

## PERSPECTIVES OF WOMEN IN NAIROBI KENYA TOWARD MALARIA CONTROL

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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 attitude 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 while using purposeful sampling was used to select 16 women from Nairobi, Kenya who participated in this study. Semi structured open ended questions were used to explore the attitude of women in Nairobi, Kenya towards malaria control measures already implemented. 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. 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 (a) that 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, Kenya 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.*

**Key Words:** *Malaria, Nairobi, Kenya, Women Attitudes, Malaria Control, Public Health Care Officials, Sub Saharan Africa, Ecological System Theory.*

## 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; National Institute of Health, 2013). 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.

## **GENERAL HISTORICAL BACKGROUND LITERATURE REVIEWED AND THEORETICAL FRAMEWORKS**

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; 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 (Ajetunmobi et al., 2012; Alemu, Shiferaw, Ambachew, & Hamid, 2012; Barrera, 2011; 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.

## THEORETICAL FRAMEWORKS

According to Bronfenbrenner (1979) and (1994), 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. 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.

## METHODOLOGY

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, 1990; 2002). Data were collected using audio tapes during interviewing. Journaling was also be used to gather relevant qualitative data during interviewing. Finally, **NVivo 10 software** was used to analyze collected qualitative data upon the completion of interviews.

### 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?

### **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.

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.

## **DATA COLLECTION AND ANALYSES**

### **Purposeful Sample Size**

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.

Due to confidentiality issues, we did not to use names of participants. Rather, we 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 Participant 5 (P5C1). In the second cluster (Kibera), Participant 1 (P1C2), Participant 2 (P2C2), Participant 3 (P3C2), Participant 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

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, we 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 we 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. 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)

## RESULTS OF THE FINDINGS AND INTERPRETATIONS

**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, we 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, 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, Hetherington, 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.

## 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.

### 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, and 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.

## LIMITATIONS OF THE STUDY

Prior to conducting this study, five limitations were identified holistically which we revisited thereafter. We found that during the study, we have to self-check on several occasions because some of the researchers were raised in Kenya and responses from the participants were familiar to me. In order to ensure trustworthiness, we have to remove ourselves 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.

## 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. We are recommending that public health officials introduce accountability measures that will ensure that already introduced measures are effectively implemented.

## IMPLICATIONS OF THE STUDY

### 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 for generations. 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. The significant of this study was to shed some lights about malaria's implications Africa in general and that of Nairobi, Kenya in particular. However, **if the lessons learnt and the insights gained from this study are carefully implicated, Nairobi, Kenya in particular and Africa in general should see some positive social changes with time.**

## DISCUSSIONS AND CONCLUSIONS

As we conducted this research, we 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. In summation and as previously stated, if the lessons learnt and the insights gained from this study are carefully implicated, **Nairobi, Kenya in particular, and Africa in general should see some POSITIVE SOCIAL CHANGES with time.**

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## CONFLICT OF INTERESTS

We share no conflict of interest in this study.

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