necessary as each forced me to remain objective rather than subjective as I conducted this study. Researchers are encouraged to avoid research bias when conducting research studies (Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008). Malaria infection continues to affect the health of many ordinary citizens in

Nairobi, Kenya. It is fair to note, however, that over the years, several intervention measures have been employed by Nairobi public health officials, yet malaria continues to remain a serious public health concern for the residents of Nairobi, Kenya. Assumptions in this case are necessary as malaria, despite all the intervention measures employed, continues to affect the health of many in Nairobi, Kenya. Therefore, it is easy to assume that the attempts by health care professionals in the efforts of controlling malaria continue to yield little results.

Scope and Delimitations

The major focus of the outlined research problem has clearly articulated the impact malaria has had and continuous to have on the health of many in Africa. Literature reviewed to present has signified that intervention measures introduced over the years have failed to effectively control malaria. The attitude of women in Nairobi, Kenya and their views on the intervention measures already initiated by public health policy makers in their efforts in fighting malaria over the years is an important aspect to explore in the relationship to control malaria. Choosing women was important to this study as women in this region and many other regions in the world are the primary care givers to family members infected with malaria (Okeke, 2010). Empowering and providing women the opportunity to actively participate in voicing their opinion on already implemented measures and providing further insight on the devastating effects malaria has had on their community is integral in moving the fight to eradicate or control malaria in this region.

Furthermore, women in most environments often bear the burden of caring for loved ones when faced with health challenges. As such, the need to choose women as participants was important as they provided rich information, relaying their experiences on malaria intervention measures already implemented and the impact these intervention measures have had on them directly or indirectly over the years (Houeto et al., 2007). Furthermore, during the course of the literature review relevant to the topic, it was clear from already reviewed literature that women's viewpoints have not been comprehensively researched on intervention measures already employed in the relationship to effectiveness or ineffectiveness.

Finding a theory that best fits this research study was important to me. After reviewing several theories, the ecological systems theory by Bronfenbrenner (1979) was chosen over its counterparts as it encourages individuals to detail their experiences with various systems from a holistic standpoint. This theorist asserted that the interaction an individual has with various systems in their environment over a period of time shapes their views. Furthermore, this theory provided the participants the opportunity to relay their experiences with public health policy makers on already initiated, developed, and implemented intervention measures in fighting malaria in Nairobi, Kenya.

Finally, it was important that during research, boundaries were kept at all times. Keeping boundaries between participants and ensuring that the instrument used to gather data was appropriate was also important. In qualitative research, I worked in close proximity to the participants; therefore, ensuing that I did not seriously influence the study's outcome but remained objective rather than subjective at all times was

imperative. This was a scope that I used in order to establish authenticity into the findings of this research study.

Limitations

The methodology selected for this study had limitations that cannot be overlooked. The credibility of qualitative research has also been debated by many scholars (see Fredrick, 2012; Golafshani, 2003). Validity as well as the reliability of the qualitative research method is an important aspect of research that has to be adequately understood (Patton, 2002). Golafshani (2003) asserted that in order for a study to remain reliable, the study has to prove trustworthy. Moreover, the results must remain valid and should also be collaborated by others and must meet the set social scientific standards. In addition, Shavelson and Town (2002) alleged that in order for quality and trustworthiness to be maintained, it is important for a study to remain reliable, transferable, dependable, and credible. The active involvement of the researcher in the collection as well as analysis of data could also introduce bias in the study.

Therefore, this research study was conducted with five major anticipated limitations.

These limitations were as follows:

- I grew up in Nairobi, Kenya, which could impact my biases and prejudice due to possible predispositions to participants and environment.
- The targeted sample population only dealt with women, which could be construed as gender bias.
- The results or outcomes obtained from gender unequal social scientific research

studies are usually subjects for overwhelming scholarly scrutiny.

- The research study was a single individual research study, which could have created possible limited scholarly interpretations. And finally,
- The sample population for this study may not be generalized or replicable to the entire population of Nairobi, Kenya.

Montoya (2012) recommended that researchers gather large amount of data to avoid bias. Montoya also encouraged researchers to avoid bringing in personal beliefs into the study in order to avoid bias. Understanding design bias, reading interview questions with an objective party, and ensuring that data are gathered appropriately is also recommended to avoid bias (Montoya, 2012). Validity and reliability are the most important concepts to establish in any research. As such, this was achieved by ensuring that results were reported accurately. Additionally, personal beliefs were not introduced during the study. Research questions were presented fairly and reviewed by another party prior to interviewing.

Delimitations

This study was delimited to (a) women in Nairobi, Kenya, (b) the women selected have experienced malaria infection directly or indirectly, and (c) the participants understood and spoke English.

Significance

Malaria infection continues to be a serious healthcare problem that has forced health care experts all around the world to continuously and tirelessly try and find intervention measures that can help control or eradicate this infection. While countries in

the Western world have effectively managed to eradicate malaria infection, the control of malaria has not been realized in the continent of Africa. Areas mostly affected by this infection are in Sub Saharan Africa. This study added to already introduced intervention measure initiated in fighting malaria all around the world, especially in Africa. The views of women in Nairobi, Kenya on already introduced intervention modalities are also an important aspect of moving the fight in eradicating malaria in a positive direction.

Furthermore, it is important for health care experts in Nairobi, Kenya to effectively understand how ordinary citizens' views have already initiated intervention measures. It is arguable that bringing the voices of these women to light has assisted health care experts in this region in understanding the effectiveness of already initiated malaria intervention measures. Moreover, health care experts in this region and other parts of Africa were provided the opportunity to understand and incorporate the views of ordinary people in the effort of fighting malaria in this region. Likewise, women in most parts of the world are primary care takers and mostly bear the responsibilities of caring for their loved ones when infected by malaria.

As such, their views are important in helping understand whether the already introduced intervention measures in Nairobi, Kenya are effective or ineffective. This study brought about positive social change as ordinary citizens felt empowered; their voices were heard and they became active participants in fighting malaria infection in Nairobi, Kenya. This will hopefully continue in all countries in Africa and beyond that are affected by malaria infections.

Summary

The CDC (2012) in collaboration with WHO (2013) have recognized that malaria infection has devastated and continuous to devastate the lives of many in Africa. The deadly health implications associated with malaria infection are mostly felt in Sub Saharan Africa. The WHO reported that early diagnosis and treatment are important in lowering morbidity and death from malaria. Malaria mostly affects the health of the most fragile: children, pregnant women, and individuals with compromised immunes systems (Peter, Manuel, & Shetty, 2011; Smereck, 2011). Conversely, public health care experts in this region have fought tirelessly in the attempt to control and eradicate malaria infection.

However, their efforts have failed to effectively eradicate or control this infection. The introduction of mosquito nets, residual spraying, education, and just recently a vaccine have not eradicated or effectively controlled malaria in this region. Understanding the views of women in Nairobi, Kenya on intervention measures already introduced in this region was paramount in ensuring that public health officials understand the effectiveness or ineffectiveness of already introduced malaria intervention measures.

This study was important as ordinary citizens (women) were provided the opportunity to voice their opinion on how malaria has affected and continuous to affect their health as well as finances. Chapter 1 of this qualitative study addressed the importance of the study and provided background of the study. Furthermore, the study was introduced, and the problem statement as well as the research problem was

addressed. The ecological systems theory by Bronfenbrenner (1979) was also introduced and was used as a lens of analyses in this research study.

Finally, the definition of terms, assumptions, delimitations, limitations, and the significance of the study were addressed. Chapter 2 of this research will provide additional insight on the theoretical framework chosen for the research. Reviewed literature will be detailed in this chapter. Chapter 3 will provide the methodology of the study. Chapter 4 will provide the data findings. Chapter 5 will present the analysis, conclusions, and recommendations for future research.

Chapter 2: Literature Review

Introduction

The spread of malaria in Sub Saharan Africa has undeniably affected and continues to affect the health of many. Public health officials committed to controlling malaria and ultimately eradicate malaria continue to face challenges in their efforts in finding the most effective intervention measures in addressing this serious health problem. This study addressed the perspective of women in Nairobi, Kenya on the intervention measures already employed in addressing malaria infection in relationship to effectiveness or ineffectiveness.

Literature reviewed for this study was relevant to this topic of study. Literature reviewed identified that despite the significant strides made in addressing malaria infection, public health officials have failed to effectively control malaria in Africa. To date, numerous studies have been conducted to find the most appropriate measures in controlling and ultimately eradicating malaria. Studies that address the impact malaria has had on children and the everlasting health implications associated with delayed treatment once infected have been conducted over the years (see Dubos et al., 2010; Kihara et al., 2010; Osonga et al., 2012). Children are not the only population affected by malaria infection; pregnant women and their unborn children have also been found to suffer adverse health complications from malaria infection (Omalu, 2012; Raimi, 2010; Smereck, 2010). Literature reviewed also signified that major intervention measures have been employed in the effort to control malaria.

These measures include but are not limited to the introduction of mosquito treated nets, combination treatment medications, spraying, and education (Jambo et al., 2010; Okeke, 2010; Yagzom; 2011). Despite the introduction of these measures, malaria continues to be a force to be reckoned with. The literature reviewed was relevant to this study as it signified that malaria is still a health problem in Africa, and additional studies need to be introduced in to find the most appropriate, applicable, and effective measures in fighting malaria. Allowing women in Nairobi, Kenya to voice their opinion on how they view already introduced intervention measures is important as it empowered ordinary citizens to become active participants in the plight in fighting malaria in Nairobi, Kenya in particular and Africa in general. Major sections of this chapter addressed the major components of the theory chosen for the study, and the literature most appropriate and applicable to this study was also reviewed.

Literature Search Strategy

The Walden Library provided me relevant literature applicable for this study. Search engines used to gather literature included ProQuest Central, Academic Search Complete, Science Direct, Medline, and Google academic. The literature review was divided into various topics. These topics include *malaria in children*, *malaria in pregnant women, climatic effects on malaria, imported malaria, cost associated with malaria, accurate diagnosis*, and *intervention measures*. Key terms that included these topics were used to gather literature related to my topic. Despite the low cases reported in western countries, the literature reviewed did not just concentrate on the continent of Africa but western countries as well. Reviewing literature from western countries was

beneficial to this study as it was important to identify that malaria, if not controlled in Africa, can impact European countries. Additional literature that was older than 5 years old was also included as it was vital to establish that malaria has been a health problem that has affected the health of many for generations.

Theoretical Foundation

The theoretical framework that was chosen and used in this study is the ecological systems theory by Bronfenbrenner (1940).

Origin of the Ecological System Theory

The ecological systems theory was originated from Bronfenbrenner's original works in the 1940s. This theory asserts that human development is shaped from individual life experiences. These experiences are affected by various systems in their environment. Bronfenbrenner (1979) believed that these systems are divided into microsystems, mesosytems, exosystmes, and macrosystems. The microsystem is often associated with individuals' interactions with their immediate system (e.g., family); mesosytems are often associated with individuals' interactions with two microsystems (e.g., school and family). Exosystems is a system that is external to the immediate environment. Macrosystems are part of a larger system that encompasses the larger culture and attempts to understand how various sociological environments affect psychological development.

Theoretical Application of Ecological System Theory

The ecological systems theory has been applied by many scholars to understand certain phenomena's in the environments (see Barrera, 2011; McCall, 2009; Suzuki,

2011). Human development and perception of how events unfold is significantly impacted by various interactions and experiences in their environment. Suzuki (2013) examined the works of Derauf who utilized the bio psychosocial model to understand the impact various systems in the environment have on individuals and ways these individuals respond to disease. Suzuki (2013) found that various systems in the environment, micro, mezzo, and macro, all affect the way individuals interact and respond to illness.

A previous study conducted by Barrera (2011) utilized the ecological systems theory to examine how various systems in the environment affect ways mental health is viewed and treated in the Latin community. The ecological systems theory was used to examine why there was a low turnout rate of Latinos in accessing mental health services. Individuals included in the study were over the age of 18. This study found that family relationships (microsystems) play a major role in how mental health is viewed in this community.

The ecological systems theory was also previously applied in the examination of school human development by McCall (2009). McCall (2009) found that learning, health as well as social behaviors are determined by the various interactions individuals have with the systems in their environment. McCall (2009) concluded that an individual's experience with the various systems in the environment determines the maturity and growth of an individual. The application of the ecological systems theory by Bronfenbrenner (1979) on the above studies was applied in a similar fashion with this study. The experiences that women in Nairobi, Kenya have had on already introduced

measures in controlling malaria by various public health systems was also explored. As such, this theory was used as a lens in examining the effectiveness or ineffectiveness of the role played by various systems in their environment in the plight of controlling malaria from the perspective of women in Nairobi, Kenya.

Justification for Selection of the Ecological Systems Theory

The ecological systems theory was chosen over its counterparts as it will bring forth the views of women in Nairobi, Kenya on how they perceive intervention measures already employed in fighting malaria in relationship to their effectiveness and ineffectiveness. The ecological systems theory provided the participants the opportunity to relay their experiences with public health officials (macro-system) dealing with malaria control initiatives. As such, this theory was most appropriate for this study.

Relationship Between Theory and the Study

Ecological systems theory was selected to be applied in this study as it enabled the participants to relay their experiences with the public health systems when dealing with malaria control and treatment. These participants were provided the opportunity to voice their opinions on how they view the already initiated treatment modalities in the attempt to control and eradicate malaria. This study built on this theory as it brought insight on the role played by public health officials (macro-system) in the efforts of fighting malaria in Nairobi, Kenya, and how ordinary citizens view these efforts. This theory brought light to the importance of collaboration between various systems in fighting and eliminating disease. Therefore, having given the basic foundation of Chapter 2, the next sections address the actual literatures reviewed for this study.

Economic Models and Cost Associated With Malaria Control

Malaria control and treatment has an economic cost. Chime, Goodman, and Mills (2003) utilized the cost risk benefit model to conduct an earlier study to examine the true costs associated with the treatment of malaria in Africa. The researchers reviewed several articles from Gambia, Ghana, Nigeria, Ethiopia, Rwanda, Malawi, Burkina Faso, and Kenya. The literature reviewed focused mainly on the direct and indirect cost associated with malaria treatment in pregnant women, children diagnosed with anemia due to malaria infection, malaria interactions with other diseases, and malaria effects in intellectual development. Chime et al. (2003) found that the methodology used to calculate the direct as well as indirect cost associated with malaria in this population was inaccurate.

Chime et al. (2003) recommended that the cost associated with coping strategies adopted by the citizens of Africa among other factors have to be included in order to find the true economic impact associated with malaria in this region. Chime et al. (2003) further recommended that the direct as well as the indirect costs associated with malaria infection from a control to prevention perspective have to be accurately accounted for in order to accurately account for the true cost associated in treating malaria in Africa. They summed that by accurately addressing the actual cost associated with malaria will encourage other stakeholders to invest wisely when dealing with malaria control and infection in Africa.

A proceeding study conducted by Massad, Behrens, Cautinho, and Behrens (2011) utilized quantitative research method. The cost risk benefit analysis model was

used in determining the cost effectiveness of chemoprophylaxis treatment in controlling malaria as compared to other treatments in fighting malaria in European travelers. Data reported in 2005 was collected from Office for National Statistics (ONS). Additional data was collected from Malaria Reference Laboratory (MRL). These data were compared to travelers who had traveled from the UK to Brazil, Thailand, Indonesia, India, and other countries in West Africa. The study found that the effective use of chemoprophylaxis depended on the country of travel. Additional findings signified that the use of chemoprophylaxis was not effective to travelers who traveled to Brazil and Thailand. A major strength of this study was that it was able to identify that chemoprophylaxis treatment was effective for European travelers who traveled to West Africa, Indonesia, and India depending on the length of stay. However, one major limitation associated with this study is that the researchers did not provide alternative treatment to travelers who traveled to Brazil and Thailand as chemoprophylaxis was shown to be ineffective treatment methodology to this population. However, Massad et al. (2011) recommended that future studies should include other factors such as changes in transmission in order to accurately determine the effectiveness of chemoprophylaxis.

A comparable study conducted by Lubell et al. (2011) examined the effectiveness of parenteral artesunate on children diagnosed with severe malaria and the overall financial cost to the hospital. The researchers utilized the perspective of the provider using the cost effectiveness framework analysis using the cost per disability adjusted life year (DALY). Data were collected from four African Quinine Artesunate Malaria Treatment trial (AQUAMAT) sites, two from Tanzania and the remaining two from

Uganda and Nigeria. The cost analysis model was used in this study. Data reported were collected from June 2009 through July 2010. The medical information of 2,300 children was analyzed and the cost associated with treatment using artesunate was examined from admission through discharge. The study found that the cost associated with treatment of artesunate versus quinine was not significantly different. The study concluded that artesunate was a cost effective and affordable measure in treating children diagnosed with severe malaria. Lubell et al. (2011) recommended that future studies need to include additional financial factors such as time spent by nursing personal in administering medications as well cost associated in change of drug policy for accurate and reliable findings factors to be achieved.

Another study conducted by White, Conteth, Cibulskis, and Ghani (2011) evaluated the effectiveness of costs and cost effective measures already initiated in the introduction of malaria control measures such as residual spraying, indoor spraying, diagnostic and appropriate testing and treatment, and the use of insecticide treated nets. Data from the academic journal PubMed was reviewed, and 55 studies that addressed costs and 43 studies that addressed cost effective measures were included in the study. Data reviewed was published from 2000 through 2010. 78% of the studies included were conducted in Sub Saharan Africa, 18% were from Asia while 4% were from South America.

The study found that the money spent on these intervention measures in relationship to cost and cost effectiveness were appropriated when compared to the inflation rate of 2009. White et al. (2011) concluded that the cost effectiveness of these

intervention measures cannot be accurately detailed. They recommended that additional measures such as inflation should be accurately introduced and evaluated to ensure that cost and cost effectiveness of malaria intervention measures are accurately represented. White et al. concluded that the evaluation of epidemiological as well as clinical cost should be included in future studies in order to accurately calculate the effectiveness of intervention measures employed in fighting malaria in relationship to cost and cost effective measures.

A similar quantitative research study by Paintain, Mangham, Car, and Shellenberg (2012) also utilized the cost benefit analysis model to examine the cost effectiveness of delivery of insecticide treated nets (ITNs) to children under the age of 5 and pregnant women in malaria endemic countries. Literature was reviewed from various academic databases which included Medline, Global health, and Africa and CAB abstracts. Thirty two articles were selected for the study. Twenty of the studies selected were conducted in African countries. Literature reviewed was selected from January 2000 through December 2010. The study found that delivery of ITNs to malaria endemic countries was a cost effective measure of controlling malaria in this population. I concluded that delivery of ITNs to children under 5 and pregnant women were cost effective in controlling malaria. However, Paintain et al. (2012) recommended that additional cost measures need to be put in place in order to find the true cost of delivery of ITNs.

Analysis of the Impacts of Costs Associated With Malaria Control

The above reviewed literature addressed cost and economic models related to malaria infection. Chime et al. (2003) evaluated the direct and indirect cost associated in

treating malaria in various populations. Lubell et al. (2011) evaluated the cost of treating children from four sites in Africa. The Chime et al. study included numerous populations, further providing reliability in findings. This study included several factors that affected cost, making the results more reliable as compared to the study conducted by Lubell et al. that only concentrated on children from medical sites in Africa. The Lubell et al. study was also similar to the study conducted by Paintain, Mangham, Car, and Shellenberg (2012) as the cost effectiveness of medications was evaluated in these studies. These studies found that medications introduced sometimes proved effective in some populations and could not be conclusively recommended for treatment as compared to other medications. Lubell et al. (2011) and Paintain et al. (2012) failed to recommend cost effective medications or efforts that could be introduced to effectively treat malaria cases to European travelers and children in Africa respectively.

Additional studies by White et al. (2011) and Wiley et al. (2012) conducted studies to determine if money already spent on malaria control measures were appropriate in controlling malaria. The importance of the literature reviewed addressing cost while using various economic models associated with malaria is one that cannot be ignored. Despite the positive nature of these studies, they failed to conclusively provide accurate findings on the true cost associated with malaria control and treatment to the continent of Africa. These studies were important as they used various economic models to disclose cost associated with malaria infection and control. Additionally, these studies brought light to the ongoing health problem associated with malaria infection. Despite the inability to give the true cost associated with malaria infection, the financial implications

of this infection cannot be ignored. However these studies did not explore the attitude of adult women in Nairobi, Kenya on already introduced intervention measures in relationship to effectiveness versus ineffectiveness. This is an area that this study explored. As such, additional literature reviewed addressed the impact of malaria importation from neighboring countries.

Impacts of Importation on the Spread of Malaria

Dube, Ismail and Hoosen (2008) conducted a quantitative study in South Africa that examined records of specimens that tested positive for malaria from individuals who had traveled to neighboring countries such as Mozambique. Dube, Ismail and Hoosen (2008) examined and included 516 records in the study obtained from medical microbiology laboratory collected within a three-year period. The study found that a total of 94% or 485 out of 516 smears was identified as positive for malaria infection. Positive cases identified were from individuals that had traveled to a neighboring country (Mozambique). The study concluded that even though limited cases of malaria was reported in this non-endemic area in South Africa, malaria importation cases cannot be ignored. Dude et al. (2008) concluded that testing and treatment measures need to be comprehensively introduced and implemented to individuals who travel to and from neighboring countries in order to avoid mass importation of malaria infections.

Solomon Island, a region in Isabel Province in Asian Pacific region, was identified as an area that has one of the highest cases of malaria. National Surveillance program was implemented to help monitor and address malaria imported cases. O'Sulivan et al. (2011) conducted a qualitative research study from March 2010 through

April 2010 using Focus groups with 22 key informants selected to participate in the study. I conducted to understand the views of ordinary citizens on the effectiveness of the National Surveillance program implemented to address imported malaria cases in their borders. Data was collected from port authorizes, airlines as well as ship passengers that travel to this region. The study found that majority of the participants supported the National Surveillance program as a useful measure in helping track malaria imported cases in Solomon Island. The study also found that majority of the participants felt that individuals who traveled to malaria endemic countries ought to be carefully screened for malaria infection. The study concluded that already introduced surveillance systems are helpful in controlling the number of imported malaria cases in this region.

A similar study conducted by Romi et al. (2010) examined the number of cases of malaria imported into Italy. These researchers stated that even though the cases of reported malaria cases have declined, malaria continues to pose a serious health threat to the citizens of Italy. They utilized the quantitative research methodology to conduct a study and data from 2000 through 2006 was collected and analyzed from Ministry of Transportation. A total of 5219 cases were included in the study. The studies found that the majority of the cases of malaria reported during this period were mainly from travelers who traveled to the continent of Africa at 93% or 4854 out of 5219 cases. Majority of the cases were highly infected by Plasmodium falciparum. The study concluded that individuals who travel from other countries especially Africa have to be effectively screened and educated on malaria infection and treatment.

In order to determine the effects malaria has on Thailand and Kritsiriwuthinan, Ngrenngarmlert (2011) conducted a quantitative study that involving 294 immigrant participants. Blood samples was drawn from 294 selected participants. Each blood sample was examined for malaria. The study found that majority of migrant workers tested positive for Plasmodium spp. The study concluded that migrant workers have a higher probability of being infected by malaria. The researchers encouraged that migrant workers be effectively evaluated and treated for malaria infection due to their high-risk susceptibility.

In the same year a quantitative study was conducted by Unger et al. (2011) in Scotland to determine the number of cases of malaria imported. The researchers asserted that even though Scotland had managed to eliminate malaria in their county, over the years a significant number of cases of malaria have been reported in Scotland. Data that was reported and entered in the surveillance database of the Health Protection Scotland (HPS) and Malaria Reference Laboratory (MRL) from 2003-2008 was utilized in this study. Data was collected from four major sites. These sites include Edinburgh, Aberdeen, Glasgow and Inverness. The study found that 252 cases of malaria had been diagnosed and treated. The study further found that out of the 252 cases identified approximately 235 or 93% cases had been reported to Malaria Reference Laboratory while the remaining 17 or 7% cases were reported to Health Protection Scotland. The study also found that majority of the cases reported and treated had been cases of individuals who had travel to West Africa. Unger et al. concluded that imported malaria cases have significantly increased in Scotland. Unger et al. (2011) recommended that

effective reporting measures have to be incorporated in Scotland in order to keep an accurate record of malaria imported cases.

In a similar study conducted by Pavil and Maltezou (2012) examined the risk factors associated with individuals who travel to highly infected malaria regions especially sub-Saharan countries. The researchers conducted a quantitative study and examined original data from MEDLINE database from January/2009 through July/2009. Additionally, data from public health organizations as well as travel statistics were reviewed. Literature reviewed identified the number of individuals who had traveled to and from Sub- Saharan Africa within this period and the number of malaria cases reported in developed countries (Europe and North America). The researchers found that the increased numbers of malaria cases identified in the developed countries are attributed to an increase in travel to countries highly impacted by malaria. Pavil and Maltezou concluded that additional affordable precautions have to be given to travelers who travel to and from developed countries in order to control the spread of malaria.

Yangzom et al. (2011) examined the effectiveness of the intervention measures employed by public health officials in Bhutan in controlling malaria. Secondary data was utilized to conduct the study. Intervention measure evaluated for their effectiveness included durable insecticide nets, residual spraying, introduction of mosquito treated nets and combination treatment of malaria that included artemisinin base combined with therapy and evidence-based case management. Selected data ranged from 1994 through 2010. The study found that since the introduction of the above measures, malaria cases in this region had significantly dropped to 98.7% during this period. Yangzom et al.

(2011) recommended that health care policy makers continue to ensure actively that intervention measures employed are effectively utilized and additional measures need to be incorporated in their border in order to limit the number of cases of malaria imported cases.

Analysis of Impacts of Importation on the Spread of Malaria

Yangzom et al. (2011) examined the effectiveness of the intervention measures employed by public health officials in Bhutan in controlling malaria. Secondary data was utilized to conduct the study. Intervention measure evaluated for their effectiveness included durable insecticide nets, residual spraying, introduction of mosquito treated nets and combination treatment of malaria which included artemisinin base combined with therapy and evidence-based case management. Selected data ranged from 1994 through 2010. The study found that since the introduction of the above measures, malaria cases in this region had significantly dropped to 98.7% during this period. Yangzom et al. (2011) recommended that health care policy makers continue to actively ensure that intervention measures employed are effectively utilized, and additional measures need to be incorporated in their border in order to limit the number of cases of malaria imported cases.

A review of the literature related to malaria importation is important in bringing awareness of cases of malaria importation. Romi et al. (2010), Ungger et al. (2011) and Pavil and Maltezou (2012) addressed the impact of malaria importation to developed countries. The findings of the above studies were similar as they found that western travelers traveling from countries in Sub-Saharan African especially reported higher

cases of malaria as compared to other countries. These studies were important as they brought additional light to the dangers of malaria. Additional studies by Ungger et al., Romi et al. and Pavil and Maltezou encouraged public health policy makers and providers to introduce effective treatment measures to European travelers especially those that traveled to the continent of Africa.

The significance of these studies cannot be overlooked. While these researchers recommended that effective treatment methodologies needed to be introduced, they failed to recommend effective treatment modalities that needed to be incorporated to help protect European travelers. Dube et al. (2008) study, on the other hand, was different from the above studies as it addressed mosquito importation in South Africa from a neighboring country Mozambique. This study was important as it brought awareness to public health officials that malaria importation can occur between African countries, and the need to introduce evaluation and treatment measures in their individual borders is paramount.

O'Sullivan et al. (2011) and Yangzom et al. (2011) studies as compared to the above studies despite their similarities as they addressed malaria importation cases used a different approach to conduct their studies. O'Sullivan et al. (2011) and Yangzom et al. (2011) examined the effectiveness of a surveillance program and intervention measures already employed in the borders of Solomon Island and Bhutan respectively to help monitor malaria cases. These studies bear some similarities, but there were some fundamental differences. Despite the similarities, O'Sullivan et al. (2011) and Yangzom et al. (2011) failed to address the views of women on already implemented measures in

controlling malaria in relationship to their effectiveness or ineffectiveness. This is an area that my study examined.

Also, from a practical standpoint, these literatures were more vested in data collection associated with malaria infections and treatment rather than addressing public health issues related to implemented malaria treatment modalities from the perspective of the people. In order to further explore and bring to light the damaging effects of malaria infection, it is important to review additional literature on the impact of malaria on other populations. As such literature reviewed on the impact malaria has had on pregnant women was addressed in the next section.

Impacts of Malaria on Pregnant Women

Albiti, Adam, and Ghouth (2010) examined if malaria was a risk factor for anemia in pregnant women. They conducted a cross- sectional study from August 2007 through April 2008 in a hospital in Yemen. A quantitative study was conducted using pre-tested questionnaires to gather data from participants. 900 women parturient women between the ages of 15 to 46 who tested positive for malaria were included in the final analysis. SPSS software was used to analyze data. The study found that 694/900 or 71% tested positive for anemia while 16 tested positive for severe anemia, and the rest tested negative for anemia. The study found that even though 76% of the women tested positive for anemia collectively, this percentage was not significantly different from other women who are not pregnant but are also infected by malaria. However, the study found that malaria contributed to low birth rates in this population. The study concluded that malaria was not a risk factor for anemia. Aibiti et al. (2010) recommended that

additional intervention measures need to be employed to ensure that pregnant women are adequately protected from malaria infection in order to avoid complications during pregnancy and delivery. This study even though addressed the risk factor associated with malaria and anemia in pregnant women it was important to health care practitioners as it identified that pregnant women infected by malaria were at risk of low birth weight.

To further determine the effects of malaria in pregnant women, Raimi and Kanu (2010) conducted a quantitative study in Lagos Nigeria to determine if pregnant women were more susceptible to malaria as compared to non-pregnant women. 50 women were selected to participate in the study. Reported cases of malaria in pregnant women were selected in the months of April and September when malaria infection is at its all-time high. The study found that younger pregnant women were more likely to report cases of malaria at 52% as compared to older pregnant women at 48% during this period. However, the study could not conclusively identify the reasons for these statistical differences. The study concluded that non-pregnant women were less likely to report malaria infection as compared to pregnant women, making it difficult to have an accurate statistical finding. Raimi and Kanu recommended that the incorporation of additional intervention to help protect this population from malaria is essential.

In a follow-up qualitative study conducted by Karunamoorthi, Deboch, and Tafere (2010), explored the knowledge pregnant women in Jimma, a small town in Ethiopia on malaria transition and treatment. The researchers included 225 women in their study. The participants volunteered for the study. Pretest questioners were utilized to gather data. The study found that 221 women were aware of malaria, while 174/225 participants

understood how malaria was transmitted. The study concluded that even though pregnant women were aware of malaria infection, misconceptions still existed on prevention measures associated with malaria infection. Karunamoorthi et al. (2010) recommended that additional educational measures have to be introduced in order to bring further awareness of mosquito transmission and treatment in this population.

Smereck (2011) conducted a qualitative research study using a case study design approach in order to examine the effects of malaria in pregnant women. A pregnant woman (20 weeks gestation) presented herself in the emergency room in the United States after she traveled from India and Asia. The participant had not taken any malaria treatment drugs and was infected by Plasmodium vivax. Smereck found that after treatment, the patient fully recovered from malaria; however, she was unable to sustain her pregnancy. The study found that malaria often has a tragic ending when treatment is not effectively implemented especially in pregnant women. Smereck recommended that pregnant women suspected to have been exposed to malaria need to be treated expeditiously using the most appropriate medication. Smereck (2011) concluded that the type of malaria infection depends on the geographical area of travel and medical personnel have to be trained to identifying and employ the most appropriate treatment depending on the infection. Smereck recommended that even though malaria is not a common infection in United States, medical experts need to be educated on identifying malaria symptoms. In attempts to understand effects of malaria on pregnant women and their unborn children, Pell et al. (2011) utilized Meta ethnographic approach in their proposed study.

Meta ethnographic approach in analyzing and synthesizing data was utilized by Pell et al. to understand the effects of malaria in pregnant women in relationship to low birth rates. Pell et al. reviewed qualitative data from several scholarly data databases to evaluate the effectiveness of intervention measures already introduced to help reduce malaria infection in pregnant women. Reviewed studies were selected from East Africa. 37 studies were included in the study. Out of the 37 articles reviewed only 17 pregnant women were included in the study. The study found that despite the education already introduced to this population in fighting malaria, some participants were unaware on how to prevent and effectively treat malaria. As such, many failed to comply with treatment when exposed to malaria infection. Additional factors such as cost, household decision making, gender relations and distance were found to be significant barriers in incorporating malaria intervention measures. Pell et al. (2011) recommended that appropriate in-depth measures as well as evaluating additional social economic factors that hinder this population from adapting to already introduced malaria intervention measures during pregnancy needs to be evaluated.

While Pell et al. (2011) concentrated on educating pregnant women on malaria infection; Omalu et al. (2012) examined the presences of Hepatitis B in pregnant women. Omalu et al. (2012) conducted a quantitative study in North Central Nigeria to determine the levels of antibodies of malaria infection and Hepatitis B in pregnant women. The sample size was collected from an anti-natal general clinic. A total of 259 pregnant women were screen for the study while 64 women were used as a control group. Data was analyzed using the SPSS software. The samples were collected from July/2011

through November/2011. 80.3% (216) women sampled tested positive for malaria while 8.18% (22) tested positive for hepatitis B while 7.81% (21) were positive for both malaria and hepatitis B infection. In the case of non-pregnant women it was found that 51 tested positive for malaria, 8 tested positive for hepatitis B while 6 tested positive for both malaria and hepatitis B. The study found that pregnant women had a higher rate of infection of malaria and hepatitis. The study concluded that extra efforts have to be initiated to protect pregnant women from malaria and hepatitis B infection.

A prior study conducted by Isah, Amanabo, and Ekele (2011) asserted that many pregnant women are asymptomatic and usually went undetected and untreated for malaria- causing serious health implications to the mother and the fetus. Isah et al. (2011) utilized a qualitative study using a cross-sectional approach to conduct the study. The study was conducted in an antenatal clinic in Nigeria between July/1/2006 through August/31/2006. Women who presented malaria symptoms and those recently treated for malaria were excluded from the study. Women who appeared otherwise healthy were included in the study. Screening and testing was conducted on 225 women. The study found that a total of 18 women who otherwise appeared healthy tested positive for malaria. The study recommended that pregnant women in this region need to be tested for malaria and other infections to avoid complications during pregnancy. Isah et al. (2011) encouraged adequate case management services needed to be provided to women in order to avoid undetected malaria cases especially in pregnant women.

Another study conducted by Tarning et al. (2012) was designed to determine the effectiveness of 80 mg artemether and 480 mg of lumefantrine medication treatment

twice daily in controlling malaria in pregnant women. The medication was administered for three consecutive days. The study was conducted in an antenatal clinic in Uganda from March 2008 through September 2008. 21 women with uncomplicated Plasmodium Falciparum infection were chosen for this study. The participants were carefully monitored and the medication given was at a low dose to ensure safety. The study found that most the participants tolerated the medication, and no cases of recurrent malaria were reported after treatment. The study concluded that even though this treatment proved effective in preventing malaria in this population it cannot be generalized to other populations as limited studies exist on combination artemether and Lumefantrine in treating malaria in pregnant women. Tarning et al. (2012) recommended that future studies should include non-pregnant women and ethnicity.

Taylor et al. (2011) previously conducted a study in Congo (East Africa) that examined the impact malaria has on pregnant women. A quantitative study was conducted using the "real time polymerase chain reaction (PCR)" and 4570 women in childbearing age were selected for the study. The study found that pregnant women had a higher chance of being affected by malaria as compared to their counterparts at a rate of 36.6% compared to 28.8%. The study found that approximately 1.1012 million children born in Congo are exposed to malaria. Additional findings assert that pregnant women are more susceptible to plasmodium falciparum infection. Taylor et al. failed to provide a reason as to why this is the case and exposed a significant limitation in this study. The study concluded that pregnant women need to be given extra protection during pregnancy to avoid negative health implications associated with malaria infection.

Analysis of the Impacts of Malaria on Pregnant Women

The above studies clearly identify that public health officals cannot ignore the overall negative health implications associated with malaria in pregnant women. Pell et al. (2011); Albiti, Adam and Ghouth, (2010) and Smereck (2011) concluded that malaria contributed to low birth weights but can also prove fatal to the unborn child. Pell et al. study found that malaria impacted the health of unborn while Albiti et al. found that anemia is not a risk factor associated with malaria in pregnant women. Additional studies conducted by Raimi and Kanu (2010), Karunamoorthi et al. also found that pregnant women continued to be highly susceptible to malaria. Raimi and Kanu, on the other hand, found that younger pregnant women were more likely to be impacted by malaria as compared to their counterparts.

The researchers were unable to provide a reasonable explanation as to why this is the case. In a similar study by Taylor et al. (2011) the study found that pregnant women have a higher chance of being affected by malaria as compared to other groups. Karunamoorthi also found that pregnant women despite the education provided to them continue to ignore health official's recommendations that educate pregnant women on adequate protection during pregnancy. These studies recommended that additional measure needed to be incorporated to help address malaria cases in pregnant women. As these studies clearly asserted that factors such as finance impact how malaria is addressed, these studies did not provide adequate as well cost effective measures that need to be incorporated to keep this population safe.

On the contrary, Tarning et al. (2012) study was able to provide evidence that the combination treatment of medications that included Artemether and Lumefantrine proved effective when used in pregnant women with uncomplicated Plasmodium Falciparum. The above studies have enhanced the knowledge of many health care experts on the effects of malaria in pregnant women. These studies have encouraged health care providers as well as policy makers to incorporate effective changes to address malaria infection and health implications in pregnant women. However, the studies failed to tap into the views of adult women on how they view already introduced measures in fighting malaria. This is an area this study explored. Reviewing additional literature that provides additional impact of malaria in all populations is significant for this study. As such, literature addressing malaria health effects in children was addressed in the preceding paragraph.

Malaria Effects on Children as Compared to Adults

Peter, Manuel and Shetty (2011) conducted a quantitative study to evaluate the effects Plasmodium falciparum had on adults as compared to children in treating malaria. The researchers evaluated a total of 20 cases of adults and children admitted with Plasmodium falciparum malaria from adult and children critical care facilities. Additional data was gathered from tertiary care hospital. Symptoms presented by adults and children were evaluated to determine the effects of Plasmodium Falciparum on each group. The study found that children diagnosed with P. falciparum presented symptoms that included fever and rigors accompanied with chills.

Other symptoms identified in this population include irritability, altered sensorium, vomiting, seizures as well as limited urine output. Among adults, the study found that the major symptoms included vomiting that was often followed with headache (60%). Additionally a smaller percentage presented symptoms of jaundice decreased urine output, renal impairment and seizures. The study concluded that children infected by P. falciparum suffered significant health problems as compared to adults. Peter et al. (2011) recommended that additional health measures have to be incorporated in diagnosing and treating children with P. falciparum.

As Peter, Manuel, and Shetty (2011) conducted a study to determine the effects malaria infection has on children as compared to adults, Aide et al. (2011) conducted a quantitative study to determine the effectiveness of RTS,S/AS02 a malaria vaccine on children ages one through four. This study was conducted in southern Mozambique within a four-year period from April 2003 through May 2007. Aide et al. (2011) attempted to understand how this vaccine would respond to malaria, as well as hepatitis B in this population. A sample of 2022 healthy children was included in this study, and each received at least one dose of the vaccine.

A randomized study was conducted whereby some children received the vaccine while others received a similar vaccine after informed consent was received from parents and guidance. The researchers divided these children into two cohorts, and each cohort was monitored according to specific guidelines. The researchers found that the vaccine proved to be effective in some cases, but its overall effectiveness was not realized. Aide

et al. (2011) encourages additional studies to be conducted further to determine the effectiveness of RTS.S/AS02 vaccine in treating malaria.

A quantitative study conducted by Osonuga, Osunuga, Osunuga, Osunuga and Kwarteng (2011) in rural Nigeria was designed to determine the risk of hypoglycemia in children diagnosed with malaria. Osonuga et al. (2011) included 32 children in this study. Data was collected from two major hospitals that had intensive care units. The researcher monitored blood sugar levels of children admitted with malaria within a 24 hour period after admission. The average age of participants included in this study was between the ages of two through five. The study found that one out of two children admitted due to malaria tested positive for hypoglycemia.

The researchers concluded that children under the age of five diagnosed with malaria had a higher chance of being diagnosed with hypoglycemia as compared to other age groups. Osonuga et al. (2011) concluded that hypoglycemia is a major cause of death in children under the age of five diagnosed with malaria. Osonuga et al. recommended that health care providers closely monitor and test children diagnosed with intense malaria for hypoglycemia as to introduce holistic treatment approaches. While this study was significant, it failed to address the effects of hypoglycemia in children in other age groups, leaving health care providers to wonder if hypoglycemia could impact other age groups in a similar fashion. However, the ability to bring to light the serious health implications associated with hypoglycemia in children under five affected by malaria can not be overlooked.

Osonuga, Osunuga, Osonuga, &Osunuga (2012) proceeding quantitative study in Nigeria to determine the risk of jaundice in children diagnosed with severe malaria using a combination treatment of artemether and quinine. Thirty-two children were included in this study and were divided into two groups Q and A. Two hospitals with intensive care units were selected for the study. The participants were divided into two groups and each group received a treatment of quinine, as well as artemether, and each group was examined for jaundice. From initial recruitment, 16 children out of 32 that were selected for the study and diagnosed with intense malaria tested positive for jaundice. The study found that by the end of day seven after treatment had been introduced, all children included in the study tested negative for jaundice. The study concluded that the treatment that included artemether and quinine were effective in treating jaundice in children diagnosed with intense malaria.

Pardo et al. (2006) conducted a quantitative study to determine the impact of malaria on children under the age of five. This study was conducted in Equatorial Guinea in Central Africa in the island of Bioko. A combination of indoor residual spraying (IRS) and Insecticide-treated Nets (ITN's) were used to determine their effectiveness in protecting children in this age group from malaria infection. Intervention measures were introduced in 2004 through 2005. Stratified cluster sampling was used to conduct this study. A total of 168 Participants were selected in 2004 and 2005, 433 children were selected to participate. The researchers found that out of the 168 children chosen in 2004; 40% of these children tested positive for malaria infection. By 2005,

when intervention measures were introduced the number of cases of children who tested positive for malaria significantly declined.

However, the study found that in 2004, the number of children reported to using mosquito nets was higher than in 2005 and yet they had higher cases of malaria infection. The study concluded that improper usage of mosquito treated nets highly contributed to the increase in cases of malaria infection in this population. The study recommended that proper usage of intervention measures (ITN's and IRS) must be effectively introduced in order to lower the cases of malaria in this population.

In the efforts to continuously address effects of malaria in children, Jombo et al. (2010) examined a total of 502 children recruited from a health facility at Makurdi for incidence of malaria. The study was conducted in Makuri a region in Sub-Saharan Africa. Participants were recruited from September/2008 through November/2008. The researchers used structured questionnaires to gather relevant data from their parents. Data was analyzed using EPi statistical software. The study found that the majority of the cases examined showed that 88.9% of the participants who had fever symptoms tested positive for malaria. Most of these children were over the age of one. The study also found that most children used insecticides and mosquito treated nets and yet tested positive for malaria. The study concluded that additional as well as effective educational measures have to be introduced on the proper usage of mosquito treated nets in order to limit the number of cases of malaria in this population.

Malaria cases often diagnosed in western countries are often due to importation. Dubos et al. (2010) conducted a quantitative study that utilized a retrospective

multicenter cohort study in Western France that examined children records of reported malaria cases from 2000 through 2006. The researchers concentrated on reported cases of malaria in children under the age of 18. The primary goal of this study was to determine the number of cases of malaria imported in this region. A secondary goal of this study was to determine the number of delayed cases not reported on time and the effects this delay had on the overall health in this population. Dubos et al. (2010) included 18 pediatric facilities in Western France hospital and collected data from the infectious disease departments.

Dubos et al. (2010) found that majority of the children infected by malaria often received a late diagnosis. The study further found that majority of the facilities was not effectively equipped in diagnosing malaria as malaria was a rear infection in France. The researchers concluded that malaria screening should be introduced in all pediatric hospitals in order to effectively evaluate and diagnosis children who had traveled to endemic countries. The study recommended that early detection and diagnosis of malaria could help save children from further medical complications associated with malaria.

A study conducted by Kihara, Haan, Garrashi, Neville, and Newton (2010) in Kenya examined the mental health implications associated with malaria in children between ages six and seven. This quantitative study was conducted in Kenya in the rural area of Kilifi District from August 2004 through March 2005. The researchers examined the database of the district hospital and sixty-four children previously admitted for malaria infection from May 2002 through March 2004 was examined.

The inclusion criteria included children admitted for cerebral malaria, malaria accompanied with seizures and children admitted due to malaria and were unable to sit or walk independently. The study found that severe malaria had a negative impact on auditory as well as visual brain function. The researchers concluded that additional studies have to be conducted to determine the impact on future educational, as well as social functions on this population. Kihara et al. (2010) recommended that accurate testing on the effects of malaria on the neurological functions in children should be introduced.

Analysis of Malaria Effects on Children

Research conducted by Aide et al. (2011), Ossongua et al. (2011), Jambo et al. (2010), Dubos et al. (2010), and Jambo et al. (2010) addressed the effects of malaria in children. Reviewed literature signifies, that malaria in children continues to be a force to be reckoned with and has serious health implications on children health (see Abanyie et al., 2012; Ajetunmobi, 2012; Deribew, 2012). Malaria infection has also proven to have different health implications on children as compared to adults. Peter et al. (2011) and Kihara et al. (2010) found that children infected by malaria suffered from irritability, altered sensorium, seizures and low urine output; additional implications included impaired auditory, visual brain function and hypoglycemia as identified by Osonuga et al. (2011). The positive health implications associated with these studies cannot be overlooked. These studies enabled health care experts to evaluate children comprehensively to ensure that they receive immediate and accurate diagnosis in order to avoid addition health problems. This is clearly encouraged by Dubos et al. (2010) in his

study that encourages appropriate screening for children to be introduced in all pediatric hospitals.

Additional studies by Pardo et al. (2006) proceeded with the study conducted by Jambo et al. (2010) signify that despite the education introduced on proper usage of already introduced intervention measures in fighting malaria, the usage of these introduced measures continue to be ignored or used incorrectly. Despite these findings Jambo et al. (2010) and Pardo et al. (2006), did not provide recommendations that needed to be incorporated to protect this population effectively but encouraged that additional studies should introduce intervention measures that prove effective. This was not the case in Osonuga et al. (2012) study that found that combination treatment of artemether and quinine as effective in treating jaundice in children diagnosed with intense malaria.

These studies have positively encouraged health care experts to continue working on protecting children from malaria infection. Additional factors that contribute to the spread of malaria have to be addressed. These concerns could have been addressed by reviewed literature on children and malaria infections if the perceptions of ordinary peoples' opinions were obtained. These are areas this study focused. Literatures that addressed the impact climatic factors have on the spread of malaria are important to review in order to bring additional light on the importance of addressing malaria infection from a holistic fashion.

Impacts of Climate on Malaria Transmissions and Infections

Rabarijaona et al. (2012) conducted a longitudinal study in the rural area of Saharevo Madagascar an area otherwise known for its low cases of malaria. An increase in malaria cases in this region have been reported in the certain months in the year. This study was conducted from July 1996 through June 2005 a period of ten years with a cohort of 214 participants from the village. This region experiences a wet tropical climate and drier climate. The study found that 45% of the cases tested positive for malaria during the wet climate period. Approximately 98% or 210 out of 214 of the cases tested positive for plasmodium falciparum a common type of malaria infection during the wet seasons. The remaining 2% or 4 out of 214 tested positive for plasmodium malaria, plasmodium ovale and plasmodium vivax. Additional findings signified that children and young adults tested positive for plasmodium falciparum at a higher rate. Rabarijaona et al. (2012) concluded that area climate change impacted the spread and transmission of malaria. Rabarijaona et al. (2012) recommended that public health officials in Madagascar incorporate additional intervention to control the spread of malaria especially during the wet climate seasons when malaria infection is at its all-time high in this region.

Holly, Schmidt, and Schroder (2011) conducted a study to understand the impact climatic changes better have on increasing cases of malaria reported in Northwestern Germany. A quantitative study was conducted, and data was analyzed using the basic reproduction rate to help understand the outbreak of malaria in various climate seasons in this region. Data analyzed and measured, and future prediction ranged from 1961

through 2080. The researchers utilized the regional climatic models (REMO) and WettReg to project the transmission rates in the future. The study found that seasonal transmission rates tended to increase over the years due to climate changes. Holly et al. (2011) concluded that additional studies needed to be conducted in order to accurately analyze climatic factors that increased infection rates in this region. Furthermore, Holly et al. encourages that analysis of additional factors such as water bodies and population density to climatic changes in order to get accurate findings on mosquito transmission and infection.

The same year, Ramakrishnan (2011) also utilized a quantitative research method to help determine the impact climatic change has on the spread of malaria and diarrhea disease in India. The researcher also wanted to understand the financial impact climatic change would have on malaria and diarrhea disease if proper intervention measures were not put into place by 2030. Primary data was collected from various data basis for analysis. The cost of treating malaria and diarrhea in 2030 was estimated by the current cases, projected risk of these diseases by 2030 and current cost for treatment. The study found that failing to initiate proper intervention measures to control malaria and diarrhea currently will financially handicap the already struggling economy of India in the future.

Another quantitative study conducted by Omumbo, Waweru, Conner, and Thomson (2011) in the highlands of Western Kenya a tea growing area in Kericho was conducted to determine the effects temperature changes has on malaria infection. Temperature changes were monitored from January 1st 1979 through December 31st 2009. The minimum, mean and maximum temperatures were analyzed and a linear trend

was identified by using a least squares regression analysis. Statistical significance was further assessed through a two-tailed t-test. Using the gold standard meteorological observations, the researchers found the temperature changes had an impact on increasing cases of malaria infection in this region. The study concluded that other factors should be included in order to make an accurate determination on all factors that impact the spread of malaria infection in this region.

Climate conditions in sub-Saharan Africa have been blamed for the spread of malaria in this region. Mabaso and Ndlovu (2012) conducted a quantitative study to help identify the effects climate has on the spread of malaria. The researchers examined literature from PubMed that was published between 1990 through 2009. This study was conducted to examine the effectiveness of newly developed Malaria early warning systems (MEWS). Mabaso and Ndlovu examined a total of 35 literatures that were relevant to their studies. The study found that the effectiveness of MEWS could not be comprehensively evaluated. The study further found that several factors affect the effectiveness of MEWS. The study concluded that effective detection needs to be implemented in order to monitor the effects of climatic change in the spread of malaria.

Another study conducted by Mabaso and Ndlovu (2012) addressed the impact Malaria Warning Signs (MEWS) had on the early detection and control of malaria during certain climatic changes. The researchers attempted to understand if MEWS was effective in determining how various climatic conditions in sub-Saharan Africa affected the occurrences and transmission of malaria. The researchers conducted a quantitative research study and peer- reviewed literature was selected for the study. Literature from

selected scholar database was comprehensively reviewed from 1990 to 2009. 35 relevant literatures were selected for this study. The study found that limited research existed on the effectiveness of MEWS in detecting climatic driven malaria. The study further found that only two studies from Kenya showed no relationship between climate and malaria infection, while eight studies found a connection between malaria and rainfall. The researchers found that extreme climatic conditions impacted the malaria epidemics. However, the accuracy of MEWS in determining the relationship between malaria and climatic changes cannot be adequately concluded as effective. The researchers concluded that future research should be conducted to understand accurately the impact MEWS has in determining the spread of malaria infection during certain climatic conditions.

The current malaria surveillance data on climate effects on the spread of malaria has proved to be less precise; making it difficult to determine climatic impact on malaria problematic. Edlund, Davis, Douglas, Kershenbaum, Waraporn, Lessler and Kaufman (2012) utilized the MacDonald Ross compartmental disease model and Anopheles vector capacity mode to understand how temperature and precipitation had on the spread of malaria. Data was collected from 86 countries to determine the effects of temperature and precipitation had on malaria infection. Data analyzed was based on a ten year climatic data. This data was compared to the data from World Health Organization and Malaria Atlas. The study found that climatic changes impacted malaria infection. The study further found that some regions were more likely to be more impacted by malaria infection as compared to other regions. Edlund et al. (2012) concluded that regions identified as having higher chances of being impacted by malaria infection due to

climatic factors have to be closely and effectively monitored in order to reduce the cases of malaria infection. Edlund et al. (2012) recommended that additional and accurate predictors need to be put in place in order to carefully monitor climatic impact on the spread of malaria.

Analysis of the Impacts of Climate on Malaria Transmissions and Infections

Climatic factors affect the spread of malaria (see Edlund, et al., 2012; Ermert, Fink, Morse & Paeth 2012). Addressing climate impact on malaria in various regions provides other health care experts the opportunity to discover additional measures on how to address the spread of malaria. Rabarijaonaet al. (2012), Omumbo et al. (2011) studies found that climate changes and temperature changes affected the spread of malaria. Rabarijoana et al. found that during wet periods in Madagascar malaria infection increased while Omumbo et al. (2011) found that this was the case when temperature changes occurred in Kenya (Kerich). These findings were helpful to these regions as public health officials can remain aware when malaria cases are expected to increase. Other studies by Holy, Schmidt and Schroder (2011), Maboso and Ndlovu (2012), and Edlund et al. (2012) utilized various tools to determine if climatic changes impacted the spread of malaria over the years. They found that climatic changes affected the transmission rate of malaria. However, these studies could not accurately determine the accuracy of the tools used to determine the impact of climatic changes of malaria over the years.

Additional studies signified that adequate monitoring measures need to be incorporated in order to effectively measure effects climate changes have on the spread of

malaria (Egbendewe-Mondzozo, Musumba, McCarl, & Wu, 2011; Paaijm, Imbahale, Thomas, & Takken, 2010). These studies are significant as they provide additional insight on how climatic/temperature changes have on malaria transmission. These studies were important as they brought light to the impact of climatic and temperature changes in relationship to malaria transmission; however, it did not address the views of women (primary caregivers) on intervention measures already implemented by public health officials in relationship to effectiveness and ineffectiveness.

The climatic conditions of majority of this area are also quite different from the climatic conditions in Nairobi Kenya, that is the area that this proposed study will be conducted. However, the geographical conditions of the study conducted by Omumbo et al. (2011) are similar to this study. While Omumbo et al. findings will be helpful to the proposed study, majority of reviewed literature on climatic impacts on the prevalence of malaria failed to investigate the opinions of the ordinary people especially women (primary caregivers) in their studies. This is an area that the proposed research study intends to bridge the a gap in literature.

Impacts of Inaccurate Diagnosis on Malaria Treatment

Hassan et al. (2011) conducted a study in Sudan to determine the effectiveness of Fluorescence Microscope (Cyscope) in treating malaria in pregnant women. Hassan et al. compared the effectiveness of Fluorescence Microscope (Cyscope) with Giemsa stained light microscopy. This study was conducted in Medani Hospital in Central Sudan. 128 pregnant women were included in the study. Pre- test questioners were used to gather data needed. The study found that Plasmodium falciparum was detected in 80 pregnant

women using the Giemsa stained light microscopy and 80 women tested positive for Plasmodium falciparum using the Fluorescence Microscope. The study concluded that Cyscopeflurescence microscope to be just as reliable and accurate as Giemsa stained light microscopy in diagnosing malaria.

Another study conducted by Kattenberg et al. (2012) was to determine the effectiveness and accuracy of HRP2-based and pLDH-based RDT in diagnosing malaria in pregnant women in comparison to PCR and microscopy. Peripheral blood from pregnant women over the age of 15 and were tested for malaria infection from November 2010 through August 2011 using the above malaria screening tools. The study was conducted in Nanoro Burkina Faso. Women who presented themselves for regular antenatal care were screened using the HRPS-based RDT for malaria and if a positive test was realized they were included in the study. 418 women were included in the study. The study found that HRPS RDT and RT-PCR were most effective in detecting malaria in this population at 53%. The study concluded that effectively screening pregnant women was significant in ensuring that the health of both the mother and unborn baby was protected.

Alemu, Shiferaw, Ambachew and Hamid (2012) conducted a cross-sectional study to determine if patients diagnosed as a febrile were also infected with malaria. A cross-sectional study was used to conduct this study. Convenient sampling was selected, and 384 febrile patients were selected for the study. The study was conducted in Azzezo health center in Gondar in Northwest Ethiopia. Samples of stool and blood were collected from the participants to test for two types of infections, Plasmodium falciparum

and Plasmodium vivax. The study was conducted from February through March 30, 2011. The study found that the majority of the participants diagnosed with a febrile also tested positive for one of the above-listed malaria infections. The researchers recommended that effective intervention methods to be initiated to help address the spread of malaria in this region. The researchers also recommended that patients who presented a febrile symptoms need to be tested for malaria for proper treatment.

Analysis of the Impacts of Inaccurate Diagnoses

Accurately diagnosing patients is significant in treating malaria. The above studies identify the importance of accurately diagnosing malaria and incorporating the most appropriate treatment measures to those diagnosed with malaria. The similarities of the studies conducted by Hassan et al. (2011); Kattenberg et al. (2012) in finding that the use of Fluorescence Microscope with Giemsa-stained light microscopy and Cyscopeflurescence microscope in diagnosing and HRPS RDT and RT-PCR respectively as accurately measures in diagnosis malaria. These tools despite their proven effectiveness in diagnosing malaria, they were only tested on pregnant women. Despite the similarities in participants in this study (Women) this study concentrated on effective diagnostic instruments in diagnosing malaria. These studies did not assert whether these tools would be effective in effectively diagnosing malaria in other populations.

Alemu et al. (2012) also discourages health care experts from hastily diagnosing a febrile patient with malaria but to otherwise include additional measures in accurately diagnosis malaria cases prior to treatment. Additional studies by Hassan et al. (2011), Kattenberg et al. (2012), and Alemu, Shiferaw, Ambachew, and Hamid (2012) also

concluded that accurately diagnosing patients can determine the health outcome of the patients. Studies addressing the importance of accurately diagnosing patients are important in bringing additional awareness on the impact of malaria. However, despite the positive factors that are realized from these studies, they do not bring light to the voices of women on how they view intervention measures already implemented in controlling malaria in Nairobi Kenya. The above studies also did not use the Ecological Systems theory as a lens of analysis in examinations of their findings in their studies. However, this study used the ecological systems theory as a lens of analysis.

Intervention Measures Implemented on Malaria Control

Secondary data from the year 2000 through 2005 was collected by Houeto et al. (2007) examined the impacts of intervention on malaria control. This data was collected to determine whether parental involvement played a significant role in reducing the number of cases of children diagnosed and treated for malaria in Benin (West Africa). A total of 95 articles selected for academic database were included in the study. Reported malaria cases in children under the age of five were examined. The study found that parents who were empowered and provided adequate information on malaria transmission and treatment had a better chance of seeking treatment for children once suspected of malaria infection. The study also found that skills, support through the community and advocacy were essential in helping parents in seeking treatment and recovery for their children. The study concluded that parents should be provided the knowledge and act as first respondents when their children present malaria symptoms.

Jambo, Araoye, and Damen (2011) conducted a study to examine the effectiveness of roll back malaria (RBM) program that was initiated in the continent of Africa in the aims of bringing malaria awareness to this continent. The researchers conducted a cross- sectional study from the October to December 2009. A mixed method was used to conduct this study. 3171 adult women participated in the study. The researchers utilized a systematic sampling method to select participants. Semi-structured and structured questionnaires were used to gather data. Focus groups were also used to gather additional data. The study found that 41.1% of the participant's received treatment from hospitals/clinics, 36.0 % bought medications from pharmaceutical companies while 10.7% utilized herbal treatments and 0.5 participant' did not receive additional treatment.

The study also found that education; married couples, income and individuals with children increased the knowledge of antimalarial drugs and received additional treatment. The study further found that occupational and age did not affect the way individuals reacted to malaria infection. The study concluded that additional education on the drug component associated with RBM is needed in order to bring additional awareness of malaria to various communities to improve the overall effectiveness of RBM.

Bongus et al. (2010) conducted a qualitative study to determine whether collaboration among various stakeholders was an effective measure on addressing and finding appropriate measures in treating controlling and ultimately eradicating malaria. Various administrators were selected to participate in the study. This qualitative study

was conducted in Tanzania a country in East Africa. The study found that introducing effective measures that encouraged and required collaboration from various public health administrators was an effective tool in helping address malaria infection in this country. The study concluded that the role collaboration plays in addressing public health concerns in general, and malaria infection in particular is one that cannot and should not be undermined. The main focus of this study was to address collaboration among public health officials in fighting malaria. However, the study did not address the perspective of adult women on how malaria has been controlled by public health officials. This is an area that my study investigated.

A case study approach was used by Allen, Hetheringon, Manyama, Hartfield and Maire (2010) to examined the effectiveness of using the social entrepreneurship approach (SEA) in fighting and controlling malaria infection in Tanzania. The SEA approach incorporates models that encourage collaborations between all parties to effectively control and prevent malaria. Data was collected from a rural hospital in Northern Tanzania that serves approximately 77,580 patients. Medical records from 2008 were evaluated. Medical records showed that approximately 49% of patients admitted to the hospital tested positive for malaria infection. Malaria accounted for 45% of deaths that year. These records documented the number of children admitted with malaria and number of individuals treated successfully and those that died due to malaria complications. The study found the SEA approach was integral in understanding how malaria is treated and controlled. The researchers concluded that collaboration within all stakeholders is important in fighting and eradicating malaria cases in Tanzania.

A mixed method approach was utilized by Okeke (2010) to determine the effectiveness of educating women in a rural area in Nigeria (Ugwogo-Nike) in recognizing and seeking proper medical help for children infected by malaria. 30 leaders were chosen to help train women in recognizing and seeking treatment for children in this community. Systematic sampling method and purposeful sampling was used to select participants. Baseline information was collected in 2002 to help understand caretaker's knowledge on how malaria is transmitted, and effective measures used in this community in treating malaria.

A total of 300 female participants were included in the study. Only children under the age of five were included in the study. Survey instruments and focus group discussions were used to gather relevant data. The intervention measures were introduced in 2003 through May 2005. The study found that educating women in this population in the transmission and proper measures to incorporate in treating malaria was effective in reducing the number of cases identified with malaria infection. Also, the study found that encouraging women to seek treatment from public health clinics in severe cases of malaria was effective. The researcher concluded that malaria cases can be treated in the home if effectively implemented. The researcher recommended that women should be trained on how to correctly provide the correct dosage of artemisinin-based combination therapy (ACT), in treating malaria instead of using chloroquine a drug the is mostly used in this region.

A study conducted by Coleman et al., (2010) examined the role household characteristics as well as socioeconomic status played in the spread and control of

malaria infection. The study was conducted in South Africa is seven small towns of Nkomazi Municipal Area and Mpumalanga Province where the rate on the spread of malaria is unstable prone to certain seasons. A case-control design was used to compare the rate of infection in various neighboring household. Each household had to have at least one case of malaria between July 2008 and June 30, 2006 according to Coleman et al. (2010). Control households used were in the neighboring households and did not have reported malaria during this period.

Pretest structure questioners were used to gather data. The study found that 53 case households and 159 control households were used in the study. The study further found that mud built houses had higher rate of spread of malaria at 38% as compared to 16% of controlled households. The study concluded that housing needed to be improved in rural areas to include installation of mosquito screening for windows to allow adequate air floor especially during the night to help eliminated the spread of malaria.

Analysis of the Intervention Measures Implemented on Malaria Control

The significance of finding the most appropriate intervention measures in controlling the spread of malaria continues to be a serious health problem that cannot be ignored. The literature reviewed on intervention measures addresses the importance of collaboration, empowering women and using the most appropriate diagnostic tools as essential in controlling the spread of malaria (Bongus et al., 2010; Okeke, 2010). While the study conducted by Bongus et al. (2010) and Allen et al. (2010) addressed the role of collaboration in addressing malaria infection, each study introduced the role of collaboration was introduced in different fashions. While Bongus et al. encouraged

collaboration between public health officials; Allen et al. introduced the social entrepreneurship approach (SEA) in fighting and controlling malaria.

However, the similarities from both studied cannot be ignored as it was concluded that the role collaboration plays in addressing malaria cases cannot be ignored. While these studies encouraged collaboration between all parties, an earlier study by Houeto et al. (2007) followed by a similar by Okeke (2010) encourages parental empowerment and education in fighting malaria. Despite the strength that is obviously realized through empowerment, Okeke (2007) and Houeto et al. (2007) did not recommend adequate steps or tools to help keep parents empowered despite their findings showing that parental empowerment and education continues to be faced by other challenges such as limited financial resources and lack of adequate education. Bringing comprehensive malaria awareness in Africa is important. Jambo et al. (2011) study provided great insight on the importance of finding ways of bringing awareness in the continent of Africa.

Jambo et al. (2011) examined the effectiveness of roll back malaria (RBM) awareness in Tanzania and comprehensively addressed all the integral factors that are important in addressing malaria infection using this model. Jambo et al. (2011) study was well conducted as it allowed all stakeholders involved in fighting malaria in understanding that malaria infection is a serious health problem that continue to impact the health of many in the continent of Africa. As such, this study expresses the need to include all parties when trying to find the most appropriate intervention measures and the study by Coleman et al. (2010) that encourages family dwelling to be included as a factor that contributes to the spread of malaria are momentous and must be recognized.

Summary and Conclusion

Choosing literature and a theoretical frame work that is appropriate to any study is strongly recommended (Creswell, 2009; Patton, 2002). The literature reviewed for this study was appropriate as it brought to light the seriousness of malaria infection in Africa especially. Addressing some of the significant measures and reviewing literature that have been introduced over the years in the efforts to control malaria was also vital to this study. After a comprehensive review of literature, it was evident that additional studies need to be incorporated in order to ultimately control or possibly eradicate malaria. While most of literature reviewed utilized quantitative research, qualitative research has been used by many researchers in malaria studies (Bauch et al., 2013; Kaufman et al., 2012; Pit et al., 2012). Qualitative research enables the researcher to gain an in-depth understanding on a phenomenon (Creswell, 2007 & Patton, 2002). Pell et al. (2012) utilized the qualitative research method using focus groups and interviews to examine if pregnant women effectiveness received Antenatal care (ANC) in the prevention and early treatment of malaria with selected participants from Kenya, Ghana and Malawi.

A similar study using qualitative research method conducted by Mubyazi et al. (2010) used focus groups and exit interviews in determining the factors that affect pregnant women from attending Antenatal care. Another qualitative study by Beer et al. (2012) used the Health Belief Model (HBM) to understand participant's perception of malaria and effectiveness of malaria bed nets in the efforts in fighting malaria in Zanzibar. Romi et al. (2010) also utilized the qualitative research methodology in examining the number of cases of malaria imported into Italy. As such, this study

utilized the qualitative research methodology in having a deep understanding on their perception on already implemented measures in fighting malaria.

Reviewed literature was divided into several topics. The findings of these literatures even though helpful to society, they failed to address the attitudes of women in Nairobi Kenya on how they view already introduced measures in fighting malaria in relationship to effectiveness or ineffectiveness. This is a gap that exists. This gap brings me to the current study which helped fill this identified gap. As such, the next chapter will address the research methodology that was implemented in this study. Chapter 4 will provide the data findings. Chapter 5 will present the analysis, conclusions, and recommendations for future research.

Chapter 3: Research Method

Introduction

Purpose

The purpose of this study was to explore the attitude of women in Nairobi, Kenya on intervention measures already employed by public health care policy makers on methods of controlling malaria. Chapter 1 provided an overview of this research, while Chapter 2 of this study addressed the theoretical framework that is appropriate and applicable for this study. Chapter 2 further outlined reviewed literature that helped identify the gap. Chapter 3 of this study will address the research design, the role played by the researcher, methodology used in this study, issues of trustworthiness, and ethical implications associated with this study.

Research Design and Rationale

Central or Primary Research Question

RQ1 The overarching research question is as follows:

What are the perspectives of women in Nairobi, Kenya toward malaria control?

Sub-questions include:

How do women in Nairobi, Kenya perceive the intervention measures already implemented in controlling malaria?

What are the experiences of women in Nairobi, Kenya on the already implemented measures in controlling malaria?

Phenomenon

Research design enables the researcher to provide detailed information on how the chosen research method will be utilized to answer research questions (Creswell, 2009). The phenomenon that was explored is the perspective of women in Nairobi, Kenya on the already introduced intervention measures by public health officials on malaria control in this region. Research design chosen has to not only fit the topic and the methodology chosen but has to also fit the study and the goal of the study (Creswell, 2007; Patton, 2002). The research design chosen for this study was the phenomenological research design. The phenomenological design utilizes the inductive approach which allows for deep opinions to be openly articulated (Lester, 1999). This design enabled me to provide answers to the initial research question and provide clarity on the presented phenomenon.

Role of the Researcher

Quantitative researchers are highly recommended to pick an instrument that is valid and reliable for data collection purposes (Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008). In qualitative research, however, the researcher is often used as the instrument in data collection (Denzin & Lincoln, 2003; Greenbank, 2003). Turner (2010) reported that since the researcher is often used as an instrument of data collection in qualitative research, data in this case is transpired through the researcher. Turner (2010) and Johnson (2013) also asserted that a researcher can play several roles in qualitative research study. These roles include but are not limited to observation, observing participant, participant observer, in depth interviewing, or a researcher can choose to remain neutral. I utilized in depth interviewing to gather rich details on the phenomenon

at hand. Data were collected and organized based on the social scientific theory chosen for the study. Time was allocated after the interview to enable me to effectively organize and review data collected during interviewing.

I also self-monitored and ensured that bias was not introduced in the study (Denzin & Lincoln, 2003). Remaining objective rather than subjective during the research process was mostly important in this study as I conducted this study in my country and city of birth. Probing questions were asked through the interview process while I listened attentively; follow up questions, carefully listening, and asking probing questions during the interview process further provided deeper insight on the phenomenon.

As a researcher who bears her roots in Nairobi, Kenya and is quite familiar with the demographics in Nairobi, Kenya, it was important that I remained objective and left all prejudices behind during this study. I was also aware that this could be difficult to achieve as previous experiences with mosquito infection control measures could have easily introduced certain bias and prejudice into the study. I understood that in order to ensure that the study is not compromised, it was important for me to remain objective and open minded all through the research process and to continuously self-check when faced with issues related to bias or prejudice.

Methodology

Participant Selection

Purposeful sampling was used to select participants for this study. Purposeful sampling enables a researcher to select participants from a specific group for a specific

purpose. This in turn enables a researcher to gather in depth information on a particular phenomenon from a particular population (Gangle & Smick, 2009; Patton, 2002; Verial, 2013). As such, women in Nairobi, Kenya who have felt the effects of malaria directly or indirectly were purposefully chosen for this study. The participants were chosen from three cluster geographical locations in Nairobi, Kenya.

The selected geographical locations included Langata, which is a middle class suburb located in the southwest part of Nairobi. Another selected area within the cluster was Kibira, which is the largest slum in Nairobi, and Lavington, which is also a suburb in Kenya located in the northwest part of the city that is made up of a high income neighborhood. These regions in Nairobi were chosen due to the different social economical backgrounds. Moreover, these regions fairly represent the population in Nairobi. Additionally, over the years, individuals from various tribes and cultures all over Kenya have migrated to Nairobi in search of a better life. Participants chosen fairly represented individual cultures and provided rich details on lived experiences with public health personalities on malaria control and prevention measures already implemented in this region. Researchers who choose to utilize purposeful sampling do so as participants have to present certain features (Patton, 1990; Verial, 2013). As such, the participants chosen for this study have experienced the effects of malaria infection, directly or indirectly, and voiced their opinions on these experiences. Participants included in this study were purely on a voluntary basis. Participants were divided into three groups, and each group was labeled using the alphabetic number, group A through C.

The concept surrounding saturation and sample size was also addressed in this study. Mason (2010) asserted that saturation in qualitative study can be difficult to prove even though claimed by many researchers. Mason argued that research should reach saturation once the meaning of the study becomes compromised and is no longer yielding positive results. Mason further alleged that the idea of saturation, even though helpful, does not determine the sample size needed for one's study. In this study, it was important to gather data that were relevant and that captured the most integral aspect of participants' lived experiences with malaria treatment methods.

Sample

The sample size is determined by the type of study being pursued. Creswell (2007) suggested that five to 25 participants are sufficient in phenomenological design, while Morse (1994) asserted that six participants are sufficient in this type of design. Based on the above recommendations 20 participants were selected for this study. Sixteen participants were included in this study while the remaining five were used as spares in case previously committed participants backed out of the study. Four criteria were used in selecting participants:

1. Participants were women;
2. Participants resided in Nairobi, Kenya for at least 2 years or more;
3. The national language in Kenya is Swahili. However, English is widely spoken in Kenya, especially in Nairobi. As such, participants spoke fluent English with limited interpretation for coding purposes; and

4. Finally, participants were willing to participate in the study and openly communicate their opinions on intervention measures already employed in fighting malaria.

Instrumentation

Informed Consent

Face to face interviewing was used to contact participants. Participants were debriefed for 1 hour on details surrounding the study. The participants were provided full details on the study and encouraged to ask questions to their satisfaction. The Walden University Institution Review Board (2013) asserted that participants have to be provided adequate knowledge on how data will be collected and analyzed. Furthermore, the issue of confidentiality was discussed with participants. I reminded participants that participation was voluntary and participants were given the opportunity to remove themselves from the process at any given moment. Signing of the informed consent was provided to participants once agreement was reached by all parties to participate in the study. A copy of the informed consent as recommended by (IRB, 2013) was provided to the participants while another copy was forward to Walden University IRB approval # 11-08-13-0239955.

Interviews

Building a rapport is an important aspect of interviewing (Patton, 2002). I built rapport and posed already prepared semi-structured interview questions to interviewees while allowing for flexibility through the interview process. An atmosphere of calm and relaxation was provided during the interview process to allow participants to remain calm

while presenting their experiences (Kvale, 1996). This study was conducted at three different locations in Nairobi, Kenya. The first cluster (Langata) and the third cluster (Lavington) were interviewed at a public clinic, while the second cluster (Kibera) was interviewed at a neighborhood church. Choosing these sights was important as it provided a comfortable environment during interviewing. These sites were also convenient as they were centralized as compared to the area the participants were chosen for the study. Researchers should choose an interview setting that is most appropriate and less restrictive to participants (Creswell, 2007; Patton, 2002). As such, these locations were chosen over their counterparts as they were less restrictive and appropriate for the participants. Each cluster was interviewed separately on agreed upon weekend by participants.

Patton (2002) and Walden University IRB (2013) also recommended that researchers have to adequately prepare prior to conducting research. The purpose of the interview has to be explained to the participants, issues of confidentiality have to be addressed, the researcher has to address the flow of the interview, participants have to be informed on the length of the interview, and researchers have to provide contact information and clarification of any presenting questions. I ensured that the above steps were incorporated prior to beginning the interview process.

All interview questions were audio recorded. The interviews lasted for 30 to 45 minutes to avoid burn out. Primary questions were followed by secondary questions when necessary. Phenomenological interview procedure as recommended by Creswell

(1998) was incorporated during interviewing. These interview steps taken into consideration included the following:

- The philosophical understanding of the participants was important to understand during interviewing;
- Research questions outlined examined participants' experiences;
- Data were collected from participants who have experienced the phenomenon;
- The phenomenological approach was utilized in analyzing data during interviewing. Creswell (1998) asserted that method of reductions is utilized in data analysis when using phenomenological approach; and
- Most importantly, the participants' experiences were captured during interviewing.

Field Notes

The use of field notes is also an important method of gathering data that can otherwise not be captured through audio taping (Patton, 2002). Greswell (2009) reported that field notes will enable the researcher to document reflections, personal reactions, and also personal insights. Fink (2000) asserted that field notes can be taken by hand and later typed and stored as field notes. This is a measure that was incorporated in this study. However, Collier and Mahoney (1996) warned researchers should be careful and avoid gathering information that is otherwise not relevant or can introduce bias or personal experiences in the study. I ensured that this was prevented during the course of data collection.

Debriefing Procedures

Upon completion of the interview, participants were thanked for participating in the study. Participants were assured that the interview process was confidential and data gathered were used primarily to enable public health officials to understand how participants view or perceive intervention methods employed in fighting malaria. This provided health care officials additional insight in their efforts in fighting malaria. I also clarified any additional questions or concerns. Upon completion, I once again thanked participants for participating in the study. Participants were provided my email address and telephone number in the event that they would have any follow up questions. Furthermore, participants were advised that the findings of the study would be disseminated to them via email.

Procedure for Data Collection

Data in this study were collected through interviewing and field notes. Turner (2010) and Valenzuela and Shrivastava (2013) asserted that there are several types of interview techniques. Some examples of interviewing techniques used in qualitative research include but are not limited informal interviewing, general interviewing, closed, fixed response interviews, semi-structured interviews, and standardized open-ended interviewing, just to mention a few. This study collected data using semi-structured interview questions. This approach enabled the interview to move swiftly through the interview process and data collected were easily analyzed.

Semi-structured face to face interviews using the open-ended questions was chosen over its counterparts because it allowed the participants to contribute freely

through the interview process. Clough (2007), Gllham (2000), and Opie (2004) stated that the use of the semi-structured face to face interviewing technique provides the researcher the opportunity to probe, attentively listen, pause, establish rapport, and further, prompts the participants to provide deeper insight on the phenomenon.

Based on the above reasons, each participant was asked the same exact questions in order to provide uniformity. I also asked exploratory questions, further enabling the participants to provide rich feedback. Turner (2010) warned that researchers can be faced with the challenge of "overload" of data during coding while using this approach. However, Turner further argued that despite the possibility of overload, this type of interviewing allows the researcher to avoid bias.

Audio recording was used to gather data generated from interviewing. Each group was interviewed on different days on chosen times agreed upon by participants. Interviews were conducted for a 30 to 45 minute's period for each group and this interviewer periodically checked the audio tape to ensure that it works properly and appropriately. Field notes were also documented during interviewing. I remained focused and ensured that I did not lose control of the interview. I ensured that questions prepared are evaluated for appropriateness by my committee team prior to embarking into the study.

Five semi-structured interview questions were selected for this study. As recommended by Creswell (2007, 2009), and Moustakas (1994) when using the phenomenological research design. Primary, as well as secondary questions, should be utilized to prompt the interviewers further. Attachments will include Appendix A:

Contact and Scheduling form, Appendix B: Informed Consent, Appendix C: Interview Questions Sample.

Data Analysis Plan

Storing and Filing

Developing a plan to store and file data is a significant process in data analysis plan (Morse, 1989). Hard copies, as well as electronic copies, were used to store data. Electronic files were stored in the computer hard drive as well as flash drive. Client information as recommended by IRB (2013) was kept confidential at all times. McNabb (2008), Creswell (2009, 2007), recommend the use of hard copy files as backup of electronic files. Other confidential information including the field notes, informed consent forms, information used to contact participants, audio recorders and other devices used during the interviewing process were kept securely in a safe place in my home.

Mishandling data can compromise any study (Morse, 1989). NVivo10 software originally developed by Tom Richards in 1999 was used for data analysis. NVivo10 software enables researchers to arrange data using sub folders. Each subfolder will be labeled appropriately. NVivo10 qualitative software enabled this researcher to sort, clarify, arrange, and identify relationships between data. This qualitative software enabled me to analyze the content collected from the audio tapes and field notes which were used as data collection instruments.

Four major interview questions were coded to provide answers to both the primary research questions and supplementary questions. Data analysis concentrated on providing specific themes and sub-themes generated by the key probing items in the

interview questions. Also, I payed attention to the emerging themes in order to ensure that the perspective of women in Nairobi, Kenya towards implemented interventions is well documented.

When using phenomenological design, data analysis method often follows the reduction methodology (Creswell, 1998). During this stage, it is important that data analyzed addresses already outlined research questions. Researchers are warned to be careful during data analysis when using the phenomenological design as it can easily generate a large amount of data (Lester, 1999). During data analysis, I ensured that I understood the information provided during interviewing and from field notes.

Identification and organization of key themes or points is another important step to undertake (Lester, 1999). Data was entered into a database depending on the headings allowing for easy comparison. This incorporates the analysis of certain statements as well as themes while trying to understand the meaning of these statements and themes. During data analysis, it is important to set aside all prejudice as recommended by Creswell (1998), and Patton (1990). This could be achieved through bracketing.

Bracketing

Bracketing also known as "mind mapping" encourages researchers to approach any research without bias or judgment (Jarvis, 2013). Remaining objective rather than subjective provides the participants opportunity to remain honest and open as they provide a detailed views of their experiences further sharing rich information on the phenomenon. This was especially important for me to understand as I was born and raised in this region and could have easily permitted my previous experiences to interfere

with my judgment. In a serious note, Jarvis (2013) warns that "rigor" and "care" should be undertaken during this process.

Issues of Trustworthiness

To ensure trustworthiness studies have to be credible, dependable, and transferable, and bear conformability (Shenton, 2004). Credibility was achieved by ensuring that internal validity was achieved. This researcher ensured that this study measures what it set out to measure. I ensured that the findings are sensible, reasonable and appropriate, and a clear picture on the attitude of the participants on malaria control measure was captured in the final analysis.

Achieving external validity is also an important aspect of ensuring trustworthiness. Denzin and Lincoln (1994) stated that in order to ensure transferability it is important to demonstrate that the findings from this study could also be applicable to other populations or other situations. Other readers undergoing the same experiences when dealing with malaria should be able to read this study and identify or make the connection with their experiences. On the other hand, issues dealing with dependability were addressed in research study.

In order to assure dependently, a researcher should demonstrate that if the study was repeated over time, using similar methods, context as well as participants, the similar results would be obtained (Creswell, 2007; Patton, 2002). Finally, remain objective and avoiding research bias was an integral step to undertake in this study in order to avoid researcher's influence on the study, but rather relay the participant's experiences as they present them. By doing so, I was able to achieve conformability. Finally, issues of

trustworthiness were maintained through the guidance and directions of my dissertation team members, especially my Dissertation Chair Dr. Cheryl Anderson who always ensure that I avoided all biases during data collections and coding, and followed all social scientific research guidelines during the course of this study.

Ethical procedures

Researchers are encouraged to maintain the highest standards when conducting research, especially when it involves human subject (Walden University Institution Review Board, 2008). Walden University Institution Review Board (IRB) also encourages that researchers remain ethical in all stages during research. Walden University IRB strongly discourages students from gathering any data prior to approval from IRB. By so doing, dissertation students will ensure that Walden University Institution Review Board (IRB) reviews and approves all current and future impending ethical issues, prior to the approval of the student for data collections and data coding related to the study.

Since this study was conducted outside the United States IRB guidelines recommends that the researcher consult with the international compilation of regulations provided by the USA federal Office of Human Research Protections (OHRP). Previous permission to conduct this study was obtained from Ministry of Health in Nairobi Kenya located at Afya House, Cathedral, P.O. Box 30016, Nairobi Kenya Telephone number 0112542717077, and Fax number 0112542713234 see Appendix D.

Walden University IRB also asserts that applications of ethical behavior that applies in data collection in United States should be applied in international countries

unless the ethical standards of the international country are much stricter that those recommended by United States. English is well-spoken in Nairobi Kenya; as such issues of language barriers did not apply in this case. IRB also addresses issues of data collection during research. Data collected prior, during and after interview has to be stored in a safe place to ensure confidentiality. Fritz (2008) encourages researchers to inform participants that that participating in the interviewing process is strictly on a voluntary basis and participants can choose to withdraw and any given time. Any risks factors as well as benefits in participating in this research will also be addressed. I ensured that all ethical issues are addressed appropriately and effectively prior to data collections.

Summary

Comprehensively detailing the methodology that will be applied in any research is highly recommended (Creswell, 2020; McNabb, 2008). Chapter three of this research proposal outlined the methodology chosen for this research. The logic used in selecting participants, sampling strategies, instrument that will be used in this study and how data will be analyzed was detailed in this chapter. Issues related to trustworthiness as well as, ethical concerns were also outlined in this chapter. While chapter three discussed the methodology chosen for this study, chapter four detail the data collection, data analysis, data coding and a brief report of results and findings. Chapter 5 will provide the analysis, conclusions, and recommendations for future research.

Chapter 4: Results

Introduction

The purpose of this study was to explore the attitude of women in Nairobi, Kenya on intervention measures already employed by public health care policy makers on methods of controlling malaria. Women were selected from three geographical areas in Nairobi. The three clusters included in this study were Langata, Kibera, and Lavington. Chapter 1 introduced the study. Chapter 2 provided an in-depth literature review surrounding malaria, malaria prevention, and the use of quantitative methods that have been used in previous studies of a similar topic. Chapter 3 addressed the methodology used in the study. Chapter 4 includes the interview analysis for this study. This chapter also includes participants' demographics, method of data collection, and analysis. Additionally, processes to ensure trustworthiness are discussed towards the end of this chapter. The findings of this study allowed women in Nairobi, Kenya to voice their opinions on their experiences with already introduced malaria control measures in Nairobi, Kenya.

Participants' Characteristics

Participants were selected from three cluster areas in Nairobi. These cluster areas were Langata, Kibera, and Lavington. These clusters were selected based on their social economic backgrounds. Participation was purely voluntary. Participants selected for this study satisfied the criteria of selection. Sixteen instead of fifteen participants were selected for this study. Participants were interviewed on agreed upon dates, location, and

times. All selected participants had experienced malaria directly or indirectly. Participants in Cluster 1 (Langata) and 3 (Lavington) were willing to be interviewed at public clinic sites located in their geographical area. Cluster 2 (Kibera) requested to be interviewed in a church located in their cluster.

Due to confidentiality issues, I did not to use names of participants. Rather, I organized ways of identifying participants from each cluster. Participants were referred to as follows: In the first cluster (Langata), the first participant was referred to Participant 1 Cluster 1 (P1C1), Participant 2 was referred to as participant 2 Cluster 1 (P2C1), Participant 3 was referred to as (P3C1), Participant 4 (P4C4), and Particpant 5 (P5C1). In the second cluster (Kibera), Participant 1 (P1C2), Participant 2 (P2C2), Participant 3 (P3C2), Particpant 4 (P4C2), and Participant 5 (P5C2). In the third cluster (Lavington), Participant 1 (P1C3), Participant 2 (P2C3), Participant 3 (P3C3), Participant 4 (P4C3), Participant 5 (P5C3), and finally Participant 6(P6C3).

Participants Demographics

Table 1 provides the participants' demographic information. The age ranged from 33 years of age to 71 years of age. Education levels were mixed between high school and college with one post graduate participant. Seven percent of all participants or one out of 16 had a post graduate degree, 40% of all participants or seven out of 16 had high school diplomas, while 53% or eight out of 16 participants were college educated. Also, marital status between single and married were mixed with one widowed participant. About 31% or five out of 16 participants were single women, 63% or 10 out of 16 were married women, and 6% or one out 16 was widowed.

Table 1

Demographics of the Participants

Gender	Age	Education	Marital status
P1C1	43	High School	Married
P2C1	45	College	Married
P3C1	50	College	Married
P4C1	63	College	Married
P5C1	71	Post Graduate	Married
P1C2	39	College	Married
P2C2	40	High School	Married
P3C2	54	High School	Single
P4C2	28	High School	Single
P5C2	30	College	Married
P1C3	25	College	Single
P2C3	62	College	Married
P3C3	42	High School	Married
P4C3	40	High School	Married
P5C3	38	College	Single
P6C3	33	High School	Married

Note. P=Participants. C= Cluster

Research Procedures

Data Collection

Participants were selected through personal contact. Each cluster was interviewed at different dates and times. All participants were asked a series of semi-structured questions that had been previously prepared to help answer the research questions. Participants were also encouraged to ask questions throughout the interview process. Prior to data collection process, the purpose of the study was once again detailed to participants. Participants were also informed that the interview would be audio taped and field notes would be taken during the interview process. Participants were informed that

they could withdraw from the study at will. Participants signed the consent form prior to the face to face interviewing process.

Prior to data collection, I had hoped to interview each cluster in groups of five. However, prior to interviewing the first cluster, participants requested to be interviewed separately. As such, each participant was interviewed separately while the remaining four waited in an adjacent room. This procedure was followed for the remaining cluster. This interviewing method flowed swiftly as I noticed that the participants were comfortable during the interviewing process.

The interview process for each cluster went well and no unusual problems presented themselves during the interview process. Each interview lasted between 30 to 45 minutes. Data were collected using audio tapes and filed notes. A hard copy of the interview was filed in my computer and flash drive. All data collected during the interview process were stored in a safe place in my home under lock and key for safe keeping and to protect the interests of all participants.

Data Analysis

Nvivo 10 helped me manage my data, manage ideas, query data, visualize, and finally report from the data. Interpretative phenomenological analysis (IPA) was used to analyze data. Data collected using this method are useful in identifying themes through coding. I transcribed all interviews and field notes into a word documents then imported all data into NVivo 10. Prior to importing data into Nvivo, I read through participants' responses several times in order to get a deeper picture of what participants were relaying. All participants were asked the same question, therefore allowing me to auto

code all interviews into Nvivo. Nodes were created containing different categories of coding. I coded data by placing them into themes. Word frequency, text frequency, and text search was used during coding.

Meanings of patterns were identified and data were analyzed by content and theme. These methods enabled me to find the meaning of what participants were communicating during the interview process. Since each participant was asked similar questions, I organized data into questions. I created a node for Interview Question 1, and words and phrases that best help capture participants' experiences with this phenomenon were coded into nodes. Organizing data in this method also enabled me to visualize data. This coding process was used for all other interview questions. This allowed me to stay organized, capture the meaning of the data, and understand themes as they emerged.

Trustworthiness of Data

Credibility

Credibility was achieved by ensuring that this study measured what it intended to measure. Furthermore, a clear picture of the study was captured on the perspective of women on the malaria control measures by public health officials in Nairobi, Kenya in relationship to effectiveness or ineffectiveness. I ensured that my own personal bias as well as experiences with malaria did not interfere with the interview process. I achieved this by remaining objective all through the interview process. I also made notes and noted body language and how the tone in participants' voices changed as they relayed their experiences on malaria.

Participants were informed that the study would be available to them upon completion. I also provided a contact number to participants and encouraged them to call me should they have any additional questions. During the interview process, some participants sometimes expressed themselves in Swahili. Phrases like "nini" which is used when someone is trying to find the right word were used during the interview process. However, all participants expressed themselves using the English language. I informed participants that expressions used in Swahili would be omitted. Participants agreed to have these expressions removed. Data were carefully analyzed in order for consistent results to be achieved.

Transferability

Transferability was achieved as the results from this study remained applicable to similar studies conducted by other researchers when dealing with similar populations. During the study, I remained objective and ensured that bias was not introduced. Highly detailed descriptions of participants' views were also captured during the interview process. I also wanted others who had experienced this phenomenon to be able to find some connection to the experience of the participants in this study.

Dependability

Dependability was achieved as the findings of this study are consistent and could reoccur again if the study was reconducted. Results of each interview question were reported in detail. Furthermore, the findings or results of this study were reviewed, corrected, and approved by my dissertation chairperson, committee member, and Walden

university research reviewer (URR) to ensure that procedures and methodology were within acceptable social scientific research guidelines.

Conformability

The research findings are consistent and supported by data collected during the interviewing process. I also remained unbiased through the entire research process. This was important because I was born and raised in Nairobi, Kenya and could easily bring in personal bias into the interview process. It was important for me to provide results that can be collaborated on by other researchers familiar with this population. I also ensured that I documented all steps taken during the study and provided readers a detailed trail on how each decision was made.

Presentation of Interview Data

Each cluster was interviewed at an agreed upon location on different dates. I also felt that it was necessary that I presented examples of verbatim words so that I could convey spoken words exactly the way they were spoken. However, I paraphrased some of the responses as the majority of participants provided similar responses. I paid close attention to detail and captured the sound tone and words conveyed by participants. Nonverbal communication such as pauses, gestures, and laughter was also captured. Initially, I wanted to group each response by cluster, but I found that responses from all cluster were similar. Themes were selected based on word similarity. Participants in Cluster 1 (Langata) were the first to be interviewed. Participants in Cluster 2 (Kibera) were interviewed followed by participants in Cluster 3 (Lavington) (see Table 2).

Table 2

Order of Participants Presented by Site of Interview

Sites	Assumed names of participants					
LC	P1C1	P2C1	P3C1	P4C1	P5C1	
KC	P1C2	P2C2	P3C2	P4C2	P5C2	
PC	P1C3	P2C3	P3C3	P4C3	P5C3	P6C3

Note. LC=Langata Clinic. KC=Kibera Church. PC=Parkland clinic

Table 3 identifies the themes identified for each research question. Themes were selected based on word similarities.

Table 3

Themes Found in Research Questions

Research Question 1	Research Question 2	Research Question 3
Have tried	Positive attitude	Effective medication
Not tried	Negative attitude	Education
Focus on treatment	Women involvement	Affordability
Do not care		Resources (man power)

Research Question 1: Perspectives of Women Towards Malaria Control

The first research question was as follows: What are the perspectives of women in Nairobi, Kenya toward malaria control? Responses provided by participants in all three clusters were similar in meaning. From their responses, it was clear that women in all three clusters viewed intervention measures already introduced as positive. However, they responded that public health officials had failed to follow through with intervention measures already implemented. Themes that emerged from data were that public officials have tried, not really tried, focused on treatment, or do not care.

The words public officials have tried emerged from several participants. In the first cluster (Langata), three out of five participants responded that public health officials

have tried to control malaria in Nairobi and have incorporated the views of ordinary people. Two participants in this cluster did not feel that public health officials were doing enough to control malaria. In the second cluster, the story was different. Four participants in this cluster (Kibera) felt that public health officials did not care about their health and had ignored this population due to poverty. In Cluster 3 (Lavington), four out of six participants felt that public health officials had introduced effective measures in addressing malaria; however, they had failed to engage the community, especially the poor, in their efforts to control malaria in this region.

Participant 1 in Cluster 1 was very passionate and was convinced that public health officials were doing all they can to help control malaria in this region. From her body movement and her facial expressions, it was clear that she was frustrated that people had remained ignorant to recommendations given by the government to help control malaria. She responded as follows:

Have Tried

> May I say because at least we work with the government. May I say that the government has tried and is doing each and everything possible because it is free of charge unless it is the ignorance of that patient who is getting the treatment? Because the government is doing all it can…May I say they are all effective it only depends on the ignorance of people. People are not the same, there those who are just ignorant.

Participant 3 cluster 1 experience. This participant's opinion was not very different from Participant 1. She also felt that public health officials had provided the

community with adequate resources to help fight malaria. She gave examples of the free clinics in Nairobi that have been made available to the public by public health officials. She took time to answer the question and paused several times and appeared that she was trying to provide specific accurate answers:

> Especially Nairobi, Nairobi is (eeeeeee) the control is that health officials have tried to put measures to help in controlling malaria. Health officials are mainly in most clinics. Most people are given treated nets at times and (aaaaa), but not very frequently. Health care officials spray the mushy areas and the wet areas. I remember last year they sprayed (paused) the whole of langata and Nairobi because they were so many mosquitoes. This is one of the things they have done to control malaria. For pregnant women I know they are given mosquito nets for free. So, they are actually working and we see their advisement of TV and radio…They also tell us the current drug that (aaaa) is available for us to use and those not to use. So they are bringing awareness to the public on how to control and prevent malaria (paused) and ya this is good. Yes, (pause) they have also incorporated the views of people. Usually in public clinics you will find they talk to people about malaria. We have so many (eeeee) public health officials in the streets and so many posters and things to help bring awareness. And (eeee), they also go to the people to explain malaria. So I think they are doing enough, my own opinion is that they are doing well and working well with the public…Usually in public clinics you will find them talking to people about malaria. We have so many public health officials in the streets and so many

posters and things to help bring awareness. They also go to the people to explain malaria. So I think they are doing enough, my own option is that they are doing well and working well with the public.

Similar experience. Participant 4 in Cluster 1 also felt that public health officials have tried to alleviate malaria in Nairobi. She responded that health officials have provided adequate resources to citizens, but due to ignorance, many have failed to follow through with recommended interventions. Similar to Participant 1 and 3 in the first cluster, she too responded that ignorance was a major reason as to why most people continue to be affected by malaria. She went on to say that

> They have really tried their best because some people have been given free malaria treated nets, they are teaching people how to take care for their compounds and how to use repellant to scare and kill the disease. Some people are advised to smear lotion so that they cannot be attacked by mosquito. So public health officials have given enough information on malaria. Some people are ignorant or care free they do not follow or sometimes they forget. Sometimes you go to some people houses you find places where mosquito can breed, and yet people have been taught even at school children are also been taught to destroy those breeding areas. They have tried to incorporate ordinary people because sometimes they go to people's places of business and clinics and they have been taught how to take care of their compounds…

Participant 2 in Cluster 1. This participant did not respond using the word has tried but used the words it is taken care of. She was soft spoken and answered each

question with great caution. Even though she responded by stating that public health officials have taken care of malaria in Nairobi, she also went on to say that public health officials have failed to incorporate the views of ordinary people in the efforts of fighting malaria but have otherwise shifted their attention to other health problems like HIV/AIDS.

> Okay (pause) I would say that it is taken care of in terms of the services that we give. This is because in our facility we have the lab that we do the testing and of cause in pregnant women. If there is any sign of malaria we still have the facility to be able to detect whether they still have malaria. We also have the provision of drugs. Yes they are doing a good job I would say. (mmmm) not fully incorporated ordinary people. If you relate to any other programs like HIV and AIDS really the community gets involved but in malaria it is not very loud. May be we need to do more, it terms of information in our community.

Similar response. Participant 4 in the second cluster also provided a similar response to participant 2 in the first cluster. She too felt that public health officials had tried to reach the communities in Nairobi in the efforts of fighting malaria but had failed to incorporate ordinary citizens. However, she also responded that more needs to be done. The same response was echoed by participant 5 in cluster 3.

> Public health officials have tried but they need to move an extra mile to incorporate ordinary people, but they also need to move around. They give mosquito nets to mothers but this has become a business. They get the nets and sell them, the health officials need to take an extra mile and educate the

> community and educate the people on malaria and proper medications. People need to be tested (frowning) before they take malaria drugs. Myself, I almost died from malaria but I went to the doctor and got tested and was treated for malaria. So people have pneumonia but instead get treated for malaria. So public health officials need to go around and educated people on malaria.

Not Tried

Participant 5 Cluster 1. This participant was very passionate in her responses. She also mentioned that, other than lack of visibility by public health officials, it was important for the citizens of Nairobi to understand their symptoms and get tested prior to taking medications. She went on to say:

> (serious look) I think my perspective is that it is not really controlled because when you look at Nairobi there is water everywhere and after wards you get mosquitoes. When I was growing up in Nairobi they used to go around and spray so you find out that even in Nairobi now there are mosquito's carrying malaria. This was not the case when I was growing up here. Now you find after it rains you will find dirtiness and you find the breeding areas they are not been taken care of by health care officials.....Therefore health care officials need to do more. let's say in Langata when I was growing up, it used to be clean now the breading areas for malaria are there. Now people are getting malaria in Nairobi which should not be the case.....There was a time when they used to cut grasses but this is not the case…..No I don't believe, I don't believe they are incorporating ordinary people. They were trying, sometimes they had commercials in the TV

> and media but for me it should be out there. Talking and explaining to people…..
>
> It should be out their telling people because you hear people saying I have a headache I have a fever but it is malaria but nobody is really telling them what is wrong and sometimes they go buy medicine from the shop and then it reoccurs. so they are not doing much, they should be doing better.

Four out of five participants in cluster 2 (Kibera) responded that health care officials were not doing enough to control malaria in this region. They mostly attributed public health workers attitude towards this cluster as negative. All participants blamed the attitude of public health workers towards malaria control in this cluster was blamed towards poverty.

Participant 1 cluster 2. She began the interview with the words "It is not well catered for." She felt that public health officials had failed to reach the people in Nairobi especially in the Kibera community. She referenced that education and outreach was important in helping eradicate malaria in Nairobi in general and Kibera in particular. It was obvious from her body language, tone of voice that she was deeply concerned that public health officials had failed the population in Kibera. This response was also echoed by participant 5 in cluster 2. However, this participant added that public health officials have incorporated ordinary people in addressing malaria control. Participant 1cluster 2 responded:

> It is not well catered for, like the slums area it is difficult because there is a high population here....If they can make the living standards higher it would be

better...The kind of service they have in this area cannot cater for this population…

Similar response. Participant 2 response was quiet similar to the response from participant 1 in this cluster. She too felt that public health officials had ignored this cluster (Kibera) due to poverty. Even though this participant viewed the efforts of public health officials as positive, she responded that public health officials needed to incorporate additional efforts in the slum areas in order to make this area habitable.

> Malaria is high in this region, the place is not clean, stagnant water, places that are not clean, and the slums are dirty so it is easy to get malaria. The houses are made out of mud, iron sheet and they are old. No, Public health officials have not done enough. No they have not incorporated ordinary people.

A similar response was followed by participant 3 in cluster 2. Participant 3 responded with urgency and despair her voice. She addressed the issue related to affordability especially when to comes to pregnant women and children. Despite her plea, she also gave credit to public health officials as she stated that "Public health officials are trying but have not really incorporated views of ordinary people…..They are trying to get the right medications. So far no good malaria medication exists...They need to prevent malaria instead of focusing on the treatment." She went on to say:

> Medication, supply of mosquito nets and stagnant waters are there but I feel like the public health officials have not done much in the slum areas. There was a time when they used to supply mosquito nets but they do not do that anymore. People in the slums are poor and public health officials have not reached them.

> There was a time they used to depend on donors but this is not the case anymore. They are mostly given to the children and pregnant women but others cannot afford it due to poverty. If public health officials can supply mosquito nets and also come up with a vaccination for people especially in the slum area it would be good. (pause) Dumping and poor drainage in kibera helps breed mosquito. Public health officials need to come up with better control measures for slum residences. They cannot afford medications. Medications are also not effective. The public health officials need to come up with a vaccination.

In the third cluster, 4 out of 6 participants felt that public health officials have not done enough to address malaria infection in Nairobi. Interestingly, Participants in this cluster mainly focused their responses on poverty stricken areas in Nairobi and women and children.

Participant 2 in this cluster went on to say:

> No public health officials have not incorporated the views of ordinary people….No; health officials have not incorporated the views of ordinary people. They do not come into the community, there is tall grass all over our homes, pools of water and even nets supposed to be given to pregnant women are sold. Not all people that need them are able to get them or afford them. Public health officials are not seen in the community.

Similar response from participant 3 in cluster 3. "They give nets to pregnant women and mothers but many areas in low income area in Lavington health care officials are not as visible".

Focus on Treatment

Majority of participants in cluster 1 (Langata) viewed malaria as a disease that has been controlled in this region. Out of the five participants interviewed 4 participants believed that the focus on treatment and control of malaria in this region has significantly helped control malaria in this cluster. Participant 1 in cluster 1 responded that the focus was on treatment. She also responded that the poor are mostly affected by malaria due to ignorance and illiteracy. However, even though she felt that ignorance and illiteracy contributed to malaria infection, she also mentioned that finances and adequate supply of drugs and staff were important in effectively eradicating malaria. She responded:

> The ideologies may I say is on treatment if I may say for example, this is a health center unit the drugs are well stocked and so there is no way one can miss the drugs because the government is there and is willing to give drugs free of charge. So no one will come and be turned away(mhhh).....We live very close to kibera and most of the people are illiterate and ignorant so most of the time we have to form an outreach. We even preach and try to educate them that this is your life and this is your child's life so let's cooperate (mhhh)….You know it all depends on finances and supply of the drugs and also the staff. If you do not have enough staff it will also affect the health center.

Similar response. Participant 2 cluster 1 stated that "the ideologies I think it terms of management and the way it is handled, it is well done. This is because we do not have much missed opportunities when it comes to treatment." A similar response was given by Participant 3 and 4 in this cluster.

Do Not Care

Participant in cluster 2 (Kibera) did not feel that the focus was on treatment. However, they felt ignored by health officials. Public health officials do not care for people in the slums. All five participants responded that the idea here is that people are not clean and contribute to the spread of malaria. As a result, this area is often neglected and malaria continues to be a problem in this cluster.

> **Participant 3 in cluster 2**. Public health officials talk about improving this area when running for a position but never come through once elected.....The people here know public health officials do not care and poverty affects how they view the community. If they can drain stagnant water and keep the area clean and build better houses malaria will be controlled. There are many slum homes in this area, people now do not care, and they continue keeping the place dirty and don't really care due to poverty. Due to poverty people do not care.

Participant 4 in cluster 2. She responded the same way. She felt that public health officials did not care for this cluster..... People hear are poor and do not really care because no one pays attention...The ideologies affect people in this area because they feel people do not care for their wellbeing. They feel like they do not have any voice. Similar responses were echoed by participant 5 in this cluster.

> .....The public health officials feel that this place is dirty leading to malaria. Sanitation is poor; drainage is poor leading to the spread of malaria.....public health officials have not improved this area and continue to neglect this area due to poverty. They do not take it seriously and preventive measures are not like

they should be. They pay attention to disease like AIDs but do not pay attention to malaria in this region. They do not think it is serious disease. That is why they do not have many preventive measures in this region.

Question 1: Summary and Results

The first research question addressed the perspectives of women in Nairobi Kenya towards malaria control. Themes that emerged from this question were Public health officials have tried, not tried, focus on treatment, and do not care.

Majority of the responses from women in cluster 1(Langata) indicated that they felt that public health officials have tied to control malaria in this region. However, most of their responses focused on malaria in the slum area (Kibera). Some participants felt that ignorance and illiteracy had negatively impacted malaria control measures in this region. The women in this cluster felt that public health officials had introduced effective measures to help control malaria infection. Women in cluster1 responded that public health officials had introduced educational programs, provided free clinics for testing in Nairobi. Additional measures that had also been introduced by health officials included, implementation of outreach programs and also provision of mosquito nets to pregnant women and children.

These feelings were not shared by women in the second cluster (Kibera). Women in this cluster felt ignored by public health officials. They felt that the environment they lived in was a breeding ground for mosquitoes. Also, they blamed public health officials and the government for not improving the sanitation in this area. The women responded that the overall don't care attitude of public officials had left this population feeling

neglected and hopeless. There was a general feeling of desperation and anguish from this population as they relayed their experiences. They urged public health officials and the government to intervene and help improve the living conditions in this area in order to improve overall health.

The women in cluster three (Lavington) provided different responses. Even though majority of them felt that public health officials had introduced good measures in this region to help control malaria infection. They felt that public health officials had ignored the slum area. They responded that majority of the people in Lavington area have money and are well educated and can afford to go to private hospitals for treatment. This is not the case for poor people.

Women in this cluster also referenced to another slum area near lavington (Kawangware), which is also impacted by malaria infection among other health problems. Women in this cluster urged public health officials and the government to pay close attention to the slums in Nairobi and introduce measures that are affordable to this population. They further encouraged public health officials to make themselves visible in the communities and provide additional, affordable resources to effectively control malaria especially in the slum area.

Research Question 2: How do women in Nairobi Kenya perceive the intervention measures already implemented in controlling malaria?

Analysis of research question two was grouped into three themes: Positive, negative and women involvement. Responses from participants in all three clusters shed light on how women perceived intervention measures already implemented by public

health officials in controlling malaria in Nairobi Kenya. 6 out of 16 participants perceived public health officials attitude, value and belief towards malaria infection as positive and in alignment with their values, attitudes and beliefs. The remaining 9 participants viewed public health official's attitudes, values and beliefs as negative towards malaria infection and were not in alignment with their values attitudes and belief.

Also, these women perceived intervention measures already introduced as effective if properly implemented. However, participants in all three clusters responded that public health officials have failed to work effectively in collaboration with women in the community to address malaria infection. Women in all three clusters encouraged public health officials to involve women in decision making in order to control malaria successfully not just in Nairobi but in Kenya.

In the first cluster (langata), 4 out of 5 participants in this cluster perceived the attitude, belief as well as value of public health officials towards intervention measures introduced in malaria infection and control as being positive. Only 1 participant in this cluster viewed the attitude of public health officials as negative. In the second cluster (Kibera), 4 out of 5 participants perceived public health attitude, value as well as belief towards intervention measures introduced as negative. Only 1 participant regarded the values, beliefs and attitude of public health officials towards intervention measures introduced positively. Finally, cluster 3 (Lavington), 5 out of 6 participants viewed the attitude, value, and belief of public health officials towards malaria control negatively.

Positive Attitude

Majority of participants in cluster 1 (Langata) perceived intervention measures implemented as positive. Participants in this cluster responded that public health officials attitudes, values as well as belief towards malaria was positive and in alignment with their attitude, value and belief. Participant 1 responded that public health officials were doing a good job in addressing malaria infection. She responded:

> Mostly pregnant women are issued with nets, mosquito nets which are already treated…. So, mostly pregnant women and children under five years are given mosquito nets free of charge. Mosquito treated nets. Yes mosquito treated nets. True, the attitude is good….There are being taught on their hygiene, the hygiene of where they are and they are also taught prevention. (aaaa) I want to believe that unless one is ignorant, they are well taught. Well, may I say to control malaria; we have to at least have a clean environment. Like when we have the drainages, they have to be flowing. They cannot be stagnant because that is where mosquito breeds (interrupted by noise of plane flying). Grass should at least be kept short and the fence and any other things that would cause mosquito to lay their eggs there and for them to multiply should be taken off (mhhh). So I feel like that is what is required. Public health officials are doing all these things all the time. We have a department that goes around spraying places which have stagnant waters and others workers who come and make sure that the drainages are open. So I want to believe that it is well.

Participant 2 in cluster 1. Responded that public health officials are doing all they can to control malaria; she also blames the public for failing to follow through with

recommendations and guidelines given by health officials to effectively control malaria. She perceives the intervention measures implemented by public health officials as positive. She responded:

> Nothing much that it is attached to the believes because basically we know that the cause of malaria, which is the mosquito. So nothing much is attached to the believes (pause). It is our community and most of us in our community….might not know that. So not much is attached to our believe. In one way or another some people think it is just a common cold so it can easily get neglected (ya)....Public health officials give out the right information....public health official's attitude is positive. It is positive.

Participant 4 in cluster 1. She perceived intervention measures implemented by public health officials as positive and also believes that ignorance and lack of knowledge has affected malaria control measures. She also responded extensively that public health officials have saved the lives of many people in Nairobi.

> I believe that they are doing a good job trying to stop the malaria epidemic. It is only that some people or some areas maybe or could be ignorant or lack knowledge….But they are trying to help people because, if you can follow what you are told, to spray and take antimalarial tables and take care of your compounds and use mosquito nets….Mosquito nets that we use also have to have repellant so mosquitoes cannot attack you easily. If you do all these and all are working together, it can combat the disease. Yes, I believe public health officials care because they are helping people.... If they were not doing the work they are

doing, many people could have died because many people are treated when sick. They teach you and when you go to clinic you are being taught. So if they are not following the recommendations, many people could have died and then we could have had a problem.

A similar response. Participant 3 in cluster 1 perceived public health officials efforts as positive. However, she also encouraged public health officials to work with the community by providing additional resources especially in the underserved communities. She also encouraged government officials to intervene and improve housing conditions in the slums (Kibera). She further responded that public health officials are doing the best they can, but are unable to work effectively with the poverty stricken areas in Nairobi due to limited resources.

Well, I think they might be lacking in this. Although I think they are positive. I don't think that they have enough resource to cater for everyone. We know that there are mosquito nets but not everyone can get one....Not all pregnant women get mosquito nets. Some get and the rest they fight for themselves. I think they need to do something about that. They need to do something about reaching everyone. What they have done is good but not good enough; they still need to do more to reach everyone. And also, on the other side you will find sometimes that even the health facilities we have, because of some conditions you will find in these humble neighborhoods like kibera. Health officials cannot do much because of the way the places are and the habitation.... People are unable to dry off the mucky water so you find that health officials might try as much as they can but it

> is difficult (pause). There is a need for the government to improve those housing facilities so that mosquitoes cannot breed…. So you will find however much the health officials still want to help these people, they will find that they still need more to be done from outside so that they can be able to contain and do their work well. So they need these places to be improved because if they make proper housing and drainages and the sewage, and if everything is proper like in the upper areas, you will not find any place that has got stagnant water that breed mosquitoes, because that is the cause. So in these areas you will find resource is not there, nets are not enough. Also, drugs might not reach everyone because I do not think many people have TV or radios. As much as we are talking about people doing this there are still also limitations that they face. I am not talking for them but this is what I see.

Negative Attitude

Majority of participants felt that intervention measures already introduced as effective, however, majority of the participants especially in cluster 2 and 3 viewed public health official's attitude, belief and value towards intervention measures introduced as negative and not in alignment with their attitude, value and belief. Participant 5 in cluster 1 sounded disappointed that public health officials were not as committed as they used to be. She responded with a hint of frustration in her voice that public health officials have developed a "non caring" attitude.

> Well I believe that those who are committed could do better but the attitude has changed. I think they are not taking care of the citizens, they do not explain to

> them, non-caring, maybe I am biased (slight laugh) but I feel that they don't care much. I believe that they should be doing their work and explaining to people how to care for themselves to keep clean. I don't think they are doing much. No, I don't think there attitude is similar to mine. Because I care about people but I am not a doctor. Public health official's attitude does not marry with mine because, I look for better things for people. I want to see people living and doing well, I want to see people educated and knowing what they need to do when sick. So my values conflict with those of public health officials.

Participant 3 in cluster2. She also felt that public health officials were not doing enough to help the poor. Participant 3 felt that poor people are often neglected while public health officials concentrate on the rich. There was a sense of hopelessness as she expressed herself. She also mentioned that poverty in this cluster has created a breeding ground for other health problems. She responded:

> I believe if the public health officials can support the poor people, (pause) like now government nurses are on strike and people are dying. Rich people can go to private hospitals what about the poor people dying from killer diseases like malaria and cannot afford medication and also have to pay for public hospitals? The government needs to really work on improving the health of this people. When sick they go to the shops and buy medications that do not work and sometimes one is already infected making things worse. Most of these medications are not effective, the government is not ready to support the poor and need to give free medications to the poor. The rich do not have to worry because

they can afford medications. Poor people self-medicate and are really suffering in these areas. Public health officials are not doing anything but supporting rich people. The poor in Kenya will remain poor. Poverty in this area will continue to make people in these areas suffer, poverty also leads to crime, overpopulation and continue to deteriorate and create many other social problems.

A similar response. Participant 2 and 4 in cluster 2 perceptions was that public health officials do not take malaria seriously and think malaria is easily treated. Participant 4 in this cluster also responded that public health officials view the population in Kibera as having poor hygiene and contribute to the spread of malaria. Participant 5 in this cluster was also frustrated that malaria continues to be a problem in Nairobi. She stated that public health officials take malaria for granted. She was also sounded frustrated that public health officials had lost touch with the public and should not allow malaria to claim any lives. She responded that "… I believe that we can control malaria; malaria is treatable and should not kill people."

Participant 1 in cluster 3. She also had a negative perception towards intervention measures already introduced by public health providers towards malaria. She felt that public health officials have ignored malaria as a disease and was concentrating on disease like AIDS. She mentioned that public health officials need to pay close attention to malaria as it claims many lives yearly. She responded that many children are affected by malaria just like HIV/AIDS. She urged public health workers to work harder at controlling malaria in Nairobi.

> They do not pay attention to malaria and they give priority to diseases like AIDs and cancer.... but malaria is not the case. However, malaria is a deadly disease; ....People yearly die of malaria especially the young children, so they need to sensitize people to malaria just like they do AIDS and Cancer….I have a strong belief that we can stop malaria deaths. Public health officials need to have the same attitude with other people and become more sensitized to malaria. People need to work harder to let officials understand that malaria is a serious disease. More education, health works need to work harder.

Participant 5 in cluster 3. She too shared similar views with other participants. She felt that malaria is taken for granted and encouraged additional education. She also spoke on her personal experience on malaria and encourages accurate diagnosis prior to treatment. She encouraged public health care workers visibility in the community and commitment to their work.

> Public health officials talk about malaria but they are not educating people. They need to hold seminars and train people on malaria so that they can educate the community. Malaria has been abused and many may not know what malaria is. When I suffered from malaria about five years ago I almost died, I went to the doctor and was diagnosed with malaria. So in my case I take good care of my health, I do not take medications without a proper diagnosis. So health care works need to go to the community and educate people on malaria and train people so that they can train others in the community. People also abuse malaria and get treated for pneumonia and end up dying because of self-diagnosis.

Ministry of health needs to train people and encourage them to be tested. (pause) Sometimes public health officials do not listen to us. In Nairobi sometimes when public health officials are in the community, they want to be bribed instead of doing their work. Some are good but very few.

A similar view was shared by participant 4 in cluster 3 "The attitude of public health officials sometimes is not right, they are sometimes ignorant and not available. They are busy, rude, and have poor attention." She felt that public health officials have lost touch with the general public. While participant 4 in cluster 3 felt that public health officials had lost touch with the public, participant 6 in cluster 3 responded that medications used to treat malaria were ineffective and only treated signs and symptoms.

Women Involvement

Women involvement was also mentioned as valuable in controlling malaria in Nairobi. When asked about women involvement, all the participants smiled and were excited at the prospect of having women involved in collaboration with public health officials in the efforts in controlling malaria. Participants responded that women are the primary care takers in families and usually most affected when family members are diagnosed with malaria. They also responded that when women are affected by malaria, chances are that the whole family would suffer.

Participant 2 in cluster 1: She responded that"… (smile) women are the main home keepers and mainly involved in their children and community. So a woman is more involved than men in terms of being out and involved with the people, so they should be involved." Participant 3 in cluster 1 responded with certainty "When talking

about women we are talking about the home. So if a woman is not there or not given the information, then she is not able to assist the family." Participant 5 in cluster 1 referred to women as managers. She responded that "They are raising children and women are the head of the family….Women are managers (haaa) and need to be involved and take active participation."

Similar responses in cluster 2: Participant 1 in cluster 2 also replied that when a family member gets sick, women are usually the primary care takers in the home. She also added that women also suffer financially when family members get sick. Participant 2 in this cluster also echoed a similar response "….yes, women need to be involved". Participants 4 in this cluster when asked if women involvement was important in addressing malaria control. Prior to answering this question, she laughed out loud and answered "Women should be involved because we are the once who are capable of caring for families, we are the mothers and men do not really care."

Similar responses in Cluster 3. Participant 2 in this cluster was passionate about women involvement. She went on to say that women health is viable in sustaining family. All other participants in this cluster felt that women involvement would significantly improve malaria control measures not just in Nairobi but in Kenya. Participant 2 in cluster 3 went on to say:

> (laughter) Women should be involved because we are the main care takers and have to work hard on prevention. Malaria can affect the family financially and we need to make sure that we are taking care of the family. We should be in the forefront of fighting malaria. We cannot progress when sick and if a mother dies

from malaria our children are also left neglected. We should be in the forefront. Women groups can help educate each other and the public.

Question 2: Summary of Results

The second research question addressed the perception of women in Nairobi on the intervention measures already implemented by public health officials. While most women felt that public health had introduced intervention measures that were effective, they perceived the attitude, value and belief of public health officials towards malaria intervention measures as negative and not in alignment with their attitude, value and belief.

In the first cluster (Langata), Majority of the participants deemed that public health officials attitude, believe and value was positive and intervention measures introduced as effective. Some participants in this cluster blamed the citizens stating that ignorance and lack of knowledge especially in the slums was the main reason as to why malaria was not controlled. This cluster also responded that public health officials had provided citizens in Nairobi, free clinics and hospitals for testing and treatment. Also they responded that many in the slums had been provided free mosquito nets and educational programs in the efforts of controlling malaria. However, they had failed to follow through with the intervention measures already implemented.

This same feeling was not shared by women in cluster 2 (Kibera) and cluster 3 (Lavington). These women felt that there was a disconnect between public health workers and ordinary people. Participants in cluster 2 viewed the attitude, belief and value towards this cluster by public health officials and the government as negative.

They responded that public health officials had given up on people in the slums and failed to follow through with the intervention measures already implemented in controlling malaria. There was also a feeling of despair, resentment, disappointment, and sometimes anger from this cluster. These feelings were also shared by participants in cluster 3(Lavington).

Also, majority of the participants believed that women were not playing enough roles in efforts that are designed to control malaria in Nairobi Kenya. The participants felt that women could significantly help public health in addressing malaria control measures. They stressed involvement of women was vital in addressing malaria infection effectively, efficiently, and above all proficiently.

Research Question 3: What are the experiences of Women in Nairobi Kenya on the already implement measures in Controlling malaria?

The third research question focused on the experiences of women in Nairobi Kenya on intervention measures already implemented. Responses from all three clusters on this question were almost similar. Themes derived from this question were, effective medications, education, affordability, follow up. These words were referenced by all participants in all three clusters.

Effective medication

While participants 2 in cluster 1 responded that measures such as use of mosquito nets, education, clearing of stagnant waters and bushes as effective in malaria control. She responded that public health officials needed to provide medication that are effective. She stated that some medications that are sold to the public are ineffective. She urged

public health officials to provide specific medications when treating malaria. She responded:

> Okay, in some areas there is malaria management. I have seen places where people are not very specific on what to give because you will find drugs like Fansidar still getting used, and the community still buying these medications from the shops. The type of medication one needs to take should be very specific because you will find that there are many schools of thought in the community. People who do not really know what to take will go to the shop and just pick pills like Fansidar, so public health officials have to be very specific on the drug of choice and should be specific to their infection.

Similar response from participant 5 in the first cluster. She also felt that some medications in the market are ineffective. She responded ..."Medicines they are giving are secondary. They are not proper, because they is so much dumping. So the medicine is not effective." Participant 3 in cluster 3 also answered that some medications are not effective and need to be eliminated from the market. "..... Ineffective medications that one takes for a week and there is no cure. I believe that some companies are making fake drugs and giving them to hospitals, clinics and even to chemists. Our government needs to check on this." This was also echoed by participant 4 in cluster 3. ".....Ineffective measures are some drugs, we do not know if they are fake, one takes the drugs and does not improve but only becomes worse".

Education

Education was also a theme that come up several times from participant responses. Participant 4 in cluster 1 responded that mosquito nets are important in malaria control. She further stated that in order for malaria control measure to be effective public health officials have to educate people on the importance of proper diagnosis prior to taking medication. She also discussed the issue of affordability

> The only thing that I said before is that when it starts, many people cannot tell you if it malaria or not. Many people need to be educated that when they start feeling uncomfortable they can go for checkup. People do not want to go to the hospital because of the charges so they take the short cuts. If they go for checkup, many people will not be affected.

Participant 3 in cluster 1. She replied that intervention measures already implemented are effective if properly implement. She also stated that malaria in Nairobi is fairly controlled. However, she was concerned that most people in urban areas continue to take malaria medication without proper diagnosis and urged public health officials to educate this population on proper measures to take prior to taking medications.

> These people are stocking their old medicine that we have already been told that they do not work. You will still find when people get sick they treat themselves, they will not be tested and you will find that because malaria shares symptoms with other diseases you will find that something that could have been controlled will get out of hand very quickly. So that is a big challenge....I think that it is a high time that people out of town need to be enlightened and educated and

> assisted with nets and spraying because people suffer. People should be informed not only on malaria but generally on health issues, because I have been shocked when someone says they have malaria and buy medicines that do not work. For you to confirm that you have malaria you have to be tested.

Similar story. The story was the same in cluster 2, participant 1 in this cluster responded that use of mosquito nets, clean environments are good measures. However she also responded on issues related to affordability and education. She encouraged public health officials to have seminars and educate the public on proper measures to take in order to effectively control malaria. She responded that:

> Public health officials need to have seminars, educate the community, show them advantages of proper use of mosquito nets and the importance of communities helping themselves. Seminars should be conducted regularly. Educate citizens and also show the community that it is important to care themselves. Because if they are spending most of their money on malaria treatment then they would not be in a position to take care of their families. (pause), So it is important for the community to be educated on advantages of good health in terms of living well. If people are educated by public health officials and they take time showing them the advantages and also by going into the slums so that the people in the slums do not feel eliminated.

Participant 2, and 3 in cluster 2 also mentioned the importance of education and awareness. Participant 2 responded that: ".... unfortunately they do not have enough

people or resources to do so. People are not well educated and are ignorant, need further awareness.....Need to conduct awareness in this ….”

Similar story. Participant 2 in cluster 3 also had a similar response. She also encouraged public health officials to educate the public on malaria control. She encouraged public health officials to provide health education to the public and ask peopled to avoid stagnant water, bushes and also show them how to take ant malarial drugs especially when traveling to places like Mombasa where malaria infection is high. She went on to say"....People should sleep under treated mosquito nets and everyone should have accessibility to these nets." Participant 6 in cluster 3 also encouraged public health officials to educate people on malaria control measures. She responded that even though mosquito treated nets are given to the public, public health officials have failed to successfully educate citizens on the importance of keeping their neighborhoods clean. She went on to say:

> Public health officials need to educate people, know the signs of malaria and need to go to the hospital for treatment. They are less concerned on education, they are not telling people what is malaria and what causes malaria. They are giving mosquito nets but we do not control the breading areas where there are stagnant waters and do not clear bushes.

Affordability

Participant 5 in cluster 1 also felt that mosquito nets worked, she also talked on issues related to affordability. She sounded frustrated when she addressed the cost associated with malaria control measures. She also stressed education. However, she

was mostly concerned that mosquito treated nets that were supposed to be given to the public especially to the poor for free of charge are sometimes being sold.

> Well I think those nets helped but when you want to buy one who can get it for 1000 to 2000 shillings and many people especially in Kibera cannot afford them. So, the government needs to start giving them nets. Also, educating them on how to use nets because they are now using them to cover their kitchen garden. So awareness and education is important. The people themselves need to be enlightened so that they know that mosquito nets are important to prevent mosquitoes and malaria and not for other uses.

Participant 4 cluster 2. Was also concerned that many people in the slums are unable to get affordable treatment. She encouraged public health workers to work with the poor and provide resources to especially to this population. "They can locate some hospitals whereby they can help people in this community for free. We all depend on places like Kenyatta which is a public hospital but it is also expensive and overpopulated. Public health officials need to locate other hospitals...".

Similar answer. Participant 2 in cluster 3, also encouraged public health officials to provide affordable treatment to the poor. She further discussed the issue of self medication due to poverty. This participant was concerned that mothers and children are mostly affected and die at higher numbers due to self medications. She went on to say.

> Measure they can take includes, eliminate stagnant water, and supply mosquito nets to

> everyone in this region due to poverty. Many people cannot afford. The public health officials need to supply medication to everyone. Supply medicated mosquito nets to children and pregnant mothers. Many children in Kenya and young mothers die from malaria. They also miscarry because the medications given to the mothers are strong. People also self-medicate which is not good and can destroy kidney and liver, they need to be tested but they cannot afford to be tested. Government needs to help especially poor people who cannot afford to go to private hospitals. Even the government hospitals are also expensive and the poor continue to suffer.

Participant 5 in cluster 2. This participant also felt that some intervention measures were effective but not affordable. She mentioned that mosquito nets were effective in treating malaria. However, she also responded that many people in this cluster could not afford to pay for medications due to poverty.

> People in the Kibera region cannot afford medications….Mosquito nets have not reached this area due to negligence. Poor follow up, poor drainage, poor sanitation. Clinics that have been set up are ineffective. Health center charge and due to the fact that people from this area are not well up, they cannot afford treatment and medications. Health centers are also charging for medications which are supposed to be free. So poverty hinders people from going to hospitals.

Participant 3 in cluster 1. She answered that public health officials had good plans, however, she felt that consistency was lacking when it comes to effectively implementing measures to help eradicated malaria. She also addressed issues on

affordability and poor housing. She encouraged public health officials to follow through with intervention measures already implemented in order to eliminate malaria.

To control malaria they need to be consistent with the good plans that they already have. For example, they need to be consistent with things like spraying, especially during the rainy seasons. like now you will find that it is raining and there are many mosquitoes. The last time they sprayed it was last year and before last year they had taken longer. So if there is consistency, even with challenges like issues such as poor housing, malaria infection, making treatment affordable would improve because without mosquito there is no malaria.

Resources (Man Power)

Lack of man power and resources was also mentioned by many participants. Participant 4 in cluster 1 felt that adequate man power, free hospitals and clinics were lacking in Nairobi. She urged public health officials to make themselves visible in the community and help citizens in Nairobi especially those in the slums in effectively implementing malaria control measures. Participant 4 in cluster 1 responded that:

> They need more people to help with addressing malaria. Because the health officials in Kibera area not enough. The few they have work in hospitals and clinics. If many, they could go to people's houses sometimes, and can help clean breading areas. If health workers were enough it would help. Education and resources can help combat malaria.

Participant 3 in cluster 1. She responded that man power is needed in the communities. She mentioned that even though public health officials have

advertisements on Televisions, many people in the community especially in poor communities cannot afford Televisions and have difficulty getting information.

> Public health officials need to continue to go house to house and monitor malaria. Some people do not have TV and have difficulty getting information. So an outreach program is important and needs to be incorporated and lives of children and adults can be saved.

A similar response. Participant 3 in cluster 3 encouraged health care workers to make themselves visible in the communities. She responded that "health care works need to be in the community and go door to door to reach everyone.....Coming into the community like churches and schools and health facilities, but they need to do more outreach." Participant 4 in cluster 3 also felt that public health officials have introduced measures such as mosquito nets into the community. However, she continued to respond that "....Public health officials need to go into the community and educate the citizens."

A different twist. Participant 3 in this cluster mentioned that, clearing grass, spraying stagnant water and mosquito treated nets as effective measures. She also responded that public health officials were not visible in the community. This participant also responded contrary to other participants. She mentioned corruption by some medical officials as contributing to the inability to effectively control malaria. "....doctors selling medications that are given by government, doctors stealing medications from public hospitals, greed in Kenya."

Question 3: Summary of Results

Research question 3 was designed to explore the experiences of women in Nairobi Kenya on already introduced measures in controlling malaria. The major themes identified from this research question were similar across the board. In all clusters participants responded by stating that adequate resources were important in fighting malaria. Participants also felt that health care officials needed to implement measures that are affordable especially to the poor. Health officials are also encouraged to provide additional man power to help alleviate the cases of malaria infection.

The participants also stressed the importance of educating the public on malaria control. Also, similar words were used when addressing the most effective measures already implemented in addressing malaria. Participants from all cluster responded by stating that even though public health officials have incorporated effective measures in addressing malaria in these clusters, Majority of the participants responded by stating that there is a lack of follow up when it comes to addressing malaria infection on a continuous basis. This was mostly stressed by participants in cluster 2 in Kibera a low social economic area. Participants in this cluster felt that even though public health officials had introduced effective measures to help control malaria in Nairobi, public health officials had ignored this cluster due to poverty.

Emphasizing on the poverty levels associated with the cluster, P1C2 responded by stating that "...public health officials need to understand that people living in Kibera are poor and health officials need to take care of the slums because this environment is conducive for breeding mosquitoes that carry malaria." Additionally, P2C2 response to this question was that "…Malaria is high in this region, the people are poor and the place

is not clean, stagnant waters, places that are not clean and the slums are dirty so it is easy to get malaria." While C2P3 added that "…everyone in this region is poor."Also, C2P4 emphasized that "…hospitals are overpopulated, poor treatment and lack of resources."Finally, to top it up, C2P5 concluded that "…people from this place are not well up; they cannot afford treatment, and medications.

Participants in all three clusters responded on their experiences with malaria control measures already introduced measures. It was evident that they viewed the intervention measures already in place as effective; however, majority of participants responded that these measures have not been successfully implemented. Some participants were frustrated that malaria is even a problem in Kenya and urged public health officials to follow through with intervention measures already in place. This could be achieved through additional education, additional man power, providing adequate resources and making sure that issues of affordability are well addressed especially when dealing with low income communities.

Summary

The purpose of this chapter was to write out the analysis of the research questions and provide detailed information of participant's experiences with malaria in Nairobi Kenya. Three cluster areas were selected for this study. These clusters included Langata, Kibera and Lavington. Women you have experienced malaria directly or indirectly were included in this study. In order to gain a deeper understanding on the experiences of women in Nairobi Kenya on the already introduced malaria intervention measures by

public health officials in relationship to effectiveness and ineffectiveness, three research questions were designed to help gain an in depth understanding of women experiences.

The first research question was designed to capture the general outlook on the perspectives of women in Nairobi Kenya towards malaria control. Major themes that emerged from this research questions were public officials have tried, not really tried, focus on treatment and do not care. Participant's responses from this research questions varied from public officials had provided effective measure to public health officials had ignored poor people and had failed to follow through or effectively implement intervention measures already introduced.

The general feeling to this research question from participants experiences was that intervention measures introduces like mosquito treated nets, spraying, medication, early diagnosis are effective measures in fighting malaria, however, public health officials are not working hard enough to eradicate malaria in the low income neighborhoods.

The second research question was a probing research question that was designed to capture the general outlook of already implemented malaria control measures in Nairobi Kenya from a women's perspective. Major themes that emerged from this research question were positive attitude, negative attitude and Women involvement. Participants responded that even though majority of the already introduced measures are effective, public health officials attitude, value and belief was negative hindering effective implementation of these measures especially in the slums.

In response to this research question, Majority of the participants perceived public health officials attitude, value and belief towards malaria as negative while a few others viewed their attitude, value and belief as positive. This was mostly relayed in cluster 1 (Langata). Majority of participants in cluster 1 responded that public health officials had a positive attitude towards malaria. This feeling was not shared by majority of the participants in cluster 2 and 3. There perception towards public health officials especially in the slum areas was viewed as negative. All the participants urged public health officials to collaborate with women in the community in the efforts of fighting and controlling malaria in Nairobi.

The third research question was designed to explore the experiences of women in Nairobi Kenya on already introduced measures in controlling malaria. Themes derived from this question were effective medications, education, affordability and follow up. Participants responded that public health officials had introduced measures that were effective but they had lacked to follow through with already introduced measures. Participants were concerned that majority of people in the slum area could not afford medications and some medications sold in the "shops" were inferior.

Also, participants felt that public health officials were not visible and needed to become more involved in the communities. Education was referenced by majority of the participants. Participants were concerned that majority of the people especially in the slums, lacked resources and were unable to afford or incorporate treatment measures already in place. Public health workers were encouraged to make themselves visible especially in low income communities.

While chapter 4 provided the analysis of the research questions and provide detailed information of participant's experiences with malaria in Nairobi Kenya. Chapter 5 provided the overview on the reason this study was conducted. An interpretation, finding and limitation of the study will be outlined. Recommendations and positive social changes exceptions will also be addressed.

Chapter 5: Discussions, Recommendations, and Conclusions

Introduction

The purpose of this phenomenological study was to explore the perspective of women in Nairobi, Kenya on the malaria control intervention measures already implemented by public health officials. I asked participants to describe their experiences on already introduced malaria control intervention measures. I selected 16 participants from three geographical areas in Nairobi Kenya, which were made up of participants from Langata (Cluster 1), Kibera (Cluster 2), and Lavington (Cluster 3). Five participants were selected from each cluster with the exception of Cluster 3 (Lavington), which had six participants.

I also selected women who have experienced malaria directly or indirectly. Participants in this study were asked semi- structured questions that addressed three research questions. The first research question was the following: What are the perspectives of women in Nairobi, Kenya toward malaria control? The second research question was the following: How do women in Nairobi, Kenya perceive the intervention measures already implemented in controlling malaria? And the third research question was the following: What are the experiences of women in Nairobi, Kenya on the already implemented measures in controlling malaria?

The findings of this study were compared to literature reviewed in Chapter 2, and hopefully, this study will extend knowledge on malaria control measures. The findings were also interpreted in the context of the ecological systems theory. This historical theory was selected as a lens to analyze the findings of this research study. These

comparisons should shed some light on the activities of public health administrators' efforts in controlling malaria as well as the outcomes of their control measures' implementations. These analyses will further shed additional light on the acceptance or rejection factors of participants on malaria control efforts. These factors could lead to voicing possible effective recommendation or solutions to both the citizens in general and to public health administrators in particular in the long run.

During the course of this study, several themes were identified for each research question. Themes were selected based on the similarity of meaning of words and phrases. The themes identified for this study included *public health officials have tried*, *public health officials have not tried*, *focus on treatment, public health officials have a positive attitude*, *negative attitude*, *women involvement, effective medications, education, affordability*, and *resources*. Since most of the participants in this study had similar responses, the interpretation of findings from this study were based on the overall themes found in each research question. Also, limitations of the study, recommendations, and implications of this study are addressed in this chapter.

Interpretation of Findings

Literature and Research Question 1 Findings

Research Question 1. What are the perspectives of women in Nairobi, Kenya toward malaria control?

Malaria is viewed as a deadly disease that has claimed many lives. Some participants felt that public health officials have tried to incorporate the views of ordinary people in their efforts of addressing malaria infection in Nairobi. However, other

participants felt that public health officials have not incorporated the views of ordinary people, and the poor were especially ignored. Failing to collaborate with ordinary citizens was one of the reasons blamed for failing to eradicate malaria, not just in Nairobi, but in Kenya in general. This is in alignment with Bongus et al. (2010) who encouraged collaboration among public health officials in addressing malaria infection. Bongus et al. found that collaboration among various stakeholders can positively impact malaria control measures. However, I noted, based on the various responses from the participants, that there were systematic disconnections between the public health policy officials and the ordinary people in Nairobi, Kenya.

Furthermore, the perception of the majority of the participants was that even though public health officials had focused on treatment, a disconnect existed between ordinary citizens and public health officials. The participants believed that the overall disconnect between the populations actually expanded the negative outcomes of malaria impact on citizens of Nairobi, Kenya. Allen, Hetheringon, Manyama, Hartfield, and Maire (2010) also supported collaboration among all parties in the effort to eradicate and control malaria. Allen et al. incorporated the use of the social entrepreneurship approach (SEA) model that encouraged collaboration between all parties in addressing malaria infection.

Most participants mentioned that public health officials had failed to incorporate the views of ordinary citizens in their efforts in addressing malaria control in Nairobi. The experiences of participants in Cluster 2 (Kibera) and Cluster 3 (Lavington) were that public health officials had ignored ordinary citizens, especially the poor, in their efforts in

addressing malaria infection. However, besides systematically overlooking the ordinary citizens by the public health policy makers in Nairobi, Kenya, some of the participants concluded that the issues involved with a lack of better malaria treatment approaches were multidimensional across the board.

P5C1 mentioned that public health officials have not incorporated the views of ordinary citizens. She further responded that even though public health officials have tried to provide advertisements on TV on malaria control measures, they were not doing enough. She felt that public health officials needed to work harder with the public in order to control malaria control. P1C2 also believed that public health officials had failed to incorporate ordinary citizens and had ignored the poor in their efforts in addressing malaria infection. P3C2 shared the same feeling and felt that even though public health officials had tried to control malaria, they had failed to incorporate ordinary citizens in addressing malaria control measure.

This finding was also confirmed by a study conducted by Jambo et al. (2011) that encouraged collaboration among all stakeholders in the continent of Africa in the effort of addressing malaria control and prevention. This perspective was shared by majority of the participants in Cluster 2 and 3. The participants argued that public health officials should collaborate with ordinary citizens in order to ensure that malaria cases in Nairobi are eliminated. Above all, the participants were basically in alignment with Jambo et al., Bongus et al. (2013), and Allen et al. (2010) that collaboration between ordinary people and public health policy makers is always a winning formula in any society. However, while the overall efforts in Nairobi, Kenya appeared to be fruitful, the lack of

collaboration between the parties (policy maker and ordinary citizens) created setbacks that undermined the progress of malaria treatments in the area. These setbacks appeared to be fundamental letdowns on the ordinary citizens based on expressions on this phenomenon.

Some participants in Cluster 1 blamed the poor for being ignorant. They felt that public health officials had provided effective intervention measures to help address malaria control and infection, but the poor had failed to make use of the free intervention measures offered by public health officials. This finding was confirmed by several researchers. Karunamoorthi et al. (2010) found that even though pregnant women are educated and have been provided tools to protect themselves from malaria, they continue to ignore recommendations from public health officials. Pell et al. (2011) also found that despite the education given to pregnant women on malaria control, many in this population failed to follow through with intervention measures proposed by health officials.

Participants in this cluster mentioned that free clinics and hospitals had been made available to the poor by public health officials. Moreover, children and pregnant women who are most vulnerable had been provided free mosquito treated nets. Most of the participants in Cluster 1 (Langata) felt that public health officials have tried to provide effective measures to help address malaria control. However, the public had failed to implement these measures as recommended. Proper usage of already introduced measures was encouraged by Pardo et al. (2006) in their study that concluded that

improper usage of mosquito treated nets and insecticides continued to expose children to malaria.

Conversely, these feelings were not shared by participants in Clusters 2 and 3. The majority of the participants in this cluster seemed pleased with public health officials' efforts in addressing and controlling malaria infection. However, the participants felt that public health officials had failed to incorporate the views of ordinary people in their efforts in fighting malaria. The perception was that public health officials no longer cared for the poor. The supply of mosquito treated nets to children and pregnant women was no longer made available. In fact, participants were in agreement with Pardo et al. (2006) study that emphasized that improper use of mosquito treated nets was an ineffective measure in controlling malaria in any localized domestic settings.

Similarly, Raimi and Kanu (2010) found that pregnant women were at a higher risk of malaria infection as compared to non-pregnant women. Participants felt that public health officials were not trying hard enough to help control malaria in this population. Participants encouraged public health officials to empower women in their efforts in addressing malaria. Additionally, Smereck (2011) recommended that pregnant women suspected to have been infected by malaria need to receive immediate treatment in order to avoid additional health complications. Furthermore, Okeke (2012) encouraged parental empowerment and education in fighting malaria.

Participants in these clusters (2 and 3) also felt that most environments in Nairobi, especially the slums, are dirty with overgrown shrubs and grass. These participants voiced concern that stagnant waters are found in various places in the city, especially in

the slums, which often creates breeding grounds for mosquitoes. Some participants responded that even during dry seasons, stagnant waters are found in Nairobi, especially in the slums, creating breeding grounds for mosquitoes. Rabarijaona et al. (2012) found that malaria cases were higher during the wet climatic seasons and encouraged public health officials to provide additional intervention measures during these seasons. A similar study conducted by Edlund et al. (2012) concluded that climatic change impacts the spread of malaria.

Participants in these clusters further stated that poor housing also contributes to the spread of malaria. This was in alignment with the study conducted by Coleman et al. (2010) that concluded that mud houses were at a higher rate of transmitting malaria. Participants were concerned that the poor cannot afford medications. Participants' perception is that it appeared that the poor have also lost hope in public health officials and urge public health officials to make themselves visible in the community. Taylor et al. (2011) blamed finances as a major obstacle to malaria control measures. Taylor et al. concluded that pregnant women, even when educated on proper ways to protect themselves from malaria, often fail to follow recommendations outlined by public health officials due to limited resources.

The urge to protect women and children from malaria was also echoed by many in these clusters. Many participants encouraged public health officials to continue providing mosquito treated nets to children and pregnant women, as they are most vulnerable. This is in alignment with the research conducted by Albiti, Adam, and Ghouth (2010) who concluded that malaria contributed to low birth rates in this

population. Additional studies conducted by Raimi and Kanu (2010) recommended that pregnant women need to be protected from malaria infection as they are more likely to be infected by malaria as compared to non-pregnant women.

Participants in all three cluster encouraged public health officials to provide mosquito treated nets to all the children in the homes to help control malaria. Pardo et al. (2006) encouraged indoor residual spraying to be used in combination with mosquito treated nets in ensuring that children are adequately protected from malaria infection. Smereck (2011), and Kihara, Haan, Garrashi, Neville, and Newton (2010) also concluded that children infected by malaria had a higher chance of suffering devastating health complications, including death, if not effectively treated. As such, children who were exposed to malaria infections were subjected to unthinkable physical and mental but preventable suffering across the board in any environment.

Participant 3 in Cluster 1 mentioned that public health officials were not monitoring mosquito treated nets that are otherwise supposed to be provided to pregnant women free of charge. For example, P3C1encouraged public health officials to ensure that proper measures are put in place in order to ensure that women and children were provided mosquito treated nets free of charge. This was further supported by Albiti, Adam, and Ghouth's (2010) study conducted to determine if anemia was a risk factor for pregnant women diagnosed with malaria. Even though this study found that anemia in pregnant women did not contribute to low birth rates, they recommended that additional prevention measures are provided to pregnant women in order to protect them from additional health complications.

This was also supported by Raimi and Kanu (2010), who concluded that pregnant women were at a higher risk of malaria infection as compared to non-pregnant women. These findings were also supported by Isah, Amanabo, and Ekele (2011) who recommended that pregnant women in highly infected malaria regions to be screened for malaria even though they appeared healthy and did not present malaria symptoms. Taylor et al. (2011) shared the same feeling in their study conducted in Congo that concluded that pregnant women were more vulnerable to plasmodium falciparum infection and need to be provided extra protection in order to avoid further health complications. The majority of participants were also concerned that children were not adequately protected from malaria. Paintain, Mangham, Car, and Shellenberg (2012) encouraged delivery of mosquito treated nets to children under that age of 5 and pregnant women. They concluded that preventing children from such infections often leads to better outcomes for all.

The overall findings support the literature review that encourages pregnant women and children to be protected from malaria. These studies found that the impacts of malaria on pregnant women and children cannot be undermined. The overall perspective from participants in Cluster 2 and 3 was that public health officials focus was on treatment, but they had failed to work effectively with ordinary citizens to effectively protect citizens from malaria.

Literature and Research Question 2 Findings

Research Question 2. How do women in Nairobi, Kenya perceive the intervention measures already implemented in controlling malaria?

The attitude, values, and beliefs of public health officials are perceived as positive by some participants, while others view the attitude, values, and beliefs of public health officials as negative. The majority of the participants, six out of 16 or 38%, perceived the attitude, values, and beliefs of public health officials as negative and not in alignment with their attitudes, values, and beliefs. These participants felt that over the years, public health officials have developed a non-caring attitude towards malaria. These participants felt that previously public health officials had taken pride in their work and had ensured that the citizens in Nairobi were receiving the best intervention measures available.

This was not the case to date; participants felt that the attitude, value as well as belief of public health officials had changed. Yangzom et al. (2011) concluded that the use of mosquito treated nets, residual spraying, durable insecticide nets and combination treatment of malaria that included evidence-based case management, artemisinin base combined with therapy as effective in reducing malaria cases in Bhutan. Participants are urging public health officials to change their attitude, value and belief towards malaria and effectively follow through with intervention measures already implemented by public health officials in addressing malaria infection. The findings of this study also encourage public health officials to change their attitude towards education and most especially include women in addressing malaria control measures in Nairobi (See. Jombo et al., 2010; Pardo et al., 2006; Pell et al., 2011). These findings are in alignment with the above studies as this study encouraged public health officials to change their attitude and educate the community especially women in addressing malaria infection.

Participants felt that health officials had failed to work with women in the community to help improve malaria infection. Literature reviewed for this study did not focus on the attitude, value or belief of public health officials. However, the quest to eradicate malaria by introducing follow-up measures that could help control malaria is well collaborated with literature reviewed. Women are encouraging public health officials to include them in their efforts to eradicate malaria. Participants viewed women as primary care-takers and their role in malaria control cannot be undermined nor overlooked.

The importance of educating women on malaria control measures was in alignment with the study conducted by Jambo, Araoye, and Damen (2011) that encouraged health officials to educate women and families in order to realize the full benefits of malaria control measures. Participants stated that whenever a family member is infected by malaria, women were mostly affected. This is well-supported by Isah et al. (2011) who encouraged educating women on effectively using intervention measures already introduced in eradicating malaria. Furthermore, Isah et al. encouraged public health officials to provide additional case management services to women for the overall control of malaria. Participants responded that if women are comprehensively educated and included in malaria control measures they can raise healthy families further building healthy communities in Nairobi.

In fact, it was recommended that ensuring that comprehensive case management services were provided to the public especially in the poor communities was voiced by majority of the participants. Case management services requested by participants

included education; follow-up, community mobilization and women involvement. In summation, Karunamoorthi encouraged health officials to educate pregnant women on malaria control measures. Furthermore, Houeto et al. (2007) encouraged parental empowerment and education as important in ensuring that malaria measures are adequately implemented.

Participants responded that this is most important in the poor communities. P5C1 view was that women are primary care- takers and need to be educated and included in decision-making process. A similar feeling was shared by P2C2. Women are most affected when a loved one is affected by malaria. These views were shared by majority of the participants in all three clusters. This finding was confirmed by Pardo et al. (2006) who encouraged proper education of malaria treated nets to protect children from malaria infection.

A similar recommendation was given by Jambo et al. (2010) that encouraged additional education measures to be introduced to ensure that proper usage of mosquito nets are followed to protect children from malaria. This was also supported by Kihara, Hann, Garrashi, Neville, and Newton (2010) in a study that encouraged additional educational measures among other recommendations to be introduced to malaria endemic regions to determine the effectiveness of education. Additional literature reviewed that encouraged woman involvement in fighting malaria was conducted by Houeto et al. (2007). This study concluded that parents who were empowered and provided adequate information on malaria transmission and treatment had a better chance of seeking treatment for children once suspected of malaria infection. Participants in Cluster 2 and

Cluster 3 often referenced to comprehensive education in ensuring that malaria infection is addressed most especially in underserved communities.

Literature and Research Question 3 Findings

Research Question 3. What are the experiences of Women in Nairobi Kenya on the already implemented measures in Controlling Malaria?

Some themes derived from this research question included effective medications, education, affordability and follow up. While participants in all three clusters mentioned that use of mosquito treated nets, spraying, education, community outreach, collaboration and clearing of bushes and stagnant waters as effective measures, they felt that public health officials had failed to follow through with these measures. These measure are also supported as effective if properly implement (E.g., Bongus et al., 2010; Okeke, 2010). They stressed the importance of collaboration, empowering women and appropriate diagnostic tools as effective measures of controlling malaria. They concluded that these factors are always successful approaches for controlling any infections in any settings.

However, it appeared that participants felt that public health officials had failed to ensure that these measures are comprehensively implemented. Participants stated that medications sold to the public were ineffective. Participants stated that some medications sold in the shops are outdated. They responded that many people self-diagnose and take over the counter medications that are outdated and sometimes dangerous. Participants mentioned that public health officials have failed to create strict guidelines on medications sold to the public. While the focus here was on ensuring that medications

are monitored Tarning et al. (2012) study focused on benefits of combining Artemether and Lumefantine medication treatment on pregnant women with uncomplicated Plasmodium Falciparum. This study found that the combination of these two medications proved effective. Participants are encouraging public health officials to ensure that medications are comprehensively tested prior to being introduced to the public.

Also, majority of the citizens are not adequately educated on malaria infection and transmission. Many people are unable to afford treatment and often self-medicate creating additional health problems. Participants found malaria intervention measure to be expensive often making it impossible for many especially the poor to afford treatment. As such, many people do not get tested on time often leading to further health complications. Dubios et al. (2010) encouraged early screening and diagnosis especially in children to avoid further medical complications.

A study conducted by Chime, Goodman, and Mills (2003) while it focused on the overall cost of treating malaria, found that malaria intervention measures are expensive and encouraged additional measures to be incorporated in order to realize the true cost of treating and controlling malaria. Besides the above mentioned, a similar study conducted Massad, Behrens, Cautinho, and Behrens (2011) used the cost risk-benefit analysis model to determine the cost effectiveness of chemoprophylaxis treatment in controlling malaria.

Pell et al. (2011) found that even though pregnant women were educated on malaria intervention measures, they failed to follow through with intervention measure already introduced. Pell concluded that additional factors that included cost and

household decision-making contributed to the lack of follow-up despite educational measures already introduced to protect pregnant women from malaria infection. Pell et al. encouraged all these measure be addressed in order for pregnant women to remain in compliant with intervention measures already introduced. This was supported by Taylor et al. (2011) who concluded that pregnant women sometimes ignore recommendations from public health officials due to limited financial resources. While participants in this study addressed poverty from an individual or family perspective, Ramakrishnan (2011) addressed financial implications of malaria in India. Ramakrishnan concluded that failing to address malaria infection would significantly impact the overall economy of India by 2030.

Addition to the above-mentioned economical impact, public health care workers were also urged to make themselves available in the communities to help educate the public on malaria control measures. Public clinics and hospitals that are required to provide free medical care are now charging fees for treatment. These medical facilities are also overpopulated, have limited resources and are understaffed, making it almost impossible to receive adequate medical care. Improper use of mosquito treated nets is also leaving many vulnerable to mosquito infection. Pardo et al. (2006) encouraged proper usage of mosquito treated mosquito nets in order to lower cases of malaria infection. Jambo et al. (2010) study also recommended education measures to be implemented on the proper usage of mosquito treated nets in order to limit malaria infection especially in children.

Furthermore, public health officials were also encouraged to remain accountable and create policies that would ensure the intervention measures already introduced are effectively implemented. Literature reviewed for this study on the cost mainly focused on the economic models used to determine the overall cost associated in treating malaria. This literature did not focus on individual cost incurred by citizens in treating malaria. These studies concluded that the tools used to calculate the true cost associated in treating malaria has yet to be realized. For example, White, Conteth, Cibulskis, and Ghani (2011), and Massad, Behrens, Cautinho, and Behrens (2011) focused on most effective tools in determining the overall cost of malaria. While these studies used various economic models to determine the overall cost of treating malaria, they found that the cost of treating malaria was high. The findings of White et al. (2011), and Massad et al. (2011), were systematically aligned with the costs of malaria control complications as anticipated by majority of the participants in the majority on the clusters.

Literature review focused on the overall cost of malaria; however, the participants responded that the majority of citizens are unable to afford treatment measures already implemented. The perspective of the majority of my participants was that poverty hindered malaria control measures. P3C2 responded that the poor do not have money to pay for treatment. P3C2 responded that the poor are often forced to self-medicate as they are unable to afford medications. Majority of the participants also supported these responses and stated that the poor are unable to access public clinics and hospitals. Also, P5C1responded that mosquito nets are sometimes sold for 2000 Kenyan Shillings and the poor are unable to purchase these nets. These studies found that the overall cost of

treating malaria has proved to be significantly high. Malaria cost also concerns not just from a national level as supported by literature reviewed, but malaria cost is also concerning to ordinary citizens in Nairobi.

Additional literature reviewed for this study did not concentrate on self-diagnosis but encourage health providers to make sure that they are using the most up to date tools in diagnosis malaria accurately prior to treatment (See, Aibiti et al., 2010; & Dubos et al., 2010). This study found that many citizens in Nairobi especially the poor self-diagnose and self-medicate whenever malaria symptoms present themselves. Some participants mentioned that when some citizens suffer from chills and fever they right away start taking malaria without proper diagnosis. They encouraged public health officials to intervene and educate citizens on the importance of ensuring that they are accurately diagnosed prior to treatment. Alemu et al. (2012) encouraged health practitioners to ensure that they accurately diagnose febrile patients prior to treatment.

Furthermore, studies by Hassan et al. (2011) and Kattenberg et al. (2012) also concluded that accurately diagnosing patients can determine the health outcome of the patients. These findings were also collaborated by Peter, Manuel, and Shetty (2011) who encouraged accurate diagnosis and treatment for each child versus adults. Peter at al. found that children present different symptoms as compared to adults when infected by Plasmodium Falciarum. As such, accurate diagnosis is encouraged.

The findings in this study also signify that many citizens prefer to buy medications from shops in their communities rather than go to the clinics or hospitals which are otherwise considered expensive. Jambo, Araoye, and Damen (2011) study

found that even though patients are encouraged to go to clinics and hospitals for treatment, the study found that some participants still preferred to buy medications from the pharmaceutical companies while others depended on herbal treatments. Literature reviewed focused on accurate diagnosis prior to treatment and supported the findings of this study that encouraged citizens to receive accurate diagnosis prior to treatment in order to avoid additional health complications.

Additional literature reviewed in this study was on climatic effects on malaria and imported malaria (See, Rabarijaona et al., 2012; Mabaso & Ndlovu, 2012; Edlund et al., 2012) Findings on this study did not address climatic effects on malaria. However, some participant mentioned that malaria could be found even during dry weather. Most of the participants blamed the spread of malaria in Nairobi on stagnant water, overgrown grass and overall poor hygiene. They encouraged public health officials and the government to incorporate additional measures in ensuring that the environment was clean especially in the slums. Majority of the participants believed that malaria in Nairobi could be completely eradicated if there was follow up on already introduced malaria control measures from public health officials.

Literature reviewed focused on malaria importation from neighboring countries. (See, Ngrenngarmlert, 2011; Pavil &Maltezou, 2012; Unger et al., 2011; Yangzom et al., 2011). This was not the case in this study; even though some participants responded that malaria could be imported when peopled travel to places in Kenya like Nyanza, Kisumu, and Mombasa, which are highly infected by malaria, they did not talk about malaria importation from neighboring countries as presented in the literature reviewed in this

study. In light of this understanding, it is true to add that the importation of malaria from neighboring countries was not voiced as a concern on the spread of malaria in Nairobi, Kenya.

The majority of literature reviewed did not contradict my findings but supported most of my findings. This study extended knowledge that already exists on malaria control. The overall findings of this study suggest that malaria control measures already introduced by public health official are effective, however, other factors which include, poverty, limited education, minimal resources and overall poor follow up from public health officials has negatively impacted malaria control measures already implemented. Public health officials are encouraged to create policies and provide additional resources that could help monitor and ensure already introduced measures are effectively implemented.

Theoretical Lens

The ecological systems theory asserts that the human development is shaped from individual life experiences. These experiences are affected by various systems in their environment. The ecological systems theory was used as a lens of analysis to help bring light on the views of women on already introduced malaria intervention measures in Nairobi Kenya. Participants in all three clusters gave credit to public health officials in Nairobi Kenya by responding that they had introduced effective measures in fighting malaria. However, they also responded that these measures have not been effectively implemented.

Findings from this study signified that there was a disconnect within the systems especially between the Macro system (public health officials) and ordinary citizens. The ecological systems theory provided insight on the role played by public health officials in addressing malaria control measures in Nairobi Kenya. From a macro level, over the years public health officials have introduced malaria control measures such as mosquito treated nets, spraying, medication and education to help control malaria. However, these measures are deemed as ineffective due to poor implementation. Most ordinary citizens are unable to afford or have failed to understand comprehensively how to apply these measures. Public health officials at a Macro level have been blamed for failing to educate and provide affordable measures to ordinary citizens especially the poor.

Participants urged public health officials to go back to the drawing board and implement ways to follow through with the intervention measures already implemented in Nairobi. It was evident from the findings that participants were frustrated that malaria continues to be a health problem. Participants encouraged public health officials to reeducate the public on malaria infection and pour in additional resources in order to effectively implement already introduced malaria control measures.

Participants were also passionate on women involvement in helping address malaria infection in Nairobi in particular and Kenya in general. Some participants also viewed the public health officials as having a "don't care attitude" especially when dealing with the poor. The ecological systems theory in this study helped shed light on the importance of collaboration between systems in order for improvement of overall health. In this case the public health officials and ordinary citizens are encouraged to

work together in order to fully realize the positive outcome of malaria control and eradication.

From a general standpoint, the social-ecological systems theory was not only used as a lens of analysis, but it was tailored to cover every aspect of this study. For example, the segments of this theory were holistically tied to the definitions of the environments, the general participants of the study, the public health officials and the individual's clusters where participants lived. These above factors were tied together to the general segments of the theory of the socials ecological systems theory that emphasizes that for any systems to work effectively, all segments such as Macro and Micro must work together in order to be successful.

Limitations of the Study

Prior to conducting this study, five limitations were identified in chapter 1. I found that during the study, I had to self-check on several occasions because I was raised in Kenya and responses from the participants were familiar to me. In order to ensure trustworthiness, I had to remove myself from their experiences and pay close attention to participants as they relayed their unique experiences. This study could be criticized by other scholars or researchers as it did not include men as participants. Men in Nairobi have experienced malaria directly or indirectly and could have offered different views on their experiences.

This study was also conducted by a single researcher and interpretations of findings are only limited to this single researcher. Sample population for this study could also be debated on generalizing findings to the entire population in Nairobi. This study

was limited to 16 participants with experiences on malaria control measures. A more complete exploration on this phenomenon could include the experiences of additional participants not just limited in the three cluster areas in order to increase the number of voices on this phenomenon.

Recommendations

This study only focused on women's perspective on malaria control measures in Nairobi Kenya. The experiences of men on this phenomenon should be included in future studies in order to provide a deeper and broader understanding on malaria control measures. Also, this study only concentrated on Nairobi and three cluster areas were selected. Future studies should include other geographical areas especially those mostly affected by malaria. This study only included English speaking participants. Majority of citizens in Nairobi speak Swahili as a general language. Future studies should include participants that speak Swahili in order to gain a deeper understanding of the phenomenon.

It is also my recommendations that public health officials conduct a pilot study that will incorporate the concerns of participants. Yangzom et al. (2011) study concluded that the use of mosquito treated nets, residual spraying, durable insecticide nets and combination treatment of malaria that included evidence-based case management, artemisinin base combined with therapy as effective in reducing malaria cases in Bhutan. I am recommending that public health officials introduce accountability measures that will ensure that already introduced measures are effectively implemented.

Implications

Positive Social Change

Women in Nairobi Kenya were provided an opportunity to voice their opinions on how they view already introduced malaria control measures in relationship to their effectiveness and ineffectiveness. Malaria in Africa has caused serious health implications (Eisele et al., 2012; Deressa, Ali, & Hailemariam, 2008). In fact, numerous studies have been conducted to help address malaria infection in this continent, malaria continuous to remain an infection to be reckoned with due to its uncontrollable impacts on the ordinary citizens in Nairobi, Kenya.

Hopefully, public health officials not just in Nairobi but all over the world will be provided additional insight on how ordinary citizens' view already implemented malaria control measures. This study found that intervention measures already introduced by public health officials are only effective if properly implemented. The proper use of mosquito treated nets especially by the vulnerable population is important (Paintain, Mangham, Car, & Shellenberg, 2012). Also, public health officials are encouraged to provide comprehensive education to the public on the importance of following through with intervention measures already implemented.

The results of this study will also encourage follow-up and collaboration between ordinary citizens and public health officials. Collaboration among various stakeholders is integral for malaria control measures to be effectively implemented (Bongus et al., 2010; Allen, Hetheringon, Manyama, Hartfield, & Maire, 2010). This study shows that ordinary citizens are willing to work with public health officials to help alleviate malaria control. Public health officials are also encouraged to make themselves visible in the

community especially in underserved populations. Also, this study offers public health officials the opportunity to address issues related to sanitation in Nairobi Kenya. Participants were concerned that the living standards in Nairobi had significantly deteriorated creating breeding grounds for malaria.

The results of this study are also important as they will help public health officials in understanding the plight of the poor when dealing with malaria control and infection. It was also important that public health officials understand that the poor feel ignored and helpless. The findings will hopefully help improve the relationship between public health officials and the citizens in Nairobi. Public health officials are also encouraged to provide cost effective medications. Studies conducted by Lubell et al. (2011) and Massad et al. (2011) conclude that cost-effective medication will enhance the health of many dealing with malaria infection.

Women involvement was important in controlling malaria in Nairobi; all the participants expressed the importance of women involvement in controlling malaria. Comprehensively educating and empowering women on malaria control measure is vital in fighting and eradicating malaria (Houeto et al; Jambo, Araoye, & Damen, 2011). Women in this study often responded that they were the primary care-takers and most affected when family members become ill. Public health officials will hopefully be encouraged to work with women in the community and provide them the necessary tools and resources to educate the community on the importance of following through with recommendations outlined by public health officials on malaria control. Also, the results of this study will offer public health officials and the government of Kenya the

opportunity to understand that introducing or implementing malaria control measures while important, it is also important to create oversight as well as policies that will work in collaboration with the public to ensure that these measures are effectively implemented.

I will make the findings of this study available to the Ministry of Health of Nairobi Kenya so that they can be aware of some of the concerns that ordinary citizens of Nairobi Kenya have on already implemented malaria control measures. I will also make myself available to discuss or interpret the major findings of this study. I will also be willing to work with the Ministry of Health of Kenya to help alleviate health concerns faced by the citizens of Kenya. I sincerely hope that the findings of this qualitative research study should shed some positive lights with all citizens which include women, men, and the entire public health policy administrators which should bring some positive social change to Nairobi in particular and Kenya in general in the future to come.

Conclusion

As I conducted this research, I felt that participants were frustrated that malaria was even a problem in Kenya. It was clear that participants felt that even though malaria was not a big problem in Nairobi, they were concerned that the standards of Nairobi were significantly deteriorating and malaria especially in the slums was becoming a problem. This study was especially important as it allowed women to freely voice their opinions on malaria control measures in Nairobi Kenya. The findings of this study signify that over the years public health officials have introduced effective malaria control measures. However, these measures have not been effectively implemented especially due to

poverty. This study found that many in Nairobi take malaria for granted and view it as a common cold. This should not be the case as malaria continuous to affect the health of many in Kenya. Many people in the community especially the poor have become desensitized to malaria and often overlook the serious health implications associated with this infection.

However, malaria has claimed and continues to claim many lives yearly. Public health officials are encouraged to pour additional resources into the community in order for optimum results to be realized. Malaria is viewed as a medical condition that can be controlled but factors such as poverty, limited education, failing to empower the community, poor implementation of programs, limited resources, limited man-power and poor monitoring as well as accountability measures are viewed as some of the major factors that negatively impact Malaria control measure in Kenya. Health care officials in Kenya have done a great job of introducing measures to address malaria control. However, ordinary citizens are appealing to health care officials to ensure that they implement effective follow-up measures to ensure that these intervention measures are effectively implemented in order to eradicate malaria from Nairobi, Kenya among other national towns and cities eventually.

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Appendix A: Contact and Scheduling

My name is Catherine Kisavi-Atatah, a graduate student at Walden University's Health Sciences program. I am conducting a research in partial fulfillment on the requirements for the degree of PHD. My study is on the perspective of women in Nairobi Kenya on already introduced malaria measures. You are selected to participate in this study because you are a woman in Nairobi Kenya and you meet the criteria for selection to be included in this study.

I will like to interview you at a time and place that is acceptable to you. Please note that your participation in this study is on a voluntary basis and all information will be kept confidential.

I must also remind you that you can back away from this study at any time. Your responses for the interview will be kept in a safe place and will only be utilized by me. I will ensure that necessary steps are taken in order to keep your identity confidential. If you are willing to participate in this study, please contact me via the number below. I would like to conduct this interview on weekend preferably on Saturday. Pease let me know the dates and times that are most convenient for you to participate in the interview process.

Date: _____

Time: _____

Contact Number: _____

I am looking forward to your participation and as a co-researcher your input will significantly help public health officials in incorporating additional measures or providing them will the opportunity to understand the views of ordinary women when dealing with Malaria control measures.

Appendix B: Consent Form

You are invited to take part in a research study of "The Perspective of Women in Nairobi Kenya on the already introduced malaria intervention measures". This researcher is inviting Women in Nairobi Kenya from Langata, Kibira, and Lavington to be in the study. This form is part of a process call "informed Consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by Catherine Kisavi-Atatah who is a doctoral student at Walden University.

Background Information:

The purpose of this study is to explore the perspective of women in Nairobi Kenya on already introduced measures in fighting malaria.

Procedures:

If you agree to be in this study, you will be asked to:

- Read the consent form and provide a signature accepting to participate in the interview.
- Participate in a face to face interview.
- The interview process will take approximately 30 to 45 minutes per participant.
- You will allow field notes to be taken during the interview process

Here are some Sample Interview Questions:

In your own words, from women perspectives, what can you tell me about malaria infection? What is your perspective towards malaria control measures by public health officials in Nairobi?

In your own words do you believe health officials have incorporated the ordinary citizens in addressing malaria infection?

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether or not you choose to participate in the study. No one at Ministry of Health or Walden University will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:

Being in this type of study might pose some minor risk such us discomfort fatigue or even stress. However, this study will benefit public health officials as it will provide them the opportunity to understand the views of ordinary citizens on already introduced malaria intervention measures. Also, this study will add to already existing literature on malaria.

Payment:

This study encourages participants to participate on a voluntary basis and no gifts or payments will be forwarded to any participant.

Privacy

Any information provided during the interview process will be kept confidential. The researcher will not use any personal information about participants outside this research project. Also, the researcher will not include your name or anything that would allow others to identify you in this project. All data collected will be kept safe in a locked area

chosen by the participant. Data will be kept for a period of five years, as required by Walden University.

Contacts and Questions:

You may ask questions you have now. Or if you have questions later, you may contact me. If you want to talk privately about your rights as participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is Walden University's approval number for this study is **11-08-13-0239955** and it expires on **November 7, 2014.**

This researcher will give you a copy of this form to keep.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make decision about my involvement. By signing below, I understand that I am agreeing to the terms described above.

Printed Name of Participant

_____

Date of consent

_____

Participant's Signature

_____

Researcher's Signature

_____

Appendix C: Interview Questions

Interview Question 1

In your own words, from a women perspective, what can you tell me about malaria infection? What is your perspective towards malaria control measures by public health officials in Nairobi? In your own words do you believe health officials have incorporated the ordinary citizens in addressing malaria infection?

Interview Question 2

What do you belief are the values, attitude and belief of public health officials towards malaria infection? In your own words do you belief that the values, attitudes and beliefs are similar to your values, attitudes and beliefs? In your own words if you belief that the values, attitudes and beliefs are in alignment with your beliefs, values and attitudes please explain in what ways? If you believe that the beliefs, attitudes and values of public health officials are not in alignment with you beliefs, attitudes and values, could you please explain why this is the case?

Interview Question 3

In your own words, from a woman's perspective, what do you belief are the ideologies behind malaria control in this region? How do you belief these ideologies have affected malaria control measures?

Interview Question 4

What other measures do you belief public health officials need to incorporate in order to continue addressing malaria infection? What do you believe are the most

effective measures already incorporated in fighting malaria? What are some of the measures you believe are ineffective? In your words, from women perspective, do you believe that women should be actively involved in decision making when addressing malaria infection?

General Comments

Thank you for participating in this study. All the information obtained during this interview will be made available to you once completed. Once again I want to assure you that the information obtained from this interview will be kept safe and confidential. If you are satisfied with the interview process, this interview ends today at (Time:_____)

Appendix D: Ministry of Health Approval

MINISTRY OF HEALTH
OFFICE OF THE DIRECTOR OF MEDICAL SERVICES

Telegrams: "MINHEALTH", Nairobi
Telephone: Nairobi 2717077
Fax: 2713234
When replying please quote:

AFYA HOUSE
CATHEDRAL ROAD
P.O. Box 30016
NAIROBI

Ref No.: MOH/ADM/1/1/81

5th December 2013

Cathy Kisavi – Atatah
Walden University
United States of America

RE: AUTHORIZATION TO CONDUCT STUDY ON PERSPECTIVES OF WOMEN IN NAIROBI KENYA TOWARDS MALARIA CONTROL IN NAIROBI

Reference is made to the above subject being your proposal for a study towards partial fulfilment of the requirement for the Degree of Doctor of Philosophy Health Science at Walden University.

The study will shed light on the attitude of women in Nairobi, Kenya towards intervention measures already employed by health care providers in controlling Malaria.

The office has no objection in your carrying out the study and requests that you share the results with the Ministry.

The Country director of Health Nairobi has requested lp assist where necessary for the success of the study

Dr. Francis M. Kimani
DIRECTOR OF MEDICAL SERVICES

Copy to: County Director of Health, Nairobi

Curriculum Vitae

Catherine Kisavi-Atatah
18202 Eton Ridge Ct
Houston TX 77407
832-283-7936
Ckisavi@yahoo.com

Professional Summary

Respected and dedicated professional with over 10 years' experience in providing high quality health care services to children and families, looking for a position in providing high quality health care services to Veterans and family members in Veteran Center Programs .

Education

Ph.D.Health Sciences, Specialize in Health Policy, Walden University,Minneapolis, Minnesota, All But Dissertation (ABD), 2010- Present

Additional Education

Masters in Counseling, Prairie View A& M, Prairie View, Texas
BA, Social Work, Texas Southern University, Houston, Texas

Certificate in Medical billing, At Home Professions, Denver, CO

Professional Experience

Department of State Health Services Houston, TX 2008-Present
Human Service Representative (VII) (Licensed Social Worker)

- Conducted bio psychosocial functioning and needs of patients and families to help implement treatment plans
- provides advanced and comprehensive case management consultation for families with children who have health risks, conditions or special health care needs
- Conduct home visits and link families with resources in the community
- Completes Intakes, Family Needs Assessments, Service Plans, and Follow-up Services to families on caseload.
- Conducts comprehensive assessments to determine eligibility and need for PCS/PDN.

- Conducts presentations and communicates program services and/or changes to consumers/public in a positive and accurate manner.
- Provides training, consultation and technical assistance to program contractors and program providers.
- Actively participates and advocates in Community Resource Coordination Groups (CRCG), case management coalitions, and community organizations.
- Respond to public health emergencies such as, but not limited to disease outbreaks, environmental exposure and weather conditions

Chamberlin Edmonds (MD Anderson Cancer Center) Houston, TX 2005-2008
Health Care Representative

- Interview clients in hospital setting
- Collaborated with multidisciplinary teams in developing and implementing care
- Complete applications for state and federal programs
- Review medical records to help expedite benefits approval
- Maintain ongoing communication with government agencies in regard to claim status and provide update
- Make determination to take Federal, State or Local programs application based on delimitation of disability relating to body systems and functions of daily living.

Department of Child Protective Services Houston, TX 2004-2005
Sub Care worker

- Investigate referrals on alleged child abuse and neglect, manage case load up to 50 families
- Provide care to children in Child Protective Service care and meet specific needs by using appropriate resources to help reunite families or place children in permanent placement.
- Analyze information and help identify barriers to family and clients
- Developed and maintained professional and working relationships with law enforcement officials, judicial officials, legal resources, medical professionals and other community agencies.
- Educate families and clients regarding community resources
- Prepared comprehensive reports to investigate and testify in judicial hearings

Patient Accounting Services (Staffing Agency) Houston, TX 2001-2003
Medical billing and coding

- Medical Billing, Responsible for rectifying aged accounts

- Follow up, interpreting Explanations of Benefits
- Collection, Billing private insurance, HMO's Worker's Compensation
- Reimbursement strategies and Adjustments
- Posting and appeals

Certifications/Licenses

Licensed Bachelors Social Worker (Texas State Board of Examiners)
Critical Incident Management Certification (Texas CISM Network)
First Respondent Certification (Department of State Health Services)
Protecting Human Subjects Research Participants (National Institutes of Health)