A COMPARATIVE STUDY OF HEALTH LITERACY AND HOW RURAL COMMUNITIES UNDERSTAND HYPERTENSION INFORMATION IN UGANDA AND TANZANIA

A Dissertation in

Adult Education and Comparative and International Education

by

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Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

May 2015
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ABSTRACT

This comparative dissertation examines health literacy and how rural communities understand hypertension information in Kabale, Uganda and Moshi, Tanzania. Commonly defined as an individual’s ability to access, understand, and use information to promote and maintain positive health and well-being, health literacy as it relates to hypertension has yet to be problematized and compared within an African context. Often described as a silent killer due to a lack of physical symptoms, hypertension afflicts more than one-fourth of the world’s adult population. In Africa, hypertension is the leading cause of cardiovascular disease on the continent and is expected to outnumber deaths attributed to more well-known infectious diseases by the year 2030. Based on the analysis of interviews, focus groups, as well as direct and indirect observation, the results of this comparative research study revealed significant barriers to access, understanding, and use of hypertension information for research participants diagnosed with hypertension. These barriers led to a low utilization of health services and reinforcement of cultural perceptions of the supernatural. Additionally, behavior modification messages targeting food choice were met with frustration and confusion as support and resources for implementing such plans were limited.

Current top-down, population-based health literacy initiatives developed by Western agencies that target infectious diseases are ubiquitous but have had a limited effect. They are often devoid of context, full of technical medical jargon, and situate health literacy within a Western paradigm of behavioral psychology. This further promotes Western hegemonic ideologies and denies African identity and ways of knowing. This comparative research study undergirds the need to examine current discourses that inform health literacies and take a Freirian approach to the co-creation of knowledge.
# TABLE OF CONTENTS

List of Tables ........................................................................................................ vii
List of Figures ......................................................................................................... viii
Abbreviations ......................................................................................................... x
Acknowledgements ................................................................................................ xii
Dedication ............................................................................................................... xiv

Chapter 1: Introduction .......................................................................................... 1
Statement of Problem and Context ...................................................................... 8
Purpose of the Study .............................................................................................. 9
Theoretical Framework ......................................................................................... 10
Conceptual Framework ......................................................................................... 14
PEN-3 Model ......................................................................................................... 15
Cultural Identity .................................................................................................... 18
Relationships and Expectations .......................................................................... 18
Cultural Empowerment ....................................................................................... 18
Limitations of Study ............................................................................................ 19
Summary .............................................................................................................. 20

Chapter 2: Literature Review ................................................................................. 22
Literacy Discourses .............................................................................................. 22
  Autonomous Model ............................................................................................ 22
  Ideological model .............................................................................................. 24
Health Literacy Discourses .................................................................................. 25
  Biomedical Discourse ...................................................................................... 26
  Sociocultural discourse .................................................................................. 29
Development Discourses ..................................................................................... 31
  The Dominant Paradigm ................................................................................ 32
Health Campaign Discourses ............................................................................. 35
  Theory of Reasoned Action ........................................................................... 37
  Health Belief Model ....................................................................................... 37
  Visual versus oral traditions of literacy ......................................................... 39
Individualism Versus the Collective .................................................................. 40
Structural Context ................................................................................................. 41
Summary .............................................................................................................. 44

Chapter 3: Research Design and Methods ............................................................. 45
Research Questions ............................................................................................... 45
Research Design ................................................................................................... 46
Comparative Case Study ...................................................................................... 47
  Cross-cultural comparison ........................................................................... 48
  Comparability ................................................................................................. 51
  Equivalence ...................................................................................................... 53
  Implications of “Comparability” and “Equivalence” for current study ........... 56
  Cultural equivalence ...................................................................................... 57
Contextual equivalence .................................................................................................................. 58
Functional equivalence .................................................................................................................. 58
Conceptual equivalence .................................................................................................................. 59
Site Selection .................................................................................................................................. 59
Research Site One: Kabale, Uganda ................................................................................................. 60
Research Site Two: Moshi, Tanzania ................................................................................................. 62
Sampling .......................................................................................................................................... 64
  Research Participants-Kabale, Uganda ......................................................................................... 64
  Research Participants-Moshi, Tanzania ......................................................................................... 65
Data Collection ................................................................................................................................ 66
  Observation ..................................................................................................................................... 67
  Interviews ....................................................................................................................................... 71
  Semi-structured interviews .............................................................................................................. 72
  Focus groups ................................................................................................................................. 73
  Documents and artifacts .................................................................................................................. 75
Data Analysis .................................................................................................................................... 76
  Phase I: Open Coding/Initial Coding ............................................................................................... 77
  Phase II: Categories ......................................................................................................................... 79
  Phase III: Conceptual Categories ...................................................................................................... 79
Validity ............................................................................................................................................ 80
  Translation ..................................................................................................................................... 80
  Triangulation ................................................................................................................................. 84
Summary ........................................................................................................................................... 84

Chapter 4: Presentation of Research Findings—Uganda ................................................................. 85
  Ugandan Health Care System ......................................................................................................... 88
  Health Literacy and Hypertension .................................................................................................... 91
  Kabale Regional Referral Hospital ................................................................................................. 94
  Village Health Teams ....................................................................................................................... 100
  Health Centre II ............................................................................................................................. 101
  Religion ......................................................................................................................................... 104
  Traditional Healer .......................................................................................................................... 109
  Radio ............................................................................................................................................. 114
  Newspapers/Brochures/Pamphlets .................................................................................................. 117
Summary .......................................................................................................................................... 118

Chapter 5: Presentation of Research Findings—Tanzania ............................................................ 120
  Tanzania Health Care System ......................................................................................................... 121
  The Kilimanjaro Effect .................................................................................................................... 127
  Tourism .......................................................................................................................................... 129
  Agriculture ...................................................................................................................................... 133
  Health Literacy and Hypertension .................................................................................................. 136
  Hospitals ......................................................................................................................................... 137
  Other Literacies ............................................................................................................................... 144
Summary .......................................................................................................................................... 145
Chapter 6: Presentation of Research Findings—Culture ................................................. 146
  Supernatural ............................................................................................................. 146
  PEN-3 Cultural Lens ................................................................................................. 152
  Summary .................................................................................................................. 155

Chapter 7: Presentation of Research Findings—Comparison ....................................... 156
  Similarities ................................................................................................................ 158
  Differences ................................................................................................................ 160
  Other Literacies ....................................................................................................... 162

Chapter 8: Summary of Findings, Implications, and Recommendations .................... 164
  Key Findings Related to Research Question 1 ....................................................... 164
  Key Findings Related to Research Question 2 ....................................................... 164
  Key Findings Related to Research Question 3 ....................................................... 166
  Key Findings Related to Research Question 4 ....................................................... 166
  Implication of Findings ......................................................................................... 167
  Implications for Policy Makers ............................................................................. 168
    Hypertension Screening ..................................................................................... 170
    Medication ........................................................................................................... 171
    Public awareness campaigns ............................................................................. 173
  Implications for Adult Education ........................................................................ 174
    Participatory Action Research ......................................................................... 175
    Participatory Action Research, Adult Education, and Paulo Freire ............... 177
    Participatory Action Research and Health Education ....................................... 178
    Words of wisdom ............................................................................................... 179
  Implications for Research Participants ................................................................. 182
  Implications for Future Research ....................................................................... 183
  Conclusion .............................................................................................................. 184

References ............................................................................................................... 186

Appendix A: Institutional Review Board Approval Kigezi Healthcare Foundation ..... 208
Appendix B: Institutional Review Board Approval: Queen’s University ............... 209
Appendix C: Informed Consent Letter .................................................................... 210
Appendix D: Research Protocols ........................................................................... 211
LIST OF TABLES

Table 1-1: Common Attributes of Health Literacy Definitions ..................................................15
Table 2-1: Health Belief Model ................................................................................................38
Table 3-1: Data Collection Matrix ...........................................................................................67
Table 3-2: Spradley’s Participant Observation Protocol ..........................................................69
Table 3-3: Emerson’s Fieldnotes Protocol .................................................................................70
Table 3-4: Spradley’s Descriptive Interview Protocol ...............................................................73
Table 3-5: Krueger’s Focus Group Protocol ..............................................................................74
Table 3-6: Pareek and Rao’s Interpreter Training and Selection Guidelines .........................82
Table 4-1: Uganda Health System Referral Network .................................................................89
Table 4-2: Factors Influencing Access to Formal Health Systems ...........................................91
Table 4-3: Hypertension Health Literacy Model .......................................................................93
Table 4-4: Percentage of Household Owning Selected Assets, 1991 – 2002 ....................114
Table 5-1: Tanzania Health System Category and Services Provided ..................................121
Table 5-2: Human Resources Status by Facility Levels in Public Health Facilities ............123
Table 5-3: Hypertension Health Literacy Model .................................................................137
Table 6-1: Percentage of Residents in Sub-Saharan Countries that Believe in Witchcraft ...148
Table 6-2: PEN-3 Model Uganda and Tanzania .................................................................153
Table 7-1: Comparison Hypertension Literacies Table .........................................................157
LIST OF FIGURES

Figure 1-1: Total deaths by broad cause group, by WHO Region, World Bank income group and by sex, 2008 .................................................................4

Figure 1-2: Non-Communicable Disease Risk Factors ........................................5

Figure 1-3: Conceptual Model of Health Literacy ...........................................15

Figure 1-4: Airhihenbuwa’s PEN-3 Model ......................................................17

Figure 2-1: Example of REALM Form ............................................................27

Figure 2-2: Example of TOFHLA Form ............................................................27

Figure 3-1: Kabale Town ...................................................................................61

Figure 3-2: Map of Kabale and Surrounding Countries ..................................61

Figure 3-3: Moshi Urban (Mount Kilimanjaro in the background) .....................63

Figure 3-4: Phases of Grounded Theory Analysis ..........................................77

Figure 4-1: Kicumbi Village, Kabale, Uganda ..................................................86

Figure 4-2: Kicumbi Village Health Camp .......................................................87

Figure 4-3: Percentage of vacant positions in the public sector .........................91

Figure 4-4: Villages surrounding Kabale Town .................................................95

Figure 4-5: Rural Health Camp, Kabale, Uganda .............................................97

Figure 4-6: Nurse taking a patient’s blood pressure. Rural Health Camp, Kabale, Uganda ......98

Figure 4-7: Village Health Team Responsibilities ..........................................100

Figure 4-8: Rubira Health Centre II, Kabale, Uganda .....................................102

Figure 4-9: Religious affiliation in Kabale, Uganda .........................................106

Figure 4-10: Distribution of health facilities in PNFP’s in Uganda ....................107

Figure 4-11: Traditional Healer on Lake Bunyonyi .........................................110
Figure 4-12: Traditional Healer and Wives .................................................................111
Figure 4-13: Traditional Health Literacy Posters .........................................................117
Figure 5-1: Tanzanian Health System Hierarchy ............................................................121
Figure 5-2: Health workforce status by level of facility ................................................123
Figure 5-3: Regions of Tanzania Ranked Socioeconomic Index ....................................125
Figure 5-4: Kilimanjaro Region Health System Inputs and Outputs vs. Mainland .............125
Figure 5-5: Health workers per 10,000 in 2012 ..............................................................126
Figure 5-6: Health facility density by region .................................................................127
Figure 5-7: Mount Kilimanjaro observed from my daily run .......................................129
Figure 5-8: Tanzania: Total Contribution of Travel & Tourism GDP ..............................128
Figure 5-9: Tanzania Total Contribution of Travel & Tourism to Employment ................131
Figure 5-10: Northern Tourism Circuit, Tanzania .........................................................132
Figure 5-11: Mount Kilimanjaro Climber Expenditures ..............................................132
Figure 5-12: Tanzania National Parks Expenditures ....................................................133
Figure 5-13: Planted Area for Main Crops .................................................................134
Figure 5-14: Planted Area for Permanent Crops ..........................................................134
Figure 5-15: Kilimanjaro Native Cooperative Union Café, Moshi, Tanzania ..................135
Figure 5-16: Hypertension Screening at Vasso Agroventures Ltd., Moshi, Tanzania ......136
Figure 6-1: PEN-3 Conceptual Model ........................................................................153
Figure 8-1: The projected mortality trend from 2008 to 2030 for major Noncommunicable
diseases and communicable diseases ..................................................................168
Figure 8-2: Mortality rates of cardiovascular diseases ................................................169
ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
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<tbody>
<tr>
<td>BP</td>
<td>Blood Pressure</td>
</tr>
<tr>
<td>CHW</td>
<td>Community Health Workers</td>
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<td>CVD</td>
<td>Cardiovascular Disease</td>
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<tr>
<td>DASH</td>
<td>Dietary Approaches to Stop Hypertension</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GNP</td>
<td>Gross National Product</td>
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<tr>
<td>GoU</td>
<td>Government of Uganda</td>
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<tr>
<td>HCI</td>
<td>Health Centre II</td>
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<tr>
<td>HCII</td>
<td>Health Centre II</td>
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<tr>
<td>HCIII</td>
<td>Health Centre III</td>
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<tr>
<td>HCIV</td>
<td>Health Centre IV</td>
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<td>HDP</td>
<td>Health Development Partners</td>
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<tr>
<td>HL</td>
<td>Health Literacy</td>
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<td>HSSP</td>
<td>Health Service Strategic Plan</td>
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<tr>
<td>KRRH</td>
<td>Kabale Regional Referral Hospital</td>
</tr>
<tr>
<td>LMIC</td>
<td>Low and Middle Income Countries</td>
</tr>
<tr>
<td>MoH</td>
<td>Ministry of Health</td>
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<td>NCD</td>
<td>Non Communicable Disease</td>
</tr>
<tr>
<td>NFR</td>
<td>National Referral Hospital</td>
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<tr>
<td>NHS</td>
<td>National Health System</td>
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<tr>
<td>PNFP</td>
<td>Private Not For Profit</td>
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<td>REALM</td>
<td>Rapid Estimate of Adult Literacy in Medicine</td>
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<td>Acronym</td>
<td>Full Form</td>
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<td>RHC</td>
<td>Rural Health Camps</td>
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<tr>
<td>RRH</td>
<td>Regional Referral Hospital</td>
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<tr>
<td>SSA</td>
<td>Sub-Saharan Africa</td>
</tr>
<tr>
<td>TCMP</td>
<td>Traditional and Complimentary Medicine Practitioners</td>
</tr>
<tr>
<td>TNBS</td>
<td>Tanzania National Bureau of Statistics</td>
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<tr>
<td>TOFHLA</td>
<td>Test of Functional Health Literacy Assessment</td>
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<tr>
<td>UNICEF</td>
<td>The United Nations Children's Fund</td>
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<td>UNMHC</td>
<td>Uganda National Minimum Health Care Package</td>
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<tr>
<td>VHT</td>
<td>Village Health Teams</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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ACKNOWLEDGEMENTS

To my thesis advisor, Dr. Ladislaus Semali, thank you for your friendship, wisdom, time, dedication, and belief in me. You opened my eyes, heart and mind to your beautiful country and continent. To my dissertation committee, Dr. Adnan Qayyum, Dr. Jamie Myers, and Dr. Sinfree Makoni, thank you for your time, dedication, support and valuable input. You are all greatly appreciated, and I am sincerely thankful that you served on my committee.

To my wife, Tisha Leslie Freer, there is not enough room in this dissertation to describe my gratitude and love for you. You have inspired and encouraged me to be a better person and to love myself. You have inspired me to want more from life and encouraged me to take the road less traveled. I love that you are “all-in” on this journey and that we will continue to laugh, love, and cry together. I love you. To my two sons, Nate and Max, I can only smile as I type your names. You keep me young at heart and inspire me to see the world in so many different ways. Your perspectives on life are so refreshing and a constant reminder that love and laughter is all that’s required.

To my parents, Ned and Cass, and my brother Chris, thank you being there from the beginning. Thank you for your unconditional love, support and encouragement during this journey. To my in-laws, Bob and Jeani, and brother-in-law Rob, thank you for your love, support, and friendship.

To Tom and Mary Zulauf, thank you for always welcoming me on the road less traveled. Thank you for your support, encouragement, and countless introductions along the way!

To Dr. Geoffery Anguyo and the KIHEFO team, Dr. Karen Yeates and The Pamoja Tunaweza Women’s Centre, Katharine West, Nicola Heus, the TAWREF team, Tory West, Shay
Bell, and the rural communities in Kabale, Uganda and Moshi, Tanzania, thank you for accepting me and introducing me to your wonderful communities. I am forever grateful.

To the research participants in Kabale, Uganda and Moshi, Tanzania, thank you for participating in this research. Thank you for sharing your stories and granting me access to your lives. You have inspired and taught me to be a better researcher, educator, and person.
DEDICATION

This work is dedicated to the rural communities in Kabale, Uganda and Moshi, Tanzania.
Chapter 1

Introduction

The research and discussion on health literacy are rich, complex, and ongoing. The definition of the term “health literacy” has generated fierce debate and continues to be interpreted, defined, and operationalized in multiple ways. Consequently, the definition of health literacy and health illiteracy is muddled by the multitude of actors who possess competing agendas, ideologies, and cultural values. Elements of a common definition have emerged over the last five years to include an individual’s ability to access, understand, and use health information to promote and maintain positive health and well-being. These common attributes are further defined by Sørensen et al. (2012) as an individual’s ability to “seek, find, and obtain health information (access)... comprehend the health information that is accessed (understand)... and apply the information to make decisions to maintain and improve health (use)” (p. 9). While the operationalization and problematizing of these elements becomes muddled depending on one’s ideological framework, scholars do agree on the associated evidence between low health literacy and health-related skills.

In adults, moderate evidence suggests that low health literacy is associated with patient access to care and health-care related skills. Studies suggest low levels of health literacy have affected the following areas:

- Increasing emergency care and hospitalization among elderly patients with low health literacy (Baker et al., 2004; Cho, Lee, & Arozullah, & Crittenden, 2008; Howard, Gazmararian, & Parker, 2005),
• participating in preventative services, including mammography screenings and influenza immunization (Guerra & Krumholz, & Shea, 2005; White, Chen, & Atchison, 2008),
• taking prescription medication appropriately (Gazmararian, Kripalani, Miller, Echt, Ren, & Rask, 2006; Raehl, Bond, Woods, Patry, & Sleeper, 2006),
• reading and interpreting medical labels correctly (Davis et al., 2006),
• understanding nutrition labels (Rothman et al., 2006),
• worsening of overall health status (Weiss, Hart, McGee, & D’Estelle, 1992),
• reducing self-management of chronic disease (Schillinger, Bindman, Wang, Stewart, & Piette, 2004), and
• higher mortality (Berkman et al., 2004).

Additionally, research has concluded that while low health literacy is found across all demographic groups, it disproportionately affects non-White racial and ethnic groups, the elderly, individuals with lower socioeconomic status and education, people with physical and mental disabilities; those with low English proficiency (LEP), and non-native speakers of English (Kutner, Greenburg, Jin, & Paulsen., 2006; Nielsen-Bohlman, Panzer, & Kindig, 2004). Furthermore, Schillinger (2011) found the following:

Vulnerable populations have been described as subgroups that, because of shared social characteristics, are at higher risk of risks. This implies that their vulnerability is socially determined by the structural nature of society, and that vulnerable populations, by virtue of being vulnerable, are much more likely to be at high risk of being exposed to risk of illness. Vulnerable populations are exposed to contextual conditions that distinguish them from the rest of the population. (p. 13)
Nowhere are vulnerable populations and their shared characteristics more prevalent than in Sub-Saharan Africa.

People in Sub-Saharan Africa (SSA) have the worst health, on average, in the world. The World Health Organization (WHO) estimates the region has 11% of the world’s population but carries 24% of the global disease burden (WHO, 2006). With less than one percent of global health expenditures and only three percent of the world’s health workers, Africa accounts for almost half the world’s deaths of children under five, it has the highest maternal mortality rate, and it bears a heavy toll from infectious diseases such as HIV/AIDS, tuberculosis, and malaria (WHO, 2006). Yet, while infectious diseases currently dominate the discourse of disease burden and donor support, there is an emerging epidemic that poses a major threat to the health of African nations. According to the WHO, the largest increase in Noncommunicable disease (NCD) deaths will occur in Africa. Furthermore, in African nations NCDs are projected to exceed the combined deaths of communicable, nutritional diseases and maternal and perinatal deaths as the most common causes of death by 2030 (Mathers, Fat, & Boerma, 2008).

Noncommunicable diseases, also known as chronic diseases, can be categorized into four disease types: (1) cardiovascular diseases, (2) cancers, (3) chronic respiratory diseases, and (4) diabetes. These four disease types account for 80% of the 36 million NCD deaths per year and outnumber worldwide death, disability, and economic burden rates of more well-known infectious diseases (WHO, 2013). While high-income economies have made significant gains in reducing chronic disease mortality in the past decades, low and middle-income countries (LMIC) are facing the mounting burden of risk factors that lead to chronic disease. According to the WHO (2013), “Nearly 80% of NCD deaths—29 million—occur in low- and middle-income countries. More than nine million of all deaths attributed to NCDs occur before the age of 60;
90% of these “premature” deaths occurred in low- and middle-income countries” (See Figure 1-1).

Experts agree that there are four primary risk factors associated with NCDs: tobacco use, unhealthy diet, alcohol abuse, and physical inactivity (see Figure 1-2). According to WHO (2013), these primary risk factors can lead to the following metabolic/physiological changes that increase the risk of NCDs: (1) Raised blood pressure (hypertension); (2) overweight/obesity; (3) hyperglycemia (high blood glucose levels); and (4) hyperlipidemia (high levels of fat in the blood). Amongst these four risks, hypertension ranks highest globally in terms of attributable deaths (16.5%).

Hypertension is a world-wide public health challenge. Often described as a silent killer due to the lack of physical symptoms, it afflicts more than a quarter of the world’s adult population and is predicted to increase by 60% to approximately 1.56 billion in the year 2025 (Kearney, Reynolds, Muntner, Whelton, & He, 2005). Routinely measured by health care professionals with an inflatable arm cuff and a pressure-measuring gauge, hypertension is defined as systolic blood pressure 140 (or higher) or diastolic pressure reading 90 (or higher). A diagnosis of hypertension or high blood pressure is dangerous due to added stress placed on the heart, arteries, and organs such as the kidney, brain, and eyes.
Today, hypertension is the leading cause of cardiovascular mortality (heart failure) worldwide, both in industrialized and in low-income developing, countries and increasing rapidly in SSA (Danaei et al., 2011; Lopez et al., 2006; Seedat, 2000). Additionally, if left untreated, hypertension can lead to kidney failure, blindness, stroke, and enlarged arteries (aneurysm). As the global disease burden of hypertension becomes more understood by the academic and medical community, the amount of research conducted in developing countries has started to increase. For example, Addo, Smeeth, and Leon (2007) conducted a meta-analysis of the biomedical journal *PubMed*. Based on their search criteria, 37 publications describing 25 studies from 10 countries in SSA satisfied the criteria for inclusion. From those studies, the following was concluded:

- A higher prevalence of hypertension in urban areas compared to rural areas.
- The prevalence of hypertension increased with age.
- The difference in hypertension prevalence between males and females was minimal.
- Women reported better detection, treatment, and control rates than men.
- *Hypertension awareness and education information were limited or unavailable* (emphasis added).

More recent cross-sectional studies of the prevalence of hypertension in SSA have demonstrated significant prevalence. The Millennium Village Project found a hypertension prevalence of 27.3% in Malawi and 26.8% in Mbola, Tanzania. It is even more prevalent in the semi-urban areas, for example in Ghana at 29% and in Tanzania at 40% (de Ramirez et al., 2010), a target country for this comparative study. In Uganda, the other targeted site for this research, a recent study concluded that “one in every three adults aged 20 years or older in the rural Ugandan district of Rukungiri is hypertensive” (Wamala, Karyabakabo, Ndungutse, &
Guwatudde, 2009, p. 157). This becomes worrisome when one considers in 1941 the first published report on hypertension prevalence in Uganda estimated prevalence at 2.9% among adults (Williams, 1941, as cited by Wamala et al., 2009).

Hypertension has yet to be problematized in Uganda and Tanzania, thus national health literacy programs related to hypertension have yet to emerge. In the United States, notwithstanding the pervasiveness of anti-smoking and “drink responsibly” literacies, the most common target of hypertension health information is an individual’s diet. It is well established in biomedical literature that a high intake of sodium (salt) and low levels of potassium is a direct recipe for hypertension. Additionally, obesity is strongly associated with hypertension due to the added stress that weight gain puts on the heart muscle and the relationship between the types of foods that can initiate both hypertension and obesity (i.e., processed foods are typically high in calories, sodium, and saturated fat). Appropriately, to lower hypertension experts recommend an eating plan low in sodium, saturated fat, and cholesterol and emphasize a diet high in fruits, vegetables, and low-fat dairy products. These recommendations are often operationalized through lifestyle modification health literacy programs that target nutrition and food choice.

In the United States, the most widely accepted and recommended health literacy program targeting diet and hypertension is the Dietary Approaches to Stop Hypertension (DASH). Developed by the U. S. Department of Health and Human Services and the National Institutes of Health, Heart, Lung, and Blood Institute (NHLBI), the DASH program promotes the following:

- Foods low in saturated fat, cholesterol, and total fat
- Fruits, vegetables, and fat-free or low-fat milk
- Whole grain products, fish, poultry, and nuts
- Reduced red meat, sweets, added sugars, and sugar-containing beverages.
These recommendations, along with lowering sodium intake, have been proven empirically to lower blood pressure (NHLBI, 2006). The DASH program also includes other health literacies such as weekly recipe plans, additional education resources on nutrition, exercise plans, social media support groups, member blogs, and discussion boards. Similarly, a simple internet search or a visit to the doctor, library, or community center would provide access to free and credible nutrition and lifestyle information to lower hypertension.

A chronic disease that afflicts both industrialized and developing countries alike is very rare. The scientific knowledge necessary to prevent and control hypertension exists. Though industrialized countries have greater access to health care professionals (NCHS, 2014) and education resources, the evidence would suggest the understanding and use of these resources is problematic (Antikainen et al., 2006; Joffres, Hamet, MacLean, Gilbert, & Fodor, 2001). In Uganda and Tanzania, hypertension health literacies have yet to be problematized and examined. Thus, it is imperative that its common attributes’ access, understanding, and use are investigated, analyzed, and compared within their own cultural context.

**Statement of Problem and Context**

It has become evident that hypertension is a major problem in Africa. The condition is being widely reported across Africa and is the leading cause of cardiovascular disease on the continent (Brundtland, 2002). Levels of awareness and detection are worryingly low, which suggests high levels of adverse effects such as diabetes, stroke, and heart failure are inevitable in the future. While there is currently a paucity of hypertension research being conducted in Africa, the morbidity rates attributed to this chronic disease are increasing at a pace that Western academics, donors, and policy makers will not ignore much longer.
Hypertension health literacy has yet to be problematized or operationalized in Tanzania or Uganda. Current top-down health literacy initiatives developed by Western agencies (e.g., WHO, World Bank, USAID, UNDP) referred to as Information, Education, and Communication (IEC) strategies that target infectious diseases are ubiquitous and have had a limited effect. They are often devoid of context and full of technical medical jargon; they also situate health literacy within a Western paradigm of behavioral psychology. This further promotes Western hegemonic ideologies and denies African identity and ways of knowing. A failed history of development, literacy initiatives, and health campaigns grounded in Western ideologies suggests hypertension strategies in Africa are both imminent and problematic. For adults living with hypertension in Kabale, Uganda and Moshi, Tanzania the issues affecting access, understanding, and use of hypertension health information are complex and culturally bound. The need to situate and problematize this information within their local context is urgent.

To problematize health literacy and its common definition in Moshi, Tanzania and Kabale, Uganda is to learn from the past. The examination of Western literacy, health literacy, development and health campaign discourse that has shaped IEC strategies is Africa is required. Only then can we begin to expose the hegemonic ideologies that undergird how knowledge comes to be naturalized and unexamined (Foucault, 1977) and move forward in our efforts to learn what it means to access, understand, and use health information within a local African context.

**Purpose of the Study**

The purpose of this comparative case study is to understand and compare health literacy for adults diagnosed with hypertension in rural communities in Moshi, Tanzania and Kabale, Uganda. Health literacy can be defined as an individual’s ability to access, understand, and use
health information to promote and maintain positive health and well-being. Additionally, this comparative study examines the similarities and differences between the two cases and examines cultural perceptions that influence health literacy.

**Theoretical Framework**

My research interest draws on a Post-structural Foucauldian understanding of discourse, power, and culture, as well as a Freirean theory of learning. Discourse refers to prevalent ideas that are circulated through society via language, images, and behaviors that become commonsensical social practices (Walshaw, 2007). The underlying discourses of literacy, development, and health shape how individuals and communities are constructed as subjects and learners (Giroux, 1992). These discourses, rooted in Western hegemony, become linked to how we know and understand everyday practice; they become naturalized and unexamined, and distinguish between appropriate and inappropriate conduct (Foucault, 1977).

Post-structuralism is informed by the philosophic traditions of scholars that rejected the claims of universal truth and understood meaning to be “radically dependent upon the pragmatics of context” (Peters & Burbules, 2004, p. 19). It is a philosophy that frames power not as one aspect of society, but as the basis of society (Denzin & Lincoln, 2005), a power that is socially and historically situated within hegemonic ideologies that produce discourses that authorize individual and group inclusivity and exclusivity. This framework promotes the politics of difference and challenges the privilege of unity as defined by Western ideologies of Enlightenment and progress. To understand health literacy in East Africa requires a Post-Structural foregrounding of culture as a “mobile field of ideological and material relations that are unfinished, multilayered, and always open to interrogation” (Giroux, 1992, as cited by Airhihenbuwa, 1995, pp. 5-6). Furthermore, an examination of current cultural practices in
relation to a dominant Western discourse of development must be unpacked. As Thiong’O (1993) stated:

The effect of a cultural bomb is to annihilate a people’s belief in their names, in their languages, in their environment, in their heritage of struggle, in their capacities and ultimately in themselves. It makes them see their past as one wasteland of non-achievement and it makes them want to distance themselves from the wasteland. (as cited by Airhihenbuwa, 1995, p. 8)

The current dynamic that situates the West through its multitude of actors as the primary purveyors of health knowledge juxtaposed by the indigenous knowledge of the cultures they pervade is one of dominant and peripheral. Foucault’s idea of the archeology of knowledge, savoir and connaissance, posits that formal knowledge, such as scientific pretentions, can only be understood by examining the “broad discursive conditions that are necessary for the development of connaissance” [savoir] (Foucault, 1980, as cited in Gutting, 1989, p. 251). Thus for Foucault, knowledge is situated in the examination of the savoir, the commercial practices, politics, laws, morality, institutions and policies that inform the connaissance (Foucault, 1984). The current discourses of literacy, development, and Western medical prevention regulates what knowledge is acceptable defined by its own connaissance of language, culture, and science, and relegates “traditional” ways of knowing to the margins of magic and myth (Foucault, 1977). To examine universal truth is to discover “there is something altogether different behind things: not a timeless and essential secret but the secret that they [things] have no essence, or that their essence was fabricated in a piecemeal fashion from alien forms” (Foucault, 1977, p. 142).

Foucault later introduced the more popular (amongst U. S. scholars of education) methodology of genealogy as a compliment to the archeology method in the analysis of
discursive practices and power. According to Foucault (1980), to apply both methods would include: “The analysis of discursive practices [that] made it possible to trace the formation of disciplines (savoirs)” (p. 4; archeology); “The analysis of power relations and their technologies” (p. 4; genealogy); and “The modes according to which individuals are given to recognize themselves as…subjects” (p. 5). This is what Foucault calls the “archeological dimension,” the “genealogical dimension,” and the “practices of the self” (pp. 11-12).

The governmentality of subjects by the institutions that regulate health information, communication, and education ensures the welfare of the population by overseeing the behaviors of the individual and the group. This is done by regulating conduct, desires, hopes, and the environment (Foucault, 1977; 1990a; 1990b). In earlier work, Fromm (1960) suggested the control of man via mythical discourse contributes to what Freire (1973) labeled “cooperating units” (p. 5). Fromm stated,

He [man] would be free to act according to his own will if he knew what he wanted, thought, and felt. But he does not know. He conforms to anonymous authorities and adopts a self which is not his. The more he does this, the more powerless he feels, the more is he forced to conform. In spite of veneer of optimism and initiative, modern man is overcome by a profound feeling of powerlessness which makes him gaze towards approaching catastrophes as though he were paralyzed. (As cited in Freire, 1973 p. 6)

The freedom from paralysis is the examination of the broader discourse of culture, which requires the “decolonization of the members of the marginalized group” (Airhihenbuwa, 1995, p. 8).

Similar to Foucault, Paulo Freire understood the subject and object to be socially and historically created, juxtaposed in relation to “oppressor” and the “oppressed.” The oppressors
“develop the conviction that it is possible for them to transform everything into an object of their purchasing power; hence their strictly materialistic concept of being” (Freire, 1970, p. 58). The oppressed “as objects, as ‘things,’ have no purposes except those their oppressors prescribe for them” (p. 60). Thus, the world for the object becomes a passive world whereby they are instructed to reach their hands out towards the hegemonic chains that enslave them. The prescription of choice is limited to the dominant discourses that seek to control their behavior, conduct, desires, and hopes. Freire (1998) suggested:

The dominant class, then, because it has power to distinguish itself from the dominated class, first, rejects the difference between them, but second, does not pretend to be equal to those who are different; third, it does not intend that those who are different shall be equal. What it wants is to maintain the differences and keep its distance and to recognize and emphasize in practice the inferiority of those who are dominated. (pp. 71-71)

Within the context of education, the operationalization of the dominant paradigm masks itself in a top-down, technocratic approach that Freire (1970) referred to as the “banking concept of education” (p. 72).

The banking concept of education understands knowledge to be a deposit of information from the Subject to the Object, a “gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing” (p. 72). As long as the object [oppressed man] of knowledge is constructed within the dominant discourses that shape their oppressions, the object will not find freedom of a revealed and transformed world. To counter the destructive practices of mechanistic education, Freire calls upon radical educators to reconcile the contradiction of the teacher-student relationship to that of each becoming teachers and learners. Central to this relationship is the idea that:
Education takes place when there are two learners who occupy somewhat different spaces in an ongoing dialogue … both participants bring knowledge to the relationship, and one of the objects of the pedagogic process is to explore what each knows and what they can teach each other. (Freire, 1998, p. 8)

It is through dialogue, critical reflection, and action (praxis) that teacher and learner reach *conscientização* (conscientization), which truly is “an acceptance that women and men are conscious beings and consciousness as consciousness intent upon the world” (Freire, 1970, p. 79). Through dialogue Freire suggested that objects of knowledge become subjects and creators of knowledge. The subject comes to know his or her world not as a static reality but as a reality in process that can be transformed. Freire’s is a pedagogy of hope that inspires teachers and learners to “imagine a world, in his own words, that is less ugly, more beautiful, less discriminatory, more democratic, less dehumanizing, and more humane” (p. 25).

**Conceptual Framework**

According to Miles and Huberman (1994), a conceptual framework is a visual or written product that “explains, either graphically or in narrative form, the main things to be studied— the key factors, concepts, or variables—and the presumed relationships among them” (p. 18). This comparative study used two conceptual models to inform my research and data collection. The first is my own understanding of the main themes to be studied, based on common attributes ascribed to the key concept health literacy (Table 1-1). A conceptual model has been provided as a visual example of the common attributes of health literacies and possible factors that might influence these attributes (Figure 1-3). The second is Airhihenbuwa’s PEN-3 model, which frames health within the context of history, culture, and politics.
Table 1-1

Common attributes of health literacy definitions

<table>
<thead>
<tr>
<th>Competency</th>
<th>Action</th>
<th>Information</th>
<th>Objective</th>
<th>Context</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ability</td>
<td>To access</td>
<td>To understand</td>
<td>Promote and maintain good health</td>
<td>The context of the specific tasks needed to be accomplished</td>
<td>Span of a lifetime</td>
</tr>
<tr>
<td>The capacity</td>
<td>To seek</td>
<td>To comprehend</td>
<td>To make decisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The knowledge</td>
<td>To find</td>
<td>To apply</td>
<td>To improve health</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To obtain</td>
<td></td>
<td>To use</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Adapted from “Health literacy and public health: A systematic review and integration of definitions and models” (p. 5), by Sorensen et al., (2012), BMC Public Health, 12(1), 80.

Figure 1-3. Conceptual Model of Health Literacy

PEN-3 Model

Current health literacy initiatives rooted in behavioral psychology focus on the individual’s decision-making process in adopting positive health behavior for the prevention of chronic diseases such as hypertension. For example, nutrition models, such as DASH and the
food pyramid, are rooted in an epistemology that places the locus of choice on the individual
(Dutta-Bergman, 2005). Furthermore, it is “assumed that improved knowledge and a change in
attitude are the twin engines that generate expected outcomes in behavior” (Airhihenbuwa, 2007,
p. 177). This pedagogic orientation often neglects or ignores the beliefs and values that come to
define community knowledge (p. 177). These theories and models also fail to understand and
address constraints that might operate in resource-deprived spaces such as “third-world” nations
(Dutta-Bergman, 2005; Marmot & Wilkinson, 1999). The dissemination of fact-based pamphlets,
the placement of posters, and mass radio broadcasts all assume the individual to be a rational
being that, when given the correct knowledge, will make the rational choice of positive behavior
change. These assumptions fail to address the systemic issues of poverty and structural
constraints that might preclude an individual from making a “rational” choice or even receiving
the information. Additionally, they fail to understand culture is the context that informs
behaviors. To address health behavior within an African context, Airhihenbuwa (1995, 2007)
challenged researchers to understand health within the cultural identity of Africans such that any
education intervention is anchored in African ways of knowing. Solutions must operate from a
place of authenticity that values and represents the subjects’ historical experience of knowledge
acquisition and production that informs behavior change within an evolving context.

The PEN-3 model was created to examine health beliefs and actions within the context of
culture, history, and politics (Airhihenbuwa, 1989, 1995, 2007). It has been used to develop
culturally competent programs in a multitude of settings:

- Diabetes in African American adults (Purcell & Cutchen, 2013)
- Domestic violence in Chinese American immigrant communities (Yick & Oomen-Early, 2008)
• Cervical cancer in Latina immigrants (Scarinci, Bandura, Hidalgo, & Cherrington, 2012)
• Child malaria in Nigeria (Borchgrevink mor, Idris, Adelakun, & Airhihenbuwa, 2010).

The model is composed of three interrelated and interdependent domains, each with three categories (Figure 1-4): cultural identity (person, extended family, and neighborhood); relationships and expectations (perceptions, enablers, and nurturers); and cultural empowerment (positive, existential, and negative; Airhihenbuwa, 1995). According to Airhihenbuwa, the dimensions “[offer] a cultural framework that provides (and in many cases obligates) researchers and interventionists to partner with communities when defining health problems and seeking solutions to those problems” (p. 4).

![Figure 1-4. Airhihenbuwa’s PEN-3 Model. Source: Global health and culture project. Retrieved from http://bbh.hhd.psu.edu/lab/global-health-culture.](image)

Below is a brief summary of each category annotated by Airhihenbuwa (1995) in his book, Health and Culture: Beyond the Western Paradigm (pp. 29-34):
Cultural Identity

Person: Health education is committed to the health of all. Individuals should be empowered to make informed health decisions appropriate to their roles in their families and communities.

Extended Family: Health education is concerned not only with the immediate, nuclear family, but also with extended kin.

Neighborhood: Health education is committed to promoting health and preventing disease in neighborhoods and communities.

Relationships and Expectations

Perceptions: Perceptions comprise the knowledge, attitudes, values, and beliefs, within a cultural context, that may facilitate or hinder personal, family, and community motivation to change.

Enablers: Enablers are cultural, societal, systemic, or structural influences that may enhance barriers to change, such as availability of resources, accessibility, referrals, employers, government officials, skills and type of services (e.g., traditional medicine).

Nurturers: The degree to which health beliefs, attitudes, and actions are influenced and mediated, or nurtured, by extended family, kin, friends, peer and the community.

Cultural Empowerment

Positive Behavior: These are behaviors that are based on health beliefs and actions that are known to be beneficial and must be encouraged. Affirmation of these behaviors is critical to program success and sustainability.
**Existential Behavior:** Those cultural beliefs, practices, and/or behaviors that are indigenous to a group and have no harmful health consequences, and thus need not be targeted for change and should not be blamed for program failure.

**Negative Behaviors:** Negative behaviors are based on health beliefs and actions that are known to be harmful to health: Health providers must examine and understand them within their cultural, historical, and political context before attempting to change them.

In summary, the PEN-3 model situates culture at the center of knowledge creation. It values the traditional beliefs, relationships and perceptions that undergird the community. Additionally, it ensures that interventions are culturally specific by identifying and organizing cultural components as part of the data collection process. Therefore, by focusing on cultural influences and their integration into the community, a culturally relevant health education program can be created.

**Limitations of Study**

This study acknowledges that health literacy is predominately a Western concept that has yet to be explored in African societies. Additionally, hypertension in Uganda and Tanzania has yet to be problematized like more familiar infectious diseases (e.g., HIV/AIDS, malaria), thus traditional literacies (e.g., posters, pamphlets and awareness campaigns) used to communicate information about hypertension have yet to be developed. Consequently, results and conclusion of this comparative research will be exploratory rather than explanatory due to a lack of prior research and comparable data. Further research that problematizes health literacy and its common attributes of access, understanding and use is required in both the United States and Africa if we are to move beyond an autonomous model of literacy to an ideological model that
understands literacy within the context of how people make meaning of information and their capacity to put that information to use.

This study also acknowledges my limited fluency in the primary languages (e.g., Rukiga, Luganda, and Swahili) spoken by research participants. This limited my understanding of direct communication between my interpreter and the research participants, which hindered my efforts to fully understand the depth of meaning participants associated with each question. Conversely, researchers (Borchgrevink, 2003; Bragson, 1997; Holmes, Fay, Andrews, & Attia, 2013; Pareek & Rao, 1980) suggested the use of a translator can often increase the validity of the research and significantly benefit the researcher in a multitude of ways: Understanding the sub-culture of participants, understanding the dialect of research participants, understanding the phenomenon of study, establishing rapport, understanding cultural effects, and asking related questions of both the researcher and the research participants to provide further clarity (Pareek & Rao, 1980).

Summary

This comparative study investigates health literacy and how adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania access, use, and understand hypertension information. Additionally, this study investigates barriers of access, understanding, and use and cultural perceptions that hinder positive health and well-being. The study is informed by the problematic nature of current health literacies developed by Western institutions for common infectious diseases in Africa. Hypertension has yet to be problematized or operationalized in Africa, thus the need to understand and situate the problem within a local context is urgent.

This comparative study is theoretically grounded in a Post-Structural philosophy and a Freirean theory of leaning, which provided a lens to uncover the discourses that currently undergird a Western dominant paradigm of health and learning. Conversely, the PEN-3
conceptual model positions health beliefs and action within a context of culture, history, and politics and provided a lens from which to examine current health perceptions that hinder the promotion of positive well-being for research participants. Chapter 2 presents a literature review on current Western dominant discourses that have historically shaped literacy, health, and development in present day Africa.
Chapter 2

Literature Review

To understand health literacy in Kabale, Uganda and Moshi, Tanzania is to examine the discourses of literacy, health literacy, development, and health campaigns to expose the historical and hegemonic ideologies that undergird how knowledge comes to be naturalized and unexamined (Foucault, 1977). This section examines each of these discourses and how each reinforces a dominant/peripheral paradigm that currently frames health information in Africa.

Literacy Discourses

The Western paradigm of literacy is positioned as an education-as-panacea framework that directly links literacy practice with positive human, political, cultural, social, and economic development (Graff, 1979). Though empirical evidence has disproven these myths and donor-sponsored campaigns in Africa such as the International Literacy Year, the Literacy Decade, and the more recently launched World Literacy Decade continue to fail on their stated promises, literacy is still positioned as the panacea of social and economic transformation. Literacy is critical to the degree that it problematizes the very structure and practice of representation by focusing attention on the fact that meaning is not fixed and that to be literate is to undertake a dialogue with others who speak from different histories, locations, and experiences (Giroux, 1992). The following section, informed by Street (1984), juxtaposes the autonomous and ideological models of literacy.

Autonomous Model. The autonomous literacy discourse describes a system of beliefs and practices that has been the dominant model of Western literacy education and development practices. The autonomous discourse situates literacy as a neutral cognitive function, a “technology of the mind” (Goody & Watts, 1963), a set of skills to be learned. It defines the
purpose of literacy, how literacy is acquired and what it means to be *literate* and *illiterate*. Additionally, literacy is treated as an independent variable that can be isolated, measured, and associated with modernization, progress, social mobility, development, and—in the case of this comparative research—health and well-being. For example, research suggests (Baker et al., 2004; Cho et al., 2008; Howard Gazmararian, & Parker, 2005) emergency care and hospitalization amongst elderly patients increases amongst those defined as being low health literate. The autonomous model suggests introducing “health literacy” (e.g., health information, education) to the elderly patients would enhance their cognitive skills, thus improving their ability to care for themselves and reducing their need for emergency care and hospitalization, regardless of social and structural constraints that may be causing them to suffer poor health. Hence, as a society, we focus our attention on the individual and that individual’s literacy problem (behavior) rather than the social and systemic problems that undergird illiteracy. As Street (2003) argued, disguised in this model are the cultural and ideological assumptions that underpin the acquisition and meaning of literacy practice (Street, 2003).

The neoliberal discourse draws on the autonomous literacy discourse within the African development paradigm as propagating literacy as a necessary precursor to economic development, democracy, cognitive enhancement, and upward social mobility (Graff, 1979). The myths embedded under the guise of “literacy” or “education” reflect a Western ideology rooted in neocolonial practice that situates both the individual and the group in a deficit model of dependency. For example, the Rwanda Reads program launched by the Ministry of Education in coordination with USAID’s Literacy, Language, and Learning (L3) initiative sought to promote the development of literacy skills and a “*culture of reading*” in Rwanda. Below are excerpts
from the Minister of Education’s program description related to literacy and economic development:

Those who can draw upon the written word effectively will be the masters of this new globalized society we all share – one in which Rwanda can and must be a respected contributor.

Rwanda Reads is an initiative that will enable Rwandans to achieve our collective vision for the future of our country.

We must all be empowered to contribute to the development of our country as described in Vision 2020.

The cause and effect relationship between reading and economic, social, and cognitive development is evident and strikingly bold. In this case, literacy is treated like a commodity to be bought and sold to the developing society as the only way for that society to compete and participate in the high rewards promised by the “developed” world in a market-driven, global society. If the individual and/or the society fail to become literate, they will not progress or modernize into a “developed” society. According to Carnoy (1974), under capitalist ideology from which neocolonial and neoliberal discourse is rooted, “Education is seen as a force of rationalism and progress in the interpretations of societal change. Incorporating individuals into the capitalistic system is a positive function of the education system” (p. 37). Those individuals who learn to read are deemed “successful”; those who do not are called “lazy.” Furthermore, with all of the financial resources and literacy programs designed to save the native, it can only be the native’s fault for not reaching this attainable status. Thus, the dependence on the West to define progress and modernity continues.

**Ideological model.** The ideological literacy model of discourse understands literacy as part of a larger social context. It moves beyond literacy as a technical skill and situates literacy as a practice that is socially and culturally situated and dependent on ideology (Heath, 1983;
Scribner & Cole, 1981; Street, 1984). Literacy cannot be perceived in absolute terms; rather, it must include the study, practice, and validation of multiple ways of knowing. Therefore, what counts as literacy is dependent on the people using it and the social and political context in which it is being used (Papen, 2001). Lankshear and McLaren (1993) posited different conceptions of what literacy is and how it is practiced. They suggested that literacies “reflect and promote values, beliefs, assumptions, and practices which shape the way life is lived within a given social milieu and, in turn, influence which interests are promoted or undermined as a result of how life is lived there” (pp. 17-18). This implies that literacy is a social activity underpinned by social, cultural, and historical discourses that affect how individuals and communities “read their world” (Barton, 2007; Freire, 1970). Freire (1973) further stated, “No program of literacy-training can exist—as the native claim—which is not connected with the work of human beings, their technical proficiency, their view of the world” (p. 157). From this perspective, literacy is about knowledge and power and the discourses that shape its ideology. It draws attention to the social and cultural structures that shape the access and outcomes of literacy, and it recognizes adult literacy learners as active agents who possess a wealth of experience that inform their learning.

**Health Literacy Discourses**

The National Literacy Act of 1991 defined literacy as: “An individual's ability to read, write, and speak in English, and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one’s goals, and develop one’s knowledge and potential” (National Literacy Act, 1991, emphasis added). This same definition was applied to the development of national assessments of adult literacy in the United States used to measure adult literacy on three components: reading, writing, and numeracy (Nielsen-Bohlman et al., 2004, p. 43). These assessment tools positioned literacy as a function of reading comprehension
and task completion, which established an individual’s literacy proficiency score. These assessments and the institutions that administered them defined who was “literate” and “illiterate” among American adults.

Coinciding with the development of functional adult literacy tests, assessment tests for health literacy were developed in similar vein. Consequently, the concept of health literacy was situated within the autonomous literacy discourse of functional skill assessment, that is, reading and writing and numeracy defined in absolute terms. An individual was either health literate or health illiterate. Drawing on Nutbeam’s (2008) concept of critical health discourse, this section will examine how different health literacy discourses construct learners, health literacy acquisition and the purposes of literacy.

**Biomedical Discourse.** The most commonly used assessments to measure health literacy among individuals are the Rapid Estimate of Adult Literacy in Medicine (REALM) and the Test of Functional Health Literacy Assessment (TOFHLA). The REALM (Figure 2-1) is a word recognition and pronunciation test while the TOFHLA (Figure 2-2) assesses a patient’s ability to read and comprehend information commonly encountered in the health care setting. This might include physician instructions, prescription labels, and pill bottles (Baker et al., 1999).
Within the biomedical literature, the TOFHLA and the REALM are the primary methods used to assess health literacy in relation to health outcomes. Primarily employed in medium to large multi-site cross-sectional studies, these tests are used by health practitioners to measure the association of independent variables, such as gender, race, income, geographic setting, education.
attainment, disease, and health outcome (to name a few) to the dependent variable, health literacy levels. For example, Schillinger et al. (2002) concluded that diabetic patients (N = 408) with low health literacy, based on their S-TOFHLA score, were less likely than those with adequate health literacy to attain proper glycemic control at two primary care facilities in San Francisco. In a multi-site study of four Medicare-managed sites in Cleveland, Houston, Tampa, and South Florida, inadequate health literacy was associated with lower uses of preventative medical services such as receiving the influenza vaccination and mammograms in patients ranging in age from 65 to 80 years old (N = 2,722; Mean age: 71; Scott, Gazmararian, Williams, & Baker, 2002).

Cross-sectional studies are an efficient and inexpensive method to collect data over a large geographic and population segment. Conversely, the limitation of these studies is that they do not provide a good basis for establishing causality nor do they improve our understanding of the complexity of health literacy. While two distinct variables can be measured at the same point and a relationship established, they cannot positively confirm that one caused the other. Most often, this is due to confounding variables that affect the relationship between the variables of interest. Therefore, I would argue a causal relationship between low health literacy and low levels of health attainment cannot be understood using this method of inquiry. Furthermore, I would argue that understanding the complexity of health goes beyond experimental design. It is devoid of cultural context and the realities that many face in a community setting. It does little to help us understand complex and interrelated issues that affect access, understanding, and use of health information that support or conversely inhibit an individual in making a health-based decision. Additionally, structural determinants have crucial influences on the improved health of people. Yet the power and locus of control for who defines health literacy, produces knowledge,
and regulates information is situated in a field that values its own socially constructed method of objectivity.

**Sociocultural discourse.** More recently, the discussion on health literacy has moved beyond an individual cognitive idea of literacy to one of understanding literacy as a social and cultural practice. Researchers understood health literacy to be more than just text on a page and sought to understand the purpose and meaning people associated with it. Functional literacy was seen as too narrow and devoid of context. According to Street and Street (1995),

> By reducing literacy to a “neutral” set of reading and writing skills, literacy is defined apart from social context and becomes, then, a content to be taught through authority structures whereby pupils learned the proper roles and identities they were to carry into the wider world. (p. 118)

In essence, the functional definition of health literacy framed the individual within a deficit model that placed the burden and responsibility of health on the individual. More recently though, scholars have asserted that low health literacy rates are more than an individual problem; they are a by-product of system-level contributions (Rudd, 2003). Additionally, they understood that structural constraints and cultural perceptions significantly influence access to the health care system and how people make meaning of medical information, authority, and treatment (Kielich & Miller, 1996). Accordingly, new definitions of health literacy emerged that accounted for the sociocultural and ideological assumptions that underpin the relationship between the patient and healthcare provider.

Nutbeam (2000) referred to health literacy as “the personal, cognitive and social skills which determine the ability of individuals to gain access to, understand, and use information to
promote and maintain good health” (p. 260). He grounded this definition within the promotion of health outcomes that:

Represent those personal, social and structural factors that can be modified in order to change the determinants of health…. These include such outcomes as improved knowledge and understanding of health determinants, and changed attitudes and motivations in relation to health behavior, improved self- efficacy in relation to defined tasks. (Nutbeam, 2000, pp. 261-263)

Health literacy from this perspective frames literacy as an “asset” that empowers the individual to “exert greater control over their health and the range of personal, social and environmental determinants of health” (Nutbeam, 2008, p. 2074). This definition goes beyond an individual’s ability to understand health information to encompass their capacity to put it to use. Furthermore, it suggests that an individual’s health literacy is mediated by sociocultural constructs that frame one’s ability to act on their own behalf.

Other scholars have taken a multi-dimensional approach in defining health literacy within a sociocultural approach. Zarcadoolas et al. (2005) defined four categories of health literacy: (1) fundamental literacy (skills and strategies involved in reading, speaking, writing and interpreting numbers (numeracy); (2) science literacy (the levels of competence with science and technology, including scientific concepts, comprehension of technical complexity, understanding of technology, and an understanding of scientific uncertainty); (3) civic literacy (the abilities that enable citizens to become aware of public issues and become involved in the decision-making process); and (4) cultural literacy (the ability to recognize and use collective beliefs, customs, world-view and social identity in order to interpret and act on health. Similarly, Freedman et al. (2009) situated health literacy within three domains: (1) conceptual (basic knowledge and
information required to understand and take action on public health concerns); (2) critical (skill necessary to obtain, process, evaluate and act upon information needed to make health decisions); and (3) civic orientation (skills and resources necessary to address health concerns through civic engagement).

The implications of accessing health literacy from a socio-cultural perspective are a deeper understanding of ideologies and structural factors that undergird an individual’s access, understanding, and use of the health system and its associated literacies. It contextualizes and frames health literacy beyond an individual’s functional skillset and uncovers larger socio-cultural factors that affect a community’s knowledge of health. From this perspective, adult educators can work to develop and implement programs that target cultural perceptions and structural issues that preclude an individual from positive health and well-being.

**Development Discourses**

*More than half the people of the world are living in conditions approaching misery. Their food is inadequate, they are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas. For the first time in the history humanity possesses the knowledge and the skill to relieve the suffering of these people...I believe we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life....What we envisage is a program of development based on the concept of democratic fair dealing...Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge.* (Truman, [1949] 1964, as cited by Escobar, 1995, p. 3)
The Truman Doctrine ushered in, for the United States, a post-World War II strategy to rescue the poor from their self-defeating ways. The “modernization” of poverty created the “politics” of poverty, which required a naming convention to juxtapose the superior ways of the West’s economic, scientific, and technological conventions to that of the “Third World’s” “underdeveloped,” “backward,” and “traditional” ways of knowing. The discourse of development cloaked itself in the grand narrative of salvation. As Gronemeyer (2010) stated, every epoch pervaded with a belief in progress has needed—the tendency of the present to conceive of itself as the penultimate stage of history, to fancy itself in a kind of positive final time in which only breakthrough remains before the harvest of history can be gathered into humanity’s granary. (p. 67)

Salvation was purchased through development, and development was sold by the West through superior ways of existing in the world. Growth, economic prosperity, and happiness as Universal Truth were explicitly and implicitly situated in the West. For underdeveloped and third world cultures, this meant updating their symbolic and moral obstacles to the hegemonic ideologies of their benevolent savior.

**The Dominant Paradigm.** The rapid economic growth in the United States and Europe during the Industrial Revolution and following WWII created an empirical operational definition for the West’s conception of development and progress. The *cause* of development and economic growth [dependent variable] as measured by a nation’s Gross National Product (GNP) is positively associated with modern technology. Referred to as the Dominant Paradigm of Development (Rogers, 1976), it suggests that development is dependent on a nation’s ability to substitute labor with capital-intensive technology as a means to increase economic growth as measured by their GNP (Rogers, 1976).
As economists ran this simple comparative analysis (i.e., the GNP of the United States vs. the GNP of countries not called the United States), they [United States] determined [labeled] that two-thirds of the world [underdeveloped] were poor. As Mohanty (1988) stated, “Only from the vantage point of the West is it possible to define the ‘third world’ as underdeveloped and economically dependent. Without the overdetermined discourse that creates the third world, there would be no (singular and privileged) first world” (p. 74). Naturally, it was more than just GNP; it was the shaping of African cultural institutions and critical consciousness to “properly guide the production, distribution, and consumption of items usually reflected in GNP figures” (Chinweizu & Madubuike, 1983, p. 3). As Altbach and Kelly (1978) stated, neocolonialism “constitutes the deliberate policies of the industrialized nations to maintain their domination. It may function through foreign-aid programs, technical advisers, publishing firms, or other means” (p. 30). Instantaneously, people living in newly defined poor countries were labeled poor subjects [value = n], requiring an infusion of Western capital, technology, and science to accomplish their own salvation.

On its first economic mission to the “underdeveloped” world, experts from the newly created International Bank for Reconstruction and Development (World Bank) were sent to Columbia, South America in 1949 to assess their economy and formulate a plan that would increase the country’s GNP. In response to their social and economic conditions, the Bank offered the following assessment:

One cannot escape the conclusion that reliance on natural forces has not produced the most happy results…International and foreign national organizations have been established to aid underdeveloped areas technically and financially. All that is needed to usher in a period of rapid and widespread development is a determined effort by the
Columbian people themselves. In making such an effort, Columbia would not only accomplish its own salvation but would as the same time furnish an inspiring example to all other underdeveloped areas of the world. (International Bank, 1950 as cited by Escobar, 1995, p. 25; emphasis added)

To counter the natural forces that yielded such unhappy results, the Bank recommended a complete restructuring of social and economic programs through comprehensive planning and an integrated coordination of social and economic programs (p. 25). This included the shift from agrarian to industrial technology, the privatization of government programs, integration into the national and international capitalist markets, and the determined effort of the poor people to inspire the underdeveloped world. Through scientific inquiry, development could now be quantified and material well-being measured (Rogers, 1976). An apparatus of knowledge and power was set in motion as the Western model of development and its key actors were now operationalized.

During the 1960s and 1970s the World Bank continued to implement its policies inspired by the modernization dominant paradigm. During this time, the World Bank dramatically increased its role and investments in Africa. Early structural adjustment policies long applied to industrialized market economies were implemented in Sub-Saharan Africa. The result of these early programs yielded a 2.6% increase in GDP from 1965 and 1974, yet stagnated thereafter (World Bank, 1994). Furthermore between 1965 and 1985, the average per capita growth in Sub-Saharan Africa was the lowest among all developing regions (World Bank, 1994) Thus, in 1981, after the failure of economic policies to spur development, the World Bank published the Accelerated Development in Sub-Saharan Africa – An Agenda for Action (commonly referred to as the Berg Report) outlining four major problems that were contributing to the economic crisis
in Africa: government over-spending on social programs, restrictions on privatization by the state, government bureaucracy, and free provisions of basic services such as health care, education, and water (Loxely, 1983). These recommendations were operationalized into Structural Adjustment policies or terms of conditions that African countries had to adopt for development aid. A general overview of structural adjustment policies suggests: (1) currency devaluation, which opens up natural resources to the global community at a fraction of their worth; (2) large funding cuts for social programs including education and health care; (3) privatization of state-owned enterprises, which opens up social systems to be purchased and run by foreign enterprise; and (4) trade liberalization, which removes government restrictions on trade and opens up borders for industrialized countries to bring in their own mass-produced products. This often results in the undercutting of indigenous production and devaluing of local economies (Loxely, 1983).

The World Bank’s “scientific” model of development measured by GNP/GDP and operationalized through structural adjustment policies resulted in a world debt increase from $0.5 trillion to $1.2 trillion between 1980 and 1992 (Abbasi, 1999). Accordingly, UNICEF attributed a drop of 10-25% in average incomes in the 1980s, a 25% reduction in spending per capita on health and a 50% reduction per capita on education in the poorest countries of the world to structural adjustment policies (UNICEF, 1989). They estimated that such adverse effects to state policies resulted in the deaths of half a million young children in a 12-month period (UNICEF, 1989).

Health Campaign Discourses

The discourse on health campaigns and mass communication (the primary modality of knowledge dissemination) is rich and complex. It is not my goal to examine the intricate details
(campaign length, health promotion vs. health services, fear message vs. role model message, television vs. radio, etc.) that comprise a health campaign, but rather to focus on the discourses that inform my research interest in health literacy. The majority of extant health programs and initiatives being implemented around the globe are grounded in the philosophic tradition of behavioral psychology. Behaviorism assumes that the learner is essentially passive, responding to environmental stimuli and suggests the following:

Both positive reinforcement and negative reinforcement increase the probability that the antecedent behavior will happen again. In contrast, punishment (both positive and negative) decreases the likelihood that the antecedent behavior will happen again. Positive indicates the application of a stimulus; Negative indicates the withholding of a stimulus. Learning is therefore defined as a change in behavior in the learner.

(Retrieved from http://www.learning-theories.com/)

Based on the philosophic tradition of behaviorism, health communication campaigns have been the modus operandi for informing the public about health prevention and services (e.g., AIDS, malaria, smoking), with the goal being the adoption of old/new behaviors that increase positive health outcomes. Accordingly, the task assigned to health communication researchers was to generate health communication knowledge to direct health care policies, practices, and interventions (Kreps, 1988). This knowledge is operationalized via communication modalities such as radio, television, and print and then marketed to a target or mass audiences. For example, print literacies—particularly posters and pamphlets—represent the primary mode of health communication in rural Uganda and Tanzania (Kendrick & Mutonyi, 2007; Mboera et al., 2007). Although different alternatives to health communication approaches have been developed, a meta-analysis of journal articles conducted over the last two decades revealed two
of the most widely used theoretical models that inform health campaigns (Painter, Borba, Hynes, Mays, & Glanz, 2008). The following is a brief explanation of these health behavioral models.

**Theory of Reasoned Action.** The Theory of Reasoned Action (TRA) proposes that an individual’s intention to perform or not perform a behavior is the most critical determinant of human behavior. Behavioral intention is determined by the individual’s attitude toward the specific behavior and their perceptions of what important others might think in relation to the behavior change. Thus, the individual’s attitude, combined with the perceived attitude of others (subjective norms), forms their behavioral intention. Each of these determinants (attitude, subjective norms, behavior intentions) is individually located and contextually situated (Fishbein & Ajzen, 1975).

**Health Belief Model.** The Health Belief Model (HBM) attempts to explain and predict health behaviors by focusing on the attitudes and beliefs of individuals. Its based on the understanding that a person will take a health-related actions if that person:

1. feels that a negative health condition can be avoided,
2. has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition, and
3. believes that he/she can successfully take a recommended health action (Janz & Becker, 1984).

The model is based on six components: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Janz & Becker, 1984; Rosenstock, 1974; see Table 2-1).
Table 2-1

*Health Belief Model*

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Application</th>
</tr>
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<tbody>
<tr>
<td>Perceived Susceptibility</td>
<td>One’s opinion of chances of getting a condition</td>
<td>Define population(s) at risk, risk levels; personalize risk based on a person's features or behavior; heighten perceived susceptibility if too low</td>
</tr>
<tr>
<td>Perceived Severity</td>
<td>One’s opinion of how serious a condition and its consequences are</td>
<td>Specify consequences of the risk and the condition</td>
</tr>
<tr>
<td>Perceived Benefits</td>
<td>One’s belief in the efficacy of the advised action to reduce risk or seriousness of impact</td>
<td>Define action to take; how, where, when; clarify the positive effects to be expected</td>
</tr>
<tr>
<td>Perceived Barriers</td>
<td>One’s opinion of the tangible and psychological costs of the advised action</td>
<td>Identify and reduce barriers through reassurance, incentives, assistance</td>
</tr>
<tr>
<td>Cues to Action</td>
<td>Strategies to activate “readiness”</td>
<td>Provide how-to information, promote awareness, reminders</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>Confidence in one’s ability to take action</td>
<td>Provide training, guidance in performing action</td>
</tr>
</tbody>
</table>


The academic research on the effectiveness of health campaigns is a collection of some successes and mostly failures dating back over 60 years. A meta-analysis conducted by Snyder (2002) determined that health campaigns have a small, yet positive short-term effect on health behavior. Moreover, research points out that low socio-economic status groups fail to benefit equally from health campaigns compared to higher socio-economic groups (Viswanath & Finnegan, 2002) and that health communication campaigns often contribute to the existing gaps between the rich and the poor (Viswanath & Finnegan, 2002).

An examination of the health campaign discourse reveals a need to “take an overtly political approach [to health campaigns], questioning the values of biomedicine and focusing on identification of the political, economic, and historical factors that shape a culture’s response to
and concepts of health, disease, and treatment” (Lupton, 1994, p. 58). As discussed, discourses that inform literacy, health literacy, development, and health campaigns are rooted in classical Western ideologies of individualism, rationalism, modernization, and progress. Thus, the following section examines the implications of stated discourses and how they affect the effectiveness of health campaigns in their mission of behavior change in Africa.

**Visual versus oral traditions of literacy.** As a cornerstone of Western modernization theories, literacy is required and sufficient for overcoming poverty and “surmounting limitations rooted in racial, ethnic, gender, and religious difference” (Graf, 2011, p. 42). In this definition, literacy does not refer to the ideological discourse that situates literacy within a larger social context. It does not seek to “reflect and promote values, beliefs, assumptions, and practices which shape the way life is lived within a given social milieu” (Lankshear & McLaren, 1993, pp. 17-18). If we understand the primary method for transmitting health knowledge in African health campaigns is through posters, flyers, and other pictorial learning tools, then we can conclude that literacy is defined by an individual’s ability to read. This becomes problematic when trying to address health perceptions and behavior in traditionally oral cultures.

Prior to the introduction of the Bible by Western missionaries/colonizers, Indigenous knowledge was communicated to African societies via Sage philosophers who were treated with respect and awe because their knowledge was viewed as signifying access to supernatural powers (Ajayi, Goma, & Johnson, 1996). Sage philosophers were responsible and trusted with local traditional knowledge and often mediated disputes based on land, relationships, and intra-kin competition. In its earliest form, wisdom transmitted from the Sage to the African societies represented the beginning of formal and informal education in Africa. According to Chinweizu et al. (1983), orature is “the incontestable reservoir of the values, sensibilities, esthetics, and
achievements of traditional African thought and imagination” (p. 2). Other types of oral literacy included an indigenous system of apprenticeship, basic moral education, socialization, and puberty rights. Oral communication “produced and transmitted new knowledge necessary for understanding the world, the nature of man, society, God and various divinities” (Ajayi et al., 1996). The non-recognition of oral cultural practice in health education is consistent with a Western ideology that seeks to rescue the underdeveloped from their backwards ways, a “gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing” (Freire, 1970, p. 72).

**Individualism Versus the Collective**

Health campaigns rooted in behavioral psychology focus on the individual’s decision-making process in adopting positive health behavior for the prevention of disease. Specifically, health campaigns and the models from which they are derived are rooted in an individual epistemology that places the locus of choice on the individual (Dutta-Bergman, 2005). Western discourse has shaped American ideology such that individuals are only supposed to look after themselves and their direct family. Individuals are awarded social status by their accomplishments, often measured by an individual’s wealth. Conversely, individual failures result in the individual being labeled lazy or unmotivated, as, for example, the pejorative labels assigned to the poor or unemployed in the United States.

In a collectivist society, to which African tribal communities belong, the interest of the group is of highest value. Gorodnichenko and Rolady (2012) found that within collective culture, the embeddedness of the individual is in a larger group and individual behavior is discouraged. Additionally, in a study on African culture and development, Platteau (2000) illustrated the collective nature of African society. He documented that productive individuals are seen with
suspicion and cajoled into sharing their surplus with the community. Collective punishments in the form of social ostracism, loss of status, or even violence exist to penalize the rich. The intention of collective punishment could be construed in Western discourse as disciplining hard work and initiative, but within a collective culture, it is perceived as preventing the disruption of community cohesiveness. In essence, to introduce a health program in Africa that relies on an underlying theory rooted in individual behavior change is to debase the African individual understanding of being within the collective.

**Structural Context**

The orientation of mass communication health campaigns rooted in behaviorism often neglects constraints that might operate in resource-deprived spaces such as third world nations (Dutta-Bergman, 2005; Marmot & Wilkinson, 1999). The dissemination of pamphlets, the placement of posters, and mass radio broadcasts all assume the individual to be a rational being that when given the correct information will make the rational choice of behavior change. These assumptions fail to address the systemic issues of poverty that might preclude an individual from making a “rational” choice or even receiving the information. For example, Mboera et al. (2007) surveyed rural Tanzanian individuals and found that health care facilities were the best place for them to receive health information. Conversely, participants also acknowledged that “health care charges, long distances, and inadequate and unaffordable transport systems, poor quality of care, equity, and poor governance” (p. 38) limited access to these facilities. It was also observed that brochures and posters were often written in English, did not apply to health risks of the local community, and were not available for distribution to individual patients. In Uganda, the majority of health information available, especially around malaria, is found in a print format. This may be sufficient in urban areas. However, there is a low literacy rate in the rural areas of
Uganda. While English is the official language of Uganda, in rural areas many people speak a tribal language as their first language.

The contextual factors discussed above are important to acknowledge for health education planners in creating effective health campaigns. I would argue though that this is not the place to start. When people are pushed to the margins of society by dominant ideologies that seek to keep them there, it is not enough to develop contextually relevant health information. The following quote is long, yet poetic and appropriate in describing the root problems of literacy, development, and health under a Western discourse of individualism, rationalism, modernization and progress:

As long as societies distribute needs and power unequally within the population, it is unethical for communication and human service professionals to help solve minor and/or immediate problems while ignoring the systemic barriers erected by societies that permit and perpetuate inequalities among citizens. Real change is not possible unless we deal with the crucial problem in human societies: lack of economic and social power among individuals at the grassroots. (Freire reminded us of this 25 years ago….). Yet, the models and strategies that were/are developed have failed to address directly these constraints. Individuals are impoverished or sick or do not consume a balanced diet or are slow in adopting useful practices, not because they lack knowledge or rationality but because, more often than not, they do not have access to opportunities for enhancing the quality of their lives. This is largely due to their lack of social, political, and economic power. Unless we are willing to recognize this and act on it, our work will either be ineffective of function as mere bandages, temporary palliatives to a larger and long-standing problem. (Melkote, 2000, p. 46)
To examine the major actors in global health requires a Foucault genealogy to uncover their interrelation to one another. The same system that elects the CEO of Halliburton to the Vice Presidency of the United States oversees the majority of funding of global health initiatives. This is to say that the lines get blurred between private donor and government sponsored programs because it appears that they are one in the same. The World Bank is the largest external funder of global health in the world today, committing more than $1 billion annually in new lending to improve health, nutrition and population control programs in developing countries (Ruger, 2005). The Bill and Melinda Gates Foundation represents the largest non-profit contributor to global health in the world today. In 2012, the Gates Foundations awarded $3.4 billion in global health grant initiatives. With a little less than $5 billion allocated annually for global health programs, the World Bank and the Gates Foundation yield a tremendous amount of power. Which diseases get researched? How are they measured? What policies are written? How are allocations of funds determined? Who gets money? Why? What are the implications if next year the Gates Foundation and its board of directors decide that malaria is no longer a global priority? What happens to all of those people that have come to rely on those resources? Sadly, this exercise has made me realize that very little of this is actually about people. An article published in the Wall Street Journal (Moya, 2009) reported:

Over the past 60 years at least $1 trillion of development-related aid has been transferred from rich countries to Africa. Yet real per-capita income today is lower than it was in the 1970s, and more than 50% of the population -- over 350 million people -- live on less than a dollar a day, a figure that has nearly doubled in two decades. Even after the very aggressive debt-relief campaigns in the 1990s, African countries still pay close to $20 billion in debt repayments per annum, a stark reminder that aid is not free. In order to
keep the systems going, debt is repaid at the expense of African education and health care.

**Summary**

Chapter 2 examines the historical roots of discourses that currently shape health information in Africa. It uncovers Western dominant ideologies of autonomous literacy beliefs and practices and how these ideologies shape information and the individual in a dominant/peripheral paradigm. Additionally, the review juxtaposes these ideologies with scholarship that seeks to contextualize literacy and position literacy as a social and cultural practice. It moves literacy beyond a functional skill and suggests that literacy can only be understood within the context of how people make meaning of information and their capacity to put information to use. Finally, the chapter explored the discourse of development and how the “modernization” of poverty created the “politics” of poverty, which required the superior ways of the West to provide growth, economic prosperity, and happiness to those in the newly created Third World. Chapter 3 outlines the research design and methodology used to answer the central questions posed in this comparative research. It provides a rationale for both methodological and method selections and introduces the reader to the research site locations and its participants.
Chapter 3

Research Design and Methods

The focus of this comparative case study is health literacy and how individuals diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania access, understand, and use hypertension health information. As hypertension has yet to be problematized by actors that disseminate health information in these two countries, there are enormous challenges and barriers that individuals must overcome to treat this chronic disease. This study provides opportunities to problematize and compare not only health literacies in both Uganda and Tanzania, but also to understand cultural perceptions that hinder the promotion of positive health and well-being. This chapter states the research questions, research design, sampling, data collection, and data analysis methods.

Research Questions

To attain the main purpose of this study, the research questions will explore the following:

1. How do adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania access, understand, and use hypertension information?
2. What barriers exist in accessing, using, and understanding hypertension information and how do existing barriers impact hypertension care?
3. What cultural perceptions hinder or enable access, understanding, and use of hypertension information for adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania?
4. What are the differences and similarities between access, understanding, and use of hypertension information for individuals in Kabale, Uganda and Moshi, Tanzania?
Research Design

This comparative case study used qualitative research methods, specifically an intrinsic case study design, to understand and compare how hypertension health literacy information was accessed, understood, and used by community members and how those choices affected health outcomes in two African rural communities located in Uganda and Tanzania. The reason for selecting qualitative research is the “set of interpretive, material practices that make the world visible. These practices transform the world” (Denzin & Lincoln, 2005, p. 3). Qualitative research is a process of research that examines the meaning that individuals or communities ascribe to a certain social or human phenomenon (Creswell, 2007, p. 37). Additionally, qualitative research stresses the “socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry” (Denzin & Lincoln, 2005, p. 10). Whereby positivist research contends that human nature is constant and predictable, qualitative research is multi-voiced; understanding an individual’s social world is complex as its essence is situated within their lived experience. It is through this process that I sought to understand myself and participants as co-educators and readers of our world.

Qualitative methods offer the practitioner a rich set of “paradigms, strategies of inquiry, and methods of analysis to draw upon and utilize” (Denzin & Lincoln, 2005, p. 20). The choice of methodology is often determined by the phenomenon the researcher seeks to understand. Based on the stated purpose of my research, my specific interest in Uganda and Tanzania, and my research questions, the current research employed a comparative intrinsic case study methodological approach.
Comparative Case Study

The case study approach fit the need of this research inquiry, which was to understand and compare health literacy for adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania. According to Creswell (1998), “case study research is a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information” (p. 73) Furthermore, Yin (2003) stated the choice of the case study is “the preferred strategy when ‘how’ or ‘why’ questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context” (p. 1). Each (Creswell, 1998; Stake, 1995; Yin 2003) suggests that the selection of case study design is a way to gain understanding of a situation, to appreciate the “uniqueness and complexity of a case, its embeddedness and interaction with its contexts” (Stake, 1995, p. 16). This methodology allowed me to employ multiple data collection methods to understand and examine health literacy within a defined contextual framework. Clandinin & Connelly (2000) agreed, suggesting research should be obtained “through a wide array of sources, autobiography, journal, researcher fieldnotes, letters, conversations, interviews, stories of families, documents, photographs and personal-family social artifacts” (as cited in Creswell, 2007, p. 131). Accordingly, through multiple methods I was able to focus on the situated and intersecting relationship between social, cultural, and political factors that influenced participant access, understanding, and use of hypertension health information.

Stake (1995) argued that the system can be studied with one of three types of case studies depending on the stated purpose of the research: instrumental case study, collective case study, and intrinsic case study. Instrumental case studies are often used when there is a research
question or “puzzlement” (p. 3) that requires understanding. An instrumental case study is selected to provide “general understanding…insight into the question by studying a particular case” (p. 3). Thus, the emphasis in the case is something other than the particular case being researched. A collective case study is essentially an expanded instrumental case study. Research is coordinated and conducted over multiple cases to offer deeper insight to the general question being posed. Conversely, an intrinsic case study is used to develop an understanding of a particular case rather than studying a case to inform some general problem (Stake, 1995).

The intrinsic case study was selected for two reasons. First, the current research examined a “bounded system” to understand how hypertension literacies are accessed, understood, and used in Kabale, Uganda and Moshi, Tanzania. My focus and interest in Uganda and Tanzania were driven by a desire to understand and explore the uniqueness and complexities of each case. Second, to compare case studies is to understand social realities through the deconstruction and analysis of how individuals and communities interact with their lifeworld. Accordingly, the current research required a focus and determined commitment to each case. More so, it required a deep respect for and commitment to the people of Uganda and Tanzania, not to practitioners and policy makers.

**Cross-cultural comparison.** This current research sought to understand and compare health literacy for adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania. This study is positioned as a comparative study because of its two populations and their shared phenomenon. As Zelditch (1971) suggested, comparative education must include two or more countries that are compared with respect “to the same concepts” (p. 271). Raivola (1985) expanded on this definition further and demands that,
Research into social phenomena take into account the fact that they are bound up with the ecological context and tradition. Educational problems have to be examined in the light of culturally determined needs, objectives, and conditions. To fully understand this culture dependency, it is necessary to compare cultures. (p. 362)

From a cross-cultural perspective, most comparativist scholars subscribe to the understanding that comparative research can be seen as an effective strategy for gaining knowledge about a foreign system to gain a better understanding for one’s own system (Mallinson, 1957). Raivola (1985) stated that comparison “demands that a theoretical concept be expressible by a different operational counterpart, with its culture-specific features, for each culture under comparison” (p. 364). In examining education systems around the world, the discovery of limitations and possibilities that effect social reform in our own societies become evident. Furthermore, the recognition of common problems that schools and societies confront is manifested on an international, national, and local level (Altbach & Kelly, 1986). Therefore, the core function of cross-cultural comparison is to reveal institutions and their functions that are nonexistent within some other culture (Raivola, 1985).

The collection of information and analysis of comparative data may also be directed towards problem-solving or policy making within one’s own system (Crossley & Broadfoot, 1992; Nieben, 1982). Hall (1977) stated, “There may be discovered features that are worth borrowing for introduction into our own system (or conversely, some that we perceive must be avoided at all costs!)” (p. 82). The discussion of education policy and its underlying social, economic, and political discourses can provide insight and perspective on the how these systems interconnect. It challenges scholars, educators, and politicians alike to think broadly about the link between the local and global issues and the overlapping values that underpin the education
enterprise (Hayhoe & Mundy, 2008, p. 1). Therefore, as Eckstein (1983) suggested, comparative education can be useful for providing a deeper understanding of one’s own educational system as well as providing the practical benefits of understanding the educational system of other countries.

From a methodological perspective, comparative research is often used in “creating a frame of reference to which varying observations can be related. The units being compared can be powerfully described by means of comparison variables, which according to Nurmi form equivalence criteria for the classification of phenomena” (Raivola, 1985, p. 363). The formation of equivalence classes through descriptive analysis can lead to the construction of theory (p. 363). From this perspective, one might conclude that Raivola’s purpose for comparative research is to offer general explanations and universal law. The strands of comparative literature would certainly support this framework, as the methodological debate between Positivists and Interpretivist reaches far into the comparative literature. But Raivola noted that the researcher must distinguish the aim of their research from that of distinguishing a particular phenomenon or establishing universal law. Furthermore, he stated,

Not all comparative research, then, seeks general explanations, but all research that seeks to offer general explanations must be comparative. Comparison is always involved in inductive reasoning. Research workers cannot be content with ascertaining the existence of a dependency relationship; they must also define the extent and conditions of its occurrence (pp. 363-364).

Thus, to understand a phenomenon in relation to constructing nomothetic generalizations, researchers must conceptualize the phenomenon and discover how they are interconnected. Raivola (1985) referred to the work of Warwick and Osherson (1973) for a set of requirements
that a theory must fulfill, in which task comparison can be helpful. (1) A theory has to be built on clearly defined concepts. This, however, is a question of isolating logical rather than empirical universals. (2) The theory has to cover the whole of the area of reality to be explained. (3) All claims included in the theory must be general. (4) The theory must be economical: it should be as comprehensive as possible using a minimum of concepts (Warwick & Osherson, 1973, as cited by Raivola, 1985, p. 364). I would posit that Raivola is not interested in the Positivist vs. Interpretivist debate but rather calling upon the comparativist community to discover the relationships between a phenomenon and systematically analyzing and exploring sociocultural differences as they relate to more comprehensive social theories. To do this, though, one has to understand the nature of comparison as it relates to different cultural variables under study.

Comparability. The literature in comparative and international education is rich with definitions of what it means to “compare.” For example, Bereday (1964) defined comparison as an ordering process,

A preliminary confrontation of data from different countries...done for the purpose of establishing the tertium comparationis, the criterion upon which a valid comparison can be made...Finally, one proceeds to comparison, a simultaneous analysis of education across national frontiers. (pp. 9-10)

Zelditch (1971) defined comparability as “two or more instances of phenomenon [that] may be compared if and only if there exists some variable, say V, common to each instance” (p. 267). Schriewer and Holmes (1992) took a more sociological stance, asserting that comparison is a cognitive and social operation of identifying similarities/differences and arranging them in mental hierarchies. Furthermore, Schriewer and Holmes concluded that comparativist scholars must move beyond mental observations generated by the reception or perception of stimuli to an
orientation towards theoretical propositions (pp. 35-36) Thus, in general, we might conclude that to compare is to juxtapose or differentiate between one or more phenomena. The term “comparability” is much more difficult to discern. For comparability is a matter of degree between phenomenon and is dependent upon what is being compared. The word comparability implies equivalence, and according to Triandis and Berry (1998), researchers must question “when a common underlying process exists can there be the possibility of interpreting differences in behavior?” (p. 8).

Cross-cultural research is a complex endeavor due to the dynamic nature of the culture(s) under study. Therefore, many scholars and skeptics have posed the same question: Can different social and/or cultural systems be compared scientifically (Raivola, 1985, p. 368)? In response, Warwick and Osherson (1973) demarcated this question into three separate parts as it applies to comparability in cross-cultural research. (1) Do the concepts under comparison correspond? While specific concepts in different cultures may have identical definitions, the meaning that is construed may be different in different contexts. Meaning is defined by the participant(s) and is based on their own historical, social, and cultural framework. Warwick and Osherson (1973) emphasized the problematic nature of operational and linguistic formulation in identifying corresponding concepts along the “general-specific continuum.” In other words, are concepts such as “health literacy” defined both operationally and linguistically the same in both contexts under study? (2) How is the correspondence of measurements to be assessed? Warwick and Osherson (1973) appealed to the comparativist researcher to question the valid indicators or variables as such concepts will be defined and operationalized culturally. In the global north, the ability to “access” health care could be defined as the ability to purchase affordable health insurance. In the global south, “access” to health care may be culturally defined as the ability to
be seen by a doctor. Another example of valid indicators is the concept of “time,” which has a culturally diverse interpretation. In some indigenous cultures, the concept of time is derived by the planting and harvesting of crops, while nomadic tribes often follow the cyclical nature of the seasons to ensure their livestock have pastures to graze in. These are much different concepts then the Western idea of clock-management. (3) Can the problem of how concepts are linguistically expressed be resolved? The primary way in which humans make meaning of their lifeworlds is through mediation tools and artifacts. It can be argued that the most significant mediating artifact of culture is language. Language used to describe a concept in one culture may be different in another. The nuances and semantic fuzziness of language can be difficult to discern even when trying to understand one’s own culture. Thus, Warwick and Osherson (1973) recommended that the researcher be cautious of language issues that may arise. They advocated employing a multilingual expert in the formation and interpretation of research tools and in eliminating vague and ambiguous language that might construe different meanings in different contexts.

**Equivalence.** Equivalence is defined in the Merriam-Webster Online Dictionary (2013) as “the quality or state of being alike: the quality or state of having the same value, function, meaning, etc. Similarly, the Cambridge Dictionaries Online (2013) define the concept as “something that is the same amount, price, size, etc. as something else or has the same purpose as something else.” Thus, if we were to compare these two definitions, the *tertium comparationis* contains three elements: a relationship between two concepts, a concept of similarity, and a set of qualities. In cross-cultural research, the term equivalence and its many types (language equivalence, conceptual equivalence, content equivalence, etc.) are defined in varying degrees of agreement. From the literature reviewed, scholars agreed and understood equivalence as the
reliability of the measurement instrument to compare concepts cross-culturally (Herdman, Fox-Rushby, & Badia, 1997). Raivola (1985) stated, “International comparison makes the research worker very effectively aware of the danger that one’s assumptions, system of values, and prejudices could lead to a cultural bias in the gathering and interpretation of data” (p. 366). The varying degrees of variation between scholars’ definitions of equivalence came in defining the types of equivalence. For example, some authors referred to technical equivalence as the method used to obtain data, while others referred to the technical features of language (pp. 238-239).

In seeking to define a common element of equivalence, Nowak (1977) identified five types of relationship that must be contextually defined and understood when conducting cross-cultural research. These relationships have three characteristics. (1) Phenomena are observed or judged in the same way in different cultures (cultural equivalence). The assumption of convergence is a description of the process leading to isomorphism. The “isomorphic” elements of the system are those phenomenon or properties that hold true in both contexts. This can help us understand smaller phenomenon within the scope of larger more established universal laws/theories. Thus as the two units converge towards uniformity, the comparative analysis should focus on the process of isomorphism through analogy (similarities), homology (a relationship between two concepts based on ancestry and historicity), and explanation (rules and norms that lead towards the ideal. This allows the researcher to look at a case or static snapshot of the process towards the ideal and understand the phenomenon at its particular stage of development.

(2) The objects of comparison (people or institution) are part of a higher level of systems that have earlier definition as equivalents (contextual equivalence). Zelditch (1971) stated, “If the meaning of that which we compare depends upon the context out of which it is measured, the
context ought to be taken into account in making the comparison” (p. 314). Methodologically, measurements of cross-cultural phenomenon will often be made in different languages and different conditions affected by contextual social and cultural practices. To ensure comparability, the equivalence of object and the units of comparison must be defined at the same level.

(3) The objects have the same role in the functioning of the system (functional equivalence). Functional equivalence refers to the idea that the same function may be performed by alternative institutions or in alternative ways. This does not imply that it is required or even necessary to find measures that are equivalent in all respects. Rather, the importance is that the “measures be equivalent in those respects that are relevant to the problem at hand” (Zelditch, 1971, p. 315). For example, motivation to eat more healthfully may differ among individuals, but the substantive content of the act in terms of lowering blood pressure is equivalent. Moving along the lines of the “general-specific continuum,” independent variables like attitude and behavior might be defined in a way that they have a more general relevance to the dependent variable or set of systems for which an explanation is sought. Another way in which variables may become more functionally equivalent is to break them down into component parts. As Raivola (1985) stated, “The units being compared can be powerfully described by means of comparison variables, which according to Nurmi form equivalence criteria for the classification of phenomena. Such equivalence classes created for descriptive purposes make a preliminary comparison possible and form the first step in constructing a theory” (p. 363). The point in both these examples is that finding functional equivalence in two different systems might be marred by their multi-dimensions. Thus, the comparativist might define the theoretical purpose of the systems for which an explanation is sought and measure its variables by its sub-dimensions.
(4) Phenomena correlate empirically in the same way with the criterion variable (correlative equivalence). Reliability and validity are key concepts in the measurement process. Their relationship is such that reliability refers to the stability of a test measure or protocol, while validity is the degree to which a measuring instrument measures what it is purported to measure. Nowak has operationalized this method of showing equivalence. He suggested that to establish correlative equivalence, the comparative scholar must establish both reliability and validity. This is to say, that just because a measurement tool is considered stable does not mean that the results can be assumed valid.

(5) The phenomena under comparison derive from the same source, namely, the same conceptual class (genetic equivalence). Conceptual equivalence or genetic equivalence exist when the meaning of stimuli, concepts, methods, etc., are similar or identical for culturally or ethnically different respondents. Similar to the types of equivalence already discussed, it is not imperative for variables to be exact across multiple systems; rather their meaning is relevant to the key concept for which an explanation is sought.

Implications of “Comparability” and “Equivalence” for the current study.

Comparative research has proven to be an effective strategy for understanding social realities. Making comparisons among countries, cultural groups, and communities gives the researcher an opportunity to deconstruct and analyze the dominant discourses that have shaped how groups make meaning of their lifeworld. Comparative research also makes known possible perceptions that shape community values and behaviors. The current research does carry an essence of comparison due to its centering in two cross-cultural locations, Kabale, Uganda and Moshi, Tanzania. One of the purposes of this current study is to transcend the Western discourses of modernization and health to determine culturally relevant community-based health interventions
in Uganda and Tanzania. Additionally, insights gained in this research will enlighten adult educators and policy makers on social and structural realities that influence accessibility, understanding, and use of hypertension information for rural communities in Uganda and Tanzania.

Cultural equivalence. Nowak (1977) defined cultural equivalence as phenomena that are observed or judged in the same way in different cultures. The phenomenon in this study is hypertension health literacy and its common elements: access, understanding, and use. The two rural communities that I investigated in Kabale, Uganda and Moshi, Tanzania shared similar and different systems of beliefs, customs, and ways of knowing in regards to health, but the phenomenon was observed the same way. Using Airhihenbuwa’s (1995) PEN-3 conceptual model, Spradely’s (1980) participant observation and interview protocol, and Charmaz’s (2006) data analysis protocol, the values of traditional beliefs, relationships, and perceptions that undergird the community’s access, understanding, and use of hypertension information were elucidated and compared. Additionally, from an underlying perspective of culture, the hegemonic discourses that have shaped this region and its perceived relation to the Western world are the same. For example, each of these communities has been labeled “underdeveloped” and in need of Western intervention as a requirement of modernization. Their tribal and collective communities have been disregarded in the name of autonomy and individualism. The borders that situated tribes were re-drawn by the same colonial actors concerned with complicity and exploitation of natural resources. The missionaries introduced reading through colonial schools that offered instruction to the “native” that would serve the colonial powers. More recently, Western literacy myths have promoted reading as the panacea for all social ills and relegated oral ways of knowing as “traditional,” not “scientific.” These are just some of the
discourses that have come to define the rural African community by the benevolent actors that seek to bring light to the natives’ darkness.

**Contextual equivalence.** Nowak (1977) understood contextual equivalence to be the objects of comparison (people or institutions) as part of a higher level of systems that have earlier definition as equivalents. This study situates the objects of comparison within rural communities of East Africa, specifically Kabale, Uganda and Moshi, Tanzania. These communities are part of indigenous tribal societies that value collective living and oral ways of knowing. Historically, tribes from both areas participated in the trading of gold, ivory, slaves, and commercial goods connecting tribal societies via the lakes that surround the region. Based on the very nature of trade, the movement of people, merchandise, customs, and ideas overlapped in tribal societies. This would infer that collective knowledge in regards to health and disease has migrated between tribal societies.

**Functional equivalence.** Functional equivalence refers to the idea that the same function may be performed by alternative institutions or in alternative ways. This does not imply that it is required or even necessary to find measures that are equivalent in all respects. In comparing two communities, it will be imperative to focus on the functional equivalence in this project. This is to say that while language, practices, and beliefs might be very different in how each community perceives access, understanding, and use of hypertension health literacies, a culturally mediated health intervention is the same. The PEN-3 model will be invaluable in this effort to maintain functional equivalence as it will provide a systematic yet flexible tool for locating health perceptions within each culture. This study will provide opportunities to compare these health perceptions illuminated through this process.
Conceptual equivalence. The proposed study attempts to discover local meaning of hypertension health literacies in Kabale, Uganda and Moshi, Tanzania prior to making comparisons. Thus, the conceptual equivalence in this current study meant developing an understanding of access, understanding, and use of hypertension information from an insider’s perspective. This developed an understanding of the complexity of culture as it related to community health beliefs and behaviors. Furthermore, it illuminated the challenges faced by these rural communities situated within the current bio-medical discourse. Comparability and equivalence were significant fundamental concepts for research that sought to understand how individuals make meaning of access, understanding, and use of hypertension information. These concepts provided a foundation for conducting a comparative study and had direct implications for my research.

Site Selection

The current comparative case study was conducted in Kabale, Uganda and Moshi, Tanzania. More specifically, in Uganda, formal interviews were conducted with participants from villages located in Kabale Town, Rubira, Kicumbi, Lake Bunyonyi, and Kisoro. In Tanzania, formal interviews and focus groups were conducted with participants from villages located in three districts (Hai, Moshi Rural, and Rombo) surrounding Moshi Urban. Specifically, interviews were conducted in Moshi Town, Machame, Mwenge, and Kibosho. Countries and research participants were selected through purposeful sampling based on their comparability and equivalence.

Dr. Geoffery Anguyo, medical doctor and founder of the Kigezi Healthcare Foundation (KIHEFO), in Kabale, Uganda has been a research partner and friend to a longtime friend of mine, Dr. John Doces, assistant professor of political science at Bucknell University. Through
my friendship with Dr. Doces, I was able to connect with Dr. Anguyo via email prior to conducting my fieldwork. Based on the stated purpose of my research and its equivalence and comparability to my other site location, Dr. Anguyo invited me to conduct research within his community. He wrote a letter of permission to conduct research in the community and provided access to key elders, health professionals, traditional healers, community leaders, and research participants diagnosed with hypertension. Dr. Anguyo also provided a translator from his team.

In March of 2013, I traveled to Moshi, Tanzania to visit relatives working with the Tanzania Women’s Research Foundation (TAWREF) and to conduct an environmental scan of health literacies in local clinics, hospitals, and villages. During this time, I received the name of Dr. Karen Yeates, nephrologist, assistant professor, and lead investigator for Dream Global, a research team diagnosing hypertension and engaging in action programs to lower blood pressure in Tanzania and Northern Saskatchewan. She is also the founder of the Pamoja Tunaweza Women’s Center located in Moshi, Tanzania (http://www.pamojatunaweza.com/). Through multiple SKYPE and email conversations about my interests in health literacy and hypertension, we came to the mutual conclusion that my research would be beneficial to the rural communities she works with in Tanzania. Dr. Yeates and the team at Pamoja Tunaweza Women’s Center provided me access to research participants as well as the use of a translator.

**Research Site One: Kabale, Uganda**

Kabale is located in Kabale District, in the Kigezi region of southwest Uganda. The center of town is marked by small retail shops that provide goods and services to truckers using the main road to transport goods to the capital cities of Kampala in the north and Kigali, Rwanda to the south. Another road just outside Kabale will route travelers westward to the Democratic
Republic of Congo. Although primarily used as a transportation hub, Kabale does attract tourists on their way to Bwindi National Park to track endangered gorillas.

Other key demographics include:

*Kabale General Population*: 498,300
**Language:** Rukiga, Luganda, English

**Administrative Units:** Kabale is predominantly occupied by Bakiga, Banyankole, Banyarwanda. Other tribes living in this area include: Baganda, Acholi, Luo and Bafumbira. There are three counties, Rubanda, Rukiga and Nدورwa. The rural counties are divided into 17 sub-counties and 106 parishes, which are further divided into 1,229 villages/cells. The municipality has three divisions with 12 wards and 75 villages. This makes a total of three rural counties, one municipality, 118 parishes, and 1,374 villages (Moses, 2009).

**Employment:** Eighty-five percent (85%) of the population in Kabale are engaged in full-time agriculture. Of this segment, 84.6% are dependent on subsistence agriculture as the primary source of livelihood.

**Agriculture:**
- Sweet and Irish potatoes
- Sorghum
- Beans
- Pigeon peas
- Wheat
- Bananas

**Medical Resources:** Kabale offers one governmental hospital with 212 beds, 48 other government health units, 16 non-governmental health units, 13 private clinics and 14 drug shops. The public health directorate has 15 doctors, 102 nurses, 39 paramedics, and approximately 80 support staff.

**Hypertension prevalence:** One study conducted in Rukiga estimated hypertension prevalence to be 30.1% (Wamala et al., 2009).

**Research Site Two: Moshi, Tanzania**

Moshi, Tanzania is the regional capital of the densely populated Kilimanjaro Region. Moshi Town (*Moshi Urban*) is a popular base for people trekking up Mount Kilimanjaro. It is
also the coffee-producing center of Tanzania and close to the famous Ngorongoro Conservation Area, Lake Manyara National Park, Tarangire National Park and Arusha National Park.

The Kilimanjaro Region of Tanzania is comprised of seven districts with an estimated population of 1.6 million people (Tanzania National Bureau of Statistics, 2012). Formal interviews and focus groups were conducted with participants from villages located in three districts (Hai, Moshi Rural, and Rombo) surrounding Moshi Town.

![Figure 3-3. Moshi Urban (Mount Kilimanjaro in the background)](image)

Other key demographics include:

*General Population (Hai, Moshi Rural, Rombo):* 936,000

*Language:* Swahili

*Employment:* Subsistence farming. The order of crop yield and importance in the district:

- Coffee – Small farmer and Estate
- Barley
Medical Resources: Each district where research participants resided had a designated district hospital. Additionally, Kilimanjaro Christian Medical Center (KCMC), the largest referral hospital in the Northern Zone of Tanzania, was located in Moshi.

Hypertension Prevalence: A meta-analysis of prevalence data pooled from different regions of the world concluded that in 2005 Tanzania had an adult hypertension prevalence of 31.3% (Kearney et al., 2005).

Sampling

Research Participants-Kabale, Uganda. Research participants in Kabale, Uganda were purposefully identified through two primary methods. First, Dr. Anguyo and his medical team conduct health camps in villages surrounding Kabale Town. Due to the many physical barriers that exist in accessing the formal health care system (discussed in Chapter 4), a health camp is an effective way to deliver medical services to villages surrounding Kabale Town. During my investigation, I participated in three health camps conducted in the villages of Rubira, Kicumbi, and Kisoro. Sitting with a doctor or nurse in a small makeshift tent, I observed numerous patient visits. If a patient’s blood pressure was greater than 140 (systolic) or 90 (diastolic), they were given a diagnosis of hypertension. Depending on the severity of their diagnosis, they were either prescribed medication or briefly consulted on lifestyle modifications (e.g., lowering salt intake). In each case, the patients were referred to either Kabale Regional Referral Hospital or Dr. Anguyo’s Kigezi Health Care Center for a follow-up up screening. After the doctor/patient consult, with patient consent, I conducted my interview. Second, participants were identified
during their visit to Dr. Anguyo’s clinic in Kabale Town. Participants identified at the clinic were typically being seen for infectious diseases, primarily HIV/AIDS, and their hypertension was asymptomatic of their other disease. Upon individual consent, I interviewed participants at the clinic who were identified as hypertensive.

My fieldwork in Uganda yielded 22 semi-structured interviews conducted with adult participants diagnosed with hypertension. Of the 22 research participants, 18 were female and 4 were male. It was both described and observed in Uganda that women are the primary caregivers for children and responsible for household health. Accordingly, both health camps and doctor visits were overwhelmingly attended by women and small children. Ages for participants were difficult to determine as date of birth is not traditionally kept in rural Ugandan societies. For example, I had at least 10 women tell me they were 35 years old after I listened to the nurse describe symptoms of menopause to them. It appeared that 35 was the de-facto age for village women. Nonetheless, strictly based on observation and discussions with the nurse or doctor, research participants’ ages ranged from 35-64 years old. Semi-structured and informal interviews were also conducted to inform and validate the case with village elders, a traditional healer, medical officers and nurses, ministry of health officials, and rural villagers.

**Research Participants-Moshi, Tanzania.** Research participants in Moshi were purposefully identified through my interactions with the team at the Pamoja Tunaweza Women’s Center. While conducting my fieldwork, I participated in a hypertension screening sponsored by Vasso Agroventures Ltd., a Holland-based flower company located in Kibosho. Similar to my experience in Uganda, I sat with a nurse as blood pressure measurements were taken. Patients diagnosed with hypertension were directed to a room where they consulted with a doctor about their condition. After the doctor/patient consult, with patient consent, I conducted my interview.
In Machame, I was connected with a local nurse who led me through her village as she conducted blood pressure screenings. Individuals that were identified and diagnosed as hypertensive, upon their consent, were interviewed. They were also referred by the nurse to the area hospital for follow-up care. Participants from Mwenge were identified through a local elder who lived in the area. Four adult women and one adult male, all previously diagnosed with hypertension, consented to be interviewed for this comparative research study.

My fieldwork in Tanzania yielded 16 semi-structured interviews conducted with adult participants and two focus groups conducted with five adult participants diagnosed with hypertension. Of the 21 research participants, 14 were female and 7 were male. Similar to Uganda, it was observed that women were the primary health providers in the family, yet the required screening of employees by Vasso Agroventures in Kibosho generated six males for this comparative research study. Also similar to Uganda, ages for participants were difficult to determine as date of birth is not traditionally kept in rural Tanzanian societies. Strictly based on observation and discussions with the nurse or doctor, research participants’ ages ranged from 35-65 years old. Semi-structured and informal interviews were also conducted with village elders, medical officers and nurses, ministry of health officials, and rural villagers to inform and validate this current comparative research.

Data Collection

This current comparative research employed qualitative data collection methods. Table 3-1 outlines the approaches and aligns the research questions with the methods.
### Table 3-1

**Data Collection Matrix**

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Participants</th>
<th>Method Used</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Q1). How do adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania access, understand, and use hypertension information?</td>
<td>Kabale, Uganda (hypertensive participants = 22; 18 female, 4 male)</td>
<td>Semi-structured interview; Informal interviews; Observation; Focus groups; Secondary data analysis</td>
<td>(1) Open coding to summarize and categorize data, (2) developing categories, sub-categories, and dimensions based on the open coding, (3) establishing conceptual categories</td>
</tr>
<tr>
<td>(Q2). What barriers exist in accessing, using, and understanding hypertension information and how do existing barriers impact hypertension care?</td>
<td>Moshi, Tanzania (hypertensive participants = 21; 17 female, 7 male)</td>
<td>Additional consenting participants: Traditional Healer, medical officers, nurses, village elders, rural villagers</td>
<td>Rob’s conceptual model; PEN-3 conceptual Model</td>
</tr>
<tr>
<td>(Q3). What cultural perceptions hinder or enable access, understanding and use of hypertension information for adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania?</td>
<td>Additional consenting participants: Traditional Healer, medical officers, nurses, village elders, rural villagers</td>
<td>Semi-structured interview; Informal interviews; Observation; Focus groups; Secondary data analysis</td>
<td>(1) Open coding to summarize and categorize data, (2) developing categories, sub-categories, and dimensions based on the open coding, (3) establishing conceptual categories</td>
</tr>
<tr>
<td>(Q4). What are the differences and similarities between access, understanding, and use of hypertension information for individuals in Kabale, Uganda and Moshi, Tanzania?</td>
<td>Kabale, Uganda (hypertensive participants = 22; 18 female, 4 male)</td>
<td>Semi-structured interview; Informal interviews; Observation; Focus groups; Secondary data analysis</td>
<td>(1) Open coding to summarize and categorize data, (2) developing categories, sub-categories, and dimensions based on the open coding, (3) establishing conceptual categories</td>
</tr>
</tbody>
</table>

**Observation.** Denzin and Lincoln (2005) distinguished between three types of observation-based research: participant observation, reactive observation, and unobtrusive observation. Participant observation, rooted in traditional ethnography, is “a process of learning
through exposure to or involvement in the day-to-day or routine activities of participants in the research setting” (LeComte & Schensul, 1999, p. 91) It allows the researcher to gain insight and understanding into the environmental, social, and cultural context of participants’ lives. Furthermore, Mack, Woodsong, MacQueen, Guest, and Namey (2005) suggested participant observation is useful for understanding “the relationships among and between people, contexts, ideas, norms, and events; and people’s behaviors and activities – what they do, how frequently, and with whom” (p. 14). Reactive observation is rooted in experimental design and is “associated with controlled settings” (Denzin & Lincoln, 2005, p. 732) whereby participants are aware they are being observed, but interaction with the researcher is limited to responses in the research protocol. Unobstructive observation is “conducted with people who are unaware of being studied” (p. 732).

Independent of the type of observation research conducted, Denzin and Lincoln (2005) suggested there are three methods “of increasing levels of specificity” (p. 732): descriptive observation, focused observation, and selective observation. Descriptive observation seeks to annotate and describe all details that are being observed. Focused observation targets a specific issue or defined category of activity within the context of the larger case, while selective observation focuses “on a specific form or a more general category” (p. 732).

The current comparative research study employed both participant and unobstructive observation. According to Dewalt & Dewalt (2010), participant observation is a “method in which an observer takes part in the daily activities, rituals, interactions, and events of the people being studied as one of the means of learning the explicit and tacit aspects of their culture” (p. 260). Bernard (2006) identified the following five reasons for conducting participant observation: (1) Opening up the area of inquiry to collect a wider range of data, (2) reducing the
problem of reactivity, (3) enabling researchers to know what questions to ask, (4) gaining intuitive understanding of the meaning of your data, and (5) addressing problems that are simply unavailable to other data collection techniques (pp. 354-356). Participants both enhanced the quality of data collected as well as functioned as a tool of analysis. It also allowed me to check against participants “subjective reporting” (Mack et al., 2005, p. 14), and gave me the flexibility to modify my research questions based on new information important for understanding the case. More so, participant observation moved me beyond my own personal experience to an open sensitivity to what participants react to as significant, meaningful, and important. It led to a deeper understanding of the complexities and “multiple truths” (Emerson, Fretz, & Shaw, 1995, p. 3) that shape participants’ lives and uncover implicit assumptions that are not accessible through other data collection methods. Ultimately, it allowed me to “get close to those studied as a way of understanding what their experience and activities mean to them” (Emerson et al., 1995, p. 12). I utilized Spradley’s (1980) systematic approach to participant observation to guide my fieldwork (Table 3-2).

Table 3-2

*Spradley’s Participant Observation Protocol*

<table>
<thead>
<tr>
<th>Observation Focus</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space</td>
<td>Layout of the physical setting</td>
</tr>
<tr>
<td>Actors</td>
<td>The names and relevant details of the people involved</td>
</tr>
<tr>
<td>Activities</td>
<td>The various activities of the actors</td>
</tr>
<tr>
<td>Objects</td>
<td>Physical elements</td>
</tr>
<tr>
<td>Acts</td>
<td>Specific individual actions</td>
</tr>
<tr>
<td>Events</td>
<td>Particular occasions</td>
</tr>
<tr>
<td>Time</td>
<td>The sequence of events</td>
</tr>
<tr>
<td>Goals</td>
<td>What actors are attempting to accomplish</td>
</tr>
<tr>
<td>Feelings</td>
<td>Emotions in particular context</td>
</tr>
</tbody>
</table>
Unobstructive observation was my sensory guide on the ground. It allowed me to openly observe the environment and record the details that informed it. This included details about the physical setting, people in the setting, and those impressions available to the senses—sounds, smells, and tastes of the natural environment. It was a direct access to my initial impressions and interpretation of the environment. The interconnected activities of participant observation and unobstructive observation allowed me “to develop vicarious experiences for the reader, to give them a sense of ‘being there’” (Mack et al., 2005, p. 63).

To capture and record my observations in the field, I employed Emerson et al.’s (1995) systematic protocol for writing fieldnotes. According to Emerson et al., “fieldnotes are accounts describing experiences and observations the researcher has made while participating in an intense and involved manner” (p. 4) further adding “it involves active processes of interpretation and sense-making: noting and writing down some things as ‘significant,’ noting but ignoring others as ‘not significant,’ and even missing other possibly significant things altogether” (p. 8). Emerson et al.’s focus is on a “participating-in-order-to-write fieldwork style which confronts writing issues directly and immediately in the field…and brings to the fore the interconnections between writing, participating, and observing as a means of understanding another way of life” (p. 19). This is described more fully in Table 3-3.

Table 3-3

*Emerson’s Fieldnotes Protocol*

<table>
<thead>
<tr>
<th>Field Note Type</th>
<th>Description</th>
<th>When to apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jotting</td>
<td>Brief written records of to-be-remembered observations. Key phrase: If you don’t write it down, it’s gone.</td>
<td>In the field, on-going</td>
</tr>
<tr>
<td>Field Note Type</td>
<td>Description</td>
<td>When to apply</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Journal/Reflection Diary</td>
<td>A personal record of how you feel and perceive your relationship with others in the field.</td>
<td>At the desk</td>
</tr>
<tr>
<td>Logbook</td>
<td>A running account of how time is going to be spent and how it is actually spent</td>
<td>At the desk</td>
</tr>
<tr>
<td>Analytic Memo Book</td>
<td>A grounded theory approach to field note analysis. A series of elaborations on discrete phenomena, topics or categories.</td>
<td>At the desk</td>
</tr>
</tbody>
</table>

These protocols ensured I was using a systematic and scientific approach to collecting and recording observation data.

**Interviews.** To understand health literacy and its common attributes is a process of interpreting an individual’s or group’s shared norms, values, beliefs and ideologies as they are operationalized through behavior. While observation led to rich data, it only permitted interpretation based on my understanding of the environment. To achieve a thick description and interpretation of multiple views within a community, interviews were required (Stake, 1995). Interviews helped me to further understand how participants thought, behaved, and solved problems. As Rallis and Rossman (2011) stated, “Interviews are the foundation of qualitative research and essential in understanding how participants view their world” (p. 176). Kvale and Brinkmann (2009) further suggested,

The research interview is based on the conversations of daily life and is a professional conversation; it is an inter-view, where knowledge is constructed in the inter-action between the interviewer and interviewee. An interview is literally an inter-view, an inter-change of views between two persons conversing about a theme of mutual interest. (p. 2)

Additionally, interviews exposed perceptions of problems, such as access barriers to hypertension literacies and how communities address such problem. In this sense, health literacy
could be understood as “a set of solutions devised by a group of people to meet specific problems posed by the situations they face in common”…a “living, historical product of group problem solving” (Van Maanen & Barley, 1985, p. 33). Finally, interviews helped resolve conflicts in data collection as I had the opportunity to ask participants about contradictory data.

There are multiple types of interviews: group, empathetic, brainstorming, exploratory, formal, informal, structured, semi-structured, and unstructured. The selection of the type of interview is predicated on multiple factors such as the research questions, the role of the interviewer, the question format, and the research purpose (Denzin & Lincoln, 2005). Based on my stated research questions, this current comparative research used two types of interviews: semi-structured and focus groups.

**Semi-structured interviews.** Unlike structured interviews, which contain a structured sequence of questions and a limited set of “response categories” (Denzin & Lincoln, 2005, p. 702), semi-structured interviews are flexible and typically structured around a topic or theme to be covered. The aim is to understand the respondents’ perspectives rather than make generalizations about behavior. Semi-structured questions gave participants the opportunity to reveal meaning through detailed descriptions. Additionally, due to its flexible nature, the researcher can probe areas of complex meaning for clarification and identify potential questions to address in future interviews.

Pertinent to semi-structured interviews is developing questions that lead to detailed answers. Often, semi-structured interviews are preceded by observation as well as informal and unstructured interviews that allow the researcher to develop a thorough understanding of the case and develop relevant and meaningful questions that elicit thick description. To inform my
interview design and protocol, I employed Spradley’s (1980) descriptive interview protocol as described in Table 3-4.

Table 3-4

**Spradley’s Descriptive Interview Protocol**

<table>
<thead>
<tr>
<th>Type of Question</th>
<th>Characteristics</th>
<th>Example Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Tour Questions</td>
<td>Takes place is a particular locale: a hospital, a home, etc.</td>
<td>Could you describe a typical visit to the doctor’s office?</td>
</tr>
<tr>
<td></td>
<td>They can inform about <em>space, time, events, activities, or objects.</em></td>
<td>Can you read this hypertension brochure and explain it to me?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Could you show me around the clinic?</td>
</tr>
<tr>
<td>Mini-Tour Questions</td>
<td>Similar to grand tour questions, but deals with a smaller unit of the experience</td>
<td>Can you explain what you do to eat healthy?</td>
</tr>
<tr>
<td>Example Questions</td>
<td>Take a single act or event identified and ask for an example</td>
<td>Can you give me an example of not understanding what the doctors said to you at your last visit?</td>
</tr>
<tr>
<td>Experience Questions</td>
<td>Asks participants for any experiences they have had in a particular setting.</td>
<td>Can you tell me about your experience as a rural health worker in Machame, Tanzania?</td>
</tr>
<tr>
<td>Native-Language Questions</td>
<td>Asks participants to use the terms and phrases most commonly used in the cultural scene</td>
<td>How would you talk about blood pressure?</td>
</tr>
<tr>
<td>Probing Questions</td>
<td>Used when further clarification is required or to elicit more information</td>
<td>Can you be more specific?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Can you provide me with an example?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What do you think?</td>
</tr>
</tbody>
</table>

**Focus groups.** According to Powell and Single (1996), a focus group is defined as “a group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research” (p. 499). Krueger (2009)
expanded on this definition and noted that “focus groups are a special kind of group…

participants are selected because they have certain characteristics in common that relate to the

topic of the focus group” (p. 2). While sharing similar attributes to other types of interviews,

researchers (Harrell & Bradley, 2009; Krueger, 2009; Powell & Single, 1996) do suggest that

focus groups have distinct advantages over traditional one-on-one interviews such as: the ability
to collect a wide range of opinions on the stated topic or category; ensuring research validity
through concurrent uses of data gathering methods; providing insight into perceptions, feelings,
and thinking on the stated topic or category; generating respondent recall; resolving conflict of
information; and elucidating participant concerns towards stated topic or category. Conversely,
they caution researchers that focus groups require a great deal of skill to be led effectively and
produce desired results.

Questions developed for focus group interviews followed Spradley’s interview protocol
and incorporated Krueger’s (2009) recommendation for asking “powerful” (p. 6) questions. The
focus group design followed Krueger’s (2009) protocol (Table 3-5).

Table 3-5

Krueger’s Focus Group Protocol

<table>
<thead>
<tr>
<th>Opening</th>
<th>Questions</th>
<th>Systematic Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Welcome</td>
<td>• Use open-ended questions</td>
<td>• Start while still in the group--use probing questions</td>
</tr>
<tr>
<td>• Topic Overview</td>
<td>• Avoid dichotomous questions</td>
<td>• Immediately after the focus group: Draw a diagram of the</td>
</tr>
<tr>
<td>• Ground Rules</td>
<td>• Avoid &quot;Why&quot; question Ask about attributes</td>
<td>seating arrangement; Note themes, hunches, interpretations,</td>
</tr>
<tr>
<td>• Opening Question</td>
<td>• Use &quot;think back&quot; questions</td>
<td>ideas Lable and file field notes, tapes and materials</td>
</tr>
<tr>
<td></td>
<td>• Use different types of questions (Opening</td>
<td>• Within hours of conducting focus group: Review field notes;</td>
</tr>
<tr>
<td></td>
<td>questions, transition questions, key questions)</td>
<td>Prepare memo in field journal</td>
</tr>
<tr>
<td></td>
<td>• Use questions that get participants involved</td>
<td>• Later--within days analyze the</td>
</tr>
</tbody>
</table>
• Go from general to specific
• Be cautious of serendipitous questions

Whether conducting semi-structured interviews or leading a focus group, to be successful one must plan in advance. Stake (1995) suggested that “it is terribly easy to fail to get the right questions asked, awfully difficult to steer some of the most informative interviewees on to your choice of issues” (p. 64). Therefore, Creswell (1995) suggested a good interviewer must:

- Identify interviewees based on purposeful sampling.
- Determine what type of interview is practical and will net the most useful information to answer the research questions.
- Use adequate recording procedures.
- Design and use an interview protocol.
- Refine the interview questions and procedures further through pilot testing.
- Determine the place for conducting the interview.
- Obtain consent for the interview.
- During the interview, stay to the questions, complete the interview within the time specified. (p. 134)

Finally, throughout the data collection process, the rapport I had with my translators and informants was pertinent to gaining access to participants. As Denzin & Lincoln (2005) stated, “The researcher must find an insider—a member of the group being studied—who is willing to be an informant and act as a guide and translator of cultural mores and, at times, of jargon or language” (p. 132).

**Documents and artifacts.** As the stated phenomenon of this research is hypertension health literacy, documents played an important role in my understanding of the formal and
informal health system(s) and research participants’ ability to access, understand, and use hypertension information within these systems. On a previous trip to Tanzania, I discovered the problematic nature by which posters, brochures, and pamphlets were used to provide rural community members with information on topics such as malaria, HIV/AIDS, and maternal health. It became apparent through observation that this information was rarely given to patients. Additionally, I observed, in two different rural clinics, boxes of brochures stacked in back rooms covered in dust. Many of the brochures were developed in Dar Salaam or by outside agencies and were not relevant to the rural context of the community. The rhetoric of policy makers implementing effective health campaign programs was not corroborated by evidence on the ground.

Other ways I used documents in this comparative research included:

- Content analysis of media related hypertension literacies i.e. newspaper, television, radio
- Historical records and reports of hypertension in the area
- Patient history reports
- Medical officer notes
- Government policy documents on hypertension
- Government policies on health

**Data Analysis**

According to Merriam (1998), the case study does not claim any specific data collection methods, but “focuses on holistic description and explanation” (p. 29). Bogdan and Biklen (1998) further stated, “Analysis involves working with data, organizing them, breaking them into manageable units, synthesizing, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others” (p. 157). This current research used a
grounded theory approach to data analysis. I selected grounded theory (Figure 3-4) because it employed a systematic approach by which to understand conceptual themes, structures, and relationships that constructed hypertension literacies for individuals and communities in Kabale, Uganda and Moshi, Tanzania.

Figure 3-4. Phases of Grounded Theory Analysis

**Phase I: Open Coding/Initial Coding**

The first phase of grounded theory analysis is termed *open coding* by Glaser (1978), Strauss (1987), and Strauss and Corbin (1998). According to Glaser (1978), the goal of open coding is “to generate an emergent set of categories and their properties which fit, work and are relevant for integrating into a theory” (p. 56). Charmaz (2006) used the term *initial coding* to describe this first phase and views this initial step as the researcher’s first attempt to categorize and summarize the data (p. 43). Based on these definitions, I employed Charmaz’s approach to the first phase of my data analysis. During the initial coding phase, Charmaz’s method (1) treats
all data and themes equally, (2) remains open to all theoretical possibilities, (3) defines text through action, not pre-existing categories, and (4) seeks to define categories and properties after initial line-by-line coding is complete (Charmaz, 2006, pp. 47-50). This is opposed to open coding as described by Glaser (1978), in which categories, sub-categories, properties and dimensions are defined during phase I of the analysis (pp. 56-58).

Charmaz (2006) listed two approaches to conduct initial coding: line-by-line coding and incident-to-incident coding (pp. 50-53). Line-by-line coding is a systematic approach that names each line of the data (p. 50). It treats each line equally that may or may not contain important data that relates to the research question. Incident-to-incident coding compares incidents within the data that helps the researcher conceptualize incidents that were coded “earlier in the data” (p. 53). This comparative approach is often used with observational data in which incidents can be holistically compared and conceptualized better than if a line-by-line method were employed (p. 53). As my primary method of data collection included semi-structured interviews and participant observation, line-by-line and incident-to-incident methods were used.

In an effort to preserve the fluidity of the participant’s experience, I relied on practices informed by Glaser (1978) and Charmaz (2006) to conduct my line-by-line coding using gerunds or action words as opposed to their noun forms. Gerunds help the researcher to stay close to the data, inform participant perspective, and dissuade the researcher from turning actions into topics (Charmaz, 2006, p. 49). Additionally, I will critically examine the data in consideration of the following questions:

- What process(es) is (are) at issue here? How can I define it?
- How does this process develop?
- How does the research participant(s) act while involved in the process?
• What does the research participant(s) profess to think or tell while involved in this process?
• When, why, and how does the process change?
• What are the consequences of the process? (p. 51)

**Phase II: Categories**

The second phase of grounded theory analysis is developing categories, sub-categories, and dimensions based on the initial coding. As already stated, Charmaz (2006) completes this action during the second phase and uses the term *focused coding* while Glaser (1978), Strauss (1987), and Strauss and Corbin (1998) defined these actions as part of the open-coding phase. Similar in their approach, both Charmaz (2006) and Glaser (1978) view the goal of this second phase (focused coding or *selective coding* using Glaser’s term) to create category definitions and their properties. As Glaser (1978) stated: “The goal of the analyst is to generate an emergent set of categories and their properties which fit, work, and are relevant for integrating into a theory” (p. 56). In developing the categories from my line-by-line coding, I critically examined the data for processes that might establish a definition that informs the participant’s experience. Based on those properties, I determined the category and then tried to define what they mean in relation to the research questions, my own interpretive voice, and the participant’s experience.

**Phase III: Conceptual Categories**

The third phase in grounded theory analysis is establishing conceptual categories. According to Glaser (1978), “theoretical codes conceptualize how the substantive codes may relate to each other as hypotheses to be integrated into theory” (p. 72). Additionally, Strauss (1987) suggested establishing conceptual categories is a way to view the data both structurally and interactionally, which “results in the detailed codes connecting specific conditions with
specific interaction strategies” (p. 78). Glaser instructs the researcher to “continually watch how they are putting the theory together and take their cues from the data” (p. 73).

**Validity**

Perspectives on validity and its attributes are multiple in the scholarly literature. Lincoln and Guba (1985) understood validity as the use of alternative methods to establish the trustworthiness of a study. Lather (1991) suggested qualitative research should move beyond the “closed narrative with a tight argument structure to a more open narrative with holes and questions and an admission of situatedness and partiality” (as cited by Creswell, 2007, p. 204). Understood as both a process and a strategy, Creswell (2007) considered validation to be “an attempt to assess the ‘accuracy’ of the findings, as best described by the researcher and participants” (pp. 206-207). Conversely, Wolcott (1990) posited that understanding rather than convincing should be the goal of qualitative research (as cited by Creswell, 2007).

Researchers commonly operationalize these perspectives through what Creswell calls “validation strategies” (p. 208). These include but are not limited to the following strategies: triangulation of data source and methods; prolonged engagement and observation in the field; peer-review of methods, meaning, and interpretations; clarifying researcher bias, and member checking.

**Translation.** Although English is recognized as Uganda’s official language, rural participants in Kabale, Uganda spoke a mixture of Rukiga and Luganda depending on the village’s location and tribal history. I observed in Kabale Town, a more urban setting with a younger population, that English was the predominant spoken language, but in the villages, especially among the older adult population, verbal communication happened in their native language. Similarly, in Moshi Town (*Moshi Urban*), English was widely recognized and spoken
by providers of goods and services within the local street economy. Yet, in the rural villages where research participants resided, the primary language spoken was Swahili. As my understanding of these languages was limited to a few simple phrases, the use of an interpreter was required in this comparative case study.

In the absence of language mastery, the researcher has to rely on the skill of a translator to bridge the language and cultural gap between the interviewer and the research participants. This poses certain limitations on the researcher and their ability to conduct fieldwork. Borchgrevink (2003) highlighted some of the limitations: “The more you know of the language of the people you are studying, the better access you will have to information, the deeper understanding you will get, and the higher the overall quality of your fieldwork” (p. 106-107). Borchgrevnik further concluded:

The loss of direct contact between the anthropologist and the informant may make the communication process more formal, tending more towards a formal interview than a normal conversation. Spontaneity, playfulness and jocularity are more difficult to achieve, and body language and meta-communication may be lost on the way. (p. 110)

Other researchers (Halai, 2007; Pavlenko, 2005) suggested that subtle meanings and nuances can be lost and that representations of participant data can be affected by the researcher’s limited knowledge of the research participant’s native language. Subtle nuances including non-verbal communication, facial expressions, changes in voice and tone, and the uses of different styles of speech can be difficult to interpret for non-native researchers. Additionally, “the interpreter may function as an additional filter through which the information is screened. We are always better at translating into our own native language than the other way around” (Borchgrevink, 2003, p. 111).
While I acknowledge I was limited in understanding direct communication between my interpreter and the research participants and these limitations hindered my efforts to fully understand the depth of meaning participants associated with each question, the use of an interpreter was vital to this comparative study beyond just bridging the language barrier. Researchers (Borchgrevink, 2003; Bragson, 1997; Holmes et al., 2013; Pareek & Rao, 1980) suggested that there are significant benefits to working with an interpreter in cross-cultural research. To reduce some of these limitations discussed, researchers suggest methods for selecting and working with an interpreter. For this current comparative research study, I used methods outlined by Pareek and Rao (1980) to guide my selection and training of interpreters. Table 3-6 outlines Pareek and Rao’s (1980) guide to selecting and training an interpreter. The table also lists examples of how these methods informed and benefited this current comparative research study and is representative of work in both countries.

Table 3-6

**Pareek and Rao’s Interpreter Training and Selection Guidelines**

<table>
<thead>
<tr>
<th>Interpreter Knowledge</th>
<th>Example from current research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding the subculture of</td>
<td>Interpreters were from the rural communities, well-known and respected by the research participants. This gave me instant access and credibility with village elders, traditional healers, health workers, and research participants.</td>
</tr>
<tr>
<td>participants</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Understanding the dialect of the</td>
<td>Interpreters were fluent in English and understood the three primary languages spoken by participants in this study: Rukiga, Luganda, and Swahili.</td>
</tr>
<tr>
<td>respondents</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Understanding the phenomena to be</td>
<td>Interpreters were either doctors or nurses and well-versed in hypertension. Additionally, they understood literacies (or lacks thereof) that were available to research participants.</td>
</tr>
<tr>
<td>studied</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Establishing rapport</td>
<td>Interpreters understood the unwritten protocol for working with the village mamas. Because interviews took on a somewhat formal tone due to the ‘outside’ researcher/interpreter/research participant relationship, a small bag of sugar or tea went a long way in establishing</td>
</tr>
</tbody>
</table>
Interpreter Knowledge

<table>
<thead>
<tr>
<th>Example from current research</th>
</tr>
</thead>
<tbody>
<tr>
<td>rapport and setting a friendly and jovial tone for the interviews.</td>
</tr>
</tbody>
</table>

Asking questions

Prior to conducting interviews, the interpreter and I would review each question. This gave us an opportunity to discuss the interview process and review any areas that were deemed problematic due to language used, cultural relevancy, or general confusion on what the question was targeting.

Sensitivity to response biases

Interpreters understood sensitive topics such as bewitching and accessing a traditional healer and could delve deeper with research participants based on body language and tone of voice with discussing such topics.

Communicating neutrality and avoiding biases

Interpreters were well-versed in village life and understood many of the systemic and health barriers that faced research participants. Additionally, with their biomedical backgrounds, interpreters were genuinely interested in learning more about hypertension from the patient perspective and were committed to trying to understand the problem from the research participants.

Sensitivity to cultural effects

Interpreters were from the village community. They were well-versed in cultural effects on hypertension and literacies. For example, they understood that most villagers could not read and preferred oral communication to the written word.

Flexibility in interviewing

While I used an interview protocol to ensure pertinent questions were asked, I often probed deeper into issues that I did not understand, needed further clarification on or informed the case. Interpreters were flexible in their time and ability to handle these requests.

It was evident in this comparative case study that the use of an interpreter greatly benefited the research. I was granted instant access to rural communities and their members.

Regardless of whether I was fluent in the native language or not, without the help and credibility interpreters and I would not have been able to conduct this study. Additionally, while member checking with research participants was not possible due to the limited ability to track participants from health camps or clinics back to their rural villages, interpreters provided a way for me to validate my interpretations or ask follow-up questions based on information provided by research participants.
**Triangulation.** To ensure validity, this current comparative research relied on multiple data sources to inform cases in Uganda and Tanzania. Data sources included research participants, key informants and stakeholders, village elders, local community members, medical officer, Community Health Workers, traditional healers, and government officials. Additionally, this current research used an informed systematic approach to multiple data collection methods including participant and indirect observation, semi-structured and informal interviews, focus groups, and document and artifact analysis. Data and interpretation of participant data was reviewed with translators to ensure accuracy. Further interpretations and presentation of the data in this report has been vetted by key informants in both Uganda and Tanzania. Finally, time spent in the field as well as the extensive knowledge provided by site coordinators, key informants, and interpreters on rural village life, community health, and the ways health information is distributed and the health challenges that undergird the community ensured an accurate portrayal of the current comparative case study.

**Summary**

Chapter 3 outlines the research design and methodology employed for this current comparative research. A qualitative philosophy grounds this cross-cultural, intrinsic case study approach that appropriately responds to research questions examining how individuals diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania access, understand, and use hypertension information. Additionally, the section highlights implications of comparability and equivalence, site selection and sampling, data collection and analysis methods, and validity. This framework guides this comparative research and supports the research findings discussed in Chapter 4.
Chapter 4

Presentation of Research Findings—Uganda

On the second day after my arrival in Kabale, Uganda, I participated in my first health camp. Traveling in a makeshift ambulance over potholed roads—often described as an “African massage”—we arrived at a small church located in the village of Kicumbi. Inside the church, more than 200 people, primarily women and children, waited to be seen by doctors and nurses trained in general medicine, optometry, dentistry, and nutrition. A makeshift set-up of drawn curtains loosely separated each area, and villagers patiently waited to be seen by one of the specialist. As I sat with a nurse in the general health section, I could hear the screams of children as their teeth were pulled without any local anesthetic to numb the pain. I observed tears in the eyes of young women as they were led to a doctor to discuss antiretroviral treatment after their lab work, taken on-site, returned a positive HIV result. In the general health section, I observed patient after patient being diagnosed with maladies and disease such as HIV/AIDS, malaria, diarrhea, syphilis, urinary tract infections, lymphoma cancer, upper GI infections, lower GI infections, and diabetes. I did not observe one person who received what we might call a “clean bill of health.” My thoughts raced between the health extremes I observed and the sense of calm displayed by patients and health professionals. It exuded an eerie sense of familiarity, a sense that what I was observing was very normal for both doctors and patients. Lost in this reflective moment, I was called over by a nurse who had just taken an individual’s blood pressure (BP). She was diabetic and her BP was 170/90. The nurse asked if I would like to interview her. Nervous, I gathered my notebook and digital recorder and walked with the patient and translator outside to a small patch of grass overlooking the rural valley (Figure 4-1). The record button was
pushed, and I was on my way to exploring health literacy and how individuals diagnosed with hypertension access, understand, and use hypertension information in Kabale, Uganda.

This section presents research findings for participants diagnosed with hypertension in Kabale, Uganda. It provides an in-depth view of both the formal and informal systems of health knowledge accessed by research participants, their associated literacies, and associated barriers to access, understanding, and use of hypertension information at each level of care.

*Figure 4-1. Kicumbi Village, Kabale, Uganda*
Figure 4-2. Kicumbi Village Health Camp, Kabale, Uganda
Ugandan Health Care System

Developed by the Government of Uganda (GoU), the Ministry of Health (MoH), and Health Development Partners (HDP), the *Health Service Strategic Plan III* (HSSPIII) provides an overall framework for Uganda’s National Health System (NHS) for 2010-2015 (Uganda Ministry of Health, 2010). As part of this framework, health delivery services in Uganda are organized around four clusters and mandated under the Uganda National Minimum Health Care Package (UNMHC). The UNMHC defines the four clusters as followed:

1. *Health Promotion, Environmental Health and Community Health Initiatives* including health education, environmental health and nutrition services, occupational safety, and disaster preparedness and response;

2. *Maternal and Child Health* including maternal and child health, sexual and reproductive health and rights, management of common childhood illnesses, immunization and nutrition;

3. *Communicable disease control* including HIV/AIDS, tuberculosis and leprosy, malaria, and diseases targeted for elimination.


Uganda’s formal health system is a referral-based system that relies on a network of hospitals and health centers to provide free care and services for citizens at all levels of need (see Table 4-1). For example, rural participants interviewed for this current study accessed either a
village health team member (VHT) or a health centre II (HCII) as their primary source of health information and services. If the HCII could not meet their needs, they were referred to the Kabale Regional Referral Hospital (KRRH) as health centres III and IV did not exist, were understaffed, or could not diagnose or treat symptoms of hypertension. In addition to the formal health system, there co-exists an informal network of traditional health providers (e.g., traditional healers, bonesetters, traditional birth attendants, and churches). The combination of formal and informal systems creates a pluralistic system of biomedical and traditional medical knowledge within Ugandan culture.

Table 4-1

*Uganda health system referral network*

<table>
<thead>
<tr>
<th>Health System Category</th>
<th>Services Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village health teams (VHTs/HCI)</td>
<td>First contact for someone living in a rural area such as Kabale. Village health workers distribute a limited medical supply, advise patients on hygiene, and refer patients to health centers and referral hospitals. <em>VHT/HCI does not include a physical structure, although many VHTs are available at HCII locations.</em></td>
</tr>
<tr>
<td>Health Centre II (HCII)</td>
<td>Provides the first level of interaction between the formal health sector and the communities. Only outpatient services and community outreach services provided. Staffed by a nurse or nurse’s assistant.</td>
</tr>
<tr>
<td>Health Centre III (HCIII)</td>
<td>Basic preventative, promotive, and curative care. Provision provided for laboratory services and maternity care. Staffed by a senior medical officer.</td>
</tr>
<tr>
<td>Health Centre IV (HCIV)</td>
<td>A small hospital with both inpatient and outpatient services. Staffed by senior medical officers.</td>
</tr>
<tr>
<td>General Hospitals</td>
<td>Provides preventive, promotive, curative maternity, in-patient health services, surgery, blood transfusion, laboratory, and medical imaging services.</td>
</tr>
<tr>
<td>Regional Referral Hospitals (RRH)</td>
<td>Provides specialist clinical services such as psychiatry; Ear, Nose and Throat (ENT); ophthalmology; higher-level surgical and medical services; and clinical support services (laboratory, medical imaging, pathology).</td>
</tr>
<tr>
<td>National Referral Hospitals (NFR)</td>
<td>Provides comprehensive specialist services; also involved in health research and teaching in addition to providing services offered by</td>
</tr>
<tr>
<td>Health System Category</td>
<td>Services Provided</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Private Not For Profit Clinics (PNFP)</td>
<td>Provide preventative, palliative, and rehabilitative services. Includes clinics and comprehensive hospital services. Often serves as a complementary service to government run facilities in rural areas.</td>
</tr>
<tr>
<td>Private Health Practitioners</td>
<td>Large urban and peri-urban presence offering a wide-range of services including family planning, malaria, STD, and HIV/AIDS care.</td>
</tr>
<tr>
<td>Traditional and Complementary Medicine Practitioners (TCMP)</td>
<td>Herbal remedies for a wide spectrum of diseases; Removal of bewitched spells; Family planning.</td>
</tr>
</tbody>
</table>


Although the HSSPIII outlines the goals, vision, mission, and priorities for Uganda’s health sector, it also includes the stark reality of an under-resourced and under-staffed healthcare system (Figure 4-3). According to the report,

Dual employment is common and 54% of the doctors working in the private sector also work in the government sector, whereas more than 90% of the nurses, midwives, and nursing aides in the private sector work full time in this sector. (p. 7)

Representing the most vacancies at the HCII-HCIV levels, nurses are critical service providers to the rural populations, often serving as key linkages between the village health teams and doctors in the formal health system. It was observed in this study that many HCIII and HCIV were closed or unoccupied due to a shortage of nurses. Other health system limitations included the absence or shortage of medical care facilities, low salaries, a lack of essential medicines and supplies, and acknowledged corruption at all level of care. Add to this an 85% rural population with limited levels of income and education, poor housing conditions, limited access to
sanitation and safe water, cultural beliefs and social behaviors, and one can begin to understand the challenges facing Uganda’s healthcare system and its population.

Health Literacy and Hypertension

This current comparative research sought to problematize and understand how individuals diagnosed with hypertension access, understand, and use hypertension information to promote and maintain positive health and well-being. Each of these common attributes is interrelated, as an individual’s ability to access information will directly influence his or her understanding and subsequent use of that information. For example, research suggests several factors that influence health seeking behavior of rural populations’ access to and utilization of the formal health system (Beiersmann et al., 2007; Shaikh & Hatcher, 2005; Sudha et al., 2003; Table 4-2).

Table 4-2

Factors influencing access to formal health systems

<table>
<thead>
<tr>
<th>Factors of Health System Utilization</th>
<th>Definition of Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>Is a health facility within geographical reach of the rural population?</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Does a sick person have the means of transport to reach a health</td>
</tr>
<tr>
<td>Factors of Health System Utilization</td>
<td>Definition of Factors</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>service facility?</td>
<td></td>
</tr>
<tr>
<td>Cost (direct and indirect)</td>
<td>Can a household actually afford to seek treatment at a health facility and pay for the drugs? Can a family afford to miss a half day or a full day’s work to visit a health facility or take a sick person to it?</td>
</tr>
<tr>
<td>Quality of Care</td>
<td>Are the health staff trained well enough to provide the best possible treatment and are the treatment procedures explained well enough to the patient so they can follow the prescribed treatment?</td>
</tr>
<tr>
<td>Delay</td>
<td>Does a sick person seek professional help promptly and does a sick person receive timely treatment when contacting a health facility?</td>
</tr>
</tbody>
</table>

Additionally, implied in this common definition of health literacy is a basic level of community awareness about hypertension. This might include a simple understanding of terminology, signs and symptoms, risks, and available treatment options. Thus, to make sense of access, understanding and use, it was first necessary to understand, from an institutional perspective, the level of hypertension awareness that existed in Kabale. Table 4-3 lists the institutional knowledge base, defined as the trusted sources of hypertension health information as reported by the research participants. The awareness column is defined as the corresponding institution’s overall awareness of hypertension. This includes the institution’s ability to recognize symptoms, check an individual’s blood pressure, diagnose the problem, discuss associated risks and review available treatment options. For example, the Kabale Regional Referral Hospital, the only public government hospital in Kabale, had the medical resources (i.e., doctors/nurses, blood pressure monitors) to diagnose symptoms and prescription medication to treat hypertension. Additionally, the medical officers understood and could communicate the non-modifiable risks of hypertension, such as age, family history, ethnicity, and gender, as well as the modifiable risks—disease and lifestyle—that could be contributing to the individual’s condition. Therefore, the awareness of hypertension based on these associated factors was listed as high.
Table 4-3

**Hypertension Health Literacy Model**

<table>
<thead>
<tr>
<th>Institutional Knowledge Base</th>
<th>Awareness</th>
<th>Access</th>
<th>Literacies</th>
<th>Understanding</th>
<th>Use/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kabale Regional Referral Hospital</td>
<td>High</td>
<td>Difficult</td>
<td>Oral Communication (Two-way)</td>
<td>Lifestyle-related risk factors; disease-related risk factors; treatment options</td>
<td>Screening; Medication; behavior modification</td>
</tr>
<tr>
<td>Private Clinics (including PNFP and PHP)</td>
<td>High</td>
<td>Difficult</td>
<td>Oral Communication (Two-way)</td>
<td>Lifestyle-related risk factors; disease-related risk factors; treatment options</td>
<td>Screening; Medication; behavior modification</td>
</tr>
<tr>
<td>Village Health Teams</td>
<td>Low</td>
<td>Easy</td>
<td>Oral Communication (Two-way)</td>
<td>Referral</td>
<td>Visit Kabale Regional Referral Hospital</td>
</tr>
<tr>
<td>Health Centre II</td>
<td>Low</td>
<td>Easy</td>
<td>Oral Communication (Two-way)</td>
<td>Referral</td>
<td>Visit Kabale Regional Referral Hospital</td>
</tr>
<tr>
<td>Church</td>
<td>Low</td>
<td>Easy</td>
<td>Oral Communication (One-way)</td>
<td>Referral; Spiritual healing</td>
<td>Visit Kabale Regional Referral Hospital</td>
</tr>
<tr>
<td>Traditional Healer</td>
<td>Low</td>
<td>Easy</td>
<td>Oral Communication (Two-way)</td>
<td>Herbal healing; Bewitching</td>
<td>Herbal medication; bewitching spell removal</td>
</tr>
<tr>
<td>Radio</td>
<td>Low</td>
<td>Easy</td>
<td>Media/Oral communication (One-way)</td>
<td>Lifestyle-related risk factors</td>
<td>Behavior modification</td>
</tr>
<tr>
<td>Newspaper</td>
<td>Low</td>
<td>Difficult</td>
<td>Media/Visual communication (One-way)</td>
<td>Lifestyle-related risk factors</td>
<td>N/A</td>
</tr>
<tr>
<td>Television</td>
<td>Low</td>
<td>Difficult</td>
<td>Media/Audio/Visual communication (One-way)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
The other columns are defined as followed:

- **Access**—the participant’s ability to access the institutional knowledge base.
- **Literacies**—the communication modalities used by the institutional knowledge base to disseminate hypertension information to the individual.
- **Understanding**—the participant’s potential for understanding hypertension based on the information communicated by the institutional knowledge base.
- **Use/Action**—action(s) available to the participants, based on the understanding of hypertension information shared by the institutional knowledge base.

Based on the conducted research, the following section discusses each institutional knowledge base as it relates to research participants’ experience of access, use, and understanding of hypertension information.

**Kabale Regional Referral Hospital**

As part of a network of government subsidized health facilities, Kabale Regional Referral Hospital (KRRH) serves approximately two million people in the districts of Kabale, Kisoro, Rukungiri, Kanungu as well as people from neighboring countries including Rwanda and the Democratic Republic of Congo. Centrally located in Kabale Town, KRRH is one of only two reported knowledge bases where participants could be accurately diagnosed by a trained medical officer, as well as access empirical information and subsequent treatment for hypertension.

KRRH also offered a two-way communication opportunity whereby medical officers and patients could communicate about patient history or treatment options as well as discuss any questions the patient might have related to those inquiries.

Although the awareness of hypertension was high at KRRH, physical access to services proved to be very difficult for Kabale’s rural population. The distance from the villages where
participants were interviewed to KRRH ranged anywhere from 10km to 30km (Figure 4-4). One participant said, “From my home to the health facility it takes like three hours, and on foot because I am not able to go by vehicle, so I foots slowly until I reach.” Another participant said, “If I have to refill my medication or see a doctor I must travel by foot, but I am too tired, so sometimes I just skip the medication.”

![Map of Kabale District showing mapping of HCT sites and services](image)

*Figure 4-4. Villages surrounding Kabale Town*

Of the participants identified in this study, none had available transportation such as a car or bicycle, and no bus system currently services the rural community with access to Kabale Town. A participant said,

Yeah, sometimes we don’t have what to sell to get money and go to the hospital giving the means of transport. They are not easy. We need a lot of money, and sometimes you find you don’t have what you can sell to get transport to the hospital.
Another said,

Some people die because of the long distance. We don’t have a vehicle to take them when we get a seriously sick person. So we have a problem in accessing the medical facilities. They try to go by walking but they are too sick and can’t make the long distance.

Participants could hire a boda boda (motorcycle taxi), but for a population living well below the poverty line, this was not a realistic option. The only other alternative was for participants to travel the distance by foot. This option was problematic for a multitude of reasons: (1) The physical nature of walking long distances to the clinic proved very difficult for individuals already suffering from hypertension and other reported maladies, such as joint swelling, lower back pain, respiratory issues, and GI infections, (2) the opportunity cost of walking to the clinic, as opposed to being able to access treatment at a HCII, meant a lost day of food and wages for the peasant farmer and her family, and (3) it often discouraged the older population from seeking the required medical attention they needed.

Although physical barriers impacted participant access to hypertension information and utilization of care at KRRH, respondents acknowledged access, understanding, and use problems did not go away once they arrived at the hospital. A majority of research participants were diagnosed as being hypertensive while visiting a rural health camp (Figure 4-5 and 4-6). Rural health camps (RHC) involve sponsored medical teams, most often from KRRH or Private Not for Profit (PNFP) clinics traveling to a rural area and setting up a mobile clinic. Patients diagnosed with hypertension were then referred to KRRH for a follow up appointment to check BP levels, receive free medication, or both. As I approached KRRH for the first time, I observed approximately 60 women and children sitting outside on the grass. Although there were some
men in the crowd, it was observed (and described by participants) that women were the primary health providers in the family. Inside, the benches in the main hall were packed with people waiting to be seen. A few nurses and administrators checked on the small children, but I would not describe the environment as efficient. According to patients interviewed, this is a normal occurrence at KRRH. Some individuals reported waiting the entire day only to be told they would not be seen by the doctors. One participant said, “I walked there and waited all day long. Then an official told everyone to go home and come back tomorrow.” Low government salaries for nurses and medical officers also compounded the long wait, as many participants complained that the only way to be seen by a doctor was through bribery. While I never observed an exchange of money, it was widely acknowledged by my key informant, a doctor in Uganda, that this was common practice.

Figure 4-5. Rural Health Camp, Kabale, Uganda
Access to medicine at the dispensary was just as laborious. A long line stretched around the hall as patients held their prescriptions, written on torn sheets of paper, waiting to see if their medicine would be in supply. According to the Ugandan HSSRIII (2010), only 30% of the essential medicines (HIV/AIDS, malaria, tuberculosis, vaccines, and reproductive health commodities) required by Uganda’s population are covered under the national budget (p. 22). Therefore, the health system must rely on global institutions (e.g., WHO, UNICEF), the private sector, and global initiatives to provide the bulk of its medicines. Consequently, medicines not designated under the “essential” category, such as hypertension medicines, are often in short supply at public facilities. Many respondents discussed traveling to the hospital only to be told that there were no drugs available. One participant said,

The resources is that when I go to—at times I get the treatment from the government
centers, but at times I go there and they (medicine) are not there. So they told me to go and buy, but buying takes up my time…. When they are not there they tell me to go and buy. But it takes me time to go and buy because most times I don’t have money to get the treatment. Yeah, so it becomes difficult, but finally I go and try to get a way of getting money. After getting that money I send for treatment, and the clinics order other hospitals or private hospitals where I have the treatment, and I start again.

Another stated,

There is a nearby health facility in my area where I go and picks the what, the medication. Sometimes when I don’t find the medication there I’m sent to the main hospital, the referral hospital where I pick up the drugs. Sometimes I go to the main hospital, and don’t find the medication, then I go to the pharmacy to buy. They’re free.

And if not I go to a private pharmacy and pay.

I was unable to observe a patient/doctor consultation at KRRH, but participants complained that doctors took very little time to explain hypertension to them and were dissatisfied with the lack of information received. Participants described their visits in a prescriptive manner. Their blood pressure was checked and they were either given a prescription or told to “eat more fruits and vegetables,” “use less salt,” or “limit the stress in the home.” There was little information shared by doctors about hypertension, possible causes, health risks, symptoms, relationship to other diseases, and available treatment options. Additionally, behavior modification messages with no explanation, support, or education created a significant barrier of understanding and subsequent use of prescribed information. This left many participants feeling confused and frustrated as many already ate vegetables, such as sweet potatoes, every day. One participant said, “I grow sweet potatoes and feed my family every day, I don’t know why I have
Village health teams (VHTs) provided a critical link between the rural community and the formal health system. Although VHTs are not allocated a physical structure by the government, it was observed in this current study that many of the HCIIIs had VHT volunteers working in them. VHTs are identified and voted on by community members and elders based on their trustworthiness, previous volunteer work or interest in health, and their willingness to serve the community (MoH, 2012). One VHT described her role this way: “Sometimes we have home visiting. We teach them how to clean their compounds, how to clean their houses, how to make like tipi taps for washing their hands before eating, for preparing food, after visiting toilets.” Figure 4-7 lists the area of focus and primary responsibilities of VHTs.

![Village Health Team Responsibilities](image)

**Figure 4-7.** Village Health Team Responsibilities. Source: Uganda Ministry of Health. (2012). Village health team handbook. (p. 7)
Similar to the shortage of qualified medical officers discussed in the previous section, the MoH (2009) reported that “only 31% of the districts have trained VHT’s in all the villages” (p. 5). Government officials acknowledge attrition is high amongst VHTs due primarily to a lack of wages and training opportunities (p. 5). Conversely, participants in this study reported that VHTs were easily accessible to them in their respective villages and they were a trustworthy source of information regarding issues of hygiene, sanitation, and first aid. Unfortunately, due to a lack of training and required skillset, VHTs had a very limited awareness of hypertension at the village level. It was observed that some VHTs recognized the blood pressure cuff and used terms such as “pressure check” and “check BP” to describe its use. However, they did not actually know how to perform the test. Although this makes sense as performing this duty was not part of their training or recommended services, the ability to take a BP reading would, at a very minimum, provide a community nurse with patient levels so they could be referred to the appropriate care setting if required. Additionally, when VHTs in this study were asked about their understanding of hypertension or high BP, most associated the disease with “fatty foods,” “salt,” and “head pressure” (stress). While it is true a high level of fatty food and salt as well as high levels of stress are primary contributors to hypertension, a lack of understanding of other non-modifiable and modifiable causes (especially disease and infection) and the consequential risks of not screening for and treating hypertension was problematic.

Health Centre II

As discussed, the majority of participants in this study were diagnosed as hypertensive while attending a medical health camp sponsored by trained medical teams that caravanned to the local village(s). According to participant interviews, many complained of headaches, blurred vision, dizziness, paralysis and shortness of breath, all classic symptoms of hypertension.
Additionally, they described experiencing these symptoms over a long period of time prior to diagnosis. This suggests that participants were experiencing symptoms of hypertension prior to diagnosis yet were unable to access information at lower levels of care required to help them understand their symptoms, and use this information to treat their symptoms. Negligence of these symptoms immediately placed them and their health in a high-risk category for artery, heart, brain and organ damage, and ultimately death.

![Image: Rubira Health Centre II, Kabale, Uganda](image)

*Figure 4-8. Rubira Health Centre II, Kabale, Uganda*

Health Centre IIIs (HCIIIs) provide the first level of formal health interaction for individuals living in rural communities (MoH, 2009, 2010). Typically staffed by a nurse and/or nurse aid,
HCIIIs provide critical outpatient care such as child vaccinations, malaria and diarrhea treatment, and HIV testing for rural community members. In the case of Kabale, they also provided the link between the rural health centers and the referral hospital as HCIIIs and HCIVs were non-existent in many communities, due to understaffing and a lack of resources. Accordingly, research participants acknowledged that they had easy access to HCIIIs and frequently took advantage of the multiple services they provided. It was observed on multiple occasions at HCIIIs, though, that conducting a blood pressure test was not a routine part of a patient’s intake process. This according to one key informant can be attributed to the following:

- A lack of resources, such as a working blood pressure cuff.
- A lack of awareness and general understanding of hypertension and its interrelatedness to both non-communicable and communicable diseases.
- The burden and emphasis placed on diagnosing and treating other diseases.
- A lack of trained staff nurses and nurse aides.

When I asked a nurse aide to describe what she knew about hypertension, she said “sometimes those people who don’t walk a lot, those who eat fatty foods. They’re the ones developing such problems. Yeah.” Although most participants in this study were diagnosed by trained medical officers at a health camp and referred to KHHR for further evaluation and treatment, the lack of hypertension screening and information available at HCIIIs further contributed to a limited understanding of this chronic disease. Additionally, hypertensive medicine was not available or part of the essential medicines supplied to HCII. This further increased barrier of access, which often dissuaded individuals from seeking the recommended care they required.
Religion

Religion has played a complex role in shaping the health of rural communities in Kabale since the late 18th and 19th century. It is not possible to understand Uganda’s colonial past and current present without discussing religion, because one was a tool for the other. Religion was introduced as a form of control; some might conclude it was a non-violent way to ease the process of colonization and subservience to the colonial masters. A Kabale elder and historian described the relationship this way:

Now what do we do with these people (Ugandans)? Then somebody discovered the best solution: bring religion. How can I tell you that what you are doing is wrong when you don’t think you’re doing anything wrong? The best thing is introduce an ideology of telling you something and that something wrong is called a sin. Religion came to tell us the bad and the good of how to live. The first thing they labeled totally wrong is the Gods which were being worshiped by the locals. That was the biggest sin on us. Forget about those gods. We have brought to you the only God. [Laughter] So you had to abandon these other gods, these smaller gods of yours, and if you keep with them, that’s a sin. If you abandon them and accept our God (Jesus) then you are the righteous person. You are completed. Now what I’m talking about is religion, isn’t it? It came to tell us that what we are doing here is all wrong [Laughter] in terms of behavior. The best way to be a good person is to be obedient and to be subservient to what the white has brought you…. I am simply illustrating to you what that religion was very not meant for anything else but to make us good people, but not so much a good people to each other, but good people to so that the Mzungus (Bantu term used to describe people of European descent) can rule over us.
He went on to describe:

When Africans became more difficult, they brought religion to cool them down and so that they become subservient; so that they become very obedient and they take up the culture of the Whites or of the British in our case, okay. I grew up; my primary education was before independence, okay. I can sing to you the national anthem of that time, “God save our gracious Queen. Long live our noble Queen. God save the Queen.” I did not know what a queen is. [emphasis added]

Juxtaposing the creation of this subservient system, the church and its medical missionaries were also responsible for creating formal institutions in Uganda. The Anglican church of England and its Church Missionary Society introduced the first Western churches, schools, and hospitals in Uganda. Although it certainly can be debated that these institutions were established as another mechanism of colonial control, the introduction of Western medicine was influential in understanding the causes and treatment of disease in Uganda. For example, British medical teams were responsible for diagnosing rheumatic fever, discovering the prenatal transmission of malaria from mother to child, using quinine to treat malaria, and establishing Mengo (Namirembe) hospital in 1897, which still exists today in Uganda’s capital city of Kampala (Keen, 2014; Laghu, 2012). Ironically, the father of the elder quoted above, was one of the first Ugandan teachers in Kabale’s Anglican Church. Because of his relationship with the Church Missionary Society and its medical missionaries, his wife was able to have reproductive surgery and eventually give birth to a baby boy, a future elder and historian in Kabale and key informant for this research. Today, the complex history of the church in Uganda has matured into a symbol of community fellowship and hope. According to religion demographic data outlined in
Uganda’s last conducted Population and Housing census (UBOS, 2002), Kabale District has a 98% affiliation with Christianity (Figure 4-9).

Figure 4-9. Religious affiliation in Kabale, Uganda

This strong affinity for Christianity was abundantly evident while conducting my fieldwork. Growing up in the Presbyterian Church, I recognized many of the hymns that bellowed from the radio in small shops lining the two-way street in Kabale Town. For the few businesses that owned televisions, a constant stream of evangelical broadcasts greeted customers as they had their hair braided or purchased airtime for their mobile devices. A majority of the public schools and more than 75% of the private-not for-profit (PNFP) medical centers in Uganda “exist under 4 umbrella organization[s]: the Uganda Catholic Medical Bureau (UCMB), the Uganda Protestant Medical Bureau (UPMB), the Uganda Orthodox Medical Bureau (UOMB) and the Uganda Muslim Medical Bureau (UMMB)” (MoH, 2010, pp. 6-7; Figure 4-10).
Participants in this study reported easy access and a high level of trust for health information disseminated by the church. The church was not only a place of worship but also a place of community gathering, social activity, and a strong source of both religious and community information. Many churches facilitated community savings teams and HIV/AIDS support groups. As one participant stated, “The support is like when I go to church. They have got these other groups among the church where I can go in and at times they dance, other times we sing and we share.” A key informant described it this way:

When it (the church) became a structure that makes grass-root people interact up to the topmost level, then it developed into a very, very useful community function, community gathering…the church is the best alternative for social activities. Every Sunday, don’t do anything else, just go and meet people of your type. Remember, your type is not just religion. It is also the local place. It is also politics. It is also savings and credit. It is also health. It is also education. These are people of your type in all those aspects.

In the two worship services that I observed, one an Anglican service and the other a Pentecostal service, both pastors integrated messages of health as metaphors of God’s grace, faithfulness, and healing. For example, the Pentecostal pastor spoke of HIV/AIDS and being
faithful to one’s partner as a metaphor for Christ faithfulness to the church. Both pastors preached a message of hope, a message of asking the Lord for good health, food, a job, and believing that the Lord would provide, if not on Earth, then in Heaven. Conversely, the Pentecostal church also preached a more problematic message that attributed disease to evil spirits or demons that needed to be cast out. This message can often lead to dire results. For example, I participated in a health camp at the Pentecostal Church where I sat by the side of a 15-year-old girl whose body was racked with lymphoma cancer. The doctor explained that the girl was told she needed to pray for the disease to leave her body instead of seeking medical attention. She prayed for more than nine months and, according to the doctor, would be dead in a few days. In a culture where information based on scientific evidence is limited and people are desperate for solutions, messages like this become extremely dangerous.

With the exception of mixed messages coming from the Pentecostal church, participants described a responsible message of faith and medicine coming from their respective leaders. According to one participant, her pastor always instructs the congregation “when you’re sick, don’t wait. Go to the hospital. Don’t go to the traditional healer. First run to the hospital. Don’t wait until you are really very, very sick. Immediately go to the hospital.” Another said, “treatment is needed, but praying, prayer is the most important thing for me.” As it relates to hypertension, according to a few participants, their churches had mentioned high blood pressure in association with limiting the intake of fatty food or salt and eating more vegetables and fruit. Yet, most participants acknowledged that health messages coming from the church were about more common diseases such as HIV/AIDS, malaria, family planning, and child nutrition. The church was also an important place for health-related announcements such as information about health camps, malaria net distribution, and child vaccinations. Interestingly, when discussing
with participants their own hypertensive symptoms, many complained of “pressure in the head,” “headaches,” “too much thinking,” “bad thoughts,” “many thoughts,” essentially attributing their hypertension to one if its primary causes, stress. Accordingly, the church and prayers offered somewhat of a refuge for participants in dealing with the everyday stresses in their lives. It was a coping mechanism that gave participants peace and encouragement. One participant who had a mentally ill child at home that caused her stress said, “I believe big relief is from the church. I get it (relief) from the church, because after some prayers it gets better.” Another who was in an abusive relationship stated, “There are people who get a little better, because at times it is caused by the many thoughts…So that’s why at times I feel relieved for a moment when I’m in church praying.”

**Traditional Healer**

It was 4th of July, Independence Day in the United States, and I was slowly making my way across Africa’s second deepest lake, Lake Bunyonyi, in a hollowed out canoe powered by a small engine. As we motored by one of the 29 islands that emerged from the great depths of the lake, the driver points and says “Akampene.” I turned to my translator and she said, “Punishment Island.” She further described the desolate island adorned by a single tree as the place where unmarried pregnant girls were left to die by starvation or drowning. Although my translator said the practice ended in the early 19th century, women were still taken to the island as a form of punishment. Fortunately, there were no women on the island this day and we continued to our destination, a meeting with a local traditional healer (Figure 4-11 and 4-12).
Figure 4-11. Traditional Healer on Lake Bunyonyi, Uganda
Traditional healers are still very common in Kabale District. According to Ugandan’s Ministry of Health (2010):

Approximately 60% of Uganda’s population seeks care from TCMPs (Traditional and Complementary Medicine Practitioners) (e.g., herbalists, traditional bone setters, diviners, traditional birth attendants, hydro-therapists, spiritualists and traditional dentists) before visiting the formal sector…This results into late referrals, poor management of various medical, surgical, obstetric conditions and high morbidities and mortalities. (p. 8)

Because traditional healers are often more accessible and affordable to rural communities, they are consulted for a diversity of physical and social problems (e.g., fractures, leprosy, malnutrition, ulcers) and social reasons including wealth seeking, family planning, and removing a bewitched spell.
After removing my shoes, I was welcomed inside by the Traditional Healer, his four wives, and his eldest son. The inside of the hut was cool, a nice break from the Ugandan heat outside. The floor was covered in long grass and the walls were adorned with animal skulls, signifying the “ways of a hunter.” The Traditional Healer was dressed in animal pelts, which were not permitted to be worn outside of the hut. For the next two hours, he described his medicines, instructed use, and common interactions he has with the rural community. When I asked him about hypertension, he referred to it as “big heart.” My translator described it to me this way:

The other herb I’ve shown you that show him how people are sick, like when he treats them and this one will be better another one will get sick. When he cooks that herb and when it’s changed its color to reddish, he has to ask that herb, I’m requesting you can do it. Show me what this person is sick from, is suffering from, and immediately when the person is suffering from hypertension that herb will show him that this person is suffering from hypertension. Another thing, like when they’re climbing this hill, they come when they tired, when they are dizzy, and mostly when they are huge (obese). That’s when you can tell them this person is suffering from hypertension. You see, those people suffering from hypertension, he’s saying when they are coming here, and it’s how they breathe. Deep breaths, they breathe deeply, so you can tell this person is suffering from hypertension.

When asked what he prescribes an individual who has been diagnosed with hypertension, he said, “Curing hypertension with drink—garlic, ginger, honey. He mixes those things, garlic, ginger, and honey. Mixes with honey, yes. Yeah, it lowers blood pressure. Yes.”
Many participants in this study acknowledged consulting a traditional healer for various ailments, including symptoms that were later attributed to hypertension. One participant stated, “I had some abdominal pains that needed a traditional healer. I needed to go to a healer first for herbs before a medical one.” Another said, “I always go there (traditional healer) to be treated. I have a lot of trust in them, because they have always treated me.” Others acknowledged seeking help from the traditional healer, but not for physical problems. For example, one participant said, “One major reason why people visit traditional healer is when you get married and you fail to get a child, the first place you visit is a traditional healer. Yeah. In case your children keep dying, you lose so many children.”

In my interviews, I observed some hesitancy on the part of participants to acknowledge their care and treatment by traditional healers. A key informant later explained that in recent years the government has tried to dissuade rural communities from seeking medical care from traditional healers. This was often done through bullying tactics and threats, thus people were fearful in discussing their use of traditional medicine. This information was further supported by Konde-Lule et al., (2010), and their research on healthcare access in rural Uganda. As it relates to accessing a traditional healer, their research concluded,

A large proportion of their clients consult at night, under the cover of darkness to avoid being seen. They also reported that many of their clients come from distant places because a majority of patients prefer to visit healers outside their areas of residence to further conceal their identity. This view was also echoed by community leaders that participated in the focus group discussions. Those findings indicate that stigma at times is linked with traditional practitioner consultations. (pp. 4-5)
It was my observation that rural communities take a pragmatic approach to health. In a pluralistic health system where limited information is provided by both formal and traditional health systems, rural communities want what every community wants, to be healthy. Thus, using fear tactics and stigmatizing rural communities for accessing traditional healers instead of partnering with them only increases the burden of care and disease for communities desperate for treatment options in a resource deprived system.

**Radio**

Uganda’s rural population relies heavily upon radio communication to stay informed and communicate with each other via public announcements, greetings, and sponsored programs. According to the last population and housing census (UBOS, 2002) 45.4% of rural households owned a radio (Table 4-4).

Table 4-4

*Percentage of Household Owning Selected Assets, 1991 – 2002*

<table>
<thead>
<tr>
<th>Household Assets</th>
<th>1991</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupied own house</td>
<td>80.2</td>
<td>86.2</td>
<td>30.4</td>
<td>78.5</td>
</tr>
<tr>
<td>Owned a radio</td>
<td>NA</td>
<td>45.4</td>
<td>68.2</td>
<td>48.6</td>
</tr>
<tr>
<td>Owned a television set</td>
<td>NA</td>
<td>2.1</td>
<td>19.6</td>
<td>4.5</td>
</tr>
<tr>
<td>Owned a bicycle</td>
<td>NA</td>
<td>35.7</td>
<td>18.9</td>
<td>33.3</td>
</tr>
<tr>
<td>Owned a motor car</td>
<td>NA</td>
<td>0.9</td>
<td>6.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Owned a motorcycle</td>
<td>NA</td>
<td>2.3</td>
<td>3.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Did not own any means of transport</td>
<td>NA</td>
<td>61.9</td>
<td>74.7</td>
<td>63.7</td>
</tr>
<tr>
<td>Owned a telephone (fixed or mobile)</td>
<td>NA</td>
<td>2.5</td>
<td>24.4</td>
<td>5.5</td>
</tr>
</tbody>
</table>

In Kabale District, there is a small mix of private and public radio stations that benefit rural communities through educational programs on health, farming, poverty eradication, and business. For example, the Voice of Kigezi featured a weekly program called *Straight Talk* that discussed young adult issues such as sex, HIV/AIDS, and family planning (AUBT, 2014). Key informant for this research, Dr. Geoffery Anguyo of Kigezi Healthcare Foundation (KIHEFO), hosted a weekly health program on public radio in 2013. Although a selected health topic (e.g., malaria, hygiene, or child vaccinations) was chosen for each week, he often fielded questions from individuals suffering from a myriad of diseases and social problems. He attributed this phenomenon to difficulties individuals had accessing the formal health care system and the pragmatic approach to health used by the rural communities. Unfortunately, after only a year on the radio and very successful rating numbers, the program was cancelled due to an increase in broadcast costs.

Participants in this study all had easy access to a radio and proclaimed a high level of trust for information that was broadcasted. Many of them passed the time in the evening gathered with family members listening to gospel music, popular radio soap operas, and educational programs. According to one elder,

Radio is taken as gospel truth. If you said a lie on the radio, you have done the community a big disservice. If I oppose what you have said, for example, I say “No, no, no what you have said is not true.” I can quote and say, “Even the radio said it!” That’s my confirmation that it was true.

Although most participants had heard radio messages about high blood pressure on the radio, it was widely acknowledged that these messages were infrequent and often pertained to lifestyle choices. Many participants used words and phrases like “diet,” “less salt,” “more fruits
and vegetables,” “fatty food,” “fried food,” and “sugar” to describe radio messages they heard about high blood pressure. These messages often left participants feeling frustrated. For example, one participant said,

It becomes difficult to understand in the way that at times there’s some type of foods you have to eat and other foods you leave, of which I don’t have, I cannot access them. So it becomes difficult for me to understand about blood pressure when I don’t have the resources to manage.

Another participant said, “They talk about getting more fruits and greens. Here in Kabale, there are few greens that grow, so we must buy greens. It is difficult to buy those greens. It is difficult for me.”

Also problematic to radio messaging is the use of language. For example, many of the broadcasts I heard were in English. Uganda is technically an English-speaking country and in town I heard it used often, but in the rural villages, the primary languages spoken were Rukiga and Luganda. English was not well understood by the rural adult population. Thus, health programs broadcasted in English were ineffective for many rural community members.

Additionally, radio programs often broadcast using a mix of languages (e.g., English, Rukiga, and Luganda), trying to capture a wide audience. According to one participant, a key informant for this study, this is confusing for everyone. He said,

Somebody goes on the radio and speaks a mixture of English, Luganda, and Rukiga at the same time. You have wasted your time. Who are you talking to? If you’re talking to somebody who understands English only, the Rukiga words are already missed. If you talk to someone who knows Rukiga only, the English words are going to be missed. People waste a lot of use for radio time by giving messages which are mixed, which is a mixture of two languages.
It’s evident that while radio is an easily accessible and trusted source of information for rural communities, hypertension education is limited to infrequent lifestyle messages that are often rendered ineffective due to a one-size-fits-all language scheme.

**Newspapers/Brochures/Pamphlets**

Walk into any clinic, hospital or pharmacy in Kabale Town and you will find a myriad of health education posters on display (Figure 4-13). I conducted an environmental scan of public and private health care centers and Kabale Regional Referral Hospital and found posters addressing HIV/AIDS, malaria, diarrhea, family planning, safe motherhood, tuberculosis, cholera, hygiene, clean water, domestic violence, and nutrition.

*Figure 4-13. Traditional Health Literacy Posters*

These posters were often accompanied by brochures or pamphlets that medical officers could give to patients. Conversely, with the exception of a few posters addressing maternal nutrition, I was unable to locate any print media displaying information on hypertension or high blood pressure. When I asked doctors and nurses what type of hypertension information patients
received, they told me that print information did not yet exist. Interestingly, from my interviews conducted in the rural communities, this was not a problem as most participants were unable to read. Furthermore, as one participant stated, “even for those of us who know how to read and gone to school our reading culture is extremely poor.” Additionally, an elder said,

Let me tell you the information that does not work out here, this is written, written information. Just forget about it. Don’t bother. People have tried to—manual, pamphlets, cards, just don’t bother. Those things don’t work.

He continued,

The best way of hiding information from an African is to write it somewhere. When you write and send it out, you are sure you are hiding it because they never read even if they receive the paper where it is written. Talk about newspapers. Talk about mini-fliers. Talk about cards. Talk about pamphlets. Talk about forget. The impact you get will be near to zero if you use that mode of communication. It will be just near to zero.

**Summary**

It is evident that physical barriers of access to KRRH, the only institutional knowledge source that could provide individuals with empirical information on hypertension, played a significant role in limiting understanding and use of hypertension information for research participants. Additionally, when physical barriers were overcome and research participants were able to access hospital care, doctors communicated a prescriptive lifestyle modification message that left participants both confused and frustrated. Furthermore, prescribed medication was often unavailable at government dispensaries, thus requiring participants to seek and pay for medication from a private dispensary. Accordingly, taking a pragmatic approach to their health, research participants turned to the informal health system. The church, traditional healers, and
radio were all described as trusted sources of health information, yet hypertension information provided by these informal sources was limited. Combined, these factors contributed to a very limited understanding of hypertension and an increased risk of serious health problems for research participants.
Chapter 5

Presentation of Research Findings—Tanzania

It was not difficult to determine when we were close to landing at Kilimanjaro International Airport. For frequent flyers, this might be interpreted as the pilot’s announcement to fasten your seatbelt, a change in cabin pressure, or possibly the crying of a small infant on-board. Yet, all one has to do when flying into Kilimanjaro is look out the window. The view from my window seat beautifully framed the tallest free-standing mountain in the world, Mount Kilimanjaro, confirming our approach and signaling the start of phase two of my data collection.

Conducting research in Tanzania was very different from my experience in Uganda. Government officials were present in most villages surrounding Mount Kilimanjaro, ensuring travelers paid the high permit fees associated with park entrance. These same officials were also well-versed in the permit costs associated with conducting research in the area. Thus, the limitless accessibility to rural communities and health care facilities I encountered in Uganda was not permitted in Tanzania. Fortunately, my key informant in Tanzania, Dr. Karen Yeates and the team at Pamoja Tunaweza Women’s Center were well versed in how to conduct research in the area. Operationalized, this meant more money spent on research permits and visas and a more concerted effort in scheduling my visits to local villages. Although this somewhat inhibited my ability to wander through a village and informally interview individuals, my translators were very accommodating in helping me access rural communities.

This chapter presents research findings for participants diagnosed with hypertension in Moshi, Tanzania. It provides an in-depth view of both the formal and informal systems of health knowledge accessed by research participants, their associated literacies, and associated barriers to access, understanding, and use of hypertension information at each level of care.
Tanzania Health Care System

Tanzania’s health care system is similar to Uganda’s referral-based health system. Individuals are referred through a multi-tiered health system based on their required level of care. As needs become more specialized, levels of care facilities become more centralized to the larger population (Figure 5-1).


Table 5-1 lists the category of health centers and hospitals available to citizens as well as the types of care provided at each center.

Table 5-1

Tanzania health system category and services provided

<table>
<thead>
<tr>
<th>Health System Category</th>
<th>Services Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village Health Workers (VHWs)</td>
<td>The lowest level of health care delivery in the country, VHWs provide preventive services, which can be offered in homes. Typically, each village health post has two VHWs appointed by the</td>
</tr>
</tbody>
</table>
village government. They are given a short training before they start providing services and supervised by dispensary staff.

Dispensary Services
Ideally run by a clinical assistant and aided by a nurse, dispensary services include maternal and child health care, treatment of simple medical problems, child delivery, and basic outpatient services.

Health Centers
Health centers are run by clinical officers and aided by a nurse. Services include preventative health, reproductive health, minor surgery, laboratory assistance, vaccination, and limited inpatient care.

District Hospital (Kibosho)
District hospitals offer outpatient and inpatient services not available at dispensaries or health centers, including laboratory and x-ray diagnostic services and surgical services, including emergency obstetric care.

Regional Hospitals (Mawenzi)
Regional hospitals include similar services as district hospitals but are larger and offer more specialized care, such as pediatrics. Regional hospitals are ideally staffed with medical physicians, specialty care physicians and nurses, and midwives.

Specialized referral hospital (KCMC)
Teaching hospitals that provide complex health care requiring advanced technology and highly skilled personnel.

According to the CIA World Factbook (2014), Tanzania is considered one of the “poorest economies” in terms of per capita income (Economic overview). In 2013, Tanzania’s GDP ranked 83rd among 229 countries (CIA, 2014). From a national perspective, despite health care reforms designed to improve the overall quality and access to care, the challenges of systemic poverty have proven difficult to overcome. According to Tanzanian officials, the health system’s performance is described as an “unsatisfactory” and “non-functional” system (MoH, 2012). A combination of factors has contributed to this reported status:

- **Shortage of health workers** (Table 5-2 and Figure 5-2)—According to the last Service Available Mapping Survey, Tanzania had “1,339 doctors, including 455 in the private sector. This is equivalent to one doctor per 25,000 persons, far below the WHO recommended requirement ratio of 1:10,000” (MoH, 2007, p. vii).
Table 5-2

*Human resources status by facility levels in Public Health Facilities*

<table>
<thead>
<tr>
<th>Facility Level</th>
<th>No.</th>
<th>Health Professionals</th>
<th>Shortage</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Required 2006</td>
<td>Available 2006</td>
<td>2006</td>
</tr>
<tr>
<td>Referrals/Specialized Hospitals</td>
<td>8</td>
<td>8,546</td>
<td>4,477</td>
<td>4,069</td>
</tr>
<tr>
<td>Regional Hospital</td>
<td>21</td>
<td>7,266</td>
<td>2,481</td>
<td>4,785</td>
</tr>
<tr>
<td>District Hospitals</td>
<td>95</td>
<td>22,458</td>
<td>7,364</td>
<td>15,094</td>
</tr>
<tr>
<td>Health Centers</td>
<td>331</td>
<td>11,916</td>
<td>4,908</td>
<td>7,008</td>
</tr>
<tr>
<td>Dispensaries</td>
<td>3,038</td>
<td>30,380</td>
<td>9,384</td>
<td>20,996</td>
</tr>
<tr>
<td>Training Institutions</td>
<td>72</td>
<td>1,711</td>
<td>449</td>
<td>1,262</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>3,565</td>
<td><strong>82,277</strong></td>
<td><strong>29,063</strong></td>
<td><strong>53,214</strong></td>
</tr>
</tbody>
</table>


- **Loss of high skilled workers** (doctors, nurses, specialists)—between 1995-2005 the health training institute produced 23,474 staff, of which only 16% (3755) were employed by the Public Sector (MoH, 2008). Skilled workers are entering the private sector due to higher wages, better working conditions, available equipment, and more opportunities for professional development.
• **Unequal distribution of financial resources**—85% of health expenditure is given to the central and main hospitals. These hospitals access only 10% of the population, thus 15% of the financial resources designated for health care are meant for 90% of the population (WCC, 2014).

• **Low motivation**—many of the districts in Tanzania are operating under severe hardship conditions including a lack of basic requirements such as “roads, communication networks, electricity, recreation, water, and schools….the situation leaves human resources significantly under-motivated to function effectively” (MoH, 2008, p. 11). Low motivation also contributes to high rates of absenteeism (40%) by medical personnel (MoH, 2008).

• **Poor communication**—Inadequate and ineffective communication between health service providers at each referral level often leads to a mismanagement of patient care.

Conversely, as it relates directly to the Kilimanjaro Region, health care systems are performing well above the national average. According to *Midterm analytical review of performance of the health sector strategic plan III 2009-2015* (2013), the Kilimanjaro Region ranked #2 in socioeconomic indexes behind the capital city of Dar es Salaam and #1 in health system strength (Figure 5-3 through Figure 5-6).


It was evident when interviewing research participants and observing the health care system that the indicators presented above played a significant role in participant access to care in this region. While this research does not seek to empirically correlate the socioeconomic status and strength of the health care system to monies derived from natural resources in the area, it was clearly observable the direct and indirect impact that Mount Kilimanjaro had on the region.

The Kilimanjaro Effect

On my second day in Tanzania, my translator and I rode a dala dala (minibus) to the village of Mweka, approximately 30 minutes north of Moshi Town. Although I did not have scheduled interviews that day, I wanted to observe and get a feel for village life in one of the areas I would be conducting my research. After spending the previous month in rural
communities outside of Kabale Town, Uganda, I was struck by the marked improvement of basic infrastructure supporting Mweka and the surrounding area. First, the roads were paved leading up to the village. Second, there was a formal bus system that operated between Moshi Town and the rural village. Third, there were power lines running all the way up into the village supplying power to some of the village homes. Fourth, as I walked through the village, I observed that most houses were constructed from cement, a non-existent commodity in rural Kabale where houses were made of a compact mixture of mud and dung. I later observed that these infrastructure traits were not unique to this particular village or area. Moshi had an extensive network of dala dalas, boda bodas (motorcycle taxis), large buses, and private taxis that ran from the town center to most surrounding villages. Although there was no formal bus schedule and few formal bus stops along the route, dala dalas typically ran a fixed route and would stop anywhere along the route to pick-up or drop-off passengers. Additionally, a dala dala cost between $100 and $200 Tanzanian schillings ($ .50-1.00 USD), which offered a cost-effective way for rural community members to travel. As I continued to walk through the village and observed the mamas washing clothes in a small stream and kids playing soccer, I was perplexed by the stark contrast of perceived wealth between this village and those that I had visited in Uganda. Then I glanced up between the tall banana trees and felt the massive presence of Mount Kilimanjaro (Figure 5-7). I was standing at her base, walking through her lush soil, eating her fruit, and wondering if the Tanzanian coffee I so loved was being grown in the acres of land before me. As I admired her stark size and beauty, the source of the noticeable structural improvements I observed started to become more obvious.
Tourism

A year prior, in the spring of 2013, I traveled to Moshi, Tanzania to conduct an environmental scan of health literacies. This being my first travel experience to Africa, I was surprised to see so many trekkers, backpackers, and safari enthusiasts on my connecting flight from Amsterdam to Kilimanjaro. Knowing now what I do about the tourism industry in the area
this is not such a surprise, but at the time, it felt like I was the only one who hadn’t received their Patagonia catalogue!

In 2013, the tourism industry represented approximately 13% of Tanzania’s total GDP ($4.3 billion USD; Figure 5-8) a figure that is expected to rise by 6.7% ($4.6 billion USD) by 2024 (Turner, 2014). Tourism also accounted for more than 1.1 million jobs, approximately 11.2% of Tanzania’s total employment (Turner, 2014; Figure 5-9).

Figure 5-8. Tanzania: Total Contribution of Travel and Tourism GDP
Tanzania’s most valuable stretch of land is the Northern Tourism Circuit (Figure 5-10), which includes Mount Kilimanjaro to the east and the Serengeti National Park to the west. Popular travel guide publication *Fodor* recently ranked the Serengeti as a top “20 Places to See Abroad Before You Die” destinations (*Fodor*, 2014). Tourism in this area generates approximately 72% ($3 billion USD) of Tanzania’s total tourism revenue (Mitchell, Keane, & Laidlaw, 2009; Turner, 2014).
In a study conducted by Mitchell et al. (2009), they concluded that of the US $50 million dollars generated per year by Mount Kilimanjaro climber expenditures, 28% (US $13 million) directly benefited the local rural poor (Figure 5-11).

*Figure 5-10. Northern Tourism Circuit*

Additionally, the study further concluded that approximately 300,000 people visited Tanzania’s national parks in the Northern Region (Serengeti, Ngorongoro, Manyara, Tarangire) generating an estimated US$550 million dollars of which 18% (US$100 million) benefited the local rural poor (Figure 5-12).

![Tanzania National Parks Expenditures](image)


**Agriculture**

Agriculture plays a vital role in Tanzania’s economy. According to The World Factbook (2014), agriculture “accounts for more than one-quarter of GDP, provides 85% of exports, and employs about 80% of the work force” (Economic overview). According to the last census conducted by the National Bureau of Statistics (2012), 76% of respondents in the Kilimanjaro region participated in crop production as well as livestock rearing as their primary source of income. Of the annual crops grown in the region, maize and beans represented the largest planted area for main crops in the region (Figure 5-13).
Permanent crops (Figure 5-14), often referred to as perennials, also played a vital role in the regions agriculture production. The most important permanent crops in the region were bananas and coffee (NBS, 2012).
Many participants in this research were directly influenced by the agriculture sector. For example, many worked on small coffee farms and were members of *The Kilimanjaro Native Cooperative Union* (KNCU; Figure 5-15). KNCU is Africa’s oldest cooperative and represents more than 70,000 small coffee farmers and producers around the mountain (KNCU, 2014). Over 80% of the coffee grown by KNCU members is sold through direct export, representing 11% of Tanzania’s national production (Vanstaalduinen, 2014) and contributing over US$25 million dollars to the local economy. Just as important, KNCU has partnered with the PharmAccess Foundation to provide health insurance for all its members and has established an education and scholarship fund to help less privileged farmers (KNCU, 2014). Other research participants residing in the Kibosho Ward worked for Vasso Agroventures Ltd. (VAL) a partner company with Dutch-based Kili Holland that grows and delivers tropical plant cuttings. VAL provided health insurance for all permanent employees and was responsible for partnering with Pamojas Women’s Clinic to offer a hypertensive screening and education seminar during my visit (Figure 5-16).

*Figure 5-15. Kilimanjaro Native Cooperative Union Café, Moshi, Tanzania*
Health Literacy and Hypertension

Similar to the case in Uganda, hypertension in Tanzania has yet to be problematized by governing institutions, researchers, and donor communities. Consequently, an individual’s access, understanding, and use of hypertension information are relatively unknown in rural communities compared to more researched diseases such as HIV/AIDS and malaria. Accordingly, traditional health literacies such as posters, pamphlets, radio broadcasts, and health awareness campaigns were severely limited or non-existent as it related to hypertension. Yet, due to the area’s developed infrastructure (roads, buses, electricity) and its relatively robust health care system, research participants reported easy access to trained medical officers and resources (e.g., hypertension medication). Table 5-3 lists the institutional knowledge base, defined as the trusted sources of hypertension health information as reported by the research participants. The awareness column is defined as the corresponding institutions overall awareness of hypertension.
This includes the institution’s ability to recognize symptoms, check an individual’s blood pressure, diagnose the problem, discuss associated risks and review available treatment options.

Table 5-3

*Hypertension Health Literacy Model*

<table>
<thead>
<tr>
<th>Institutional Knowledge Base</th>
<th>Awareness</th>
<th>Access</th>
<th>Literacies</th>
<th>Understanding</th>
<th>Use/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Referral Hospital (KCMC)</td>
<td>High</td>
<td>Easy</td>
<td>Oral Communication (Two-way)</td>
<td>Lifestyle-related risk factors; disease-related risk factors; treatment options</td>
<td>Screening; Medication; Behavior modification</td>
</tr>
<tr>
<td>Regional Hospital (Mawenzi)</td>
<td>High</td>
<td>Easy</td>
<td>Oral Communication (Two-way)</td>
<td>Lifestyle-related risk factors; disease-related risk factors; treatment options</td>
<td>Screening; Medication; Behavior modification</td>
</tr>
<tr>
<td>District Hospital (Kibosho, St. Joseph, Machame)</td>
<td>High</td>
<td>Easy</td>
<td>Oral Communication (Two-way)</td>
<td>Lifestyle-related risk factors; disease-related risk factors; treatment options</td>
<td>Screening; Medication; Behavior modification</td>
</tr>
<tr>
<td>Dispensary</td>
<td>Low</td>
<td>Easy</td>
<td>Oral Communication (One-way)</td>
<td>N/A</td>
<td>Medication</td>
</tr>
<tr>
<td>Traditional Healer</td>
<td>Low</td>
<td>Easy</td>
<td>Oral Communication (two-way)</td>
<td>Herbal healing</td>
<td>Herbal medication</td>
</tr>
<tr>
<td>Radio</td>
<td>Low</td>
<td>Easy</td>
<td>Media/Oral communication (One-way)</td>
<td>Lifestyle related risk factors</td>
<td>Behavior modification</td>
</tr>
</tbody>
</table>

**Hospitals**

The Tanzania health care system offered three levels of hospital care predicated on the service population (e.g., District, Regional, and National) and specialized care requirements of the patient. As it relates to hypertension care, access to a medically trained doctor or prescribing
nurse who could recognize symptoms, screen, diagnose, and recommend treatment was available at each level of hospital care. Because of this, research participants could choose a hospital facility based on geographical distance rather than required care. From a *physical access* perspective, defined as the proximity and distance to effective hypertension care, research respondents used phrases such as “no problem,” “not hard,” and “not difficult” to describe getting to the hospital. They often referred to the effective and inexpensive network of dala dalas that interconnected the rural villages to the more urban hospital locations. One participant stated, “If I don’t feel well, I can take dala dala to hospital.” Another stated, “Getting to the hospital is no problem, a car can take me or I take dala dala.” While structural barriers did not deter participants from accessing and utilizing hospital care, the cost burden for those without health insurance did.

According to the WHO *World Health Report* (2006), more than 100 million people enter poverty status due to health management costs related to chronic diseases. Research conducted by Gustafsson-Wright, Duynhouver, van der Gaag, and Schultsz (2010) concluded that the impact of unexpected health events, such as a chronic disease diagnosis, can severely financially impact uninsured households. Additionally, they found that those uninsured are most likely to be poor and less likely to utilize the health care system when ill. Conversely, research suggests a positive relationship between health insurance recipients and health care access and utilization (Jutting, 2004; Veugelers & Yip, 2003). This is significant in that according to Gustafsson-Wright et al. (2010), “many chronic diseases can be prevented by treating specific risk factors, an increase in access to and utilization of health care is expected to decrease the prevalence of chronic disease and thereby improve health” (p. 6). Although 93% of men and 94% of women
have no health insurance in Tanzania, many participants in this study had health insurance provided by their employer or co-op (United Republic of Tanzania, 2013).

Because of this, those participants with health insurance reported limited access barriers to the health system due to the burden of cost. One participant stated, “The money is no problem, we are getting medical treatment by insurance. The company has health insurance for us, so accessing is no problem.” Another stated, “I can get medication at the hospital. Good thing I have health insurance, you just tell your manager you need to go to the hospital, you go, get your medicine, see the doctor, no problem.” And another said, “It’s not a problem with money or time because I have health insurance.” Consequently, for those without health insurance, the burden of cost often precluded them from seeking medical care. One participant stated,

It can take even a month to go to see a doctor because the hospital which I attend here is Mission of Kibosho. It’s a private hospital, a Catholic hospital. It’s a little bit expensive so it take time to go see a doctor until I have money.

Another said,

The Kibosho is a private hospital, so you need to go with money. Before I did not have the—I was on probation. I did not get the full employment here, so I did not have the health insurance, so it was very difficult for me to access. When you go to see a doctor only to pay for consultation fees, 10,000. Then medication you may end up paying 40,000. Taking your blood pressure is 5,000. It’s a lot of money.

Finally, a participant suffering from hypertension on-set by diabetes concluded that he can’t afford to take care of both chronic diseases due to the financial burden. He said, “I can’t afford a doctor so sometimes I get traditional medicine…I just go to hospital if I feel too sick. Sometimes I get medicine for hypertension but mostly just try to relieve the headache.”
Findings of this current research might suggest that participants with higher accessibility and utilization of the health care system would describe a higher level of understanding of hypertension, yet, interestingly, participants in this study, insured or uninsured, described a very limited understanding of the hypertension. While conducting my fieldwork, I was able to participate and observe a hypertension screening organized and sponsored by the Pamoja Women’s Clinic and Vasso Agroventures Ltd. As individuals waited to have their blood pressure taken, I informally asked what they understood about hypertension or “pressure” as many described it. Some participants stated they heard about hypertension from people in their village. For example, one participant stated,

I heard about hypertension from the people, the neighbor who are having hypertension. They’re telling her they are being told by doctors not to eat salt, not to eat too much cooking oil, not to eat fat. Yeah, to reduce all those and to exercise more.

Another said,

I hear about from my neighbor, a neighbor died of hypertension. So before I did not know she had hypertension, then she got stroke. She fainted. When they took her to the doctor they say the blood—the blood pressure was very high.

While others, even though they were experiencing classic symptoms of hypertension (e.g., dizziness, headaches, blurred vision, heart palpitations), were learning about it for the first time. One participant stated,

First time to take the blood pressure, first time to hear about hypertension. But I always have the symptoms of headache, dizziness, and losing vision, but I didn’t know it’s hypertensive because I don’t know anything about hypertension, so I thought it’s malaria. Today I been told the blood pressure is very high… Because malaria, first the
symptoms of malaria—malaria is very common, so I know malaria. I don’t know hypertension. So in the symptoms of malaria it’s headache, weakness, dizziness, the same ones hypertension. Yeah, that’s why I thought it’s malaria.

Another said,

The first time it was six months ago at the hospital. Before I didn’t know even why the heart is racing, why headache, or why chest pain. I was dealing with that symptoms for four years… I didn’t know since 2008. It was only discovered 2014 I’m having blood pressure. 2013 December, that’s when. So all these symptoms I did not know its blood pressure.

Similarly, many participants were unable to attribute their symptoms to any know disease such as malaria or HIV/AIDS, thus they did not seek care for their symptoms. One respondent said,

I didn’t know what’s the problem. I thought it’s normal. Like when you’re getting old the heart maybe beat a little bit more fast and headache because of all this work I’m doing. So I taking things easily. Then in May I didn’t not go (to the hospital) because of hypertension. I went to the hospital because I was having stomach problem. Diarrhea. That’s when they took the vital sign and the diagnosis. You are also hypertensive.

For those participants that had some understanding of hypertension, their knowledge was restricted to general phrases attributed to behavior and lifestyle modification. Words such as “diet” and “exercise” and phrases like “eat less salt,” “eat more health foods,” “less stress,” and “eat more fruits and vegetables” were common among those participants with knowledge about hypertension. For example, one participant stated after her visit to the doctor,
I wished to know much about how to diet because the doctor at the clinic, they have a lot of work so they don’t have much time to speak to you. Today I wish the doctors, they would tell me more about the diet which I supposed to eat in order to control the blood pressure.

Another said,

I just felt that I don’t feel well, then I went to the hospital and then they find that my blood pressure is high. I was told that. Now, after that, they say don’t take sugar. Don’t take salt, but I don’t know how it comes now. I have the blood pressure. How it starts, I don’t know.

Another said,

I was told by the doctor that I should not eat food with salt and less sugar in the tea and reduce the fat. Say I have my daughter-in-law who cooks and she puts salt and fat. When I eat such food, the pressure goes up.

As it related to stress, one participant said,

Talking with a doctor I discovered—the doctor discovered that the main problem of high pressure is the stress, like the domestic violence at home. I was being beaten a lot with the husband. Now I make a decision to feel better because I was using medication, but still the blood pressure was very high. The medication did not help at all because of domestic violence at home. So now I make a difficult decision for my life because of my health because the doctor told me I’m borderline to get stroke if I not taking care of my heart. Now I got divorced. So we are officially separated. Now I am at home alone with the children. The husband moved away.
For some participants, the lifestyle message described by doctors and nurses was helpful in the control of their hypertension. For example, one participant who described his condition as “small pressure,” a non-technical way to describe slightly elevated blood pressure known as prehypertension, was able to control his blood pressure by eliminating salt and sugar from his diet. Others, like the women described above, eliminated areas of high stress in their lives, which in combination with medication lowered her blood pressure. Unfortunately, many participants were left wondering how to make or use the recommended lifestyle changes prescribed by doctors. Many described not understanding how to “eat healthy” or what it meant to “eat less salt.” One participant said, “The doctor told me to eat less salt, but I don’t know if that means to eliminate salt or just eat it sometimes?” Another said, “I use salt to keep our meat so I don’t know how to eliminate salt.” As it related to stress reduction, one participant said, “I have a troubled child at home who takes all my time. I have to give special care to him and I have other children. I don’t know how to eliminate this stress.” Ironically, another “taboo” food described by doctors, sugar, was the same food a key informant doctor recommended I take to the village(s) to build rapport and give participants who helped me in my research.

The hospital system and the infrastructure that supported it offered many positive attributes to research participants living in rural communities surrounding Moshi. Relatively easy physical access to knowledgeable doctors and an adequate supply of hypertensive medication was an encouraging sign that hypertension prevalence could be reduced with additional literacies and education initiatives used to promote awareness, effective understanding and use of hypertension information.
Other Literacies

Due to the relatively easy access to hospitals and hypertension medicine, research participants overwhelmingly reported going to the hospital and learning about hypertension from doctors and nurses. Radio, a common household asset owned by 84% of the population (TNBS, 2012), was reported by participants as an effective source of health information but not necessarily hypertension information. For example, as it related to the radio, one participant said,

The easiest way for me to get information is to listen to the radio because I can listen at home until I sleep. Sometimes we listen to the radio at work. I have not heard of hypertension on the radio, just HIV, peptic ulcers, malaria, and vaccines.

While one participant responded hearing about hypertension on the radio, it was not the main program. He said,

They (radio) say it was the same problem. I know that problem. It’s not like hypertensive problem, but its peptic ulcers. Sometimes they talk about hypertension. They always talk about that, acid in the stomach and when they talk—there’s a program on one of the radio stations, talk much about the acid in the stomach. When they talk about that, sometimes they talk about blood pressure too, but it’s not the main program. The main program is the ulcers in the stomach.

Religious leaders also provided health information, yet a majority of respondents in this study reported not hearing about hypertension from their faith leadership. One participant explained her pastor talked about eliminating stress from the home and this helped her blood pressure to feel “relieved.” Another discussed the calm she felt during prayer and how this helped alleviate some of the “pressure” and “headache” she felt.
Traditional healers and birth attendants still played an important role in Tanzania’s village life. It is estimated that between 60 and 80 percent of people in Tanzania use traditional medicine in everyday health (MoH, 2002). This role has been recognized by Tanzania’s Ministry of Health as they are currently seeking ways to integrate and institutionalize traditional and alternative health practices into the established health sector (MoH, 2012). Yet, as it related to hypertension, participants in this study reported not visiting a traditional healer for treatment. For many in this study, they visited the traditional healer for relief from stomach issues including peptic ulcers and diarrhea.

Summary

The Kilimanjaro Effect played a significant role in participant access to the highest levels of care in the region. An efficient network of roads combined with a cost-effective bus system limited the physical barriers of access for research participants. Similarly, employee health insurance provided by foreign companies and union co-ops limited the cost burden of care and medication for some participants. Conversely, easy access to the highest levels of care did very little to increase participant understanding of hypertension and its associated risks. Recommendations of diet modification without the required support, education, and resources to implement such plans left participants confused and frustrated. Additionally, participants’ acknowledgement of serious symptoms of hypertension (e.g., dizziness, blurred vision, and severe headaches) and the time between the onset of symptoms and a biomedical diagnosis suggests lower levels of care or traditional care were inadequate resources for treating hypertension. This further corroborates a lack of general hypertension awareness and suggests a significant need for literacy development and education in all sectors of care.
Chapter 6

Presentation of Research Findings—Culture

This current comparative research sought to understand what cultural perceptions hindered or enabled access, understanding, and use of hypertension information for adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania. According to Airhihenbuwa (2007), “Culture is a collective sense of consciousness active enough to influence and condition perception, judgment, communication, behavior, and expectations and the location of power in a given society” (p. 4). Airhihenbuwa further suggested that if we are going to engage in addressing health behavior for Africans, it “should be anchored in African ways of knowing (including myth) within an authentic and organic historical experience of knowledge production and acquisition that inform behavior change” (p. 5). In both Uganda and Tanzania there was a strong cultural perception of the supernatural, bewitching, and its connection to health and disease. The following section discusses the research findings on these cultural perceptions and how they hindered participant access, understanding, and use of hypertension information.

Supernatural

The literature on disease, religion, and the supernatural in African cultures is complex, confounding, and specific to the ancestral heritage from which it is derived. According to Awolalu (1976):

Every locality may and does have its own local deities, its own festivals, its own name or names for the Supreme Being but in essence the pattern is the same. There is that noticeable “Africanness” in the whole pattern…This is a religion that is based mainly on
oral transmission. It is not written on paper but in people’s hearts, minds, oral history, rituals, shrines and religious functions. (pp. 1-2)

Beliefs, attitudes and perceptions of indigenous religious practices and their relationship to health and disease are deeply rooted, yet continue to be challenged by the emergence of Western biomedical discourse. Despite this juxtaposition of biomedical and traditional discourses, African societies continue to co-exist within these two systems of knowledge. For example, despite the introduction, acceptance, and conversion of Christianity and Islam by African societies, beliefs about the spirit world are still culturally embedded in many rural communities’ perceptions about health and disease. A Gallup survey of 18 African countries conducted in 2009 concluded that on average 55% of residents believe in some form of witchcraft (Table 6-1).
Table 6-1

*Table of Percentage of residents in Sub-Saharan countries that believe in witchcraft*

<table>
<thead>
<tr>
<th>Country</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know/Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ivory Coast</td>
<td>95%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Senegal</td>
<td>80%</td>
<td>19%</td>
<td>2%</td>
</tr>
<tr>
<td>Ghana</td>
<td>77%</td>
<td>21%</td>
<td>2%</td>
</tr>
<tr>
<td>Mali</td>
<td>77%</td>
<td>23%</td>
<td>1%</td>
</tr>
<tr>
<td>Cameroon</td>
<td>76%</td>
<td>24%</td>
<td>0%</td>
</tr>
<tr>
<td>Congo (Kinshasa)</td>
<td>76%</td>
<td>24%</td>
<td>0%</td>
</tr>
<tr>
<td>Niger</td>
<td>75%</td>
<td>24%</td>
<td>0%</td>
</tr>
<tr>
<td>Malawi</td>
<td>72%</td>
<td>28%</td>
<td>0%</td>
</tr>
<tr>
<td>Chad</td>
<td>68%</td>
<td>31%</td>
<td>0%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>64%</td>
<td>36%</td>
<td>0%</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>63%</td>
<td>37%</td>
<td>0%</td>
</tr>
<tr>
<td>Zambia</td>
<td>59%</td>
<td>41%</td>
<td>1%</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>55%</td>
<td>43%</td>
<td>2%</td>
</tr>
<tr>
<td>South Africa</td>
<td>46%</td>
<td>54%</td>
<td>0%</td>
</tr>
<tr>
<td>Burundi</td>
<td>46%</td>
<td>55%</td>
<td>0%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>45%</td>
<td>49%</td>
<td>5%</td>
</tr>
<tr>
<td>Kenya</td>
<td>26%</td>
<td>74%</td>
<td>0%</td>
</tr>
<tr>
<td>Rwanda</td>
<td>17%</td>
<td>83%</td>
<td>0%</td>
</tr>
<tr>
<td>Uganda</td>
<td>15%</td>
<td>85%</td>
<td>0%</td>
</tr>
</tbody>
</table>


Research suggests that in the absence of information, explanations, and cures to unknown diseases or unusual circumstances that exist outside a community’s context of knowledge and practice, supernatural explanations often emerge (Awusabo-Asare & Anarfi, 1997; Castle 1994; Kirby, 1994). Accordingly, if both traditional and Western treatments fail to cure a disease, “it is commonly recognized that some supernatural force must be the cause rather than a natural,
physical phenomenon” (Cruz, 2000, para. 3). In their study on the HIV/AIDS epidemic in Ghana, Awusabo-Asare and Anarfi (1997) suggested that individuals often bypassed Western biomedicine in favor of traditional medicine. Furthermore, they concluded,

There is a belief that Western medicine can provide neither an explanation nor a cure for certain diseases. Therefore, people suffering from a disease whose origin has been attributed to supernatural causes, and their families, may seek explanation and possible cure for the disease at fetish shrines, diviners or spiritualists. (p. 244)

In a study conducted by Castle (1994) on illness and diagnosis of child death in Mali, 49% of mothers (n=122) attributed the death of their child to the “illnesses foondu (‘the bird’ referring to the owl) and heedu (‘the wind’)” (p. 314). Confounding, the study further concluded that 29% of mothers who sought biomedical services still cited the foondu and heedu as the cause of their child’s death. The author suggests that in regions where mortality is high, spirit attribution acts as an explanatory mechanism that shifts the responsibility of blame from the individual to the community belief system and allows the individual to maintain a positive relationship with the community (p. 315).

In both Uganda and Tanzania, research participants acknowledged and described a strong relationship between disease and perceptions of bewitching in village life. Interestingly, although biomedical hypertension information was more accessible to participants in Tanzania, both groups described the relationship similarly. Dr. Anguyo, key informant for this study in Uganda, described the relationship the following way:

People in the village who are sick and can’t attribute their illness to a known disease will attribute it to bewitching. When a child has a fever they can relate this to malaria or when someone starts to lose a lot of weight, HIV/AIDS. But even with those diseases there is a
high level of belief in spirits because people don’t have the resources for hospital care. So they go to the witchdoctor who tells them about a neighbor or family member that has bewitched them and they drink something or participate in some ceremony. But they don’t get better and often die.

A village elder stated,

So diabetes and hypertension are mysterious diseases at community level. Their symptoms are not known and therefore they are mistaken for being anything else until the person dies. There are millions of people who have died of hypertension or diabetes without knowing that that was the problem.

It was difficult to ascertain if research participants visited witch doctors or attributed their hypertensive symptoms to bewitching prior to diagnosis. Participants often spoke of “people” in their village who visited witch doctors when confronted with an unknown illness and the informal communication practices in village life that propagated these perceptions of disease and bewitching. For example, when I asked a participant in Tanzania about bewitching, she responded by stating,

In the village where I come from lots of people go to the witch doctor when they are sick. They go to the witch doctor most, not the hospital. Sometimes if they get treatment at the hospital and it doesn’t work they go to the witchdoctor instead and get some herb.

A participant in Uganda stated,

Yeah, in the villages we have that thinking (illness is caused by bewitching). Even like this HIV, before they have tested they go to witchdoctors. They think they have cursed them. Witches assess them but can’t give right services, but when they come here
(medical health camp) and the doctors assess them, they will find the disease and that’s the way they will get access to the what, to the services.

Some participants attributed the burden of cost to access the formal health care system as a reason why villagers sought treatment from a witch doctor. A participant in Tanzania stated, “they do (visit a witchdoctor) before seeing a doctor first. Kibosha Hospital can use 100,000 ($55 USD) for medication, consultation, and everything, but witch doctor 5,000 ($3 USD) you get everything”. He continued, describing the role health insurance plays in influencing people’s health-seeking behavior. He said,

Because only this company’s employing like maybe 500 people, not all having health insurance. There’s also people doing casual labor that are still in probation. Only a few of them get health insurance. So it means the rest also they go to the witch doctors.

It was also apparent that many participants witnessed people in their village dying due to failed treatment by a witch doctor. A participant in Tanzania stated,

So with all the stress of witch doctor and sickness you die first because he just keep you separated from here (hospital) because he tells you lies, like a neighbor is the one who is hurting you. You have nothing to do with your sickness…There is one neighbor who had the kidney problem which was complication of a lot of what was going on inside his body. He did not go to the hospital. He went to the witch doctor and then he was being told to eat cabbage, and then told this people is hurting you, the neighbors. He was given some traditional medication to put on the tea, getting blood…. Yeah, but few more months he just died. If he has been going to the hospital then maybe he will still be alive because they’ll treat the kidney.
A participant in Uganda said,

I have not been to a witch doctor, so I don’t know the treatment. But people in my village say witch doctors know how to treat them even though most of the time they don’t get to well, they end up dying.

**PEN-3 Cultural Lens**

Airhihenbuwa’s PEN-3 model was created to examine health beliefs and actions within the context of culture, history, and politics (Airhihenbuwa, 1989, 1995, 2007). In the case of both Uganda and Tanzania, the perceptions of disease and the spirit world were deeply rooted and contextually bound in indigenous religious traditions. To address health behavior within an African context, Airhihenbuwa challenged researchers to understand health within the cultural identity of Africans such that any education intervention is anchored in African ways of knowing. Solutions must operate from a place of authenticity that values and represents the subject’s historical experience of knowledge acquisition and production that informs behavior change within an evolving context.

The PEN-3 model (Airhihenbuwa, 1995; Figure 6-1) is composed of three interrelated and interdependent domains, each with three categories: *cultural identity* (person, extended family, and neighborhood); *relationships and expectations* (perceptions, enablers, and nurturers); and *cultural empowerment* (positive, existential, and negative). According to Airhihenbuwa, the dimensions “[offer] a cultural framework that provides (and in many cases obligates) researchers and interventionists to partner with communities when defining health problems and seeking solutions to those problems” (p. 4). Table 6-2 defines the three interrelated and interdependent domains of the PEN-3 Model and is populated based on the conducted research and its relationship to culture, disease, and bewitching.
Table 6-2

**PEN-3 Model Uganda and Tanzania**

<table>
<thead>
<tr>
<th>PEN-3 Categories</th>
<th>Definition</th>
<th>Research</th>
</tr>
</thead>
</table>
| Cultural Identity | **Person:** Health education is committed to the health of all. Individuals should be empowered to make informed health decisions appropriate to their roles in their families and communities.  
**Extended Family:** Health education is concerned not only with the immediate, nuclear family but also with extended kin.  
**Neighborhood:** Health education is committed to promoting health and preventing disease in neighborhoods and communities. | The household in rural African life is an integrated and complex system in which individuals have different roles related to asset production, consumption, and knowledge. Accordingly, the household gatekeeper of health knowledge must be the target of programs that address disease and the spirit world. Any health intervention must take place in the village and integrate itself within other systems of knowledge and production, such as agriculture and food production. |
<table>
<thead>
<tr>
<th>PEN-3 Categories</th>
<th>Definition</th>
<th>Research</th>
</tr>
</thead>
</table>
| Relationships & Expectations | **Perceptions:** Perceptions comprise the knowledge, attitudes, values, and beliefs, within a cultural context, that may facilitate or hinder personal, family, and community motivation to change.  
**Enablers:** Enablers are cultural, societal, systemic, or structural influences that may enhance barriers to change, such as availability of resources, accessibility, referrals, employers, government officials, skills and type of services (e.g., traditional medicine).  
**Perceptions:** Disease and illness is caused by the spirit world, an act of bewitching that must be treated by a traditional healer or witchdoctor.  
**Enablers:** Systemic poverty; inefficient and inadequate health systems; poor accessibility to the formal health system; lack of hypertension literacies and education; limited focus by government and non-government organizations on non-communicable diseases; poor doctor/patient communication; high rates of mortality  
**Nurturers:** Household; village; elders; traditional healers; witchdoctors |
| Cultural Empowerment | **Positive Behavior:** These are behaviors that are based on health belief and actions that are known to be beneficial and must be encouraged. Affirmation of these behaviors is critical to program success and sustainability.  
**Existential Behavior:** Those cultural beliefs, practices, and/or behaviors that are indigenous to a group and have no harmful health consequences, and thus need not be targeted for change and should not be blamed for program failure.  
**Positive Behavior:** A desire and willingness to listen, learn, and educate; an openness to change based on information and education; strong informal network of communication in the village (if information provided is factually and contextually relevant)  
**Existential Behavior:** Visiting traditional healers for illnesses treatable by herbal medicine; Prayer to alleviate stress |
<table>
<thead>
<tr>
<th>PEN-3 Categories</th>
<th>Definition</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Negative Behaviors:</strong></td>
<td>Negative behaviors are based on health beliefs and actions that are known to be harmful to health: Health providers must examine and understand them within their cultural, historical, and political context before attempting to change them.</td>
<td><strong>Negative Behaviors:</strong> Visiting witchdoctors for treatment of hypertension; propagating the message of disease and witchcraft in the village</td>
</tr>
</tbody>
</table>

**Summary**

In the absence of hypertension literacies and information, some research participants attributed their symptoms to deeply embedded cultural perceptions of bewitching. This strongly held belief resulted in negative behaviors such as seeking treatment from a witchdoctor, spell removal from a traditional healer, and propagating the message of disease and witchcraft in the rural villages. Each of these negative behaviors delays medical treatment and puts participants at serious health risks for more serious diseases or death if left untreated. Airhihenbuwa’s PEN-3 model provided a lens by which to understand health from a cultural perspective. The implication for adult educators, discussed with more depth in the Chapter 7, is that hypertension education initiatives or intervention must target the household, specifically the gatekeeper of health knowledge, and integrate bewitching into all areas of curriculum.
Chapter 7

Presentation of Research Findings—Comparison

This comparative case study sought to examine and compare how participants diagnosed with hypertension living in rural communities in Kabale, Uganda and Moshi, Tanzania accessed, understood, and used hypertension information. Similar to the hypertension health literacy tables (Table 4-3 and Table 5-3) described in both the Ugandan and Tanzanian sections, the combined Table 7-1 lists the institutional knowledge base, defined as the trusted sources of hypertension health information as reported by the research participants. The awareness column, defined as the corresponding institution’s overall awareness of hypertension, and the access column, defined as participants’ ability to access the institutional knowledge base. Based on participant interviews, focus groups, and direct and indirect observations, the institutional knowledge bases and their awareness of hypertension were similar in both Uganda and Tanzania. For example, participants in both studies described the hospital as the best place to get information about their hypertension. Furthermore, it was also described and observed that within each countries referral-based medical system, hospitals in both Uganda and Tanzania were the most well-equipped and staffed to screen, diagnose, and treat hypertension. Conversely, participants in each country described similar functions of lower health centers and community health workers, each as providing certain kinds of care but limited in hypertension awareness, knowledge, and treatment options. Additionally, based on the data gathered, the understanding and use columns have been updated from the original table(s). The understanding column is now defined as what participants actually understood about hypertension based on information received from the institutional knowledge base and how they actually use this information in their treatment of hypertension. Based on the updated table, the following is an analysis of similarities and
differences of how rural communities in Kabale, Uganda and Moshi, Tanzania access, understand, and use hypertension information.

Table 7-1

*Comparison Hypertension Literacies Table*

|------------------------------|------------------------|---------------|-----------------|----------------------------------|----------------------------------|------------------------|------------------------|
| Hospital                     | High                    | Difficult     | Easy            | Eat more fruits and vegetables; lower salt intake; lower stress in the home; take medication; | Eat more fruits and vegetables; lower salt intake; lower stress in the home; take medication; confusion | Limited lifestyle modification; low utilization of health services; **inconsistent** drug treatment; Seeking alternative answers | Limited lifestyle modification; high utilization of health services; **consistent** drug treatment |}
| Lower level health care centers | Low             | Easy          | Easy            | Bewitching; | Bewitching; Prayer; Witch-doctor; Traditional healer; No action; Hospital | Prayer; Witch-doctor; Traditional healer; No action; Hospital |}
| Community Health Workers    | Low                     | Easy          | Easy            | Bewitching; | Bewitching | Prayer; Witch-doctor; Tradition-al healer; No action; Hospital | Witch-doctor; Traditional healer; No action; Hospital |}
| Traditional Healers         | Low                     | Easy          | Easy            | Bewitching; Heart pressure | Bewitching; Heart pressure | Herbal remedy; Spirit removal | Herbal remedy; Spirit removal |}
| Radio                        | Low                     | Easy          | Easy            | Eat more fruits and vegetables; lower salt intake; | Eat more fruits and vegetables; lower salt intake; | No action; limited lifestyle modification; seeking alternative | No action; limited lifestyle modification; seeking |
Within a pluralistic health system where medical information is sought from a variety of sources, physical access to lower levels of health care were similar in both Uganda and Tanzania. Although, inefficiencies and inadequate staff and resources were described and observed in both countries, physical accessibility to lower level care centers and community health workers (CHWs) did not represent a barrier for participants. Unfortunately, it was also described and observed that hypertension care was not available for participants at these lower levels of care. It was observed that blood pressure cuffs were non-existent at many lower levels of care and staff were not trained on how to administer blood pressure tests or recognize symptoms of hypertension.

**Similarities**

Participants in both countries described a limited understanding of physical symptoms and an inability to attribute symptoms to hypertension. Accordingly, participants described waiting a significant amount of time between the onset of physical symptoms and receiving an accurate biomedical diagnosis. This suggests participants may have sought treatment from lower levels of care and CHWs, and that they were unable to get the information and care they required, prolonging treatment and increasing their risks for more serious health problems. Even
in Tanzania, where physical access to the highest level of care was unproblematic, participants still described a limited understanding of hypertension and having symptoms of dizziness, headaches, blurry vision, and respiratory problems for significant lengths of time prior to a biomedical diagnosis.

The absence of hypertension information and explanations at lower levels of care and from CHWs left participants in both countries with the inability to attribute their symptoms to a known disease (e.g., Malaria and HIV/AIDS) and thus created a gap between understood community knowledge and knowledge of an unknown disease. This gap in knowledge influenced participant actions in similar ways. First, it provoked a deeply embedded cultural explanation for disease. In both Uganda and Tanzania, traditional beliefs in the supernatural world were often used to explain health and disease in the context of bewitching. This often encouraged participants to seek treatment from witch doctors or traditional healers. As previously discussed, participants in this study were vague in describing their interaction and beliefs about bewitching, only to conclude that traditional beliefs in the supernatural were still prevalent in village life. Second and more prominent in Uganda than Tanzania, prayer was a utilized treatment for participants’ hypertension. Participants described the calming influence that prayer had on the mind and the hope that God instilled in them. Conversely, it was observed in one particular denomination that disease could be “prayed away,” which is very dangerous in the absence of factual information and explanations. Third, participants described significant amounts of time between the onset of physical symptoms and a biomedical diagnosis of hypertension. This suggests another possible outcome due to limited knowledge and understanding at lower levels of care: Participants took no action until medical camps visited their village or physical symptoms got so bad that hospital care was required. Fourth and finally,
if symptoms were bad enough, participants who were not diagnosed at medical camps sought care at the hospital. With the exception of seeking care at the hospital, the absence of information and knowledge at lower levels of care and from CHWs created a similar outcome: prolonged treatment and an increased risk of more serious health problems.

**Differences**

The primary difference between participant access in Uganda and Tanzania was the infrastructure that supported accessibility to high levels of care in Tanzania. The direct and indirect benefits of Mount Kilimanjaro were observed in well-paved roads and a cost-effective bus system that reached participants in rural communities. I rode the dala dala to the villages almost daily, and while not the most efficient mode of travel, I was able to easily access rural communities, health centers, and hospitals surrounding Moshi. While participants in Uganda described walking for three hours to the hospital or foregoing treatment due to a lack of transport, a majority of participants in Tanzania described physical access to the hospital as “no problem.” Additionally, a majority of Tanzanian participants in this comparative research study had some form of health insurance supported by a strong agriculture sector heavily influenced by foreign investment. This reduced the financial access barriers that inhibited Ugandan participants from seeking continued care.

The implications of limited physical and financial barriers on hospital access or conversely, the implications imposed by physical and financial barriers on hospital access were significant in a multitude of ways. First, limiting barriers of access, physical and financial, increased the utilization of hospital care for Tanzania participants (*use*). Although this research suggests that participants in Uganda and Tanzania likely sought treatment from lower levels of care, which delayed access to hospital care, once diagnosed or treated for hypertension at the
hospital, participants in Tanzania described limited barriers to further care and treatment. Second, in both cases, hypertension medication was only available at the hospital and privately owned dispensaries, yet participants in Tanzania described easy access to medication and limited financial barriers due to health insurance coverage (use). This, according to previous research (Balkrishnan, 1998; Mojtabai & Olfson, 2003) and described by participants in the current study, suggests a higher level of adherence to long-term treatment and recommended care. Third, due to physical and financial barriers, participants in Uganda were limited to biomedical information and treatment. This encouraged participants to seek out alternative answers to their health, often re-enforcing cultural beliefs in bewitching and religious beliefs in prayer and healing.

It is important to note, as described by some research participants in Tanzania, barriers of cost did exist for those individuals without health insurance. As described, these barriers directly influenced their health-seeking behavior and subsequent care. These barriers were similar to those that influenced care for Ugandan participants that caused a low utilization of hospital care, the pursuit of treatment from traditional sources (e.g., traditional healers and witch doctors), and inconsistent adherence to prescribed medication.

Interestingly, easier accessibility and utilization of hospital care might suggest a better understanding of hypertension for participants in Tanzania, yet participants described similar a doctor/patient communication pattern that left both groups frustrated and confused. It was directly observed in doctor/patient consults in Uganda and similarly described by participants in Tanzania that four recommended options prescribed by the doctor to participants to treat their hypertension: eat more fruits and vegetables, lower salt intake, reduce stress, and prescribed medication. Recognize that traditional health literacies (e.g., health campaigns, awareness programs, radio programs, pamphlets, brochures, and posters) explaining hypertension causes,
risks, symptoms, association with other diseases, association with lifestyle, treatment options, side-effects, duration, and so on are limited or non-existent. Thus doctor/patient communication is the only opportunity for individuals to learn about and understand their chronic disease. Yet, the consults I observed lasted between 2-5 minutes, and depending on the severity of the patient’s hypertension, they were either prescribed medication or told to eat more fruits and vegetables, lower salt, and reduce stress in the home.

Lifestyle messages (e.g., eat more fruits and vegetables, reduce salt, lower stress) are deeply rooted in social behavioral psychology and assumes that individuals are rational beings that make decisions to maximize benefits and limit costs based on received information. Yet, this rationalist perspective makes several assumptions about human decision-making, including that individuals have complete information, resources, and support to maximize their interests. Additionally, the rationalist perspective ignores structural constraints (e.g., institutions, culture, markets, and government, economic, social factors) that limit or enhance an individual’s decision-making process. In the case of participants in both Uganda and Tanzania, information, resources, and support on how to implement recommended changes were non-existent. Furthermore, structural constraints, systemic poverty and the relationship between them and food choice remain unaddressed. This left participants feeling confused, frustrated, and desperate for more information on how to implement (use) recommended changes.

Other Literacies

Similar to the message and effect of the doctor/patient consults discussed above, hypertension health literacies discussed on the radio, television, and in the newspaper used the prescriptive lifestyle message to inform citizens. Although participants in each case described the radio as an effective and trusted source of health information, programs and messages about
hypertension were limited whereas health programs on HIV/AIDS, malaria, maternal health, and child nutrition were abundant. This again suggests the need for governments, policy makers, and educators to problematize hypertension in the wake of an impending epidemic.
Chapter 8

Summary of Findings, Implications, and Recommendations

This summary of research identifies key findings for each research question based on interviews, observation, and analysis.

Key Findings Related to Research Question 1

How do adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania access, understand, and use hypertension information?

1. Hypertension information was accessed from both formal and informal knowledge bases. These included the hospital, church, radio, newspaper, traditional healers, witchdoctors and rural community members.

2. Participant understanding of hypertension was limited to symptomatic and behavior modification knowledge. Participants could identify symptoms and list certain foods to eat or avoid, but were unable to conceptualize and associate factors of risk, causation, treatment, disease association, and psychological and physiological effects.

3. Participants took four actions in accordance with their access and understanding of hypertension information: Modified their diet, took prescription medication, visited a traditional healer or witchdoctor, or took no action at all.

*Note: Although the diet modification and prescription medication are the best biomedical solutions for treating hypertension, the barriers to these option often precluded participants from taking any action at all.

Key Findings Related to Research Question 2

What barriers exist in accessing, using, and understanding hypertension information and how do existing barriers impact hypertension care?
1. Hypertension has yet to be problematized in Uganda and Tanzania, thus traditional health literacies used to create awareness and inform the communities about hypertension have not been developed.

2. Lower levels of the formal health system are ineffective providers of information and care for hypertension due to a lack of training and resources. This might explain why participants experienced symptoms of hypertension for a significant amount of time prior to a biomedical diagnosis.

3. Physical access barriers to the hospital such as poor roads, long distances, and transportation costs limited the utilization of health care and treatment options for participants in Uganda.

4. Print literacies were ineffective in the rural communities.

5. The church was an effective place to access health information, yet lifestyle modification messages and a more dangerous message of prayer over seeking medical treatment were problematic.

6. “Free” hypertension medicine in Uganda was often not available at the government hospital, thus patients were referred to private dispensaries where they had to pay for their medication, which they often could not afford.

7. Delay in care and corruption at government hospitals dissuaded participants from seeking care.

8. Lifestyle modification messages were ineffective in the absence of education, support, and available resources.

9. Physical access to the institution with the most knowledge about hypertension was the most difficult to access for rural communities in Kabale, Uganda.
10. Radio information was limited and communicated a lifestyle modification message when discussing hypertension.

11. Doctor/patient consults, the only opportunity for participants to learn about their hypertension, were described as quick and prescriptive.

**Key Findings Related to Research Question 3**

What cultural perceptions hinder or enable access, understanding and use of hypertension information for adults diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania?

1. In the absence of hypertension information, cultural perceptions of disease and symptoms were attributed to the supernatural and bewitching.

**Key Findings Related to Research Question 4**

What are the differences and similarities between access, understanding, and use of hypertension information for individuals in Kabale, Uganda and Moshi, Tanzania?

1. The most significant difference between Uganda and Tanzania was Tanzania’s ability to physically access the hospital due to its infrastructure.

2. The most significant similarity is that although participants in Tanzania had greater access and utilization of the formal health system (due to its infrastructure), their understanding of hypertension was no greater than participants in Uganda. This is primarily due to similar doctor/patient barriers discussed.

3. Lifestyle modification messages were ineffective for participants in each setting.

4. Lower levels of care were unable to effectively diagnose and treat hypertension for participants in each setting.
Implication of Findings

It is evident from this current comparative research that significant barriers to access, understanding, and use of hypertension literacies need to be addressed if this burgeoning chronic disease is going to be effectively managed in rural African communities. Hypertension continues to escalate in low- and middle-income countries (e.g., Uganda and Tanzania) where health systems are weak and the resources and capacity to address disease is limited. This leads to an increase in people living with hypertension going “undiagnosed, untreated, and uncontrolled” (WHO, 2011, p. 10) which ultimately contributes to high rates of cardiovascular mortality in these countries. Hypertension can be prevented, but it will require a coordinated and integrated approach by multiple stakeholders including government policy makers, health professionals, private industry (e.g., food manufacturers, pharmaceutical companies, medical device suppliers) academia, and civil society (WHO, 2011).

From my observation in areas such as Kabale, Uganda and Moshi, Tanzania, an incremental approach from identified stakeholders can make a significant difference in reducing hypertension as well as reducing the costs associated with long-term care. For example, while it is not feasible to think that Uganda will suddenly upgrade its physical infrastructure to give rural communities easier access to hospital care, it is very realistic to envision a program that educates Community Health Workers (CHW) and lower-system health workers on how to take an individual’s blood pressure and recognize symptoms of hypertension. As early detection is one of the primary factors in reducing cardiovascular mortality, small steps such as these can make a significant difference in the health of rural communities. The following section will discuss the research implications for three primary stakeholders: policy makers, adult educators and the research participants.
Implications for Policy Makers

Ministries of Health in both Uganda and Tanzania have outlined and presented strategies for controlling hypertension in their respective countries. Yet, this current comparative research would suggest that plans in both countries have yet to be operationalized. Infectious diseases—primarily HIV/AIDS and malaria, maternal health, and child nutrition—still dominate the health discourse and developed literacies in each country. In participating in multiple health camps in Kabale, Uganda and observing the effects of HIV/AIDS and child malnutrition on rural communities, it is easy to understand the difficult decisions each country has to make in delegating resources and developing health literacy programs. Yet, regrettably, it is evident that if action is not taken, deaths due to cardiovascular diseases with continue to rise (Figure 8-1).

Furthermore, according to the WHO (2011), “Nearly 80% of deaths due to cardiovascular disease occur in low- and middle-income countries. They are the countries that can least afford the social and economic consequences of ill health” (p. 13; Figure 8-2).

Policy makers in Uganda and Tanzania can no longer ignore hypertension; they must take action and begin to develop policies that target this deadly disease. As discussed, where resources are limited, incremental steps and an integrated approach can play a significant role in controlling and managing hypertension. Informed by this current comparative research, the following incremental actions taken by policy makers in each country could significantly reduce the cost burden and mortality rate in rural communities associated with hypertension.

Research participants in both Uganda and Tanzania described a significant amount of time between the onset of hypertension symptoms and a biomedical diagnosis. Although participants in Tanzania described having easier access to the hospital where a hypertensive diagnosis could take place, the amount of time between significant symptoms and an accurate biomedical diagnosis (e.g., dizziness, headaches, and blurry vision) suggest that lower levels of care were unable to screen, diagnose, and treat their symptoms. In Uganda, the physical barriers participants were required to overcome dissuaded hospital utilization and necessitated the use of lower levels of care or traditional care, neither of which could provide an accurate diagnosis or treatment. Implementing early detection polices is cost-effective and could play a vital role in the early detection and treatment of hypertension in both rural areas.

**Hypertension screening.** Some participants in both countries described having their blood pressure taken for the very first time upon initial diagnosis. It was also described and observed that blood pressure measurement was not part of the intake process at lower levels of care. Governments in both countries need to enact policies that mandate all government health facilities check blood pressure levels as part of the patient intake process. Such policies would require funds allocated for technologies used to diagnose hypertension as well as educating lower level staff members on hypertension diagnosis and treatment options. Expanding
hypertension screening at all levels of care would create a significant health benefit for rural communities. First, from an accessibility standpoint, lower levels of care are the initial access point for rural communities seeking information and treatment from the formal health system. For individuals suffering from hypertension symptoms, diagnosis and treatment options could be easily accessed. This would promote early detection and limit the potential risks of an undiagnosed condition, which ultimately leads to more serious health complications or death. Second, health workers at lower levels of care live in the rural community. Accordingly, health workers become advocates for hypertension awareness in their rural community. They can discuss symptoms, causes, disease association, and treatment options. Furthermore, they can provide factual and contextual information that disputes deep cultural beliefs in the supernatural and bewitching. Most important though, the information is coming from a trusted source in the community, not an outsider. Third, if effectively tracked and monitored, the government will have a rich countrywide dataset to establish prevalence and incidence rates. This will give researchers the ability to analyze the data and begin to better understand determining factors in each country at a regional level.

**Medication.** The longer hypertension goes undetected, the more at risk an individual is to experience heart failure, a stroke, heart attack, or kidney failure. Symptoms of blurry vision, headaches, and dizziness described by participants along with a diagnosis of hypertension confirmed participants were experiencing significant health risks. Conversely, not all individuals diagnosed with hypertension require medication; for some, lifestyle changes can be implemented to lower and control hypertension. However, it was my experience in Uganda and Tanzania that early detection was negligent and blood pressure levels required immediate attention. For example, while walking with a nurse in Machame, Tanzania we conducted a blood pressure test
on a rural woman who had been complaining of blurred vision and headaches. Her blood pressure registered at 203/120. According to the American Heart Association (2015) a hypertensive emergency (e.g., stroke, heart failure, and heart attack) is anything 180/120 or higher. At her levels, she was doing significant damage to her internal organs and was at serious risk. Fortunately, her son was home and could drive her immediately to the hospital. This participant and others experiencing high blood pressure levels were given a prescription to treat their hypertension. Unfortunately, especially in the case of Uganda, access to medication was only available at the hospital and was often unavailable due to shortages.

Many developing countries such as Uganda and Tanzania have essential medicine lists that government hospitals and lower systems of care are required to carry. These are often generic drugs targeting severe epidemics (e.g., HIV/AIDS and malaria) provided by foreign pharmaceutical companies. For example, India is the largest supplier of generic HIV Antiretroviral Drugs (ARVs) to low- and middle-income countries, including Uganda and Tanzania (Avert, 2014). The combinations of generic drugs along with pressure from activists and large organizations such as the Clinton Foundation have significantly reduced the cost of prescription drugs in poor countries (Avert, 2014). The WHO (2011) estimates that implementing a program whereby hypertension medicine was available in similar relation to ARVs or malaria would cost US$ 1 per head in poor countries, representing only 4% of the total budget spent on health in poor countries. A policy that requires the addition of hypertension medication to the essential medicine list, the resources to support availability of medicines at lower levels and the training of staff to administer medication could significantly reduce barriers of access and cost for rural communities in treating hypertension.
**Public awareness campaigns.** Uganda’s policy makers need no better example of creating public awareness for a health concern than their successful campaign against HIV/AIDS in the mid-1980s. Lauded for their open acknowledgement of the HIV/AIDS pandemic in their country, government officials at the highest level were instrumental in implementing an integrated and coordinated public media campaign targeting awareness and sexual behavioral change (Genuis & Genuis, 2005). Significant in their approach was the utilization of community health workers and grassroots organizations to deliver information and communicate with local community groups. Personal communication networks were set up in both urban and rural areas (Stoneburner & Low-Beer, 2004). Information from these personal networks was then used by health officials to develop contextually relevant education and messages targeting specific groups. This was a much more integrated approach than the top-down, unilateral “condomcentric” (Wilson, 2004, p. 848) message being communicated by many African countries at the same time.

The “condomcentric” message is all too familiar as it relates to the limited hypertension messages communicated on the radio, in the newspaper, and by doctors in Uganda and Tanzania: eat more fruits and vegetables, use less salt. Similar to their fight against HIV/AIDS, policy makers in Uganda and Tanzania need to openly acknowledge the hypertension pandemic and implement an integrated and coordinated public awareness campaign. People need to become familiar with the word “hypertension,” its risks, symptoms, causes, association to other diseases, and treatment options. More important, and similar to what made Uganda so successful in their fight against HIV/AIDS, policy makers must resist the top-down unilateral “food” message approach. While food choice plays a significant role in hypertension, the message of “eat more fruits and vegetables” is abstract and devoid of context. This implies a coordinated effort by
health officials in both urban and rural areas to understand hypertension at the local level and disseminate contextually relevant information to the community.

**Implications for Adult Education**

According to UNESCO (2005), “Lifelong learning can contribute substantially to the promotion of health and the prevention of disease. Adult education offers significant opportunities to provide relevant, equitable, and sustainable access to health knowledge” (p. 5). Unfortunately, the primary providers of health and education are policy makers and health professionals. This often leads to education that is ideologically driven: “Ideologies such as individual-focused health education, professionals as all-knowing purveyors of health, and citizens as consumers of expert medicine that have come to dominate the Western world” (English, 2012, p. 17). The evidence suggests though, that this is no longer just an ideology propagated in the West. In Africa, unilateral, population-based health literacy initiatives developed by Western agencies targeting infectious diseases are ubiquitous and have had a limited effect. They are often devoid of context, full of technical medical jargon and situate health literacy within a Western paradigm of behavioral psychology. This further promotes Western hegemonic ideologies and denies African identity and ways of knowing.

The implications of this current comparative research for adult educators are significant. Hypertension has yet to be problematized in Uganda and Tanzania, thus health literacies have yet to be developed. The evidence would suggest hypertension information and education is required across all sectors of society. Based on this current comparative research, there are some targeted groups where contextually relevant and community-based hypertension education could make a significant impact in the lives of rural communities in a short amount of time. Targeted groups would include:
• Community Health Workers & Lower-Level Health Workers
• Civic Leaders: Pastors, Village Elders, Local Politicians
• Doctors and Nurses (specifically doctor/patient communication)
• Traditional Healers

Education is not the panacea for all social ills, thus for initiatives to be effective, they must be part of a coordinated and integrated effort by key stakeholders. If we educate Community Health Workers on how to screen for hypertension yet we do not provide the necessary technologies to support screening, then the efforts will be futile. Similarly, if the Ministry of Health enacts and supports a policy that requires all health centers to take a patient’s blood pressure during the intake process but lower care workers have not been educated on hypertension, again, the efforts will be futile. This represents both an enormous challenge and opportunity for adult educators. It implies that if we are going to move beyond unilateral, population-based food messages, we need to be on the ground, in the community, co-creating knowledge and learning with and from the participants we seek to inform. We must take a participatory approach education.

**Participatory Action Research.** Participatory Action Research (PAR) is committed to a set of practices that produce “radical and democratizing transformations in the civic sphere” (Denzin & Lincoln, 2005, p. 34). Deconstructing the relationship between Object and Subject, PAR seeks to create co-authored knowledge that is culturally and contextually relevant. Spradley (1980) expressed co-authorship this way:

> I want to understand the world from your point of view. I want to know what you know in the way you know it. I want to understand the meaning of your experience, to walk in
your shoes, to feel things as you feel them, to explain things as you explain them. Will you become my teacher and help me understand? (p. 34)

Chambers (1992) stated, “In PRA (participatory rural assessment) outsiders are conveners, catalysts and facilitators to enable people to undertake and share their own investigations and analysis” (p. 12). Co-authored knowledge is characterized by its practical use to serve a specific need (e.g., hypertension awareness) of the community from which it originates.

The historical roots of Participatory Action Research originated in countries in Latin America, Africa, and Asia (de Koning & Martin, 1996). With an emphasis on emancipatory education and a practice concerned with examining the unequal distribution of power and resources, PAR projects sought to address the feeling of helplessness often associated with oppression (de Koning & Martin, 1996). Conversely, within the paradigm of development, it is evident that a local and culturally centered program is not possible within the framework of modern science and individual-based education (Tandon, 1991, as cited by Tandon, 1996, p. 19). Thus, adult educators established a methodology of education that situated the teacher and the learner as co-creators of knowledge. They distanced themselves from established research protocols that situated them as superior and controllers of knowledge and emphasized the practical implications of their research (Tandon, 1996). Through group dialogue, critical reflection and action, adult educators located the PAR methodology within the framework of an alternative pedagogy. Much of this early scholarship has shaped current adult education programs. For example, Fingeret and Danin (1991) concluded that a participatory approach to curriculum design in a New York City-based literacy initiative helped students overcome prior negative school experiences. Additionally, Purcell-Gates, Degener, Jacobson, and Soler (2002), in their work on adult literacy, emphasized the need for authentic materials that mediate the
individual’s and community’s everyday lives. Adult educator and philosopher Paulo Freire’s work in South America conceptualized this alternative pedagogy into popular education that linked the process of knowing and leaning through an ongoing cycle of action and reflection (Freire, 1973).

**Participatory Action Research, Adult Education, and Paulo Freire**  
Paulo Freire’s (1970, 1973) theory of conscientization, the idea of praxis, and his commitment to a democratic dialectical process has had a significant influence on the field of Adult Education and PAR. His critique of modern education as a domesticating practice for maintaining social and economic structures of inequality is rooted in action research and his early-life in South America. These experiences provided Freire with critical insight that people can change their lives and position in society through a critical reading of their world. Thus, adult education was no longer a didactic process, but rather a collaborative process of learning, thinking, and action. It becomes a process of social investigation for oppressed communities to name their oppressor and take collective action. For example, it was evident in Freire’s work in Guinea-Bissau, where the design and development of curriculum was based on the needs of the rural people as defined by the rural people. Great attention was given to local popular language, which was used to inform and educate the rural people through developed literacy manuals, cultural circles, reflective dialogue, and photo recognition discussions. Freire and his team took great effort to understand and learn from the community their needs and objectives, thus empowering the learners through mutual and shared collaboration to make meaning of their own realities. Through the use of problem-posing, Freire helped the learners identify their own world and collectively establish learning goals that would help them change it for the betterment of their community. Through praxis,
Freire and his work facilitated knowledge seeking and knowledge generation, self-efficacy, and a willingness towards the process of change based on a new understanding of the world.

**Participatory Action Research and Health Education.** Participatory action research has become the model for researchers and adult education grassroots organizations to develop and implement effective community-based health initiatives. For example, Preston-Whyte and Dalrymple (1996) facilitated a community-based AIDS drama program in South Africa. They approached the project as co-learners that emphasized the knowledge and stories of the community. Participants were encouraged to “voice and concretize their existing opinions not only of AIDS but of sexual interaction in general. They are provided with an opportunity to openly discuss sex and sexual practice” (pp. 116-117). Through song, dance, and drama, the community encouraged a new way to perceive the world and sexuality. This message was much more effective than the prescriptive approach that many NGOs used in supplying condoms to the community, i.e., use a condom. In another PAR project, George (1996) sought to understand the meaning of sexuality for poor women in Bombay, India. The women were asked to participate and share in their experiences through narratives and life-stories. They facilitated interviews with one another and led community discussions on issues such as pregnancy, sexually transmitted diseases, and domestic violence. The process of coming together and the intimacy of the topics discussed “created the space to examine the structures in our lives which kept us in a dependent position and it gave us the opportunity to discuss the collective actions we could take to change the situation” (p. 123). Both of these studies suggest an effective methodology for understanding and addressing health outside the dominant Western discourses.

The biomedical discourse that currently informs health research and subsequent education programs is often situated within a laboratory setting, devoid of cultural context and
the socio-economic determinants that influence communities’ health beliefs. Additionally, these discourses situate knowledge and its dissemination within the larger Western discourse of universal truth. As Tandon (1996) stated,

The rise of expertise, specialization, technology and commercialization in the area of health care has also resulted in the narrow definition of health as an issue only in situations where disease or ill-health occurs. Therefore, medicines, doctors, hospitals, surgery and treatment become important in any programme of health care far more than the people whose health is the purpose of any effort. (p. 24)

The implication is that health is situated within a clinical model that diagnoses and prescribes treatment based on expert knowledge located in the institution. PAR seeks to bring health out of the institution and locate it in the everyday experiences of the collective. Thus health is positioned as an aspect of, not independent of, what it means to be human. Just as education and life-long learning are part of life, health should be situated within the variables that define what it means to be an active participant in the world. To do this, PAR practitioners interested in health find value in indigenous knowledge and pursue pedagogy that promotes the community as agents of its own health. This can only happen if a community’s knowledge, skills, and values are accepted as the prerequisite for building new knowledge.

Words of wisdom. If adult educators want to be successful in developing effective community-based education initiatives, we would be wise to close our mouths and listen to those in the community. The excerpt below was taken from a conversation I had with a village elder and historian in Kabale, Uganda. I think it perfectly summarizes how adult educators must approach developing any kind of community-based education initiative.

Kigezi Healthcare Foundation (KIHEFO) is founded on the fact that a household is a
complex unit which cannot be handled in the sector form. Sector by sector is what I mean *(vertical model)*. That’s the foundation of KIHEFO. We found out, no, no, no, that’s the wrong way of doing it. We know by living with communities that the target unit of development is something called a household. A household is a mini-state. It is a mini-state with a president, with a cabinet, with a parliament. [Laughter] They cannot be one person at all times. But with a decision-making mechanism, with an implementation system, but that system is complex. In KIHEFO we found that the complexity is made up of three entities:

1. The first one is health. The first thing they want in every household is to be healthy although they may not know how to do it. Okay?

2. Then when they are finished becoming healthy they want, for our people here, their next target is agriculture. Some people who are not from here don’t believe it. Rob, if you moved from here and you went to a typical family of the Rukiga and you talked to the woman, the wife, the woman in the home and you said, “I have given you $50. What I want you to do is look for people, employ them to dig for you; you just remain at home here.” She won’t do it. She can’t. To tell a Rukiga woman not to go to dig when her strength is still there, no way. In other words, digging is not a job. It’s not a task. It’s not labor. It’s a way of living.

3. The third one, which we discovered later, can be described as microfinance. There is a desire for capital whether it’s in the form of money or the form of labor or whatever form, but they want a capital base on which to base their development. The way they develop it at the community level is that we form associations and groups. They
either contribute money or they put money or labor in the pool which they bring together and use for agriculture and for health.

So KIHEFO found out and decided that in the household these three things exist in an integrated form. If you want to work seriously with the household to develop it, you must also help them with the three things in combination, the three of them. If you want to deal with rural people, deal with them at household level and bring those households in the community where they belong. Don’t change for them. Deal with them in the community where they belong, where they chose to belong by themselves. Remember that you are dealing with them in three things at a goal. That’s why our government has gone wrong again. That’s why all our donors have gone wrong.

They pull out a sector and deal with that at a time. Then they bring HIV/AIDS and look at it as a unit of its own. Then they bring veterinary—the one with chicken, deals with cows. You know? Then they bring microfinance. They put a bank somewhere and say all of you must belong to this organization. Wrong!

The household must be reached in its entity. Each household belongs to a community, but it belongs to a community of its choice! You see? You find that communities agreed to be together by themselves. Leave them the way they are. Deal with them or work with them if you want to help them. Help them the way they are. Don’t bring in another household and say you also belong to these. No, that’s already wrong. Now, if you’re working with them and you bring health, listen to what the community’s doing, listen to their agriculture, and if you want to help them, help them the way they are working.
In other words, help them in what they are doing as opposed to our IMF and World Bank and USAID and African Development Bank and Uganda Government. They all do one simple wrong thing: they bring experts. They sit at their desks and draw out the plan for these people. Then they put money in what they have planned and then they bring their planners, their implementers and come to these people and say, “We have come to help you in this.” Wrong!

Implications for Research Participants

The implications of this current research for participants diagnosed with hypertension in Kabale, Uganda and Moshi, Tanzania are not promising. The barriers to access, understanding, and use of hypertension information in both communities will continue to increase the risk of serious health problems and ultimately lead to death for participants if immediate action is not taken to problematize this deadly disease. On the ground, there are some encouraging signs that hypertension is beginning to get noticed in each area. Dr. Karen Yeates, a key informant in Moshi, Tanzania for this current research study, recently launched an education initiative in the Kilimanjaro Region to train Community Health Workers on hypertension. Specifically, the training covers four modules: (1) Health and Disease, (2) Communication and Organization skills, (3) Cardiovascular System, and (4) Risk Factors for Cardiovascular Disease. Developed and co-created with local community members, community health workers and health care officers, the four modules will be delivered by trained community health workers through in-home visits, community gatherings, and mobile health camps. These are the kinds of efforts that can go a long way in building community awareness and educating rural communities on the risks associated with hypertension. While such efforts have not been developed in Kabale, Uganda, I am currently working with KIHEFO founder Dr. Geoffery Anguyo to establish non-
profit status for KIHEFO in the United States. It is my hope that through this organization I can raise funds and awareness for hypertension in Kabale, Uganda. I have already planned a return trip to Kabale in the summer of 2015 to conduct the first ever population-based hypertension prevalence study. I will also begin to work with local communities to develop an integrated hypertension health education module that incorporates systems of agriculture and capital.

Implications for Future Research

This study acknowledges the limitation of prior research conducted on health literacy within an African context. Additionally, the lack of literature on hypertension in Africa implies a significant need for research in a multitude of areas. Based on this comparative research, three areas of future research must be conducted if we are going to begin tacking this impending epidemic.

First, future research must include a significant increase in hypertension prevalence studies conducted at all levels of society. The paucity of current research on hypertension prevalence in Africa provides little evidence of the significant depth of this problem. Prevalence studies can be used to inform policy makers, donors, and academic researchers on the depth of the problem and targeted areas of focus. They become the catalyst for an integrated and coordinated effort at both the national and local level.

Second, evidence from this research suggests that further research is required to understand effective literacies that could be used to educate community health and lower level care workers on hypertension. Although radio appeared to be an effective communication modality for rural communities, other modes of communication proven successful in targeting diseases in Africa—such as drama, dance, and personal narratives—need to be explored within
the context of hypertension. Additionally, the “food” message must be researched within the context of local communities and how they make meaning of food.

Third, and finally, future research is required at a local level to determine other cultural barriers that might hinder participants from accessing treatment for hypertension. As discussed, deeply held perceptions of the supernatural and bewitching were prohibitive in rural participants seeking biomedical care. This research was limited in that participants were predominantly adult women. Future research must explore the topic of culture, gender, and health as it relates to hypertension. Finally, in areas such as Kabale where religion plays a significant role in community life, research is required to explore the relationship between religion, disease, and health outcomes.

**Conclusion**

This research suggests that there are significant barriers that must be overcome for rural communities to access, understand, and use hypertension information to promote better health and well-being. Significant health problems, burden of care, and mortality rates are only going to increase if key stakeholders continue to ignore this problem. Limited access to care at lower levels of the health system contributed to symptoms going undiagnosed and an increase in health risk for participants. Limited lifestyle modification messages prescribed by doctors and communication modalities such as the radio and newspaper were ineffective and created more confusion and frustration than understanding and action. Cultural perceptions of the supernatural and bewitching were reinforced in the absence of information, contributing to a low utilization of the health system and increasing the health risk for participants.

The challenge ahead for key stakeholders is significant. As adult educators, we must force our way into the conversation and make known the value we add in promoting a
participatory approach to education. If left to policy makers and health professionals, a top-down Western-based “condomcentric food-pyramid” approach to hypertension education is imminent. Research participants in this study require more and deserve better. Education should not be demoralizing; it should not lead to confusion and frustration; it should not put an individual and their burden of care in a deficit model while ignoring structural barriers that limit an individual from achieving good health. Adult educators must answer the bell, accept the challenge, and forge our way into the conversation. We must be the voice at the table for rural communities like Kabale, Uganda and Moshi, Tanzania.
References


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Dear Institution Review Board,

This letter hereby authorizes PhD. Candida te Robert Freer of The Pennsylvania State University to conduct dissertation research on “Health Literacy and Hypertension” in Kabale, Uganda. Robert has informed me of the research design, methodology, and target population. This research will further our understanding of access, understanding, and use of hypertension literacies in our community and lead to locally situated and contextually bound hypertension education interventions.

This research approval is for two years, beginning May 15, 2014 through May 31st, 2016.

Sincerely,

Dr. Geoffrey Anguyo
EXECUTIVE DIRECTOR
KIGEZI HEALTHCARE FOUNDATION (KIHEFO)

CC. MINISTER OF HEALTH
CC. PERMANENT SECRETARY, MINISTRY OF HEALTH.
Appendix B: Institutional Review Board Approval: Queen’s University

Karen E. Yeates, BSc, MD, FRCP(C) MPH Department of Medicine/Division of Nephrology Queen's University/Kingston General Hospital
Co-Director, Queen's School of Medicine, Office of Global Health 94 Stuart Street, Room 2059, Etherington Hall
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yeatesk@queensu.ca

2014 May 06

Institutional Review Board
Re: Ethical clearance for PhD research by Mr. Robert Freer

Dear Institutional Review Board,

This letter hereby authorizes PhD. Candidate Robert Freer of The Pennsylvania State University to conduct dissertation research on "Health Literacy and Hypertension" in the village of Machame, Tanzania. Robert has informed me of the research design, methodology, and target population. This research will further our understanding of access, understanding, and use of hypertension literacies in our community and lead to locally situated and contextually bound hypertension education interventions.

His research will be embedded within the larger longitudinal DREAM-Global Study which is funded by the Global Alliance for Chronic Diseases in partnership with the Canadian Institutes for Health Research and Grand Challenges Canada. The DREAM-Global Study has full ethical clearance at Queen’s University in Kingston, Ontario as well as with the National Institute of Medical Research in Tanzania.

This research approval is for two years, beginning May 15, 2014 through May 31st, 2016. Sincerely,

Karen E Yeates, MD FRCP C MPH
Associate Professor, Division of Nephrology, Department of Medicine, Queen’s University
Co-Director, Office of Global Health, Queen’s University School of Medicine Director, Pamoja Tunaweza Research Centre, Moshi, Tanzania
Appendix C: Informed Consent Letter

Dear Participant:

My name is Robert Freer. I am a Ph.D. doctoral candidate at The Pennsylvania State University under the supervision of Dr. Ladislaus Semali. You are invited to participate in a research project entitled: Health Literacy and Hypertension. The purpose of this qualitative study is to understand how individuals access, understand and use hypertension health information in Machame, Tanzania and Kabale, Uganda. This study has been approved by The Pennsylvania State University Institutional Review Board.

The following research interviews, focus group, and participant observation activities were developed to ask you a few questions regarding access, understanding, and use of hypertension health information. It is our hope that this information can lead to a better understanding of how participants make meaning of health information in an effort to reduce hypertension. There are no identified risks from participating in this research.

The interviews, focus group and participant observation is anonymous. Participation in this research is completely voluntary and you may refuse to participate without consequence. The interviews and focus group will take approximately 60 minute to complete. You will receive no compensation for participating in the research study. Responses to the interview and focus group questions will be digitally recorded but only be reported in aggregated form to protect the identity of respondents. The planned use of this information will be reported in my dissertation thesis. Neither the researcher nor the University has a conflict of interest with the results. The data collected from this study will be kept in a locked cabinet for three years.

To insure safe and proper research procedures, auditors of The Pennsylvania State University Institutional Review Board and regulatory authority (ies) will be granted direct access to the research data without violating the confidentiality of the participants. Further information regarding the research can be obtained from the principal researcher Robert Freer: rzf122@psu.edu or my faculty advisor Dr. Ladislaus Semali: lms11@psu.edu, 814-865-2246. If you have questions about your rights as a study participant, please contact Penn State's Office for Research Protections at (814) 865-1775.

If you would like to know the results of this research, contact Dr. Ladislaus Semali at lms11@psu.edu or 814-865-2246. Thank you for your consideration. Your help is greatly appreciated.

Your signature below indicates that you have read the above information, are at least 18 years of age and agree to participate in Health Literacy and Hypertension research study.

Printed Name
Signature
Date
Appendix D: Research Protocols

Introductions

Facilitator(s)—who will be leading the discussion, Assistant(s)—who will be taking notes—will briefly introduce themselves and let the participants introduce themselves.

Overview of session & guidelines

Framing:

We have invited you here because you have valuable information about hypertension information in your community. We would like to learn about your thoughts and experiences with things such as:

This study focuses both on your current experiences with high blood pressure and what you think would be most helpful to you and community members with high blood pressure. Our hope is that the information that you share with us over the next 60 minutes can possibly be used to help develop new education materials that are more helpful and relevant to your local context.

Rules/Ethics/Logistics

• No right or wrong answers; we just want to know what you think and do.
• Please tell us what you really think, even if it is bad or something you don’t like—or think we might not want to hear.
• Privacy
  o Please do not share anything that we discuss here today with others outside of this room. This means that you should not mention comments or names of other people here to anyone once you leave.
  o We, the facilitators, will keep your personal information private, too.
• We will record this session so that (assistant) does not have to write absolutely everything down. We don’t want to miss anything that you say. Only the research team will listen to the recording and all identifying information will be removed to make sure what everyone says here is confidential, unless you reveal that you intend to harm yourself or others.

Research Interview Questions

Access

1. Tell me how you became aware of having high blood pressure.
2. If a friend asked you for advice about getting help for a high blood pressure, what would you tell them?
3. What obstacles have you encountered when trying to get the information you need? Please tell me about a time when this happened.
4. What would make it easier to get all the information you need about high blood pressure?
5. What kinds of resources and support have most helped you treating high blood pressure?
6. Where or who do you go to for information and advice about high blood pressure? [be sure]
   a. What has helped you feel that they are a source of information that you can trust?
7. What do you wish someone had told you about high blood pressure?
8. What kinds of resources and support would most help you get information high blood pressure?
   a. Where do you think such support and information should be offered (e.g., school, health center, community center, adult education center, mental health services center, etc.)?

**Understanding**

9. Have you ever read information about high blood pressure? (e.g., pamphlets, websites, brochures, handouts, medication instructions, reports from psychiatrists/doctors/health professionals/teachers). Please describe. How easy or difficult was it to understand?
   i. What about the information you’ve seen on high blood pressure (e.g., videos, ads, TV, YouTube)? Please describe. How easy or difficult was it to understand?
   ii. How about information you’ve heard (e.g., radio, doctor explains something about high blood pressure)? Please describe. How easy or difficult was it to understand?

10. What would make this information easier to understand?
   a. How do you learn best? Face-to-face, written in easy language, pictures, bullet points, videos, internet, discussing with other caregivers, etc.

11. What are some of the words that are associated with high blood pressure?

12. What do you still need to know about high blood pressure?
   a. How would having this information help you or make things easier?

**Use**

13. How have you used and applied the information and advice you’ve gotten about high blood pressure [ask for specific examples. E.g., doctor suggested X and I tried it.]

14. Who or what has helped you make decisions about treating your high blood pressure?

15. What are the biggest obstacles you face in treating high blood pressure?

16. Which sources of information and advice about high blood pressure do you trust the most? [Prompts: health care providers (doctors, nurses), psychiatrists/counselors, friends and family, child’s school/teachers, government websites, other websites, online discussion boards, university researchers, church members, community leaders, newspapers, brochures, TV, adult educators]
   i. Probe for reasons they trust these sources
   b. Which do you trust the least?
      i. Probe for reasons they don’t trust these sources

17. What do you do when you get conflicting information or advice about high blood pressure? [re-phrase: How do you decide which one you should believe?] [Ask for specific examples—not hypotheticals.]

18. Are there particular topics or issues related to high blood pressure that you don’t feel comfortable discussing with professionals? If so, what?
   a. Why don’t you feel comfortable discussing these things?
   b. What could they do to help you feel more comfortable?
Wrap-up

19. Considering everything we’ve discussed, is there anything you would like to add that hasn’t been mentioned?

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Wrap-up [10 minutes]
- Anything else you want to share?
- Follow-up questions
- Thank you!
- Set-up next meeting time and place
VITA

Robert Freer

EDUCATION

2015  PhD., Comparative and International Education and Adult Education, The Pennsylvania State University
Dissertation: A Comparative Study of Health Literacy and How Rural Communities Understand Hypertension Information in Tanzania and Uganda
Advisor: Dr. Ladislaus Semali

2005-2007  Master of Education, Alpha Sigma Nu, Adult Education and Training, Seattle University
Advisor: Dr. Carol Weaver

1990-1995  Bachelor of Arts, Speech Communications, University of Washington

RESEARCH EXPERIENCE

Current  Dissertation Thesis: Conducting research in Kabale, Uganda and Machame, Tanzania on Health Literacy and how each rural community accesses, understands and uses information related to hypertension.

2010-2013  Graduate Assistant, Adult Education, The Pennsylvania State University
- Conducted research on academic partnerships between Pennsylvania State University and East African faculty members
- Conducted research on Health Literacy in Moshi, Tanzania
- Conducted research on Pennsylvania Mature Worker population
- Managed learning enrichment and technology program for Adult Education Department

PUBLICATIONS
