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Purity W. Wakaba

Hypertension Management in Women in
Rural Murang'a County
Purity W. Wakaba

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Committee:

Dr. Robin A. Evans-Agnew

Dr. Janet Primomo

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ABSTRACT

Introduction- Hypertension is a challenge for women in rural Kenya, yet little is known about the barriers or facilitators to their ability to manage hypertension. The purpose of this study is to illuminate how African women farmworkers in rural Murang'a County, Kenya, cope with high blood pressure. Specifically, it describes 1) obstacles to high blood pressure management and 2) what helps women manage high blood pressure.

Methods - The participant group in this study was comprised of eight adult women farm workers in rural Murang'a County, all of whom had been diagnosed with HTN. Individual meetings were held at potential participants' homes. After obtaining consent, a short demographic interview was verbally conducted by the researcher with each recruited participant. Participants were invited to attend a focus group meeting. The researcher facilitated the focus group meeting in a discussion loosely structured by a questionnaire. Field notes and an audio record were used to document the discussion.

Results- It was noted that limited education and a poverty and corrupt economy were among the major barriers affecting management of HTN in rural Murang'a County. Other barriers identified included lack of information regarding high-risk blood pressure readings, poor care, diet and inadequate healthcare resources compounded by inadequate government support. Facilitators for managing HTN included social support from the other women and family.

Conclusion- This research highlights the need for societal-level transformations within Kenya, including its government, healthcare system and economy. There is need to increase government

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support for education, agriculture and improve healthcare systems by training nurses in HTN care/education.

Key Words:

- HTN
- Barriers to HTN management
- Facilitators to HTN management
- Rural Kenya
- Focus group
- Adult women

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DEDICATION

I dedicate this thesis to my family. A special dedication goes to my husband Ibrahim, my daughters Winfred and Ivy, and my sons Ken and Ben for their endless love, support and encouragement.

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CHAPTER 1: INTRODUCTION

Hypertension is a challenge for women in rural Kenya, yet little is known about the barriers or facilitators to their ability to manage hypertension. Despite growing evidence that physical exercise and a healthy diet including fruits and vegetables are beneficial to health, most Kenyan women who suffer from hypertension do not follow these guidelines. Little research has been completed that explores factors influencing hypertension in this population, such as social norms, environment, social networks, or environmental support. Researchers and practitioners who hope to improve intervention effectiveness and sustainability would benefit from understanding how women with hypertension in rural Kenya perceive facilitators and barriers to management of hypertension within their own lives and communities. In order to improve hypertension management, this information could inform the tailoring of intervention strategies to directly address these women's particular obstacles and concerns.

This chapter introduces the central objectives of the study. It also offers an overview of the topic of hypertension (HTN), including who is affected and to what degree, with a specific focus on women with HTN in rural Murang'a County. Central topics include: the relevance of HTN to nursing, what is known and not known about HTN, especially in Kenya, and how women in rural Murang'a County manage HTN.

According to the Center for Disease Control (CDC), hypertension contributes to most deaths related to cardiovascular disease, which is the leading cause of death globally. Of the 9.4 million deaths in Kenya each year, 1.5 million (16 %) can be attributed to high blood pressure. This includes 51% of deaths due to strokes, 45% of deaths due to coronary heart disease, and 4% due to other issues (CDC, 2013). The World Health Organization (WHO) also recognizes hypertension as an increasing global health issue with the highest prevalence in Africa, where it

affects 46% of adults. In Kenya in 2008, 44% of adults aged 25 and above had HTN, up from 37% in 2010 (WHO, 2011). While the Kenyan government has allocated funding for medical treatment of HTN, the Non-communicable disease (NCD) report indicates inadequate funding allocated for surveillance, monitoring, evaluation, and health promotion, all of which are essential to an efficacious public health response to advancing HTN management in the Kenyan Counties (WHO, 2011).

Problem Statement

Measurement of blood pressure is seen as a secondary task to treatment of other medical issues, such as prenatal care, especially in developing countries like Kenya (Ibrahim & Damasceno, 2012). A substantial portion of people diagnosed with HTN however, fail to follow up due to pervasive barriers within the Kenyan healthcare system (Ibrahim & Damasceno, 2012).

Compounding the problem, Kenya has no national guidelines for diagnosis and treatment of hypertension. Therefore, Primary Care Providers may not always use evidence based HTN management practices (Mwita et al., 2013).

Of the 38.3 million people living in Kenya in 2013, 70-80% were living in rural areas and 46% were living below the poverty line on less than one US dollar a day. The United Nations Development Program (UNDP) ranks Kenya 148 out of 187 countries surveyed in the 2011 Human Development Index, and it is categorized as a Low Income Country in the annual rankings of national achievement in health, education, and income (UNDP, 2014). The United Nations International Children's Fund (UNICEF) attributes poverty in Kenya, particularly rural Kenya, to irregular weather patterns, corruption in the government, weak infrastructure, and poor access to healthcare facilities, safe water, and sanitation (UNICEF, 2014). In sum, most people in rural parts of Kenya are inadequately referred for healthcare and have to travel long distances

with limited financial resources to obtain it, while the very limited number of healthcare facilities that are available to them lack the resources essential to deal with HTN and other non-communicable diseases (Mocumbi & Sliwa, 2012). Moreover, Kenya annually spends only about 10 USD per capita on health, and access to health care is restricted to 1-2 nurses and clinical officers for each 10-20,000 Kenyans (Jenkins et al., 2010). (Clinical officers are a mid-level cadre of health professional in Kenya, whose role falls between a doctor and a nurse).

Murang'a County is one of seven counties in the central area of the Republic of Kenya. The average daily earnings for a woman in rural Murang'a County are below US \$2 per day. The female labor force participation rate is 62%. Only 25% of women aged 25 and above have a secondary education (UNDP, 2014). Murang'a County's economy is deeply rooted in agriculture, dominated by small individual family-owned land holdings on which most people cultivate a mixture of crops including maize (corn), beans, cassava, arrowroot, banana, millet, and cabbage. Some 60% of farmers grow coffee and tea on a small scale. Livestock and dairy farming are also common, and there are milk-processing plants across the County (WWF EARPO & Kut, 2006).

The nature of work for most women in rural Murang'a County is farming. This distinguishes them from women in the county's urban areas, as well as from their own men, many of whom migrate to work in urban areas. As farmers, these women plant, weed and harvest food crops and tend livestock. In addition, they are the primary caretakers of children and elders, and are responsible for cooking and managing the home. They spend many hours fetching water and collecting firewood. In addition to farm and family responsibilities, many women work as wage laborers, producing and selling vegetables, or engaging in small scale trading and enterprises. Despite their primary responsibility for maintaining family and the farm, the women

have less access to the resources needed to increase their income than men do, as well as unequal property rights. Lack of education and limited resource control hold many rural Kenyan women back (UNDP, 2014).

As I grew up working on a farm in Murang'a County, I am aware that women there engage in jobs including fetching firewood and carrying it on their backs to the homestead. On a typical day, the women wake up very early, clean tough corn and beans, and boil them together. Tea (milk, water and ground tea) is the daily breakfast in this region. Work on the farm starts around 8:30 in the morning and continues until dusk (around 5:00 pm). On the way home, women carry food for animals (Napier grass or weeds from the farm) and vegetables (collard greens, spinach, arrowroots or green bananas) to prepare for their family's dinner. Upon getting home, it takes two to three hours to prepare dinner, which is cooked with firewood and served when ready to the family. Women then tidy the kitchen before retiring to bed, usually after 10:00 pm. The physically taxing nature of these responsibilities makes it hard for many of these women to distinguish pain that might indicate emergence of disease from the physical pain that typically results from their work. Compounding this, many use over-the-counter painkillers to numb daily pain. The pressure to provide the family's basic needs may contribute to HTN among women in rural Kenya.

An investigation of HTN management in the women of rural Murang'a County has broader implications for the population and region. Research into perceived facilitators and barriers to HTN management could provide insights into a range of important targets for intervention including medication compliance. The purpose of this study is to illuminate how African women farmworkers in rural Murang'a County, Kenya, cope with high blood pressure. Specifically, it

describes 1) obstacles to high blood pressure management (barriers) and 2) what helps women manage high blood pressure (facilitators).

CHAPTER 2: BACKGROUND AND LITERATURE REVIEW

The purpose of this chapter is to introduce concepts central to the study, describe their relationships, and present the framework for research and the analysis employed. It also includes a review of relevant literature on the topic of identifying barriers and facilitators to HTN management in women. Core concepts to be reviewed include HTN and HTN management. The Ecological Model will be described as a framework for understanding barriers and facilitators of managing HTN.

Hypertension

High blood pressure, also known as HTN, is a non-communicable disease (NCD). High blood pressure occurs when the force of the blood pushing against the walls of the arteries is consistently in the high range. This makes the heart work harder pumping blood to the body and contributes to the hardening of arteries, which may in turn lead to heart failure or stroke. Two numbers represent blood pressure: the higher number (systolic) reflects pressure while the heart beats; the lower (diastolic) reflects pressure while the heart is resting between beats (AHA, 2014). Hypertension is a medical condition in which blood pressure exceeds 140/90 mmHg on repeated examination (WHO, 2015). Normal blood pressure, according to the American Heart Association (AHA), averages 120/80 mm Hg. Readings of 120-139 over 80-90 are considered prehypertension. A reading exceeding 140/90 is considered HTN, and above 160/100 is considered type 2 HTN (AHA, 2015).

Hypertension is often asymptomatic, a fact that leads to poor management and control (AHA, 2015). Managing hypertension involves use of drugs to maintain systolic blood pressure levels of greater to equal to 140-159 mm Hg and diastolic levels of greater to equal to 90-99 mm Hg. Since lifestyle modifications are crucial, HTN management includes

addressing adherence to lifestyle guidelines, along with referrals to specialists, and advising people on self-monitoring of blood pressure. Because weight and waist circumference is associated with risk of HTN, eating a diet with more fruits and vegetables and less fat and salt is also recommended for HTN management (AHA, 2015; Weber et al., 2014).

Ecological model

According to Boutin-Foster et al. (2013), the Ecological Model integrates multiple levels to describe the social and economic determinants of human health and their implications for effective intervention. These social determinants of health include the conditions in which people are born, live, learn, play, worship and age, which can impact health risks and outcomes, their ability to function, and their quality of life. The ecological model, which addresses a set of comprehensive factors, is designed to guide service design and delivery toward specific outcomes.

Mackenzie, Neiger, & Thackery (2013) describe “barriers” as anything that obstructs behavior and hinders people’s response to interventions. The authors further explain that barriers are influenced by individuals’ beliefs, attitudes, and impressions. For example, while some people take full advantage of free health programs when they are accessible, others decline services available to them because they question the validity of such programs. Inversely, “facilitators” are elements that act as the driving force towards a goal. Facilitators enable people to respond to an intervention. Returning to the example of the free program, cost can be a barrier to some people and a facilitator to others, depending on their beliefs and expectations. Barriers to HTN management therefore are things that hinder individuals from controlling blood pressure while facilitators assist with HTN management. More about these relationships will be highlighted later in this thesis.

Management of HTN refers to activities that facilitate lowering blood pressure including weight management, physical activity, diet low in salt, reduced alcohol intake, and smoking cessation. Within developed countries, health practitioners refer to these as lifestyle modification. Within other areas of the world including Kenya, however, circumstances render these activities more complicated than can be described by such a phrase. The circumstantial influences that lead to poor HTN management in the developing world include population growth, behavioral risk factors, and persistent stress (WHO, 2013).

The current trend worldwide is for healthcare, and particularly hospitals, to focus on acute health issues and communicable diseases. However, it is equally necessary to combat chronic non-communicable health issues like HTN, and these will need to be addressed in relation to the way people live, work, age, and grow (WHO, 2013). According to the CDC, more than 75% of all deaths worldwide are from non-communicable diseases, with high blood pressure being one of the major mortality risk factors (CDC, 2011). Income, education, and housing all significantly impact the incidence of HTN in the developing world, because stress levels are enhanced by unemployment and poor living conditions. At the same time, lack of knowledge and poor healthcare access make it difficult to obtain necessary treatment for high blood pressure (WHO, 2013).

Theoretical Frameworks

This study used the Ecological framework described above as a guide to assess and collect data regarding HTN management in women in rural Murang'a County. The ecological framework was suitable to this study because it emphasizes the linkage and relationships among multiple determinants affecting health. It highlights the importance of social and physical environments that influence patterns that shape disease and how individuals respond to these

patterns on several levels (Mackenzie et al., 2013). According to the ecological model, individual behavior is but one element of the life changes necessary to reduce risk and improve health. On the social level, environmental determinants such as community norms and values, societal regulations, and policies, are equally significant to health outcomes. The ecological model articulates principles by which health-related behavior is influenced on multiple levels: individual, interpersonal, organizational, community, and societal. It is believed that such an understanding can inform public policy, contributing to better health management on a broad scale (Mackenzie et al., 2013, Lathrop, 2013, King

The focus of this chapter's literature review is to summarize what is known about hypertension management, especially with regards to barriers and facilitators. Consistent with the ecological approach, internally perceived barriers like individuals' attitudes, beliefs, and confidence will be discussed along with external barriers such as lack of education. It also reviews research on other factors contributing to HTN such as foods high in fat and salt that impact obesity/waist circumference. Interpersonal (physical, social, and psychological stresses), community (culture and gender roles, organizations/social network), and policy (agents and policy makers) level determinants will be discussed. Finally, the discussion will expound on how these multiple levels of the ecological model are reflected in evidence-based studies on HTN management focusing specifically on women in sub-Saharan Africa.

Individual Level

As regards HTN management on the individual level, the focus is on biological and personal factors that lead to risk of high blood pressure. For the women in this study, personal factors include their educational level, obesity, and dietary factors including salt consumption.

Education.

Education is an example of a factor that integrates social and individual levels, and is essential to promoting medication use in blood pressure control and HTN management. Illiteracy is a contributing factor to non-compliance, because it inhibits the individual's ability to understand prescriptions and proper use of medications, and to make informed decisions regarding management of hypertension, including proper diet (Van de Vijver et al., 2013). Kenya has a female illiteracy rate of about 25% (UNICEF, 2014). In their study on HTN control in urban Mombasa Kenya, Jenson et al. (2011) found that while women are more aware of being hypertensive, men had significantly higher rates of compliance with HTN management treatments. The 2009 statistics report by United Nations Education Scientific and Cultural Organization (UNESCO), show that 16% of Kenyan women still lack basic literacy skills, in comparison to 9% of men. Low literacy in women is linked to poverty, cultural beliefs about educating more boys than girls, HIV/AIDS, inadequate infrastructure, and inadequate guidelines to policy implementation (UNESCO, 2012).

Obesity.

Maher et al. (2011) pinpoint obesity as barriers to HTN management. African women are more vulnerable to HTN because of obesity. In essence, increased weight may be determined by culture for many Africans, including women in Kenya, because of a cultural belief that thinness is unhealthy (Gokah, & Gumpo, 2010). Putting on some weight makes people confident that they do not appear poor and incapable of self-sustenance. Consistent with those beliefs, a majority of Kenyan women have a waist circumference greater than what is recommended by the CDC

report, which should be less than 35cm unless one is pregnant. However, the relationship of excess weight to increased risk of HTN is not apparent to many people in Kenya (CDC, 2011).

Diet.

The type of diet individuals eat determines their heart health, as does what they do after eating, such as engaging in physical activity (Savica et al., 2010). Many people in developing countries, however, lack the luxury of such food “choices”. Day-to-day survival depends upon eating whatever is available, irrespective of its nutritional balance, whenever it is available, which is often at the end of a long, and physical workday. Salt intake correlates with increased blood pressure particularly among Africans (CDC, 2011). The recommended salt consumption is 2300 mg per day. However, most African populations consume more salt particularly in an effort to make tasty their usually bland meals. For example, in a study conducted in Northern Ghana on rural adult HTN epidemiology, Kunutsor & Powles (2009) found that 20 randomly selected households consumed an average of 5200 mg of salt daily, more than twice (226%) the recommended daily intake.

Interpersonal Level

The interpersonal level addresses the key stakeholders involved in the process and ways in which they are engaged in the study. It also involves the impact the study will have on the stakeholders including how the study will affect their work pattern.

Family and peer relationship.

The interpersonal level of this ecological model concerns how women interact with family members, providers, and their peers. There is a cultural tendency to rely on social support in rural parts of Kenya to alleviate different forms of stress such as work stress, disease stress, and economic stress. As with food, individuals living in developing countries do not enjoy the

wide range of behavioral “choices” for health improvement that many in the developed world take for granted. African people have less control over what happens in their daily undertakings. In addition, risk of poor health is influenced by the nature of the work in which people engage. For women in Kenya, the responsibility to oversee the wellbeing of all members of the family often requires them to forego their individual needs. Stress therefore is an important factor at this ecological level. According to the World Health Organization (WHO) (2013), social health determinants such as income, education, and housing are linked to stress and thus influence hypertension management. WHO describes stress as the outcome of demands that exceed an individual’s comprehension and capacity to cope. The environmental demands that predispose individuals to physiological and psychological stress are more prevalent in developing countries than in developed ones (Ibrahim & Damasceno, 2012).

From my experience as a woman in rural Murang’a County, living in rural and remote communities involves dealing with financial strain, social isolation, long working hours, and reduced access to services. The stress this causes is further magnified when, out of necessity the young, energetic family members leave the rural areas to seek employment elsewhere, because it increases the workload of the remaining family members, diminishes support networks, and contributes to unsafe work practices. Babu et al. (2014) reported that high workload contributes to great risk for HTN and other heart diseases. These authors reviewed nine studies on work related attitudes, demands, and social support in relation to hypertension among adults in the workplace. They concluded that job strain has a role in coronary heart disease and that hypertension is a strong and consistent risk factor.

Community Level

The community level of the ecological model encompasses factors occurring in multiple settings including workplaces and neighborhoods, as well as within churches and religious groups. Also significant are cultural expectations placed upon women and their social networks. Community level barriers include corruption, gender roles, lack of employment opportunities, poor government/healthcare support, and weak community sanctions against corrupt healthcare workers.

Corruption.

Corruption may affect healthcare delivery in rural Murang'a County. Patients are exploited by high prices charged at private clinics because the more affordable government operated healthcare facilities have understaffed and poorly trained staff, limited drug resources, and the price of medications is beyond the reach of most. A study conducted by Transparency International-Kenya (2011), reveal that in spite of Kenya having limited resources allocated to the healthcare sector, corruption is widespread and impedes access to effective, equitable and quality healthcare. The findings included shortage of drugs following hoarding by providers to private pharmacies, money paid by patients not appropriately receipted, healthcare service delays and employment favoritism among others.

Wafula, Mackintosh, & Goodman (2013) found that corruption in pharmacy outlets in Kenya was influenced by broad market forces including an environment of competition, an expectation among customers that drugs should be inexpensive, a lack of guidelines regulating operation of drug shops, and improperly trained staff. Vian (2007) discuss similar findings. .

Gender roles.

Because women are traditionally the gatherers of wood, the UNDP (2012) suggests a linkage between gender sources of energy and stress-related health problems such as HTN in

Africa. In communities where wood is the main source of fuel, the time-consuming work of gathering it constitutes a barrier to HTN management for women, on individual and cultural levels. Most rural households in Kenya use fuel wood broadly: for cooking, smoking meat or fish, making charcoal for warming houses, and heating water to wash dishes and for bathing; as well for lighting, mosquito repellent and more. For women, fuel wood is also one of few vehicles for earning cash income. Wood collection contributes to time-poverty for women, who barely have time to do all the other productive activities described earlier in this thesis. Compounding this, customary gender roles ascribe women heavier loads than men but lower calorie and water intake. This combination of physical strain and time-poverty may elevate blood pressure and contributes to the prevalence of HTN among women (WHO, 2011).

Support Networks.

Research has shown that better mental and physical health is seen in people who have good social support. Some studies relate support networks to increased self-esteem and enhanced immune function. Social support is also said to be beneficial because it can provide access to resources and information, which encourage behaviors that lower stress or improve physical health. Social support is instrumental to recovery from surgery or illness, as well as to lowering blood pressure levels.

WHO (2013) assessed the impact of social supports on improving medication adherence and found the following contributing factors: socio-economic status, health system, medical condition, and availability of therapy. The study shows how the behavior of those in authority influences blood pressure management among their subordinates. For example, positive behavior like exercise and weight loss by a parent is said to have an equivalent effect on children so that

they too adopt the behavior and become healthier. Similarly, good rapport between a patient and a healthcare provider will promote a positive treatment outcome (WHO, 2013).

Societal Level

The societal factors that influence HTN include social and healthcare policies that affect system infrastructure, supply and communication. It is important to note that the healthcare system in developing countries like Kenya is often inadequate because of low funds, poor infrastructure, and poorly trained healthcare workers (Jenson, et al., 2011). In the Kenyan healthcare system, priority in healthcare is given to acute disorders, child and maternal health care, and control of communicable diseases especially HIV/AIDS. The ratio between the providers and patients is too large for providers to give good care even regarding these priorities, let alone management of non-communicable diseases like HTN. Poor treatment of HTN in Africa and Asia is further compounded by the dissemination of counterfeit anti-hypertensive medication (Ibrahim & Damasceno, 2012).

Healthcare Communication.

To improve health outcome and adherence, good communication between the patient and healthcare provider is essential. Basile & Bloch (2010) studied barriers to HTN management in the USA. Their study identified factors leading to poor HTN management, including attitudes, beliefs, and self-confidence; behaviors like cigarette smoking, alcohol consumption, excess sodium intake; and use of stimulants like cocaine, methamphetamines, and miraa (khat). Twagirumukiza et al. (2011) concurs, adding culture, family dynamics and physical, social, and psychological stresses to the list of factors influencing HTN management. They recommend intervention by clinicians to investigate causes of lack of adherence to therapy, followed by an increase or adjustment of current therapy once causes for non-adherence are established.

Management of HTN, according to these authors, would best be supported by improving societal level infrastructure such as improving the living conditions within populations most vulnerable to HTN.

Summary

This literature review has discussed facilitators and barriers to HTN management. Family, peer support and support networks have been discussed as facilitators for HTN management while education, obesity, diet, corruption, and gender roles hinder HTN management. No data exists on the experiences of managing HTN in rural areas of Kenya. A focus on the relationship between these findings and what the women in rural Murang'a County identified will be discussed later in this thesis.

CHAPTER 3: METHODOLOGY

The purpose of this chapter is to describe the way the research was carried out, including research design and setting; criteria for inclusion, exclusion, recruitment, and retention of participants; research instruments and methods of data analysis; and finally, measures taken for protection of human participants.

In order to understand barriers and facilitators to hypertension management among women in rural Murang'a County, Kenya, this study employed a focus group research design preceded by individual meetings with each participant, a design that has been shown to promote self-disclosure among participants (Krueger & Casey, 2009). In this study, the participants had multiple commonalities: all were women farmers, from the same region, and with HTN. This homogeneity facilitated self-disclosure in the focus group, which in turn yielded detailed information about participants' diverse attitudes, opinions, beliefs, and perceptions regarding HTN and the facilitators and barriers to its management among women in rural Murang'a.

Sample, Participants, and Setting

The participant group in this study was comprised of eight adult women farm workers in rural Murang'a County, all of whom had been diagnosed with HTN by healthcare providers.

Inclusion Criteria

Participants were self-identified female indigenous Africans living and working in rural village (postal) areas of Murang'a County. Because the aim of the study was to gather current information relevant to the farmworker experience, participants were selected for age and time spent engaged in farm work. Participants between the ages of 25 and 60 who spent more than

80% of their time engaged in labor associated with farming were recruited for the study.

Participants also needed to be willing to talk about HTN and their individual experiences. The participant group included women who were taking medication for HTN management, women who were un-medicated, and those who had been prescribed medication but were not currently using medication.

Exclusion Criteria

Potential participants were excluded from the study if they did not meet all of the above criteria, including women with HTN in rural Murang'a County who did not identify as farmworkers, as well as women farmworkers who were not born in and currently living in Murang'a County. Women who met all those criteria but worked less than 20% of the time as farmworkers, or had done farm work for less than 5 years were also excluded, as were those who had not been formally diagnosed with HTN. Finally, women who were not yet 25 years of age at the time of study, or older than 60, were excluded as participants.

Recruitment

The University of Washington's Human Subjects Division approved this study. The researcher asked two community partners in Murang'a County, Kenya to help identify potential volunteer participants and distribute fliers (Appendix A). A flier provided by the researcher to the two community partners in Wamumbi Orphan Care, Murang'a County, Kenya was used to inform potential participants of the study (Appendix B). Wamumbi Orphan Care is a non-governmental organization in Kangema Town, Murang'a County, Kenya. The flier included English and a Kikuyu language translation. In addition, word of mouth recruitment with community partners helped identify interested potential participants. The community partners

obtained potential participants' contact information and whether they preferred to participate by phone or visit to Wamumbi Orphan Care.

The researcher sought to recruit up to eight participants for the study. All volunteers were screened first by telephone using a screening tool (Appendix C), after which a private meeting was arranged with those who qualified as potential participants. Individual meetings were held at potential participants' homes between the December 12th and 15th, 2014. At these meetings, the researcher read and reviewed a consent form (Appendix D) with all potential participants in order to obtain informed consent to participate voluntarily in the study. Each of the recruited participants who signed the consent form indicating that they wished to participate in the study was given a personal copy of their form.

After obtaining consent, a short demographic interview (Appendix E) was verbally conducted by the researcher with each recruited participant, to determine (1) age, (2) level of education, (3) marital status, (4) farming experience, and (5) hypertension related experience.

Participants were invited to attend a focus group meeting at an agreeable time and place.

The focus group meeting took place in December, 2014 in an office provided to the researcher courtesy of one of the community partners, the co-founder of Wamumbi Orphan Care (Appendix F). Two meals were served during the focus group meeting (breakfast and lunch). The researcher facilitated the focus group meeting. After verbally re-establishing consent to take field notes and audio record the discussion (Appendix G), the researcher proceeded to conduct a discussion loosely structured by a questionnaire composed of nine items such as 1) What is it like taking care of your high blood pressure? What do you think makes it harder or easier for some women farmworkers to manage high blood pressure? 2) What should be done to improve high blood pressure management for women farmworkers in rural Murang'a County? (Appendix E). The

questionnaire was designed to facilitate participants' free expression of their opinions via a combination of open-ended and guided questions.

The focus group study was conducted in a mixture of English and Kikuyu. Kikuyu is a Bantu language that is indigenous to the Kenyan people in this study area, including the researcher. The focus group discussion was first transcribed verbatim from the audio recordings by the researcher, and then translated into English. The verbatim notes were crosschecked for errors and accuracy by a Kenyan College professor whose indigenous language is Kikuyu. The total time to collect data was two weeks. In addition to an audio recording and transcription of what was said within the focus group, the researcher also took field notes to document observations of behavior, activities, and events in order to provide a context for the data collection period. These findings are reported and analyzed within the Chapter 4 of this thesis.

Retention

Contacting each participant via her chosen method and conducting an individual interview prior to the focus group were central to promoting retention within this study, as were reminders the day before the focus group meeting. The researcher used a cultural liaison to drive to each of the women participant's house where at each setting the ritual of tea ensued. Retention was also promoted by providing two meals during the focus group meeting, breakfast and lunch.

Data Analysis

The sources of the data analyzed were the transcribed audio recordings and the field notes taken during the individual and focus group meetings. Data were analyzed using a Directed Content Analysis framed by the Ecological theoretical model based on multiple levels of

influences, including individual, interpersonal, community and policy (Heish & Shannon, 2005). In accordance with this model, data collected on the individual level was coded using texts that discuss how behavior hinders or facilitates women's management of HTN.

Transcription and translation from Kikuyu to English was done by the researcher and audited by a local Kikuyu speaking college educator in Kenya (appointed by the researcher). Field notes were sorted and organized. Coding was done for both the field notes and the audio recordings. Data was edited for relevancy. Tabulation was also done to describe the demographics of participants in several content areas, for example the age and number of years since HTN diagnosis for each participant, and the number of participants taking medications at the time of study.

The data were later checked for inconsistencies, analyzed, and presented for review by faculty advisors and an editor. Necessary corrections were made between January 2015 and late May 2015. Reliability checks were done with faculty using Yeasmin, & Rahman's (2012) triangulation method: (1) Accuracy was promoted by taking time during the focus group to summarize salient points of the discussion and ask for clarification. (2) Accuracy of the audio transcription was reviewed with a Kikuyu speaking educator and (3) coding of raw data was discussed with faculty.

The discussion with faculty therefore triangulated some of the codes the researcher was using.

CHAPTER 4: RESULTS

This chapter reports the findings of the study relevant to the facilitators and barriers to HTN management among women in rural Murang'a County. Findings are presented in accordance with the ecological model explained previously. First, demographic interview results organized by participant, and including demographic and medical information for each woman are included in Table 1. After reviewing the demographic data, I will analyze results gathered in the focus group with respect to each of the levels of influence designated by the ecological model including individual, interpersonal, community and societal levels, multiple, intersecting barriers and facilitators are discussed.

Demographic Details

A review of the demographic makeup of the focus group will be useful to this chapter's examination of findings. Demographic details are presented below (Table 1). The focus group was composed of eight women participants, ranging in age from 50 to 60 years, with an average age of 55 years. The mean monthly household income, in Kenya shillings, was 6,600 (equivalent to about \$65 USD). The mean education level reached was equivalent to approximately the 8th grade at US levels. The average time since last visit to the local clinic, as reported by participants, was 1.5 months. About 6.5 years was the reported average number of years the women were on HTN medication. Table 1 also records participants' responses to questions about concurrent medical issues and what they believed was the most important way to manage HTN. The latter revealed marked similarities. The 3 most frequent responses were proper diet, medication, and stress reduction. Of the 8 participants, half cited medication as the most important way to manage HTN, however even more (five) cited a diet of fruits and vegetables, along with reduced salt intake, as helpful. Three participants reported stress reduction by

increasing activities (work) as important. Pain was the most frequently reported concurrent medical issue.

Table 1

Participant	Age	Monthly income (Kenya Shillings)	Education level (US grade equivalent)	Married (M), Separated (S)	Years since diagnosis	Years taking medications	Last MD visit	Other medical issues	Most important for management of hypertension
1.	53	5,000	12	M	3	3	1	Arthritis, stress	Fruits, medication
2.	60	5,000	12	S	12	12	1	Diabetes	Medicine, diet (fruits, vegetables, reduced salt intake)
3.	57	5,000	10	M	7	7	2	Cardiomyopathy	Diet-Less food, fruits, Vegetables, weight loss, Walking
4.	58	9,000	6	M	8	8	2	Arthritis	Work to be busy (avoid isolation), read the Bible, less stress (children not helpful)
5.	57	4,000	2	M	12	Some times	1	Arthritis, knee pain	Work, walk
6.	54	12,000	7	M	6	5	1.5	Fibroids	Medication

7.	50	3,000	7	M	3	3		Pain right leg, tachycardia, allergies Itchy eyes)	Eat fruits
8.	57	10,000	10	M	14	8	2	Numbness /pain, hypothyroid	Diet-fruits (melon, oranges), vegetables
Mean:	55.7	6,625	8.3	S=1, M=7	8.1	6.5	1.5		Medication was reported by 4 women

Focus Group Data

The analysis revealed certain patterns regarding barriers and facilitators of HTN on individual, interpersonal, community and societal (including healthcare system and policy) levels. On the individual level, diet, education, children, mental illness and education emerged as significant to multiple participants’ experiences. Significant influences on the interpersonal level included employment (which is also significant to community and societal levels), economy, and quality of healthcare, stress, and money. On the community level, food security/insecurity, work hours, and the demands of rural life emerged in multiple accounts, while corruption and economic inequality were most significant policy/societal level influences.

Individual Level

Within the framework of this study, analysis of the individual level of influence encompasses individual responses to issues of family and community, as these are primary components of women’s traditional role and responsibility within rural Murang’a county (as described earlier). The focus group data concerning this level focused on the responsibilities for children and the

family's food intersected with individual level issues education, diet, food as medication and taking medications.

Education

The women discussed a lack of knowledge about their condition and the resources available to them as a major barrier to HTN management. In general, the women within the focus group considered themselves under-informed about their condition. For example, all of the eight women reported monitoring their systolic blood pressure, despite not really knowing what their highest readings meant or what a normal blood pressure reading should be. "...turirikanaga ya iguru...kaingi nikuo twi koraga, Magana meeri, 180, 160 muno yukagia hau uguo...riu yukite 140 ona no uigue wega muno...hakuhi wanirre...wi muhonu... (...we recall the top number...mostly 200, 180,160 mostly around there...when we get 140 we get very happy...almost shouting...we are healed...)"

Although educational resources exist, information about them was not well dispersed, and participants considered this a major HTN management barrier. For example, one participant had been unaware that the local healthcare facility offers a monthly educational clinic, and others revealed that they were more likely to get healthcare information casually during church meetings. A conversation ensued about how this reliance on casual passage of information about health and healthcare in day-to-day interactions might mean that a person's rural location and religious denomination could influence barriers or facilitators of HTN and other disease management.

A participant noted that educating each other had been helpful. She recalled being asked to monitor her diet by a peer. The recommended diet was to include small servings of carbohydrate foods like rice, potatoes, and green bananas. "Wenda wega, muceere wa waru, na giteke kia marigu, ti umbage gathani ukaria ugathithina... ni ukaria tunini... (To be well, rice

mixed with potatoes and green bananas, you should avoid filling on a plate and eat till you sweat...you should eat small portions...)" This peer had been an encouragement to another participant as well, offering continual, timely reminders to take all her prescribed medications. "Na ndawa iyo ndugatigithirie... (Do not stop taking that medication.)" The women said they learned from each other and had respect for each other. The women considered this focus group meeting as an avenue to form a networking group and socially support each other as women with HTN diagnosis. "...riu ni twa gia na ngurubu iitu... (...we now have our own group...)"

Diet

Regarding diet, the women agreed the diabetic clinic was the only reliable source of information. The women reported that they are told at the clinic not to stay hungry. They are encouraged to eat 5 small meals a day, balancing multiple categories: local fruits like oranges, bananas, and passion fruits; local vegetables including carrots, spinach, collards greens, green beans, and peas; proteins like beans, eggs and meat (including chicken, fish, beef); and foods with carbohydrates like potatoes, arrowroots, cassava, and dry corn. Nevertheless, they reported that they ate whatever they could afford, irrespective of the food value, which was most often the staple food "Githeri" (mixture of maize/corn and beans). One participant described owning a fruit garden but was at times forced to stop her children from eating the fruits, as they were her source of extra income. Other participants did not consider fruits as a food option due to the cost.

Decreased salt consumption was a more accessible dietary goal for participants. Multiple participants agreed that, since their HTN diagnosis, they had drastically reduced salt consumption. "...riu tutiriaga cumbi ta tene... (we do not consume as much salt as in the past...)" Two of the participants said their healthcare providers had asked them not to eat salt at all. "Nii ndagitari anjirire ndigane na cumbi... (The doctor asked me to stop using salt...)"

The women discussed issues concerning food security and said they were thankful to have milk from their cows and to be in a position to sell it. Milk was the women's most reliable source of income. The women said milk enabled them to maintain their homes, including paying school fees for their children and buying medication for themselves. Moreover, some expressed gratitude that they never slept hungry, as the farms yield provided enough food. Other women however, explained that although 90% of their time is spent working on farms to produce food, ironically, many of them do not get enough food and some go hungry. "...tutionaga kindu gi kiene... (...we do not get anything substantial...)" referring to yields from the farm.

Food as Medicine

A debate over the health benefits of avocados ensued. Avocadoes were considered a great health benefit as reported by one participant who learned about the food item while using public transportation. The woman said she is also diabetic and at the time of learning about avocadoes had several diabetic wounds, she pointed at scars on both of her legs. "Ndiraiguire ...makondo ni mega...riu ndiaga hindi ciothe...na riu ni ndahonire (I heard avocadoes are good...I eat them all the time...and I'm now healed.)" In sum, participants within this study reported sufficient knowledge regarding diet and HTN management, but despite knowing the healthy foods they were expected to eat, their food choices were restricted by economic concerns.

Medication

Participants described that access to medications and their costs were a major barrier to HTN management within their experiences. According to the participants, the government hospitals in Murang'a County do not stock enough medications. Rather, they got their prescription medications from local pharmacies. The people who can afford it seek healthcare at more expensive private clinics, where medications are more readily available, while those who

are financially constrained go without medication. The women reiterated that healthcare is very costly “Ni undu very costly, guthondeka mirimu ino. (It is a very costly thing, to treat these diseases.)” In addition, according to the women, there has never been a structure to assist women with HTN who cannot afford to buy medication. “...tutiri twakoro na undu wa muthemba ucio (we have never had such a thing...)”.

Although medication adherence was noted as an issue with some of the participants, most (n=6) stated they took their prescribed HTN medication. Four considered medication as the most important factor in managing HTN (see Table 1). Of the participants who did not take their prescribed medications, one said she did not know it was for HTN management, and the other's was related to financial constraints. In conclusion, these findings reveal that education, taking HTN medication, and eating healthy diet are the primary Individual level facilitators of HTN management for women in rural Murang'a County. Barriers on the individual level largely involved the cost and inaccessibility of food, medicine and treatment.

Interpersonal Level

The interpersonal level includes the effect of family, and peer/social support in HTN management. Topics addressed include stress, mental illness, and children.

The women discussed social support including spouses, children, and work as contributors to HTN management. As revealed earlier in the literature review, healthy interpersonal relationships have been shown to contribute to better health outcomes. Individuals with strong communication, peer and family relations experience less stress, increased understanding, and are happier. However, because women must work to provide food and economic resources for their families, burdens are experienced as well.

Stress

In the discussion of HTN management within this focus group, stress emerged as a major barrier and was discussed extensively. In fact, it became necessary for the researcher to constantly refocus discussion in order to collect information on facilitators of HTN management, not just about the things that were not working in the participants' community. Economic factors had a prominent relationship to stress within this intense discussion. One participant lamented that even the outside work she took on was more a source of stress than an economic benefit. For example, though women can make extra money by selling milk, they are often paid so late that they have to choose between buying food for the animals or for the home. She described farming as a ("circle of loss"). "...itingihota gukumaintain wee, itingihota gukuriha wee... ni githiururuko kia hathara... (...it cannot maintain you, you cannot make a living out of it ...it is a circle of loss.)" The women cannot afford to hire people to help them with the hard tasks they have to endure daily. They do all the jobs contributing to increased stress.

Participants discussed the constant frustrations women encounter while working in Murang'a County. The nature of women's dual responsibility to domestic and economic production is burdensome, overtaxing their attentions so much that they routinely miss important details. For example, they rush through feeding their own cows in order to do hired labor, which causes their animals to produce inadequate milk. "...ndunahota ku mifeed undu ingikuhe iria..." When women take on paid labor outside their own homes and farms, it does not reduce their domestic responsibilities, but adds hours to their workday. "kurimia ni kuuma thaa igiri nginya thaa mugwanja. (People who are hired to farm work start from 8am to 1pm.)" The responsibilities culturally bestowed on them as women are merely put off until after 1pm when they get back home, forcing them to squeeze more into the remaining hours. Recent findings

reported by Foundations for Sustainable Development FSD (2015) concur, showing that Kenyan women are overwhelmed with responsibility.

Compounding their stress, these women noted, is the fact that men generally wait for direction from the women regarding work, and will forgo labor when women are absent. For example, participants said that on the day of the focus group meeting, their husbands considered it a day off for themselves. “Ta riu uguo tukire guku, gutiri mundu wina muthuri urikora gwikitwoundu ungi. ...ni onire mweke wa guthii...arutaga wira kuringana na uria uramuforce. Wehera nake ni ahuruka. Kwa uguo, ...tukoragwo na ihinda iritu muno... (For example, today we are here, no woman with a husband will find anything else done...he has a chance to go...he works based on what he is being forced to do. When you leave he rests. So, you are the manager, you are the worker, everything...we have a really hard time...)” Physical and emotional stressors from the burden of work can trigger HTN and increase the risk of health complications. This dilemma is encapsulated in the anecdote of one participant: directed by her doctor not to carry heavy loads, she said she has to do it to survive.

Children

Culturally, children in this region are considered a mother's blessing and an additional farming resource. However, the women at this focus group meeting were more ambivalent. They did not, for the most part, consider their children helpful in the home. Some of their children declined farming work and left home to seek employment in the urban areas, only to return home ill or destitute, or worse to be lost to death. In general, participants perceived their children as lacking insight and patience. “...ukona matiri na wendo wa wira wa mucii...and want life full of quick fix (...they do not see any farming benefit/change...)” The women said they

thought that their children did not find anything good at home and hated being there “...ino ti generation ya kurima...kaba akarare mitaro Nairobi. (...this is not a generation of farmers...they better be on the street in Nairobi.)” However, the women sympathized with their children’s choices as well, as they could see how the young men’s disappointment cohered with the lack of returns/yields from the family farm. As laborers on other people’s farms, young men could earn in two days what would take five months at home. As to daughters, they said there was nothing for them to emulate.

The women discussed the issue of educating children, which they said takes a lot of money. One woman recounted how four of her children had died leaving her with the burden to feed and educate her grandchildren, causing her great financial and social stress. She reported being particularly distressed when the grandchildren reminded her of past experiences with their departed parents. Other participants echoed that losing children was common in the region. At times, children who are educated nevertheless fail to get jobs in the areas of their study, and this increases the stress to the entire family “...riria urona ta ukuhuthirwo ri, gugoka undu ungi makiria...no thina thiinii wa mucii uyu... (...When you expect things to improve other stressors arise ... it is a problem for the entire family...)” The women expressed disappointment with their children and at times regretted having invested in educating them.

The women said they felt there was a generation gap as well as economic factors that made the children disrespect whatever the women farmers did. “...matituthikagiriria ona mona haha niho turaruta gia kuria...matikwenda kwirwo...nginya mundu akahana ta akwirira kumathomithia...hena gap kuma analog na digital. (...they do not listen to us even when they know this is where we get our daily bread...they do not want to be asked to do anything...it gets

to a point where we regret educating them...there is a gap from analog to digital...)" One participant felt things might be better if her children understood that her health was suffering.

Some of the women thought their children were concerned about them. One participant said that she is cautioned by her child against getting angry to avoid falling sick. "...negenia tu, na nowe ukuruara. Na nii ni ngwirire sorry. (Keep quarrelling and then you will get sick. I have already apologized.)"

Mental Illness/Isolation

Mental illness falls in both individual and interpersonal levels. It is stigmatized in the region. Although these women felt it was a good thing to help their sick neighbors, they feared losing friendships if they revealed their own mental health struggles with those they know and love. "...na mutikamwire ninii nda mwira... (...don't say I told you...)" Keeping the secret increased their stress and resulted in poor HTN management.

The women perceived isolation as related to mental illness giving examples of other women in their neighborhood. For example, one woman witnessed a friend telling dissociated stories following continued isolation. She also attributed superstitions and belief in demon possession to isolation "...akoiga maundu matari ho...maundu matari biu...maundu confusing...ngoria atiriri how can this happen? (...she said things that were not true...things that were unreal...I asked myself...?)"

Fear, loneliness, and concern for safety, especially at night, were also highlighted as sources of stress and mental health risk. "...gwatuka he kaundu njiguaga...ndathimwo BP igakorwo iguru... (...when it gets dark, I feel something...if I check my blood pressure then, it is elevated...)" Some participants attributed the mental health effect to geographic isolation as well

and closed the discussion with advice to move to areas with more people. Just as on the Individual level, these findings reveal that Interpersonal level facilitators and barriers to HTN management are interconnected. For example, where familial support with the farm-work could be a facilitator, that help was unforthcoming due to cultural beliefs and economic conditions. Additional Interpersonal level barriers revealed by these findings include lack of time, caring for the family, the demands of women's farming, and with social support networks (including with one another) as facilitators.

Community Level

Community level influences that emerged in the focus group include government corruption, cultural and gender role expectations, the healthcare network, and employment/economic status. Of these, economic status was perceived as the predominant barrier to management of HTN.

Corruption

These women perceived corruption among government workers as a major impediment to obtaining healthcare. They explained that providers at the government hospitals often own private clinics as well. They exploit their people by sending people to their privately owned clinics, for the sake of their own profits. "...Ni mbeba...ona ucio wa gukuhura mbica ya ngoro agiriirwo ni gukuhurira general no ndangitikira, aguthii gukuhurira hau hake...ni getha ukarihe. (...it is about money...the one taking x-ray should do it from the general hospital but does not... they will do it from their private clinic...so that you pay.)"

Moreover, participants were powerless to question government authorities, including those responsible for health care, for fear of reprisal. For example, the women said they would not dare consult any government official for medical help, as this would negatively affect them individually. "...ukurutia wathe hau...siasa ikanjiriria nawe; we nduri undu wonaga mwega

mwike...githi mutithiaga guthimwo...tawe ri, tawe no uremwo ni kugura ndawa, na wina ng'ombe, na wina kii? (...your bad reputation begins there...politics start with you: you do not see anything good done...don't you get tested ...would you, you say you cannot afford medication and you own cows and other things?)” The women said this was humiliating and in situations like this, they would end up leaving the healthcare facility without getting the care.

Culture and Gender Role

In rural Murang'a County, cultural expectations placed on women are integral to the success of their farms and more broadly the agricultural way of life. However, the inadequacies relative to food production and revenue described above are increasingly problematic for women who farm, and by extension a burden for their families and community. The participants in this study perceived this unstable lifestyle as a direct cause of chronic elevated blood pressures amongst women. “...nduri hindi urikora thakame itekuhaica tondu nago muturire waku ni wagagaya... (...You will not get your blood pressure not elevated because your life has been distracted.)” No matter how hard they worked, their farms produced minimal yields. However, leaving farming did not necessarily lead to more economic stability. One participant, who had a history of stroke, elected to do less farming, for the sake of her health, and to operate a retail shop. Even so, she could not make ends meet. “The economy is very poor...very poor,” she said. She described how the little money she gets from her sales must stretch to pay rent for the business premises as well as county taxes, which are especially high in Kangema constituency.

Another participant explained why her milk business had failed: local markets fail to pay farmers on time, making it very hard for the farmer to buy food for the animals. “...ndarakuriha hindi iria ukwendete, ndarakuriha thutha wa thiku thate, areterera nginya mweri twendi, ukona hard time nene muno.... (...you don't get compensated when you expected, not in thirty days, but

you have to wait until the 20th day of the month, which contributes to such a hard time.)” In the process of the remuneration delay, the cows have less milk production. The women were quick to point out that failure for the milk buyers to pay on time is related to economic stressors because life is hard for everyone. “...ithuothe niguu tuhana... (...We all are equal...” referring to economic struggles.)”

Some women have to sell their property to give their educated grown children money to start businesses “Muikarire wa andu acio...ukaaga direction...tondu ni mathomire, makiaga mawira... (Life for these people ...lacks direction...they are educated, but are jobless...)”

However, new businesses rarely thrive within the poor economy, and this frustration contributes to widespread problems with drug and alcohol abuse. This problem, as the woman recounted affects everyone “...ni thina urahutia every area... (...this is a problem that affects ...)”

Although, as shown earlier, young men often refuse to farm under the circumstances, however, some children do work to lessen the financial burden on the woman. For example, they can milk or feed animals, and help with meal preparation.

Since water sources (rivers) are far away, it gets in the way of good farming. The women said there is piped water in the homes but the farmers are not allowed to use the water for farming, which contributes to their frustration and despair. “...riu mawira maria turi namo ungituika ni ukwongererwo ungi ri, ati ni getha wone income ri, ni ukurema. (...the type of jobs we have when you have additional burden so that add income, you cannot.)” In short, a range of factors including poor yields following heavy farming, inadequate water sources, poor support from their husbands and children, and the poor economy combine to increase risk of elevated blood pressure for these women.

When asked about how the women could manage HTN as a community, participants did not perceive factors such as food options, opportunities for physical activity, and access to health promoting services like wellness programs, clinics, or gyms as viable solutions. “Ona tutingiciria maundu ta macio... (We cannot consider such options...)” The women believe they already have so much work and no time to think of doing other things. In addition, they said they can not consider wellness programs due to financial constraints.

Woman’s roles: “an ongoing race.”

The Foundations for Women’s Development (FWD) (2015) documents how Kenyan women are subjected to great responsibilities for minimal returns. The findings of this focus group reveal a consistent narrative about a woman’s job: that it is overwhelming, ongoing, and provides no rest. Day-to-day life for the women in rural Murang’a County is a never-ending circle without change, especially economically, in which neither working even harder nor trying different things has any effect. “Muturire witu ni wa muthiururuko... (Our day-to-day life goes round and round.)” Asked to review a typical day for the typical woman in rural Murang’a County, these women described very similar daily routines. “...wira witu ni wa mahenya, ukoragwo ihenya-ini hindi ciothe... (...our job is a race, we are racing all the time.)” The woman wakes up at 5am, and after a long day’s work on the farm, the woman has to make dinner for the family, clean up dishes, shower, and go to bed at around 10 pm. “...tukoragwo twi busy hindi ciothe. (...we are busy all the time.)”

Healthcare Network

Although participants were aware that all these stresses had a direct impact on their health, they expressed despair about the prospects of change or effective medical intervention. (“Uthondekani wi thi muno... (Healthcare is very low...)” One woman participant’s story of when she suffered a stroke is illustrative of the low quality of care in this region and an unresponsive healthcare system that does not recognize the element of urgency associated with HTN. She tearfully recalled her struggle and the pain endured by her family to see to her care. She woke up one morning with a very severe headache, then attempted to walk, fell on her side, and could not move. She called for help from family members who took her to the district government hospital about 20 miles away. She was not treated there, however, but rather referred to the provincial hospital, another 28 miles further, for a Computed Tomography (CT) brain scan. She recalled her family’s struggle to move her from one point to another, in her condition, and the amount of money they spent in the two days during which she sought acute care. It was more than 24 hours later before she received diagnosis or treatment for the stroke, because after getting the x-ray results at the provincial hospital, the family was then asked to take her to the doctor at the Murang’a County hospital. They got there late and were asked to go home and return the next morning. As she stated, she was too ill and was unable to walk. “...kwari very late na ndiahotaga guthii... (...it was very late and I could not walk...)” After pleading with the providers, one doctor at the County hospital requested to have her wait at the casualty until the next morning. The next morning, she was referred to another private clinic for a chest x-ray. Finally, she was diagnosed and prescribed HTN and stroke medications, which they bought and she has been using since. Her experience, she stated, was typical of what the sick go through especially if needing specialty care.

Economic Support

Participants reported that other counties had been given governmental support, and they believed that farmers in rural Murang'a County would benefit from economic support from the Murang'a County government. They recounted a recent radio program describing the success resulting from efforts by neighboring Kirinyaga County's government to uplift its economy by subsidizing a market to sell the fruits grown by its local farmers.

There was notable frustration amongst the women with the government's role in Murang'a County. The government, they said, had failed to follow through with initiated projects. "...ikiaga follow-up...ko ni ya rumiriirwo, akorwo ni maai muonio njira... (...there is no follow-up...if this would be implemented, like by having water issues resolved for the farmer...)" Participants recounted multiple examples of ineptitude in government interventions meant to support farmers suffering in rural Murang'a County. Most recently, in a government project to involving green beans, necessary insecticides were not forthcoming, such that the crops they had been supported to plant were ultimately ruined. Similarly, an earlier government project provided farmers with piglets and starter food supplies, but cut off aid after two months just as the pigs were coming to maturity, nor did the government follow through with purchase of the mature pigs, resulting in great losses for the farmers. Yet another situation recounted by participants involved fish farming: again, after asking farmers to build dams and providing them with eggs, the government withdrew from the project, and the mature fish were never harvested for marketing. One woman described the experience, saying "...mwa kenio ta kiroti....tutiri na follow-up...na nduri na mundu wa ku follow na guku thi... (...you get excited like in a dream...there is no follow-up...and there's no grassroots' support...)"

The health impact of the high cost of food in this region and of food scarcity were discussed earlier in this chapter, and was linked to unpredictable weather patterns and lack of available irrigation. Participants proposed that it would be more helpful for the county government to provide water for irrigation to support farming "...ngirigaca ni iteithagia muno.... (...agriculture is very helpful...)" rather than these ill-conceived projects. This sort of government support might provide an effective facilitator to HTN management for these women.

Economic stress.

Participants reported multiple causes of economic stress. Those involved in coffee production described how factories routinely delayed payment for extended periods. The participant that owned a shop recounted how she dreaded the sight of empty shelves in her shop yet had nothing to show for all the sales she had made. "...Nyonete ndi na mugathi...ngacoka ngakora ndiri na mbeca na ndiri na mugathi ri, ngwaga kuhutio atia? (Knowing that I have a necklace to sell, then finding myself without one and I have no money, how would that not affect me?)"

When the women fall sick, they said that their families are quick to assist them, including working in neighborhood farms for money. But before long, the family members get exhausted and no longer help. "...matiendaga turuare no matingituhota tondu matiri na uhoti... (...they don't want us to get sick but they are unable to support wholly.)" The women ended the discussion over money by saying it would benefit them if the economy were generally better and if they would be provided with irrigation or allowed to use the piped water to farm.

Corruption, culture and gender roles, lack of proper healthcare network and economy were highlighted as major barriers to HTN management for the women. Addressing economic

issues was considered the greatest facilitator to alleviating these barriers. More about the proposals is discussed later in the thesis.

Societal Level

Societal level influences on management of HTN among women in rural Murang'a County include government and healthcare policies, religion, and a woman's unequal social status.

Government Policy

The focus group participants expressed disappointment at the services offered at the local government owned healthcare facility; they did not put the entire blame on the healthcare workers. There was also concern that diabetes drew a lot of attention and not much concern about HTN. "Ona mutiratikirwo care muno..." ("You really are not well taken care of").

Healthcare Policy

Participants expressed a belief that inadequate staffing was a contributing factor to poor care, rendering typical nursing workloads overwhelming and stressful. They were concerned that the nurses' stress was apparent to the patients in such a way as to carry it from one patient encounter to the next. This was made more likely by the fact that nurses are not only overworked, but also tasked with caring for multiple types of conditions and age groups. For example: "Nowe ura concentrate nag twana, nowe ura concentrate na atumia aria aritu.... (The same person is concentrating with the babies and the same person concentrates on the pregnant women...)" Additionally, they were not confident of the nurses' overall competence.

The women's observations suggest a broad pattern of inadequate staffing and providers being incompetent, under-trained or outside of their field of training. For example they said that at local Healthcare Center, the provider's training and specialization was not even considered when assigning patients. "Ni uguthimwo ni mundu oro wothe." At the sub-district hospital, there

was only one primary care provider, who would see only those patients whose condition was so severe as to require transfer to the more advanced district healthcare facility. “urendwo u referwo kuri we urorio Murang’a.” The County healthcare facility has better resources including specialized doctors. However, as can be seen from the experience recounted earlier of the participant who suffered a stroke, patients are not guaranteed of care.

In general, the participants in this study did not hold nurses at the local government healthcare center in high regard, and frequently they considered them incompetent. They justified their argument saying “...inyui ni muui uria nurses aitu maha... (You all know how our nurses are.)” They described nurses/healthcare providers at the local sub district healthcare facility as easily agitated, rude and presumptuous, sometimes ignoring patients altogether or not addressing their problems.

Some providers, they said, experienced job stress and at times gave wrong patient records/prescription. “...ahota gukwandikira ciene...” The women said they feared being led to die, and wished to be educated on what to expect about HTN. “Ungiaga kwi menya, ni uguthondekwo ucoke uthii ugakue. (If you are not vigilant, you will be treated and end up dying.)”

Healthcare Communication

The women talked about delay in healthcare in relation to poor coordination of care from sub-district hospitals, to district and provincial hospitals. At the time of this study, the woman with stroke history said that her experience had led her to learn a lot about HTN management, which she now shares with others. She became a teacher to the participants in the focus group and helped support their medication compliance by illuminating common misconceptions. For example she pointed out, “Mundu ndakage kunyua ndawa oige ati ni muhonu...ta wathii werwo

wi normal (Nobody should stop taking medication in the belief that they are healed...like when your vital signs read normal.)”

The healthcare workers that teach about diabetes were considered very resourceful for this community. Participants were aware that they needed to be vigilant about their exam reports (vital signs and blood sugar and blood pressure numbers) and to ensure that these were accurately reported to the healthcare center. The women were glad to have a diabetes clinic within walking distance from their homes.

Religion

Religion was experienced as an important facilitator for these women. They described prayer as a source of consolation in the community and often encouraged each other to pray. However, one participant had to defend her beliefs to a neighbor who believed in curses: “...ta akristiano tutiagiriirwo ni gwitikia uguo... (...as Christians, we should not have such beliefs...)” To these women, a belief in a high deity is the reason they are alive. “Ona ni Ngai ututuirie...” (It is by the grace of God that we living.)” Faith is a source of comfort to help deal with their stress. However, religious organizations also contributed to the women’s social and work obligations. Culturally, as expressed by the women in this study, the church organizations expect the women to contribute food and money during visits to needy church members including the elderly, and the sick. Although the visits are voluntary, this becomes a burden to the women who are not financially stable, yet are obligated to support those among them that are disadvantaged.

“Way Forward”

The women expected the researcher to provide them with a way forward. They said the focus group study should provide the researcher with an answer to what to do about HTN. “...riu tondu ni waigua maundu macio moothe twinamo ri, give us the way forward... (...now that we have

told you so much about us, ...)” In conjunction with these concerns, the researcher revisited prior discussions about how local resources could be utilized to facilitate care, for example by providing a local nurse to work in an HTN clinic. The need for blood pressure cuffs was expressed. The women said blood pressure cuffs would help them know their blood pressure numbers. They would keep better records to discuss with their primary care providers and would use them to help each other with blood pressure management. The women stated they could employ facilitators or use the knowledge gained from participating in the study.

CHAPTER 5: DISCUSSION

The women in the focus group had an average age of 55, with about 6.5 years since having been diagnosed with HTN. Increasing age has been shown to be as a risk factor for HTN diagnosis among women (AHA, 2013). The average income for the women was low. Although this is typical in the region, it contributes to health issues for people in the rural parts of Murang'a, Kenya (UNDP, 2014). The women believed that improving the economy would help them in many ways beyond financial reasons; other facilitators to HTN management that they suggested included stress reduction, medication adherence and eating healthily. The participating women in the focus group observed several barriers for HTN management. Some of the major barriers that emerged in the discussion are addressed in this section including education, economic support, weight management/diet, assessment/nurses roles, stress, and service access.

Education

Although the average education level among participants was equivalent to 8th grade, which is not unusual in the region, their lack of knowledge regarding HTN and health is of concern. For example, some thought they had to wait for symptoms before taking HTN medication. Several studies confirm that low literacy which might be the case with these women (8th grade education) is a barrier to medication management for HTN (American Heart Association, 2013); Maher et al., 2011; Mwita et al., 2013; Van de Vijver et al. (2013); World Health Organization, 2011).

The women who participated in this study viewed their education about HTN management as being very important in their overall ability to manage their illness. Ideally, they would like to see the local clinics in each region provide comprehensive HTN information. At

present, they rely primarily on peers for health advice and information, and this was observed in their interactions during the focus group. It was clear that they trusted each other on diet issues like the benefits of avocado, and convinced one another to attend the clinic offered for people with diabetes at the local sub-district healthcare facility. Getting health related information is important for the women because it will help them make informed decisions about HTN management including proper diet (Van de Vijver et al., 2013).

Churches were also proposed as potential facilitators of health education in their regions. Participants suggested that clergy could make announcements of upcoming healthcare events and spread information about resources like health clinics and medical camps. Use of the media (radio & newspapers) was also proposed as a potential means of transmitting healthcare information to the community in rural Murang'a County. According to Dodani (2011), religious and church attendance improves physical and psychological health across religions and populations globally. The leaders of a church/religion develop trust and credibility from the community helping provide a base for stability in health promotion programs.

Diet.

The Institute of Medicine (IOM) (2010) considers obesity a risk for HTN. Barriers and facilitators related to diet and exercise emerged as significant on multiple levels of the ecological model. Although healthy eating was one of the areas in which participants felt most informed, individual food choices were influenced on interpersonal, community and societal levels with family, community and culture reinforcing traditional meanings of thinness and fatness that associate losing weight with disease and poverty (Gokah, & Gumpo, (2010). In addition, food access, including availability and cost, limited participants' choices. Pressure from family

members and time pressures interfered with their ability to cook healthy meals and to eat together as families.

Additionally, eating a healthy diet with more fruits and vegetables, and less fat and less salt could facilitate a healthy weight and waist circumference (WHO, 2013), however the food insecurity issues described earlier will need to be addressed before this can come about. The world-wide crisis of food insecurity has been overlooked as a barrier to HTN management, as is evidenced by its absence within the literature reviewed earlier. Food security was a diet-related theme from the focus group and was perceived as directly related to HTN management. The women were glad to have enough food to eat, but their food choices were constricted by barriers at individual, interpersonal and societal levels ecological levels. Similarly, opportunities to ameliorate this issue were further restricted by isolation and responsibilities to work and family. Other researchers in Kenya have found that food insecurity was associated with poverty, inflation, the high cost of food, and large family size, women's workload and poor health (Abubakar, Holding, Mwangome, & Maitland, 2011).

Diets recognized as monotonous and lacking diversity are common in this region. For example, participants in this study reported a heavy reliance on Githeri (a mixture of corn and beans). It is important to note that seasonal fruits and vegetables are available in the region and participants were aware of their importance in managing their HTN. However economic barriers on individual through societal levels constricted their access to the kinds of food they knew that their health demanded. Their experiences cohere with the findings of a study by Bukania et al. (2014) that inadequate food quantity as well as imbalanced food type distribution contributes to nutritional imbalance in Kenya. Although Bukania's study was conducted in a semi-arid part of Kenya, food distribution in rural Murang'a County availability of food types is seasonal.

Because, in Murang'a County and elsewhere in Kenya food security is greatly impacted by low income, increasing domestic production and agricultural productivity will be vital to improving long-term food security in the region (USAID, 2014).

Stress.

Stress emerged as a major barrier to HTN management within the focus group meeting. Stress was shown to be pervasive and had multiple causes including economic insecurity and daily money woes; lack of social support; pressures from children and spouse; traditional maternal duties; and work, both paid and domestic labor. Although the women are always working, they are unable to work when sick. For example, during recruitment, the researcher recruited a woman who had not left her house for a week. She had lost four sons, which contributed to great stress, severe migraines, and depression and very high blood pressure levels. Environmental demands predispose individuals to stress and poor HTN management (Ibrahim & Damasceno, 2012). The Foundations for Women's Development (FWD) (2015) documents how Kenyan women are subjected to great responsibilities for minimal returns. The women proposed that improving the economy would be a major breakthrough for their stress. They believe this could greatly affect their lifestyle and consequently improve their blood pressure levels. The women engage in activities that are often repetitive, require them to use dangerous tools, carry heavy loads, and work long hours. These activities contribute to physiological stress and elevated blood pressure (Babu et al., 2015). Moreover, in a study about worry, stress and HTN, Boutain (2001) showed that doing multiple tasks, worrying about HTN, and worrying about educating children contributed to poor HTN management. This showed that family is a mediating factor that should be studied further.

Corruption.

Most of the health care in Kenya is free or subsidized for individuals, however institutional failure has led to corruption within this system has contributed to poor HTN management amongst women in rural Murang'a County. According to the World Health Organization (2013), corruption is a major economic hindrance. In addition as discussed earlier, corruption in Kenya contributes to poverty, increases the cost of health care and undermines the government's efforts to provide adequate, accessible, quality health care (UNICEF, 2014). This is exemplified in the story participants told about healthcare providers at the sub-district facility referring patients to their own private healthcare facilities for their own profit. This meant that patients were required to pay for services that should have been free at the government hospital. The experiences related here are consistent with research showing that lack of transparency; individuals not having a voice, and ineffective law enforcement all contribute to corruption that threatens healthcare access, equity and health outcome (Vian, 2007). According to Vian (2007), there is need for measuring and documenting corruption to help diagnose, locate and provide basic healthcare.

Effort has been made in the past to eradicate this problem in Kenya. For example, Transparency International (2013) reveals different ways corruption has been addressed in Kenya. Such include the enacted 2003 Public Officer Ethics and Anti-corruption and Economics Act. Then was public procurement and disposal act in 2005, the Proceeds of Crime and Anti-money laundering Act, 2009, Ethics and Anticorruption Commission Act and Leadership and Integrity Act in 2010. The new constitution has also helped in enforcing some of the laws. While many Kenyans have not experienced the effects of these acts, the Kenyan government is at present working to hold corrupt workers accountable by forcing them to resign and sending them to court.

Healthcare Policy.

The need for healthcare workers to have good relationship with the people they serve is paramount. Ensuring well trained and sufficient workers are at the rural healthcare facilities will promote better health outcome. As discussed by Jenson et al. (2011), Kenya and other countries in developing world are encumbered with poor healthcare because of low funds, poor infrastructure, and poorly trained healthcare workers.

Communication.

The women expressed a need for better communication across their community as well as with local authorities and healthcare workers in order to facilitate HTN management. Health information could as stated by the women be relayed in churches, at the local healthcare center, and during local gatherings including market days (two days a week are designated market days. Farmers and other traders sell their produce/goods to the community. Local government officials and religious leaders use the forum to communicate to the people.).

Quality healthcare.

Certain changes are paramount for blood pressure to be better controlled in rural Murang'a County. For example the women expressed a need to have clinics nearby that focus on HTN, as well as more accessible blood pressure checking equipment. Clinics should be made accessible and affordable via government-provided coupons. The Ministry of Health should also provide the local healthcare center with adequate and trained staff. Access to free and better screenings to patients suggested as one solution to HTN management in Africa (Mocumbi & Sliwa, 2012).

In addition, there were concerns over both access and cost of medication and medical technologies (MRI, US, X-ray). For example, it took two days and multiple visits to receive

initial treatment for the participant who experienced hypertension related stroke. The problems of corruption, poor policy-making and inadequate resources are compounded by the fact that healthcare workers are overburdened and lack adequate training. For example, a district hospital with only one cardiologist increases risk for cardiovascular disease as well as interfering with HTN management (Ibrahim & Damasceno, 2012). With more widespread access to imaging technologies, such care would be more efficient and patients could have better outcomes. Sufferers of HTN would particularly benefit from heart imaging to identify and exclude various heart diseases, which would help focus treatment on the right problems (Blankstein, 2012).

Religion.

Religion is another issue overlooked by the reviewed literature. In this study, it emerged as both a barrier and facilitator of HTN management. The need to contribute financially increased the women's stress levels and contributed to HTN. However, their faith and church community were also experienced as stress reducing facilitators because of financial constraints. The women stated that they felt good about being part of the church community that encouraged and supported the disadvantaged. They said they joined other church members in the scheduled visits. Dodani (2011) identified churches as avenues for health promotion programs. Although the article is about HTN management in the USA, there is a discussion about how community involvement and cultural values help promote HTN management; findings that are similar to what was stated by the women in Murang'a County.

Focus Groups as an Appropriate Research Method

The focus group (FG) has been used widely as a method for social research and its validity is broadly accepted (Krueger & Casey, 2009). The method allows for both flexibility and directed inquiry, because it allows for participant input, and the researcher can make adjustments based on their responses. The meals provided during this study are an example of responsiveness to participant input as well as being important culturally within the community. Using this tool for this study also enabled the researcher to reduce costs by minimizing the time needed for data collection; in this case, the process took about two weeks. Results were available quickly with the women responding to leading questions at the meeting. The focus group to generate qualitative data was important for this study, as this is a new area of research in the region. The researcher was able to obtain enough data to prepare for further research. The effectiveness of the focus group to rapidly adequate and relevant data is supported by Krueger & Casey (2009).

Limitations

There were, however, limitations to the methods as used here. For one, recruiting an observer for the focus group was not possible given the remoteness of the research setting. In addition, there was no time to do follow-up after the focus group meeting, or to carry out ethnographic observations of the participants as they contended with a woman's everyday life. This qualitative study could have been improved by having more than one focus group and one participant interview. As this is a qualitative study, the researcher has found in-depth information on one particular group of rural farmworker women, and may not be generalizable to other groups. The narrowness of the age range of available participants was also a limitation: although the researcher recruited for participants between ages 25 and 60, the range of those who were available was older (50 to 60). Finally, the fact that the research relied on translation from two

languages (Kikuyu and Swahili) into English might have in some cases changed the meaning of words. The researcher worked closely with a Kikuyu speaking college educator to ensure adequate transcription. Further research on HTN and the healthcare system in rural Kenya is called for in order to confirm and clarify the findings in this study.

Implications

The need to develop trust between healthcare providers and patients in Murang'a County, Kenya is apparent from the focus group's conversations about the local healthcare facilities. Such interventions could help mitigate pain and suffering from strokes and improve the detection and management of HTN. Patients diagnosed with HTN need to be provided with services even when they cannot afford to pay for them, and the barrier of corrupt providers should be identified and addressed. Another implication of this study is that the government needs to follow with reversing its record of abandoning projects and leaving populations with depleted resources. In both cases, there are issues of competency, corruption, cost and access that need to be addressed by the government.

One promising study that might exemplify creative and effective intervention is discussed by Gatua, Patton, & Brown (2010) in their article on giving voice to rural women. This program used community radio with women in rural Kenya to give them a platform for self-expression and boost their self-esteem. Such a program could be employed for the women in Murang'a County to help them have a voice as well as finding ways to educate and manage their HTN.

"Way forward"

In addition, family is shown as a mediating factor in helping women manage HTN. This includes addressing the women's roles, spouses and children providing support to the women

and recognizing the risks to HTN including triggers like stress. This should be studied further. Because in rural Murang'a County and elsewhere in Kenya food security is greatly impacted by low income, increasing domestic production and agricultural productivity will be vital to improving long-term food security in the region (USAID, 2014). Future researchers could focus on this.

Nurse's Roles

An implication of these findings involves the role of nurses in hypertension management. Nurses work with clients in a wide range of settings and are in a key position to facilitate both early detection and later effective management of elevated blood pressure. Given the prevalence of HTN within this population, nurses should take the opportunity to check blood pressure at all visits by women to healthcare providers. This will promote detection and initiate intervention, as well as providing an opportunity for education about self-monitoring of blood pressure changes in diet, weight management, and the risks of smoking and drug/alcohol use. As discussed in Chapter 2, Twagirumukiza et al. (2011) recommends intervention by clinicians to investigate causes of lack of adherence to therapy, followed by an increase or adjustment of current therapy once causes for non-adherence are established. Monitoring HTN could be a great strategy to promote HTN management.

It would also be helpful for nurses to take the time to explore clients' expectations and beliefs about HTN management, assess clients' adherence to treatment and provide needed information to help clients make informed choices. Nurses could improve communication by documenting and sharing comprehensive information with the healthcare team regarding HTN management. Nurses could also advocate for policy improvement and a reduction in corruption.

Future Research

The use of focus groups in this research was a cost effective means of obtaining a lot of information. Future studies that expand on the use of focus groups in the region are recommended in order to fill out the larger picture of HTN. The studies should involve more focus groups, meet more than once, spend time discussing solutions, include an observer, recruit from other areas, and include a male group to help generate broader and a more comprehensive finding.

It was noted that social support facilitated HTN management. Future researchers could study the use of peer teaching in HTN management in rural Murang'a County, Kenya. It would also be worthwhile to explore how churches and media influence health and how they might be employed in intervention and education.

Economic issues crossed all ecological levels within this study, and are clearly a profound, systematic barrier to appropriate hypertension management for women in rural Murang'a County. An investigation of economic aspects to stress and other barriers described by participants in this study including the government's failure to provide adequate resources to clinics and medical care to women with HTN would be beneficial. In addition the corruption and exploitation by government healthcare workers, and family support provided for persons with HTN should be studied (Ibrahim, & Damasceno, 2012).

Conclusion

The objective of this study was to determine how African women farmworkers in rural Murang'a County, Kenya, manage high blood pressure. Specific obstacles to women's management of high blood pressure (barriers) were described as well as what helps women

manage it (facilitators). It was noted that low education and a poor and corrupt economy were among the major barriers affecting management of HTN in rural Murang'a County. The lack of information regarding high-risk blood pressure readings, poor care, and inadequate resources stood out as barriers to management of HTN. The greatest barrier to women in managing their hypertension was shown to be the poor economy compounded by inadequate government support. Their greatest facilitator is the social support they experience from each other for information referral as well as from having a forum to address other issues affecting them as women. The result of this research highlights the need for societal level transformations within Kenya, including its government, healthcare system and economy.

In the meantime, at the local level, it appears that rural farmworker women are determined to move forward, leading others to transform the resources and training of staff in their local and regional healthcare facilities.

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APPENDIX A:

Partner Request for Flyer Distribution

Hello my name is Purity Wakaba. I am a graduate nurse researcher from University of Washington, Tacoma. I would like your help distributing these flyers about my research study on hypertension.

My research study is intended to obtain information about how women with high blood pressure manage it. Please will you post these flyers on your bulletin boards and hand them to anyone who may be interested in being interviewed.

Your help will be greatly appreciated.

Thank you

Purity Wakaba

Appendix B: Invitation Flier

Appendix 1.1

Invitation to voluntarily participate in High blood pressure study

This message is for women farmworkers aged 25 to 60 years old from Murang'a County

Women farmworkers from Murang'a County who have high blood pressure are invited to volunteer and share information about how they manage their blood pressure in an individual interview and then in a group setting.

Ritana ria kwirutira na kuheana uhoro wa murimu wa kuhaica thakame

Ndumiriri ino ni ya atumia aria mena murimu wa kuhaica thakame a miaka mirongo iiri na itano nginya mirongo itandatu aria marutaga wira wa kurima

Atumia arimi kuuma Murang'a aria aruaru murimu wa kuhura ngoro ni mekurio merutire kuheana uhoro wa uria matwarithagia miturire yao ya oro muthenya mundu ari woiki na thutha ucio thiini wa gikundi

If Interested Please Contact:

Ms. Purity Wakaba

At:

Wamumbi Orphanage in Kangema Town

Office telephone: 0727 490 474

Aria mekwenda kunyitanira mekurio makinyire:

Ms. Purity Wakaba

Wabici:

Wamumbi Orphanage, Kangema Town.

Namba yake ya thimu ni 0727 490 474

APPENDIX C:

Screening Tool

Screening the Potential Participants for Recruitment: Telephone- participant calling
Date _____

Participant ID _____

Purity Wakaba

Principal Investigator

Hello, this is Purity Wakaba.

Thank you for taking an interest in my study. As you may already know, I am a student at the School of Nursing at the University of Washington Tacoma, USA. I am pursuing my master's degree. I am conducting a research study to explore things that help or get in the way of managing high blood pressure for women farmworkers in Murang'a County.

If you agree to participate in the study, I will ask you to meet with me face to face. We will discuss what the study is about and I will ask you to sign a consent form. If you consent, I will interview you and invite you to attend a two our group conversation with other women farmworkers with high blood pressure. The focus group meeting will audiotaped. I will also take notes during the group discussions.

Would you be interested in participating in this study?

If No Say: thank you for your time

If Yes Say: Now I will go over the eligibility criteria with you. Please say yes or no after each statement

<i>Inclusion Criteria</i>	<i>Response</i>	<i>Action</i>
Have you ever been told by a doctor or nurse that you have high blood pressure	Y N	If no, Ineligible
Are you between the ages of 25-60 years?	Y N	If no, Ineligible
Are you a farmworker?	Y N	If no, Ineligible
Do you live in Murang'a County?	Y N	If no, Ineligible
Are you willing to be interviewed for up to an hour and to spend two hours in a group discussion with other women with high blood pressure?	Y N	If no, Ineligible

If ineligible, say: "I am so sorry you cannot participate in the study because state the reason."

Thank you very much for calling me.

If eligible, say: Great! You are eligible. Now we can set a time and place that would work for you to sign the paper consent forms.

Date _____ Time _____ Place _____

APPENDIX D:

Documentation of ConsentUNIVERSITY OF WASHINGTON
CONSENT FORM

Assessing Hypertension Management in Women in Rural Murang'a County

Researchers:

Purity Wakaba Masters of Nursing Student
University of Washington Tacoma
253 226 4800 / 011254722645435

Contact Person for Participants Martha M. Njoroge 011254727490474

Faculty Advisor Dr. Robin Evans-Agnew
Assistant Professor, Nursing
University of Washington Tacoma
Box 358421
1900 Commerce Street,
WA, 98402
206 605 1863

Researchers' statement

We are asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions, you can decide if you want to be in the study or not. This process is called "informed consent." We will give you a copy of this form for your records.

High blood pressure also called hypertension is a common health problem in Kenya. It contributes to most deaths related to heart disease, which is the leading cause of death in the

world. In Africa, high blood pressure affects almost half of all adults. Little is known about how women who work on farms manage high blood pressure. The purpose of this study is to describe how African women farmworkers in rural Murang'a County manage high blood pressure by asking you to: 1) Describe the things that prevent high blood pressure management and 2) Describe things that help with high blood pressure management.

STUDY PROCEDURES

This is a study where I want to listen and learn from the community. There will be no experiments. The study will take two weeks. You will need to be available for two meetings lasting about 1 hour for the first meeting and two hours for the second meeting. In the first meeting we will have time to go over these forms and answer questions. I will ask questions about you, such as your age, level of education, marital status, and about your high blood pressure. I will make an audio recording of our interview. You may refuse to answer any question or item in this interview or to stop at any time.

In the second meeting, I will lead a group discussion with you and up to seven other women with high blood pressure. The discussion will last up to two hours and will be held about a week after the interview in December 2014, in Wamumbi Orphanage, Kangema town. A light meal will be served. In this meeting we will discuss as a group what things help or get in the way of our ability to manage our high blood pressure. Questions include: What do you think makes it harder or easier for some women farmworkers to manage high blood pressure? I will audio record this discussion and keep notes and destroy the tapes by June 2015. You may refuse to answer any question or to have your comments deleted from the record at any time.

RISKS, STRESS, OR DISCOMFORT

You may feel uneasy talking about your high blood pressure in front of others. You may at any time ask me to remove anything you said during our interview or the group discussion.

ALTERNATIVES TO TAKING PART IN THIS STUDY

There are no alternatives; you are free to refuse to participate

BENEFITS OF THE STUDY

You may learn more about high blood pressure and feel a sense of success at having someone listen to your opinions. This study will be used to improve the care for women with high blood pressure in Murang'a County, Kenya.

CONFIDENTIALITY OF RESEARCH INFORMATION

Linking your name to a code number will protect your privacy, and destroying the key to these codes in six months after the study has ended. Only I will know the identity of each speaker on the audiotape. All the information you provide will be confidential. This study requires you to discuss the way you care for your high blood pressure in a group of other women. Although I will ask that all participants respect each other's confidentiality, I cannot assure the confidentiality of what is said in the group.

Government or University staff sometimes may review studies such as this one to make sure things are being done safely and legally. If a review of this study takes place, your records may be examined. The reviewers will respect your privacy. The study results will not be used to put you at legal risk for harm.

OTHER INFORMATION

Audiotaping: Participation in this research requires the interview and the group discussion be audiotaped. Audiotapes will be listened to and written out onto paper by me. Only I will have access to the audiotapes. After each tape has been written out and checked for accuracy, it will be wiped clean.

RESEARCH-RELATED INJURY

What to do.

For a life-threatening problem, call the local police right away or seek help immediately. Contact Kangema Healthcare Center (254 20 202 0505) when the medical emergency is over or as soon as you can. For all other problems: contact Kangema Healthcare Center or your primary physician right away. They will treat you or refer you for treatment.

Who will pay?

You will be responsible for your medical expense. The researcher may assist with transportation costs to the healthcare. Information about your doctor will not be included on this study.

If you get sick or hurt in this study, you will receive medical treatment or a referral for medical treatment. You will be charged for the treatment. The University of Washington does not offer funds to pay for the costs of a research-related injury. This includes treatments, added medical costs, loss of a job, or other costs to you or your family. If you think your health insurance would pay for any uncovered expenses, you will be responsible for submitting those expenses to your health insurer. The law may allow you to seek payment for these expenses if they are caused by malpractice or the fault of the researchers. You do not waive any right to seek payment by signing this consent form.

Purity Wakaba

Signature _____

Date _____

Subject's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, or if participating in this study has harmed me, I can contact one of the researchers listed on the first page of this consent form. If I have questions about my rights as a research subject, I can call the Human Subjects Division at (206) 543-0098. I will receive a copy of this consent form.

Printed name of subject

Signature of subject

Date

Copies to: Researcher: Purity Wakaba
 Subject

APPENDIX E:

Demographic Survey**Demographic and High Blood Pressure Survey**

1. Please tell me your age _____.
2. What is your household income?
3. What is your highest Level of Education?
 - a. Primary school Class.....
 - b. High School Class.....
 - c. Some College Years... Months...
 - d. College Degree.
4. Are you married?
 - a. Currently Married.
 - b. Divorced/separated.
 - c. Single and have never been married.
 - d. Widow.
5. Where were your born?
 - a. How long have you been a farmer?
6. Have you ever been diagnosed with any of the following medical problems?
 - a. High blood pressure.
 - b. Stroke.
 - c. Congestive Heart Failure.
 - d. Cancer. What type?.....
 - e. Diabetes.
 - f. Arthritis. Which type?.....
 - g. Depression.
 - h. Other....
7. When was your last visit to the doctor for high blood pressure?
 - a. Less than 1 month.
 - b. 1-3 months.

- c. 4-6 months.
 - d. Between 1-2 years.
 - e. More than 2 years.
 - f. Don't remember.
 - g. Other Please explain.....
8. What do you consider most important to you in managing your blood pressure?
9. Identify and compose a question about high blood pressure management for our focus group discussion.

APPENDIX F:

Facility Confirmation Letter**Wamumbi Orphan Care: Facility Use Confirmation**

From: marthamumbi08 <marthamumbi08@yahoo.com>

> Subject: Confirmation email

> To: wakabapu@yahoo.com

Date: Tuesday, November 4, 2014, 11:59 PM

Dear Purity,

This is to confirm that, I have agreed that you conduct a research study from Wamumbi Orphan Care office Gakira sub-location, Kangema.

I'm also willing for people to contact you at the Orphanage office. I will let you use my office to contact the participant in all other research related needs.

Thank you.

Martha M. Njoroge.

Sent from Samsung Mobile

APPENDIX G:

Script: Tape Recording & Note Taking

Hello, My name is Purity Wakaba. I am a graduate student at the University of Washington, Tacoma, in Washington State, USA. I'm here to find out from you the things that make it hard and what makes it possible for you to manage high blood pressure. While we talk about this, I will be recording our talk on a tape recorder. I will also write some notes. I will use the record and the notes to write about this study. If you feel like this is not something you want to continue with, please let me know now.

Thank you

Purity Wakaba

APPENDIX H:

Focus Group Facilitator Script

Re-confirm verbal consent to take notes and make a recording.

- 1) Tell us about when you found out you had high blood pressure.
- 2) How do you obtain health information about high blood pressure?
 - a) How do you feel about the process of getting high blood pressure information?
 - b) What may make getting the best information difficult?
- 3) Where do you get health services?
- 4) What is it like taking care of your high blood pressure?
 - a) Tell us about how your healthcare provider helps you.
 - b) What sort of things do you do?
 - c) What sort of things do you avoid doing?
- 5) How has caring for your high blood pressure affected your life?
 - a) Individually/ socially/ in church/ in the community.
 - b) With your family.
 - c) In your work.
- 6) What do you think makes it harder or easier for some women farmworkers to manage high blood pressure.
 - a) Individually/ socially/ in church/ in the community.
 - b) With your family.
 - c) In your work.
- 7) What should be done to improve high blood pressure management for women farmworkers in rural Murang'a County?