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# Assessing Community Leadership Collaboration in Bringing About Sanitation in Njinikom, Cameroon

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Walden University

College of Health Sciences

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Irin Njuakom

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Walden University  
2017

Abstract

Assessing Community Leadership Collaboration in Bringing About Sanitation in

Njinikom, Cameroon

by

Irin Afuahmbom Njuakom

MSc., University of North Dakota, 2012

BS, University of Wisconsin, Oshkosh, 2006

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

Walden University

November 2017

## Abstract

The lack of access to improved toilet sanitation remains a major health and environmental hazard in developing nations in the world. Despite global leadership efforts at the level of the United Nations and nongovernmental organizations around the world, diarrhea-related diseases disproportionately affect children. Evidence from the literature suggests that competent and sustained leadership is central to resolving the problem. From a historical perspective, leadership advocacy and engagement prompted the sanitary revolution in the West in the 18th and 19th century that led to the eradication of preventable infectious diseases such as cholera. Integrated leadership that made use of sanitation and water institutions at the national, state, and local levels and structured, skilled, and financial capability helped create an enabling environment for better and sustainable hygiene sanitation in the West. A qualitative approach was used to explore the role of collaborative leadership in enhancing the demand for toilet hygiene in rural Njinikom and the community's perception of the state of sanitation. One-on-one interviews were conducted with 25 adults aged 18 years and above with knowledge and exposure to poor toilet sanitation. Content analysis was used to develop themes and patterns from the data. The findings revealed barriers such as inefficient leadership and limited financial resources that impede adequate feces disposal and motivating factors for better sanitation. The results provided support for a partnership approach that is inclusive, relevant, useful, and sustainable. The implication of the study includes renewed interest in improving toilet sanitation and health and increase understanding of the importance of adequate feces disposal in preventing and eliminating associated fecal-oral diseases.

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## Dedication

I dedicate this dissertation to my late father, Michael F. Njuakom, who during his short stay on earth dedicated his life to his children and taught us the value of education and humility. I would also like to dedicate my work to my mother for her care, prayers, and support over the years.

## Acknowledgments

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## Chapter 1: Introduction to the Study

### **Introduction**

The lack of access to safe excreta disposal contributes to the overall burden of diseases in developing nations in Africa and Asia that disproportionately affects children. Diarrhea-related diseases such as dysentery, cholera, and typhoid attributable to inadequate toilet sanitation and hygiene are the leading cause of death among children under 5 (Bartram, Lewis, Lenton, & Wright, 2005; Mara, Lane, Scott, & Trouba, 2010). Diarrhea together with intestinal helminths also results in childhood stunting, cognitive impairment, and poor academic performance (Bartram et al., 2005; Dillingham & Guerrant, 2004; Mara et al., 2010).

Despite the health, social, and economic development consequences of inadequate toilet sanitation, an estimated 2.6 billion people (41% of the global population) worldwide continue to lack access to a basic sanitation facility (Kariuki et al., 2012). Rural communities in developing countries bear a significant burden of the ill effects of poor sanitation practices. Only 51% of rural communities globally have access to improved sanitation when compared to urban communities at 82% (UNICEF/World Health Organization, 2015). Despite global intervention efforts, sub-Saharan Africa has the lowest level of sanitation coverage at 30% from 1990–2010 (Okurut, Kulabako, Chenoweth, & Charles, 2015).

Efforts to improve human feces disposal in marginalized communities in developing countries have largely focused on disease burden, behavior change, and individual households (Bartram et al., 2005; Phaswana-Mafuya, 2006; Pruss-Ustun,



2014; Tumwine et al., 2003). Several reports and studies (Bartram & Pratt, 2010; Ekane, Nykvist, Kjellen, Noel, & Weitz, 2014; Mara et al., 2010) have expressed the importance of leadership (national and local government, political, health, and nongovernmental) in sustainable sanitation. However, research has revealed that there has been limited analysis of activities of health, local, and political leadership involvement and commitment to facilitate and promote access to sanitation in impoverished communities in sub-Saharan Africa such as Njinikom in Cameroon (Bartram & Platt, 2010; Mara et al., 2010). The lack of minimum standards, surveillance, and government authority to supervise the construction of sanitation facilities hampers the goal of improved sanitation in marginalized communities.

Global efforts that include activities of the United Nations world body, local, and international nonprofit organizations such as the Bill and Melinda Gates Foundation (Jacobsen, 2008) continue to seek innovative approaches to increase access to basic sanitation and reduce associated diseases. I designed this study to explore the role of collaborative leadership in enhancing the demand for improved sanitation in rural Njinikom. The social change implications of this study lie in the fact that improved sanitation is fundamental to eliminating preventable infectious diseases transmitted via fecal-oral contact that continue to plague underserved communities in the world.

In Chapter 1, I will provide general introduction, present background and the overall purpose of the study. I will also provide the significance of the study. In this section, I will offer a preview of the theoretical framework, nature of the study, scope, limitations, and the research questions.

## **Background**

Inadequate access to toilet sanitation and the lack of leadership in addressing the crisis in developing countries are public health challenges that continue to plague impoverished communities in the world. Diseases from inadequate hygiene and sanitation disproportionately affect children and the have-nots and account for 88% of all illnesses among children under 5 years old (Bartram et al., 2005). Approximately 2 million children die annually from preventable diarrhea diseases (Pattanayak et al., 2009). These statistics demonstrate the dire consequences of inadequate sanitation and the need to understand the role of leadership in addressing the problem.

Research studies have noted the importance of promoting improved sanitation as a critical aspect of human and environmental health. There is sufficient evidence that access to improved sanitation, clean water sources, and hygiene reduced morbidity and mortality and improve health and wellbeing (Bartram & Platt, 2010; Mara et al., 2010). Improved sanitation in marginalized communities reduced diarrheal disease morbidity by 36% and together with clean water reduced child mortality by 55% based on a review of epidemiological studies (Esrey, Potash, Roberts, & Shiff, 1991). In impoverished areas, better sanitation alone is found to reduce diarrhea incidence by as much as 60% (Norman, Pedley, & Takkouche, 2010). To accelerate progress and make sanitation interventions sustainable, an understanding of the role of collaborative leadership that includes national and local governments, nongovernmental organizations, health professionals, individual households, and political leadership is fundamental (Cairncross, Bartram, Cumming, & Brocklehurst, 2010; Ekane et al., 2014). The results of my review of the literature

revealed limited existing research regarding the role of collaborative leadership in accelerating better sanitation and improving health in marginalized communities.

### **Problem Statement**

Inadequate sanitation involves indiscriminate human waste disposal and presents a major health and environmental concern in developing countries in the world, particularly in Africa and Asia. According to Kariuki et al. (2012), approximately 2.6 billion people (41%) worldwide lack access to a basic sanitation facility. Rural communities in low to middle-income countries bear a significant burden of the ill effects of poor sanitation practices. Only 51% of rural communities globally have access to improved sanitation when compared to urban communities at 82% (UNICEF/World Health Organization, 2015). According to Ako et al. (2010), just about 58% of the urban population in Cameroon has access to improved sanitation and 42% in rural areas.

Achieving improved sanitation remains a challenge in developing nations at the local community and national levels. Approximately 2 million children die annually from preventable diseases associated with inadequate sanitation (Pattanayak et al., 2009). Inadequate sanitation and hygiene are leading contributors to the global burden of disease. Despite its overall impact on health and the environment, there remains a need for effective leadership to create demand, and support policies that promote sanitation and institutions for sanitation (Mara et al., 2010).

Possible causes of the lack of progress in achieving sanitation in rural communities include lack of organizational capacity, a weak health sector, absence or weak policies and regulations, and lack of local and political leadership coordination and

partnership (Bartram & Platt, 2010; Carincross et al., 2010). Keltner, Kelley, and Smith (2004) noted that leadership is fundamental to mobilize resources and action to effect positive change and achieve progress in community programs. My review of the literature indicated the existence of few studies on the significant role of leadership in improving sanitation and revealed gaps in understanding about leadership and efforts to prioritize access to improve sanitation and health status in Njinikom. In one study on reducing diarrheal diseases associated with open defecation, Wake and Tolessa (2011) focused on nursing leadership's role in improving sanitation in districts in Haiti and Ethiopia.

I designed this study to explore inadequate sanitation and the role of leadership in rural Njinikom in Cameroon. I used a qualitative phenomenological approach. My goal was to identify factors that may hinder or increase access to improved sanitation and determine the role local leaders, health sector professionals, and political leaders can play to improve sanitation practices.

### **Purpose of the Study**

The purpose of this qualitative, phenomenological study was to determine whether a partnership approach to increase the demand for sanitation in rural Njinikom could help address current sanitation problems. According to Bartram and Platt (2010), the need for integrated leadership, engagement, and advocacy involving different sectors of the community is fundamental in any substantial progress towards improved sanitation. The intent of this study was to provide an understanding of how local

leadership, in partnership with community residents and health professionals, can increase awareness and the demand for improved sanitation in rural Njinikom.

### **Research Questions**

I developed the following two central research questions (RQs) to guide this study:

RQ1: What is the role of local community and political leaders, if any, in increasing the demand and resources for sanitation for residents in the Njinikom village?

RQ2: For individuals of the Njinikom community with or without access to sanitation, what is their perspective on the current state of sanitation and the importance and effectiveness of leadership in addressing the problem?

I carried out this study through observation of the environment as well as in-depth interviews with residents, traditional and local political leaders, and public health professionals. I also used the following subquestions (SQs) to explore the topic:

SQ1: What are traditional and local political leaders doing to accentuate the sanitary conditions of the Njinikom village?

SQ2: What are the indigenes' views and knowledge of the current crisis and leadership role in addressing it?

### **Theoretical Framework**

In this study, I used the ecological model. This model focuses on factors that influence behavior and health and underscores different attributes necessary to guide interventions to prevent diseases and promote health (Glanz & Rimer, 2005; Sallis,

Owen, & Fisher, 2008). Because human behavior involves a complex interplay of social, economic, environmental, cultural, and political factors, the ecological model provided a multilevel concentration that guided my process of data collection and analysis. The model also formed the basis of the research and interview questions aligning with my goal to explore how a partnership approach can improve access to sanitation in rural Njinikom. According to Richard, Gauvin, and Raine (2011), the multilevel focus of the ecological model allows for a collaborative approach in research and health intervention studies.

The ecological model has its roots in behavioral science disciplines and public health (Sallis et al., 2008). The constructs of the ecological model include individual characteristics (education, income, gender, beliefs); community (physical environment, community leadership and organizations, rules, and regulations); and public policy (local, state, and national policies for sanitation practices and surveillance). These constructs were relevant to my study.

The sanitation framework developed by WaterAid (2011) also served as a guide to enhance the provision of sanitation services in developing nations. The WaterAid sanitation framework comprises the following principles necessary for sustainable intervention programs: inclusiveness, relevance, effectiveness, and sustainability. Its similarity to the ecological model focuses on the advancement of an integrated approach to community assessment, collaboration, and the interaction of varying influences for better health outcome.

### **Nature of the Study**

To conduct this study, I selected a qualitative approach, using a phenomenological design. Ethnography was another approach I considered but found less suitable for this study. An ethnographical design focuses on the culture (belief system, behavior, and language) of a people to provide an understanding of how the people live (Byrne, 2001; Petty, Thompson, & Stew, 2012). The phenomenological design, on the other hand, provided a framework for understanding the phenomenon of inadequate toilet sanitation and the role of leadership in enhancing sanitation in the community from the participants' perspective. Phenomenology allowed me to focus on the nature of the indigenes' experience (see Patton, 2002) of inadequate sanitation and their understanding of the role of leadership within the community to mitigate the problem. Inadequate sanitation is characterized by open defecation (defecating in farm fields, streets, and bushes) and use of open pits without slabs or walls (Jacobsen, 2008).

The qualitative method provided the basis for data collection and analysis. This method is useful in communicating people's experience of an event or situation using their words through interviews and observations (Patton, 2002). Data collection included a purposeful sampling of key informants and indigenes on the basis of their exposure, experience, and knowledge of the phenomenon of poor sanitation. I sought out officials in the local government responsible for health and sanitation services as well as influential members of the community including business people, traditional leaders, traditional healers, students, and public health professionals. I also sought out nongovernmental organizations engaged in improved sanitation activities within the

community. Participants' in the study were at least 18 years old and residents of the community.

In-depth face-to-face interviews and observation of the environment allowed me to gather a detailed description of participants' shared experiences and enhanced knowledge of the gravity of the crisis. Because Njinikom is a homogenous community and the primary language is Itanghi kom, I did not limit interviews to just English language speakers. Cameroon is a multilingual nation with English and French being the official languages. I used content analysis to analyze the data from interviews and observations of the environment and categorize the data into codes or themes denoting participants' shared experiences and worldview.

I conducted this phenomenological study in rural Njinikom, Cameroon. My parents were born in Njinikom, where I spent 4 of my teenage and formative years as a student. I personally experienced the practice of inadequate toilet hygiene. During those years, I remember seeing sanitation officers visiting compounds to monitor hygiene sanitation conditions. I lacked an understanding of the situation and how the indigenes experienced life differently. Living in the United States, I became interested in understanding more about the people's experiences and perspective of the sanitation situation and the role of leadership in addressing the issue. I have a residence in Njinikom, consider it home, and continue to engage in the community through Irina Project Initiative, Inc. I initiated a nongovernmental organization (NGO), Irina Project Initiative, Inc., dedicated to improving sanitation and hygiene conditions in Njinikom. Irina Project Initiative, Inc. constructed the first modern public toilet in the Njinikom



open market. The Irina public toilet was inaugurated in the community in December 2014.

### **Rural Njinikom**

The village of Njinikom is the headquarters of the Njinikom subdivision found in Boyo division of the Northwest region of Cameroon. Located in the grassland savannah area of the mountainous western highlands of Cameroon, it is situated approximately 54 km from the regional headquarters of Bamenda and lies between latitude 6°20' and 6°30' north and longitude 10°11' and 10°30' east. It covers a surface area of 173 square kilometers and has a population of about 37,459 inhabitants (Njinikom Council Development Plan, 2011). The inhabitants belong to the kom tribe, which is one of the main ethnic groups in the Northwest region of the country. The indigenes are referred to as Kom or Bekom. The local language is *itanghikom*. The village is subdivided into 15 neighborhoods or quarters (Njinikom, Mughef Ikui, Kikfuini, Balikumato, Yang, Wombong Ikui, Bobong, Tinifoinmbi, Mughef Itin, Ijim, Wombong Itin, Iso, Muloin, Bueni, and Asuchu) with each headed by a local traditional chief or quarter head (Njinikom Council Development Plan, 2011). The administrative structure is comprised of the district officer, who is the head of government at the subdivisional level, the mayor and local council, and the traditional neighborhood chiefs.

### **Definitions**

*Collaborative leadership*: Partnership between community stakeholders, institutions of government with distinct responsibilities and policies for sanitation, the health sector, and reliable NGOs (Bartram & Platt, 2010; Mara et al., 2010).

*Improved sanitation:* Health promotion through safe and hygienic means of human excreta disposal at the individual and household level (Okurut et al., 2015).

*Inadequate sanitation:* The practice of open defecation that involves the use of open pits without slabs or walls, fields, running streams, and buckets for excreta disposal (Barry & Hughes, 2008; Jacobsen, 2008).

*Integrated approach:* An assessment of the social, economic, cultural, political, and environmental factors of the health of a population to provide an understanding of how these factors influence health and are fundamental to any proposed intervention (Nguyen-Viet et al., 2009).

*Sustainable sanitation:* Use of latrines and toilets that are accessible, safe to use, easily maintained, culturally appropriate, prevent disease transmission, and are affordable (Mara, 2003; Okurut et al., 2015; Tsinda et al., 2013; WaterAid, 2011).

### **Assumptions**

The premise of this study hinged on my assumption that the methods of data collection (observation of the environment, face-to-face interviews, and documentation) would provide meaningful and reliable information. I also exhibited proficiency in data collection and analysis. In addition, I assumed that the participants in the study were truthful in their responses and knowledgeable about inadequate sanitation. Also, I made sure that the ecological model, sanitation framework, and phenomenological design were the basis of data collection and analysis to increase the validity and reliability (discussed in Chapter 3) of the study. To further ensure validity and reliability, I used confidential

methods to secure the data collected and in data analysis and reporting. I used member checking and triangulation to increase data validity.

### **Scope and Delimitations**

The scope of this study was to explore participants' experience of excreta disposal management and the role of leadership in the Njinikom municipality in addressing the problem. Inadequate sanitation and hygiene are key elements in the spread of infectious diseases transmitted via fecal-oral contact particularly among children (Bartram et al., 2005; Mara et al., 2010). In a multicountry study of countries in Africa, Asia, and Americas, Esrey (1996) found that improvements in human excreta disposal resulted in reduced diarrhea and increases in height and weight of children when compared to improvement in water. Effective leadership is fundamental for any successful sanitation intervention.

Study participants included healthy adults aged 18 years and older residing in Njinikom. Participants also included individuals speaking multiple languages given that Cameroon is a multilingual country (French and English being official languages of communication). I excluded vulnerable individuals and people with any physical, mental, or behavioral conditions. I selected potential study participants by way of purposeful sampling. Purposeful sampling allowed me increased access to individuals with experience, understanding, and in-depth knowledge of the current sanitation situation in Njinikom, including traditional and local political leaders and health professionals. The purpose of the study was exploring the problem of poor sanitation in the impoverished community and what leadership could do to increase access and demand.

I focused exclusively on an understanding of the peoples' experience of inadequate sanitation and the role of leadership in advancing the course of improved human waste disposal. Addressing the health aspects of inadequate sanitation was not a significant part of this study. I blended open-ended interview questions with a semistructured technique to gain in-depth information on participants' experience and perspective. The use of open-ended interview questions allowed me to ask follow-up questions to obtain detailed information on participants' experiences, understanding, and knowledge of the situation.

### **Limitations**

In qualitative research, limitations include the use of results that are not generalizable beyond a group or setting to other community or people (Maxwell, 2013). Because qualitative research studies take place in a natural setting, it is difficult to generalize the study outcome to a wider population given that participants' perspectives are influenced by factors such as culture, social, economic, and environmental circumstances. However, because in this study I sought to explore an understanding of the role of leadership in achieving improved toilet sanitation in Njinikom, a marginalized community, the results may offer insight into potential interventions in similar communities.

Additional limitations involved the absence of prior research studies on inadequate sanitation in Njinikom. There are limited studies focusing solely on excreta disposal interventions when compared to water and hygiene (Cairncross et al., 2010; Fewtrell et al., 2005). According to Cairncross et al. (2010), studies are few due to the

lack of trials on sanitation associated with the expensive nature of latrine hardware and the absence of trust in observational studies. As a result of this limitation, this study was exploratory in nature setting the groundwork for future research in the area in Njinikom. The construction of the first public toilet in the Njinikom market and subsequent efforts by Irina Project Initiative, Inc. together with the municipal council to reduce and eliminate open defecation will require more research on the promotion of behavior change intervention.

A possible limitation in this study could have resulted from self-reported information. In this study, I relied on peoples' perspective and their experiences. Participants' memory and ability to recall events and experiences may be lacking or distorted. This potential limitation could have impacted the consistency of the information in the research study. However, taking notes during the interviews helped me to compare data entries and elucidate follow-up questions. I also used multiple data sources (documentation, observation, and in-depth interviews), cross checking the accuracy of the findings with participants, and detailed description in the reporting.

As a result of me being the principal investigator in the study, the subjectivity of the researcher could be an issue. Qualitative research, according to Maxwell (2013), is also concerned with how well a researcher's values, perspectives, and expectations may influence the research process. To limit bias as the principal investigator, I addressed my background and activities in the community and illuminated how well it might affect the interpretation of the data. My parents were born in rural Njinikom, and I have extended family relatives in the community. I spent part of my teenage and formative years in rural

Njinikom as a student. During those years, I remember seeing sanitation officers visiting compounds to monitor hygiene sanitation conditions. I lacked an understanding of the situation and how the indigenes experienced life differently. As an adult, I became interested in understanding more about the people's experiences and perspective of the sanitation situation and the role of leadership in addressing the issue.

To mitigate bias, I also clearly stated the research design and methodology of this study. For data analysis, I used a detailed description of the information collected. Inductive content analysis that involved coding data to identify patterns and themes and detailed description of information collected were critical aspects of the data analysis.

### **Significance of the Study**

In this study, I attempted to explore how leadership collaboration and advocacy could improve toilet sanitation in rural Njinikom in Cameroon. Inadequate toilet sanitation remains a major struggle in rural Njinikom, where excreta disposal facilities are characterized by open pits without walls, concrete floors or roofs for safety and privacy and located distances from the compound houses. Improved toilet sanitation is a major component of human and public health. For instance, adequate excreta disposal significantly reduces diarrhea-related diseases, ascariis infection in children, the incidence of trachoma, and schistosomiasis (Bartram et al., 2005; Cairncross, 2003; Mara et al., 2010). Leadership failures that include lack of coordination in addressing the sanitation crisis in communities in developing nations are evident in the literature (Ako, Shimada, Eyong & Fantong, 2010). This study is unique because little research has focused on the

particular role that integrated leadership could play in improving excreta disposal in impoverished communities in Cameroon.

The results of this study may also increase knowledge of the sanitation crisis and provide perspective on the village community's needs for improved sanitation regarding resource management, political impact, legislation, and the socioeconomic status of the population (see Ako et al., 2010). Moreover, because the problem of inadequate sanitation disproportionately affects the poor (Bartram et al., 2010), this knowledge may also be important in developing public health policies and building effective leadership organizations and structures in Njinikom and similar communities in Cameroon. From a social change perspective, improved toilet sanitation is fundamental to preventing and eliminating preventable infectious diseases transmitted via fecal-oral contact that continues to plague underserved communities in sub-Saharan Africa.

### **Summary**

Sanitation, as it relates to inadequate human excreta disposal, remains a major challenge in underserved communities worldwide and most significantly in low to middle-income nations. Inadequate sanitation is a major risk factor for increased morbidity and mortality related to preventable diseases such as dysentery, cholera, and diarrhea and neglected tropical diseases (trachoma and schistosomiasis; Bartram et al., 2005). Researcher approaches to improve excreta disposal have mainly focused on health outcomes; however, current research illustrates the importance of leadership engagement and collaboration in enhancing the demand for adequate sanitation (Bartram & Platt, 2010; Mara et al., 2010). Through committed and efficient collaborative leadership

approaches, some communities have successfully transformed themselves and eliminated common preventable diseases of pestilence such as diarrhea, cholera, schistosomiasis, intestinal helminthes, and trachoma that result from inadequate sanitation practices.

In Chapter 2, I will review current and past research and reports on inadequate sanitation. I will also identify successful approaches towards remedying the issue. I will discuss in detail the theoretical framework for this study and the gaps in the literature that could be addressed.



## Chapter 2: Literature Review

### **Introduction**

Inadequate sanitation, a cause of preventable infectious diseases such as diarrhea, cholera, and neglected tropical diseases (Mara et al., 2010; Phaswana-Mafuya, 2006), is a major health and environmental concern among the poor across the world. Diarrhea diseases attributable to poor sanitation are the leading cause of death among children under 5 years old (Bartram et al., 2005). The World Health Organization (2015) estimated that over 2.4 billion people globally are without access to a basic sanitation facility such as a simple pit latrine. A review of epidemiological studies found that improved sanitation resulted in a 34-36% reduction in diarrhea morbidity (Esrey, Potash, Roberts, & Shiff, 1991; Maanen, 2009). Despite the overall burden of disease and benefits of improved sanitation, progress on indiscriminate feces disposal management remains slow in sub-Saharan Africa (Okurut et al., 2015).

Various research studies have been used to explore the health consequences of water, sanitation, and hygiene practices and interventions to reduce the overall burden of associated diseases (Dreibelbis, Freeman, Greene, Saboori, & Rheingans, 2014; Fewtrell et al., 2005; Phaswana-Mafuya, 2006; Wake & Tolessa, 2012). With the current state of inadequate sanitation and burgeoning population growth, the current trend is predicted to get worse without effective collaborative leadership action (Mara et al., 2010; United Nations, 2010). Mara et al. (2010) identified political leadership outlined with institutional responsibilities and budget for sanitation as one of the most important strategies to improve toilet sanitation.

Based on my findings in this literature review, relatively few studies have focused exclusively on the role of collaborative leadership (political, local community, and health sector leadership) in addressing the sanitation crisis in developing nations. The problem of global health leadership is in dire need of greater and substantive research. The purpose of this qualitative, phenomenological study was to determine whether a partnership approach to increase the demand for sanitation in rural communities in Cameroon, in sub-Saharan Africa, could help address the current and endemic sanitation problems facing the nation.

In this chapter, I will also present a review of current literature and theory to provide background for this study. My historical review of the evolution of sanitation in the West and mid-19th century London will provide background on the problem of sanitation and the effect of leadership in environmental sanitation. My review of the determinants of access to sanitation, such as community capacity, socioeconomic status, organizational structure, political commitment, and traditional belief system (Kumar, Kar, & Jain, 2011) will provide context for this study. According to Mara et al. (2010), programs that have focused solely on construction to increase facilities for sanitation without addressing community determinants were often determined to be culturally inappropriate and benefitted a few individuals in affected communities. Successful sanitation programs have utilized an integrated leadership, engagement, and advocacy approach involving different sectors of the community (Bartram & Platt, 2010; Mara et al., 2010).

### **Literature Search Strategy**

I completed the literature review for this dissertation by conducting a rigorous search for journal articles and papers. The primary databases I used for conducting this literature review included CINAHL and Pub-Med in the Walden University Library home page to search for journal articles on the role of collaborative leadership in the demand for sanitation. I also used Google Scholar in addition to reference searches based on reference lists from other journal articles and dissertations. Author names and reports obtained from papers and articles were further used to find related articles. A Google search of the United Nations and World Health Organization reports on sanitation and health in developing countries was also conducted. The following keyword terms and combinations were useful for this literature review: *sanitation, sanitation and developing nations, sanitation and developed countries, leadership, sanitation and leadership, sanitation and health, sanitation and diarrhea, governance, and sanitation and hygiene.* Table 1 provides a graphical summary in the form of Literature Matrix of the source material analyzed and integrated into this literature review.

Table 1

## The Literature Matrix

Research chart				
Research area	Scholarly journals	Reports	Doctoral dissertation	Books
Slum, housing, sanitation, and developing world	5			
Toilet access, gender, school attendance	3		1	
Governance, institution and financing	1	5		
Cultural beliefs, housing and toilet/latrine	3			
Water, sanitation and the burden of diseases	24	10	3	1
Neglected tropical diseases, inadequate sanitation	2			
Leadership and sanitation in Africa	3			1
Theory, ecological model	12			
Sanitation framework	1	1		
Community-led total sanitation	4	1		
Community health clubs	2	1		
Determinants of health	2	2		
Sanitation, history	4	1		
Social and economic impact of improved sanitation	3	4		
<b>Total sources</b>	<b>69</b>	<b>25</b>	<b>4</b>	<b>2</b>

## **Theoretical Foundation**

The ecological model and the sanitation framework formed the basis of the theoretical foundation for this study. The theoretical framework addressed the individual attributes and community and public policy factors that influence behavior, living conditions, and health outcomes. These characteristics underlie the ecological model. Within this theoretical framework, I addressed components of the sanitation structure: relevance, effectiveness, inclusiveness, and sustainability.

### **The Ecological Model**

Health promotion targets healthy practices and efforts to change behavior at the individual and organizational levels as well as the physical, social, and economic environment in communities (Glanz & Rimer, 2005). Theories such as the ecological model and sanitation framework are useful in research and practice in recognizing that the environment in which an individual lives and grows is fundamental to understand and prevent population health problems (see Alio et al., 2010). The ecological model was useful for this study because it helped me focus on characteristics that influence sanitation behavior and underscored different attributes necessary to guide interventions to prevent diseases and promote health (Glanz & Rimer, 2005; Sallis et al., 2008).

The ecological model has its roots in behavioral science disciplines and public health (Sallis et al., 2008). Interest in health care inequality and inequity has led to health promotion intervention programs that focus on the larger context of the determinants of health (social, economic, cultural, and the environment; Richard, Gauvin, & Raine, 2011). The ecological model has been widely used in research and practice to address

significant public health crisis in communities. McDonald, Bailie, Grace, and Brewster (2010) used the ecological model to identify factors contributing to poor hygiene in remote Aboriginal communities in Australia to develop effective health promotion strategies. Researchers have also applied the model to assess risk factors for HIV epidemics (Baral, Logie, Grosso, Wirtz, & Beyrer, 2013); domestic violence prevention (Centers for Disease Control and Prevention, 2015); and disaster management (Beaton et al., 2008).

The following constructs of the ecological model were relevant to this study: individual characteristics (education, income, gender, and beliefs); community (physical environment, community leadership and organizations, and rules and regulations); and public policy (local, state, and national policies for sanitation practices and surveillance). Health outcomes are dependent on the interplay of these varying levels of influence (Coutts & Taylor, 2011). At the individual level, education status, income, desire for dignity, privacy, security, less disease, knowledge of basic sanitation practices, and disease transmission influence individual behavior towards latrine or toilet possession (Cairncross, 2003; Routray et al., 2015). In the context of the community, the physical environment; leadership (traditional, local government); community organizations; and rules and regulations governing sanitation practices may influence access to improved sanitation. Meanwhile, public policy at the national level should be enforceable for sustainable sanitation.

## **Sanitation Framework**

The WaterAid (2011) sanitation framework supports the ecological model. This framework was developed by WaterAid to serve as a guide to enhance the provision of sanitation services in developing nations. Its similarity to the ecological model focuses on the advancement of an integrated approach to community assessment, collaboration, and the interaction of varying influences for better health outcomes. The sanitation framework stressed the following four principles for sustainable intervention programs: inclusiveness, relevance, effectiveness, and sustainability (WaterAid, 2011).

Inclusiveness requires assessing for an appropriate toilet or latrine design that is accessible, acceptable, suitable, and affordable given the low rate of environmental sanitation in rural communities in developing nations (Ako et al., 2010; Pandve et al., 2012; Tumwebaze et al., 2011; WaterAid, 2011). Any design, implementation, and advocacy should be based on local reality including social factors (tradition, religion, culture, physical environment, institutions, and resources) to be relevant (Tsinda et al., 2013; WaterAid, 2011). Several studies found an association between religion, culture, and type of sanitation demand and uptake (Routray et al., 2015; Tumwebaze et al., 2011). An effective sanitation program requires a partnership between all stakeholders involved to be sustainable. Sustainability, on the other hand, is achieved when communities are empowered to participate in intervention programs and allowed to make changes and choose facilities appropriate to their situation (WaterAid, 2011).

Integrating the ecological model and sanitation framework developed by WaterAid (2011) offered a window through which I could examine the basis for a

coordinated approach to improve sanitation that focuses on commitment, advocacy, and leadership in the Njinikom community in Cameroon. Evidence in the literature review suggested that social, economic, cultural, political factors, and deficiencies in governance influence the practice of sanitation in communities in sub-Saharan Africa. My research was unique because so few researchers have focused on the role integrated leadership plays in improving sanitation in Njinikom.

### **Historical Perspective**

Using the historical perspective, I will present a review of the health and environmental conditions of developed nations such as Britain and how they achieved progress in the area of sanitation beginning in the 19th century. Events surrounding sanitation in developed countries in the 19th century maybe reminiscent of today's conditions in developing countries (Konteh, 2009) but without political leadership. Researchers of the past have noted the critical role of political leadership in achieving sanitation and the importance of the sanitary revolution.

Historical evidence in the literature suggested the underlying importance of political leadership (national and local) in enhancing improved sanitation in deserving communities stretching back into the 19th century. According to Keltner, Kelley, and Smith (2004), leadership (political, health, or local) equipped with skills and ability to identify, recognize, and prioritize community problems and to mobilize action for change is fundamental to create an enabling environment for toilet sanitation. An inquiry report commissioned by the Commissioners of Poor Laws in Great Britain in the 19th century revealed the ravaging effects of inadequate housing and sanitation and poor hygiene



among the poor (Chadwick, 1842). The report led to a public health revolution that included legislative and policy measures, institutionalization, investment, and an integrated approach to public health problems (Konteh, 2009).

Chadwick's report on the sanitary condition of the poor in Great Britain and John Snow's intervention study revealed how inadequate environmental sanitation and unclean water, overcrowding, and filthy environment resulted in the spread of diseases (Mara et al., 2010) and death. John Snow's 1854 study attributing the London cholera outbreak to contaminated water from poor sewage disposal generated empirical studies on the health effect of inadequate sanitation and unclean water sources in the 19th century (Cairncross et al., 2010a; Paneth, Vinten-Johansen, Brody, & Rip, 1998). The severity of the suffering, which disproportionately afflicted the poor, served as a wake-up call to British leadership and led to the passage of the Public Health Act by the British Parliament (Brewer & Pringle, 1998).

The subsequent Public Health Act of 1848 empowered local authorities to invest in sanitation and water projects (Brewer & Pringle, 2015) leading to improvements in water and sanitary conditions in Britain in the 19th century. Public Health Acts of 1872 and 1875 resulted in the creation of local medical officers of health in Great Britain and made the issue of sanitation central to local governments (Brewer & Pringle, 2015). Local leadership through the local medical officer was instrumental in achieving improved sanitation in Britain (Gorsky, 2007) with the installation of sewage systems and clean water sources.

The Chadwick report, though written in the 19th century, appears to mirror the sanitary conditions that continue to plague underserved areas in developing nations in the 21st century. For instance, people living in slums in developing countries live in overcrowded informal settlements without adequate excreta management and clean water sources (Tumwebaze, Orach, Niwagaba, Luthi, & Mosler, 2013). A majority of individuals without access to improved sanitation practice open defecation and live in rural communities in developing nations (Mara et al., 2010; World Health Organization, 2015). Van Minh & Nguyen-Viet (2011) estimated that about 1.7 million people die annually from diarrheal diseases associated with poor sanitation in resource-poor areas. The Chadwick report resulted in the establishment of clean water supply and sewage disposal system in the 19th Century.

The sanitary revolution, exemplified by access to clean water sources and effective sewage disposal, was voted the most significant breakthrough over other major medical achievements such as antibiotic, anesthesia, and vaccine (Ferriman, 2007). Approximately 11,000 readers of the *British Medical Journal* including medical doctors, research scientists, students, and the general public voted to advance improved sanitation as the most important medical milestone since 1840 (Ferriman, 2007). Although this vote may not have any scientific evidence, it calls attention to basic sanitation as a global crisis and a public health priority. Adequate sanitation has social, economic, health, and environmental implications affecting individuals and the global community at large. Recognition and knowledge of the challenges that individuals and communities face in

the delivery of sustainable sanitation services is fundamental for any successful intervention program.

Despite the apparent similarities surrounding the sanitation conditions in 19th century developed nations and present day public health threat in developing countries there is a lack of emphasis on the problem (Konteh, 2009) in the 21st century. Historical evidence suggested that health ministries are at the forefront of public health initiatives. The historical precedence emphasized the importance of political leadership and good governance in improving public health services. The health, social, and economic effect of inadequate sanitation and hygiene in developing countries is central to global sustainable development efforts.

### **Sanitation: A Global Priority**

According to Konteh (2009), the role of national governments in developing countries in providing public services and ensure public health policies is equally as crucial as efforts of the international community in addressing the problem of lack of sanitation access. Cairncross (2003) remarked that it is a scandal in the 21st century when more than half the people in developing nations lack access to toilet sanitation. A preview of the activities of the international community includes the United Nations global initiative, which sought the declaration of the sanitation decade and addition of environmental sanitation and access to clean water to the Millennium Development Goals (MDG) and current Sustainable Develop Goals.

Even though the effects of inadequate sanitation and hygiene are largely preventable and afflict more people than war and terrorism combined, the sanitation

problem has not achieved the same level of publicity, resources, or political will of other public health issues (Barry & Hughes, 2008; Bartram et al., 2005). Only 27% of the current population in developing nations has access to improved sanitation (UNICEF & World Health Organization, 2015). The poor in developing countries are most affected given that they lack the means to acquire such services and the knowledge to manage the ill effects of inadequate excreta disposal (Hadi, 2000). With this worsening problem, the United Nations world body initiated a global dialogue reflecting its commitment and leadership role in calling attention to the global sanitation crisis affecting the underserved populations.

### **United Nations**

In 1980, the United Nations declared the period 1981–1990 as the international drinking water supply and sanitation decade, with the goal to improve access to clean water sources and improved sanitation (Bartram et al., 2014) for underserved populations. The proclamation called for a major commitment from national governments to develop policies, set priority sanitation and clean water goals, strengthen institutions, encourage community collaboration and nongovernmental organizations to improve sanitation hygiene standards (United Nations General Assembly, 1980). O'Rourke (1992) noted that even though the decade failed to achieve its goal, it focused on the community to signal a new approach to increase attention and political awareness in the global sanitation crisis.

In 1990, the world leaders gathered at the United Nations headquarters for a worldwide summit of children. A significant aspect of this gathering was the declaration and action plan that called for universal access to clean water and safe excreta disposal

(UNICEF, 1990). An estimated 800,000 children under 5 years old die annually from diarrhea-related diseases attributable to poor sanitation, and lack of clean water (UNICEF, 2015) and accounts for 88% of all illnesses (Bartram et al., 2005). The intent of this global initiative recognized inadequate sanitation as one of the world's most important priority health and environmental concern that requires significant leadership effort at the local, national, and international level.

In 2000, 189 countries witnessed the adoption of the United Nations declaration that included the MDG. MDG #7c aimed to reduce by half the number of people globally without access to a basic sanitation facility by 2015 (UNICEF & World Health Organization, 2015). Despite the United Nations global leadership effort, the MDG for sanitation missed its target for developing nations (Van Minh & Nguyen-Viet, 2011). Bartram et al. (2014) estimated that the percentage of people with access to basic sanitation increased from 36%–64% (1.3 billion–4.4 billion) during the period 1970–2012 globally and short of the 77% MDG target. A UNICEF/World Health Organization (2015) report estimated that 7 out of 10 and 9 out of 10 people lacking access to adequate sanitation and practicing open defecation reside in rural communities.

The United Nations in 2006 declared 2008 the international year of sanitation (United Nations, 2008). When compared to clean water and other Millennium Development Goal targets, sanitation has not gained the same political priority at the level of national governments (Ako et al., 2010; Van Minh & Nguyen-Viet, 2011). According to Harvey (2008), it is imperative that sanitation policies and strategies are addressed separately from clean water to give it the impetus and prioritization it

necessitates. The current state of global sanitation calls for a leadership approach that mirrors the political leadership awakening that took place in Europe in the 19th century and led to the sanitary revolution (Harvey, 2008).

Even though the efforts of the United Nations underscores the global focus to bring attention to this humanitarian crisis, the world failed to achieve MDG #7c to half the number of people without access to basic sanitation by 2015. Progress continues to be elusive. The lack of urgency and implementation of measures to address the underlying cause of inadequate excreta disposal in developing countries remains at the heart of failure to achieve any progress.

### **Determinants of Adequate Sanitation**

In this literature review, components of the determinants of health are assessed to inform the current state of research on toilet possession, gain insight into the living conditions of people in marginalized communities as well as lay the groundwork for the study. Features of the social determinants of health include health status, physical environment, social and economic factors, policy, and governance. These factors determine how various populations live and determine access to health and public health services such as basic sanitation, clean water, and hygiene.

The determinants of health are the conditions in which individuals live, work and grow and the systems that influence daily living such as economic, social policies, norms, and governance (World Health Organization, 2017). Nguyen-Viet et al. (2009) proposed a conceptual framework for improved sanitation in developing countries based on the social determinants of health. The framework emphasizes a holistic assessment of the

community. Health is affected by an individual's immediate environment including work and living space, socioeconomic conditions, cultural beliefs and norms, religion and health services (Bahadori et al., 2015). Environmental determinants and governance remain a challenge as related to poor sanitation in sub-Saharan Africa. Developed countries eliminated infectious diseases (such as cholera, hepatitis A, and typhoid) by addressing environmental determinants of health and establishing health care services and systems (Burki, 2015; Prina, 2014).

### **Health Status**

Diseases associated with poor sanitation, hygiene, and unsafe water rank among the root causes of morbidity and mortality that disproportionately afflict the poor in developing nations (Bartram et al., 2005). The absence of empirical evidence from trials or cohort studies has increased reliance on ecological analysis, health surveys, and census data to demonstrate the impact of sanitation on health in low-income settings (Pruss-Ustun et al., 2014; Schmidt, 2014; Spears, Ghosh, & Cumming, 2013). An ecological analysis of data from 112 districts in India (characterized by poverty with over 70% of the population defecating in the open) demonstrated a link between open defecation and the prevalence of childhood stunting (Spears et al., 2013). In a systematic and meta-analysis study, Ziegelbauer et al. (2012) concluded that soil-transmitted helminth infections are endemic in regions with rampant open defecation. An estimated 133 million people worldwide are infected with intestinal helminth infections with health consequences ranging from dysentery, malnutrition, and cognitive impairment (Bartram et al., 2005).

Improved sanitation and hygiene remain the most cost-effective strategy to prevent the spread of infectious diseases, malnutrition, mortality, and childhood stunting. Hippocrates recommended the use of boiling water as far back as 350 B.C and Europe and the United States of America achieved universal sanitation coverage following the implementation of sanitation and hygiene reforms in the 19th and early 20th century (Montgomery & Elimelech, 2007; Schmidt, 2014). Fink, Gunther, and Hill (2011) in an analysis of 171 demographic and health surveys from 1986–2007 that included countries worldwide (low to middle-income nations), concluded that improved sanitation reduces the odds of diarrhea by 13% and being stunted by 27% among children under 5. A United Nations Children’s Fund (UNICEF) sanitation program in Bangladesh that increased access to sanitation in schools also witnessed an 11% increase in school enrollment for girls (UNICEF, 1999). According to Maanen (2010), improved environmental sanitation reduces the risk of diarrhea by 36%.

The desire for good health may not be the primary reason for better sanitation for some individuals. Cairncross (1992) in a survey of rural households in the Philippines found that respondents were most satisfied with their new latrines for the following reasons: absence of smell and flies, cleaner surroundings, privacy, less embarrassment with friends visiting, and less gastrointestinal diseases. In a qualitative study in rural coastal Odisha in India, Routray et al. (2015) noted that some households perceived latrine adoption to be beneficial based on travel, exposure, and awareness. Others expressed motives for household latrine facility for convenience, privacy, dignity, status, safety, and protection.



## **Physical Environment**

The physical environment describes the living environment, and housing condition as it pertains to human waste disposal. Human health to a large extent is dependent on the environment. 6 out of 10 people in the continent of Africa have no means of proper excreta disposal in their homes (World Health Organization, 2016). Meanwhile, 1 in 5 individuals worldwide continue to practice open defecation (Bartram & Cairncross, 2010). Fecal-oral disease (such as cholera, typhoid, dysentery, and hepatitis A) is transmitted via fecal matter in the soil, running streams, ground water, feces in unwashed hands, and flies thriving on feces in the open (Garbossa et al., 2013; Jacobsen, 2008). The danger of human feces to health and the environment is attributable to its contents. One gram of human excreta may contain about  $10^9$  viral pathogens,  $10^6$  –  $10^8$  different bacterial species,  $10^4$  protozoa, and  $10^4$  helminth eggs regardless of individual health status (Feachem, Bradley, Garelick & Mara, 1983).

Rampant open defecation is one of the most significant factors in environmental contamination in developing nations (Nath, 2003) with dire health and environmental consequences. The presence of hanging latrines over running streams, ponds, and rivers remains a common means of excreta disposal in Bangladesh (UNICEF, 2008). In a study on clean water and sanitation, Burki (2015) noted that 1.1 million liters of human feces are deposited into the river Ganges per minute with 627 million Indians defecating in the open. Mara et al. (2010) concluded that inadequate disposal of infant feces in the environment increases the risk of diarrhea disease by 23%.

**Housing.** Housing infrastructure in informal settlements as well as rural and

majority of urban households in sub-Saharan Africa lack piped water, electricity, and private toilets (Corburn & Hildebrand, 2015; Giddings, 2007; Shortt & Hammett, 2013). Poor quality housing is directly associated with ill health from infectious and respiratory diseases (Krieger & Higgins, 2002). Ako et al. (2010) noted that the underserved and vulnerable in the capital city of Yaounde and the economic capital of Douala in Cameroon live in dangerous housing conditions on hill slopes and swamp areas. In Ghana, an estimated 79% of the population in 2008 lived in compound houses consisting of several households, sharing a common yard and basic utilities such as water, sanitation, and electricity (Rheinlander, Konradsen, Keraita, Apoya, & Gyapong, 2015).

**Informal Settlement.** Approximately 828 million people live in informal settlements in developing nations despite a drop in slum population from 39% down to 33% between 2000 and 2010 (Haines et al., 2012). A situation most apparent in sub-Saharan Africa, where 74% of the urban population in Zambia live in informal settlements, 80% in Nigeria, 85.7% in Sudan, 92.1% in Tanzania, 92.9% in Madagascar, and 99.4% in Ethiopia (Giddings, 2007). According to Ako et al. (2010), the national average of sanitation coverage stands at 7.3% in Cameroon. Health initiatives in developing nations continue to prioritize latrine/toilet infrastructure, health aspect of poor sanitation, and emphasis on individual and household responsibilities to improve demand over public health institutions and government leadership (Burki, 2015; Okurut et al., 2015; Phaswana-Mafuya, 2006).

### **Social Factors**

The social factor assessed individual experiences, behavior, perceptions,

education, and gender-related issues that influence sanitation adoption. Excreta disposal receives little attention among government led programs and framed at best as individual household responsibility (Burki, 2015;) in developing nations. Jenkins and Curtis (2005) argued that the desire for latrine possession varies based on factors such as education, gender, crowding, household size, individual lifestyle, and community characteristics.

**Education.** According to Tumwine et al. (2003), improved sanitation in poor communities does not occur at random and appears to follow a trend based on educational and socioeconomic status. Tumwebaze et al. (2011), in studying access to sanitation in Western Uganda concluded that respondents with higher education were more likely to have improved sanitation, compared to their less educated counterparts. Meanwhile in a study across East Africa (33 sites in Kenya, Tanzania and Uganda), households with educated and professional household heads were found to have better sanitation practices when compared to their less educated counterparts (Tumwine et al., 2003).

***Disease burden and education.*** A significant number of school age children in developing countries affected by diarrheal diseases and intestinal worm infections due to poor sanitation are absent from school on any given day (Bartram et al., 2005; Maanen, 2009). Soil-transmitted worms (hook worms, round worms and whip worms) endemic in low-income countries worldwide affect 47% of school age children 5–9 years old (Hall, Hewitt, Tuffrey, & De Silva, 2008; Maanen, 2009). Other findings associated with diarrheal diseases and worm infections, root causes of malnutrition, include cognitive and intellectual impairment as well as growth retardation among poor school age children

(Cairncross, 2003; Dillingham & Guerrant, 2004; Maanen, 2010). Several studies have identified education as a prime factor in counteracting negative perceptions, cultural beliefs, and attitudes towards latrine and toilet possession with the goal to increase the demand for sanitation (Tumwebaze et al., 2011; FangHsun, Pillai, & Maleku, 2014).

**Crowding.** Crowding is among the problems affecting people living in informal settlements in developing countries requiring government attention. For instance, Corburn and Hildenbrand (2015) found that 85 households on average in the Mathare informal settlement in Nairobi, Kenya, shared a toilet facility. Chadwick's work in the 19th century revealed the debilitating health effects of overcrowding and poor sanitary conditions among the poor (1842). According to Konteh (2009), the health effect of inadequate sanitation among the laboring class in 19th Century Europe and America garnered government attention and commitment, yet, have failed to gain equal attention in the developing world today.

**Gender.** Lack of access to sanitation affects gender disparity that disproportionately affects school attendance, economic, social, and educational potential of women in developing countries (Sommer et al., 2016). Corburn and Hildebrand (2015), in studying slum sanitation in Kenya concluded that lack of access to a toilet facility increases sexual violence against women, powerlessness, and vulnerability outside of the safety of the home. While there is growing attention to the sanitation crisis, some authors have argued that there is limited empirical evidence on its impact on women and school enrollment (Freeman et al., 2012). Despite this gap, household sanitation is beneficial in enhancing self-esteem among women, and to provide dignity,

privacy, safety, security, and protection against sexual and physical violence experienced when defecating in the open and at night (Cairncross, 2003; Routray et al., 2015).

**Culture and Religion.** Cultural and religious beliefs influence people's perceptions and views of excreta disposal and latrine or toilet design. Coffey et al. (2015) noted that culture and religion, irrespective of socioeconomic status and literacy level play a significant role in influencing attitudes towards sanitation coverage in global communities. Findings by Coffey et al. (2015) concluded that high rates of open defecation in rural India (60%) compared to regions with decreased socioeconomic status and lower literacy rate such as sub-Saharan Africa at 35% are attributable to the ritual concept of purity of the body and good health. Open defecation is preferred over pit latrine commonly used in sub-Saharan Africa. These findings appear to replicate other study results which concluded that cultural and religious beliefs about purity and rituals for purification and cleansing with water following defecation in Indian and Muslim communities determine the choice for improved sanitation (Nawab, Nyborg, Esser, & Jenssen, 2006; Routray et al., 2015).

### **Economic Factors**

Studies on the economics of sanitation, as reported by Minh & Nguyen-Viet (2011) affirm that inadequate sanitation results in economic losses associated with the treatment of sanitation related diseases, infant mortality, loss income, low productivity, and travel time to defecate. A situation that is made worse by weak economies, health, and political institutions, and inadequate political will necessary to create the environment conducive for the development and implementation of public health policies

in the areas of sanitation and water (Konteh, 2007; WaterAid, 2011). Investments in sanitation, water, and hygiene are fundamental to achieving health, economic prosperity, and reducing poverty. Every U.S. dollar spent on improved sanitation would provide a regional economic gain of between US\$3-US\$34, 10% reduction in global diarrheal episodes, and improvement in individual and household income (Bartram et al., 2005).

**Poverty and household income.** Despite reducing the global poverty rate from 37% in 1990 down to 12.7% in 2012, the poverty rate in sub-Saharan Africa remained at 42.6% in 2012 with 41% of individuals living under \$1.25 per day in the period 1990–2015 (United Nations, 2015; World Bank, 2016). Individual and household wealth directly impacts sanitation and hygiene status in poor regions of the world (Bolaane & Ikgopoleng, 2011). For instance, a majority of the poor in Ghana lack individual access to a toilet facility and depend on shared public latrine facilities or defecate in the open (Boadi & Kuitunen, 2005; Rheinlander et al., 2015). In a study on achieving sustainable sanitation in informal settlements in Rwanda, 68.2% of respondents cited lack of financial means in constructing sanitation facilities (Tsinda et al., 2013). The poor are more likely to spend their income on sanitation related diseases (Water and Sanitation Program, 2012), experience loss wages from ill health and time spent searching for a private and safe place to defecate (Van Minh & Nguyen-Viet, 2011; Water and Sanitation Program, 2012).

**Financing and sustainability.** Cairncross (2003) argued that individual households or privately paid builders without government or affiliated agency regulatory knowledge and input are left to implement sanitation in global underserved communities.

This raises questions of sustainability based on the risk of lack of quality infrastructure and poor knowledge of environmental consequences (Tremolet, Kolsky, & Perez, 2010). Mara et al. (2010) argued that the absence of national policies that institutionalize sanitation, promote behavior change, and demand for sanitation renders governments and health ministries powerless as regulators and facilitators of improved sanitation. Hence, governments in developing nations have not fully grasped the underlying benefits of improved sanitation as fundamental to welfare, economic growth, and development (Isunju, Schwartz, Schouten, Johnson, & Dijk, 2011).

Despite evidence of the economic, health, and social benefits of improved sanitation, investments in sanitation coverage in developing countries have not received priority in stakeholders and government's budgetary allocation (Isunju et al., 2011; Tremolet & Rama, 2012). For instance, in 2013 GA West Municipality in Ghana spent just 3% (\$0.20 per person) of its annual budget on sanitation and 2% (\$1.60 per person) in Nakuru, Kenya in 2014 (Norman & Tremolet, 2015) Sanitation remains a neglected issue with high social, environmental, and economic cost.

**Cost of sanitation.** Additionally, understanding the financial cost of inadequate sanitation, expenditure, and the cost of failure to achieve adequate sanitation is necessary for advocacy and the promotion of the essential benefit of sanitation in national policies (Ako et al., 2010). According to Hutton and Bartram (2008), available data on government and private expenditure on sanitation and water in developing countries is limited making it difficult to estimate financing gaps. In a World Bank study of 18 African countries, it was noted that investment on sanitation in Africa is less than 0.1% of

GDP with these countries facing economic losses of 1% to 2.5% of GDP yearly due to poor sanitation (World Bank, 2012). Economical losses due to poor sanitation in Kenya is approximately KES27 billion (US\$324 million) equivalent to 0.9% of national GDP and Ghana GHC420 million (US\$290 million) equal to 1.6% of the national GDP (Water and Sanitation Program, 2012). Financing and good governance are instrumental in closing the sanitation gap and meeting the new Sustainable Development Goal target 6, which is to achieve improved and equitable sanitation and hygiene and eliminate rampant open defecation by the year 2030 (United Nations, 2016).

### **Politics and Governance**

I would use politics and governance to assess a government's capacity to manage and deliver social and public health services such as sanitation. Good governance is an underlying determinant in the development of policies and regulations, building of strong and reliable institutions, and delineation of roles and responsibilities of all actors involved in the provision and development outcomes (Ekane, Nykvist, Kjellen, Noel & Weitz, 2014; Water and Sanitation Program, 2003). Several studies have attributed the slow progress in sanitation in developing nations to a lack of political will and commitment, inadequate resources, legislative lapses, weak policies and plans, and lack of coordination among others (Ako et al., 2010; Cairncross et al., 2010; Ekane, Kjellen, Noel, & Fogde, 2012; Mara et al., 2010; WaterAid, 2011). There is the need for African leaders to demonstrate recognition and willingness, invest necessary resources, and build key institutions (sanitation, health, and education) to achieve results.



**Institutions.** Sustainable sanitation depends on effective governance and the government's capacity to ensure that institutions are imbued with the authority to carry out their functions. There is evidence that institutions for sanitation are not only far from standard in low to middle-income countries worldwide; there is no specific governing institutional framework for water and sanitation in most sub-Saharan countries (Ekane et al., 2014; Eko et al., 2010) leaving investments in sanitation and hygiene to individual households and local communities (Cairncross et al., 2010). Edwards et al. (2015) lamented the confusing state and uncoordinated authorities for sanitation. According to Ako et al. (2010), the following ministries are responsible for the management of resources in the water and sanitation sector in Cameroon: Ministry of Water and Energy, Ministry of Scientific Research and Innovation, Ministry of Higher Education, and Ministry of Environment and Nature among others. The absence of distinct roles and leadership responsibilities, surveillance data, and clear communication among participating government entities and private sector stakeholders impedes any meaningful progress in improved sanitation (WaterAid, 2011).

**National governments.** In response to the global initiative as outlined in the MDG and current Sustainable Development Goal, achieving global sanitation requires commitment to reforms that prioritize the sanitation crisis and empower local authorities and communities (Bartram et al., 2005). The current state of leadership responsibility for sanitation delivery services remains fragmented and dysfunctional at best in nations in sub-Saharan Africa (Edwards et al., 2015). Successful sanitary reforms in mid 19th century in parts of Europe involved strong political leadership, financial investment in

public health services, surveillance, and enactment of laws and policies (Brewer & Pringle, 2015).

Political leadership and will in Rwanda in 2002 placed sanitation at the center of its Economic Development and Poverty Reduction Strategy (Ekane et al., 2014). The government of Rwanda recognized the importance of sanitation as a source of economic development. A historical precedence was set in Rwanda in 1959 when a colonial decree enforced latrine provision in every household, shop, and establishment resulting in little open defecation in the nation (Jain, 2011). In Ethiopia, the government instituted a policy framework with the goal to increase urban sewerage from 7% to 60% by the end of 2016 (Savage, 2003). Burki (2015) noted that efforts to promote improved sanitation in Ethiopia saw a reduction in open defecation from 94% in 1990 to 37% in 2012 by recruiting community health workers.

**Local government.** Local governments, according to WaterAid (2011), generally function to implement national policies at the district or municipal level where they exist. By contrast, struggling municipalities in sub-Saharan Africa lack the resources, skills, and capacity to function to implement and monitor basic health services such as the provision of water and sanitation (Durrheim, 2007; Eko et al., 2010; Pandve, Fernandez, Chawla, & Singru, 2012). Such an environment presents a challenge in translating sanitation policy into actual practice. Hence, financing and construction of private and household sanitation facilities is left to communities and individuals for the most part without clear enforceable regulatory standards (Ekane et al., 2014). Ekane et al. (2014) also noted that the prevailing practice of shallow pits with no roofs or doors and use of

wooden logs as slab falls short of the standard guidelines. This mismatch may be attributable to a lack of understanding and knowledge of policies and regulatory guidelines, low prioritization on the part of community stakeholders, and minimal resources.

**Private sector and community-based organizations.** Additionally, researchers need to assess communities' knowledge of sanitation practices, policies, and regulations, and the role of private sector and community organizations. Studies show that sanitation at the international and national levels receive significantly low priority when compared to education, HIV/AIDS, and malaria; policies and regulations are weak, and institutions are fragmented (Carincross et al., 2010; Mara et al., 2010; WaterAid, 2011). Hence, the choice for improved sanitation remains with individuals and communities with the assistance of community organizations and donor agencies.

NGOs are voluntary organizations that provide humanitarian services and relief in underserved communities and populations. The effectiveness of nongovernmental organizations is dependent on good governance and resource availability, political, social, and cultural factors (Gurung, Gurung, Karki & Bista, 2011). For instance, the restoration of democracy in Nepal in 1990 saw an increase in the number of local NGOs and international organizations whose activities led to a fecal free Tangting Village in 2011 and improved overall standard of living in this apparent under-privilege community (Gurung et al., 2011). Sabur (2013) credited NGOs for initiating the successful community-led total sanitation (CLTS) approach in Bangladesh, which advocates an end to open defecation. Sustainable sanitation requires distinct leadership functions and

responsibilities of the various players involved including the central government, local government, and the private sector.

Health professionals and researchers have historically addressed the problem of inadequate sanitation, effect, and underlying causes in marginalized communities. The lack of access to proper sanitation facilities and poor hygiene remain a major concern in developing countries. Inadequate sanitation negatively impacts health status contributing to a burden of disease that disproportionately affects children in vulnerable regions of the world. Factors associated with poor sanitation include economic, social, environmental, cultural, and absence of government and institutional leadership.

The lack of access to basic sanitation requires strong leadership, effective governance, and policies to address the underlying determinants and current conditions. Research shows limited analysis of activities of health, local and political leadership involvement and commitment to facilitate and promote access to sanitation in impoverished communities in sub-Saharan Africa such as Njinikom in Cameroon. Individual characteristics, community, and public policy factors that influence behavior and health conditions underlie the theoretical foundation for this study. The review also revealed the absence of a theoretical framework to analyze leadership engagement and collaborative leadership in addressing the sanitation crisis in vulnerable regions of the world.

### **Partnership Approaches to Sanitation**

Several research studies and reports show the need for sustainable interventions to improve access to toilet facilities in developing nations across the world. Studies have

focused on the health concerns, the social and economic impact of poor sanitation, and types of interventions to promote health and prevent diseases. Other studies have focused on the determinants of inadequate sanitation in marginalized communities and ways to address the underlying issues (Mara, 2003; Mara et al., 2010; WaterAid, 2011).

Community-partnership approaches are emerging innovative and integrative ways to address the current humanitarian crisis in developing countries around the world.

In answering the question about who or what makes sanitation happen in vulnerable communities, WaterAid (2011) noted that there is renewed emphasis on community-led approaches to disease prevention and health promotion as a plausible alternative to the standard practice of general health education programs. Research studies concluded that the conventional approach based on the provision of subsidies and construction of free household toilets failed to accomplish facility usage and reduce open defecation (Chambers, 2009; Luthi, McConville, & Kvarnstrom, 2010; Routray et al., 2015). Community-based approaches are participatory in nature. The underlying premise is to drive the demand for sanitation, eliminate open defecation through community engagement, and collective action coupled with solid local leadership. Emerging community-centered approaches to improved sanitation include community-led total sanitation, community health clubs, total sanitation and total marketing, and PHAST.

### **Community-Led Total Sanitation**

The community-led total sanitation approach is an innovative method that gives credence to community mobilization and empowerment in changing behaviors about household sanitation (Pattanayak et al., 2009) in vulnerable rural communities.

Underlying this model is the idea that the community is the actual agent of sustainable change and outsiders are only facilitators in the process (Kar & Chambers, 2008; Sabur, 2013). The goal is to mobilize and empower rural communities to act in their interest to improve access to sanitation, eliminate the practice of open defecation, and achieve open defecation free society.

The community-led sanitation method is in contrast to the conventional strategies to improve sanitation that focus on individual households, free toilets, and financial subsidies with emphasis on toilet usage (Sanan & Moulik, 2007). The community-led total sanitation program targets entire communities as opposed to individual household behaviors and emphasizes the use of local resources (Kar & Chambers, 2008). It relies on a community's strength and requires the support and leadership of local leaders and institutions in mobilizing the community and developing strategies for action (Sanan & Moulik, 2007). It emphasizes collective action involving the most vulnerable and needy, ensures that the community selects own facility design, have the ability to analyze their situation, and institute solutions based on their needs (Sabur, 2013). The success of the community-led sanitation approach depends to a large extent on the community's willingness to change, for it does not encourage the use of subsidies for toilet or latrine construction (Sabur, 2013).

Community-led total sanitation was first adopted in the Indian district of Rajshahi and pioneered by a partnership effort between a local NGO (Village Education Resource Center) and WaterAid Bangladesh (Kar & Chambers, 2008). India has the world's largest population (814 million) of individuals without access to a sanitation facility and

practicing open defecation (626 million; Patil et al., 2014). Since its inception in India, the community-led total sanitation method is widely used in communities throughout the continent of Africa and Asia in both rural and urban centers.

In a cluster-randomized controlled trial in rural Mali (sub-Saharan Africa), researchers found that implementing community-led total sanitation increased personal household latrine possession and usage by 65% and reduced open defecation to under 10% in intervention villages compared to control areas (Pickering, Djebbari, Lopez, Coulibaly, & Alzua, 2015). According to the study, more poor households acquired private latrines in the intervention villages than the control ones. Piloting the community-led sanitation method in urban slums in the Kalyani municipality in India plagued by rampant open defecation also witnessed an uptake in toilet possession. According to Kar (2006), within 5 months of implementing community-led total sanitation, about nine slum communities successfully stopped and eliminated the practice of open defecation without any government or private grants.

### **Community Health Clubs**

Community health clubs (CHC) is a participatory approach first initiated in Zimbabwe in 1995 by a nongovernmental organization known as Applied Health Education and Development (AHEAD) to address sanitation and hygiene concerns (Waterkyn, 1999). CHC operate under the assumption that sustainable change and health promotion are achievable through organized groups sharing the same beliefs and norms (Waterkyn, 1999). Community health clubs rely on voluntary, free membership, and open to people of all ages. The goal is to increase the demand for sanitation based in part on

group cohesion and engagement and the provision of education on the benefits of improved sanitation (Waterkyn & Cairncross, 2005). Community-based facilitators are responsible for educating and promoting group unity fundamental to the success of the model. The community health club model is similar to the community-led total sanitation model in its effort to encourage communities to take responsible action for their health and environment.

Because participating in CHCs requires no subsidy and undertaken by the local community acting in their best interest, this method is appealing to communities in Africa and Asia. Justin (2008) concluded that applying the community health club model in communities in Uganda increased latrine adoption from 20 to 69 in the village of Iningotomei and from 4 to 40 in the village of Obulengorok id camp within 7 months. In districts in Zimbabwe, following the implementation of CHC, 2,400 latrines were built within two years in Makoni and 1200 constructed in Tsholotsho within 18 months resulting in 43% coverage compared to 2% in the control region (Waterkyn & Cairncross, 2005).

Luthi et al. (2010) acknowledged that community-based innovative models for addressing the global sanitation crisis ushered in different perspectives aimed at changing individual and institutional perceptions for the good of communities. The success of CLTS and CHC in both rural and urban communities in improving access to sanitation illustrates the importance of an integrated framework approach that allows participants from various areas of influence in communities. Even though these methods are adaptable to different traditions and cultures, success is determined by the extent of



community engagement and intervention. A potential limitation of these approaches is that regions accustomed to subsidies are less likely or slow to respond to such interventions (WaterAid, 2011). Another shortcoming is the shortage or absence of skilled staff in the village regions requiring that messages and approaches have to be modified and adapted to meet the needs of specific communities (WaterAid). The CLT and CHC innovative community-participatory models have achieved significant progress in increasing access to toilet facilities in successfully implemented areas. The practice is in line with the ecological model and sanitation framework approach that emphasizes relevance, affordability, inclusiveness, effectiveness, and sustainability.

### **Conclusion**

In this chapter, I explored the theoretical model and framework as well as the underlying influences for improved sanitation in a rural underserved community. The basis of this exploration was to determine whether an integrated leadership approach to increase the demand for sanitation in the Njinikom rural community in Cameroon, in sub-Saharan Africa would help address the current problem. In this section, I will present a summary of the key ideas of this chapter from the physical, social, cultural, economic, and political determinants of health. In this chapter, I also presented the history, evolution of sanitation as a public health issue, successful participatory approaches, and the need for further research to determine best practice in underprivileged communities.

According to Fewtrell et al. (2005), sanitation studies are limited with most research confined to examining health outcomes for children under age 6. Cairncross et al. (2010) suggested that studies on the disposal of human feces and health benefits are

limited when compared with hand hygiene and water supply. Fewtrell and Colford (2004), in a systematic review and meta-analysis study, found just four studies that examined sanitation interventions. The limitation is attributable to the challenge of conducting randomized control trials with water and sanitation as well the absence of active surveillance of diarrhea morbidity in developing nations (Cairncross et al., 2010). Another limitation cited is the decreased frequency in documenting the extent of community participation in research on water, sanitation, and hygiene (Cairncross et al., 2010).

The limited studies on sanitation interventions suggested the need for more research in this area. Based on the potential health, social, and economic benefits of sanitation, Fewtrell and Colford (2004) suggested that future research should focus on targeted interventions that provide optimal benefits to individual communities. An understanding of the community's baseline behavior is necessary before any intervention study (Fewtrell & Colford, 2004). It is against this backdrop that the ecological model and sanitation framework became useful in guiding this study.

According to the ecological model and sanitation framework, health promotion and disease prevention programs require good knowledge of environmental factors (physical, economic, social, cultural) that influence behavior. They also provide an understanding of how a complex interaction of individual, relationship, community, and general societal attributes are necessary to prevent negative health outcomes. With appropriate knowledge and understanding of what drives or hinders improved sanitation,

toilet designs and programs can be tailored to every stakeholder's satisfaction and enhance usage.

Evidence in the literature also suggested that achieving improved sanitation in impoverished communities require the transformation of government institutions with the functional capacity to enforce laws and regulations. Political reforms are also needed to consider the reality of the daily life of community stakeholders. The purpose of this study was to determine whether a partnership approach to increase the demand for sanitation in the rural Njinikom community would help to address current sanitation problems.

Access to basic sanitation remains a significant health, economic, social, and environmental concern in underserved communities globally. Individuals without access to sanitation are poor and live in houses without basic amenities such as piped water and household sanitation. Diseases associated with poor sanitation and hygiene are rampant. Inadequate sanitation affects human growth and development as seen in stunting among children. A range of factors among which are economic, social, cultural, politics and governance, determine access to a sanitation facility.

There is consensus among researchers that improved sanitation is essential to safety, health, and wellbeing. Adequate sanitation enhances dignity, is critical for women and girls' safety, education, and security; reduces bacteria in the environment, and fundamental to development and productivity (Bartram et al., 2005; Cairncross, 2003). Good governance through strong institutional leadership, political reforms, and advocacy is necessary for a clean and healthy environment conducive to growth and development (Mara et al., 2010).

The United Nations MDG and Sustainable Development Goal brought renewed urgency to this humanitarian crisis. Whereas efforts by the United Nation has helped to foster some national and regional policies and reforms, there has been an increased focus on individual, household, and community responsibility in impoverished rural communities. The United Nations effort lays the groundwork for governments as leaders in health promotion and disease prevention. Effective leadership at the national and local level is significant in achieving universal sanitation. The failure of governments in sub-Saharan Africa to regulate sanitation standards by allowing toilet and latrine construction at the disposal of individuals, households, and community organizations failed to reduce morbidity and mortality particularly among children.

The institutionalization of sanitation in low to middle-income countries remains a challenge, where responsibility is blurred with overlapping roles between several ministries. National governments have demonstrated limited commitment, leaving the issue to individual households and NGOs. Community-led participatory models such as CLTS and CHCs offer a new approach that borders on leadership and integrated efforts to improve access to sanitation.

Innovative models of community-led sanitation approaches initiated by nongovernmental organizations appear to fill the void left by national governments. Evidence exists showing that successful models widely used in developing nations have reduced and eliminate open defecation. Suggesting that behavioral interventions that are affordable, relevant, and inclusive are most effective in increasing access to sanitation facilities in both rural and urban communities worldwide (Pickering et al., 2015;

WaterAid, 2011). In this review, I revealed gaps in understanding about what leadership (local, health and political) and integrated efforts entail to prioritize and improve sanitation and health status in Njinikom. There is an increasing need for further research on sanitation in poor communities to understand this humanitarian crisis and targeted interventions to improve the situation.

Improved sanitation is important in legitimizing the state as the leader in public health rather than individuals and households. The apparent failure of national governments in developing nations to recognize the benefits of adequate sanitation and institute reforms is an impediment to improved sanitation due to lack of coordination efforts, monitoring, and surveillance. Evidence in community-based participatory research demonstrated that leadership is instrumental for any successful sanitation intervention. It was against this backdrop that I initiated the Irina Project Initiative, Inc. in Njinikom, Cameroon to scale up the demand for sanitation and hygiene practice. The creation of Irina Project Initiative, Inc. culminated in the construction of the first public toilet in the local open market and also started a partnership effort with the local municipal council.

Chapter 3 will include a discussion of the research design and methodology of the study in relation to whether an integrated leadership approach to increase the demand for sanitation in the Njinikom rural community in Cameroon could help address the current sanitation crisis. I will also review the data collection and analysis techniques I used in this study in Chapter 3. Relevant data collection techniques included face-to-face interviews and observation of the participants' environment to gain insight into the

latter's experience of inadequate sanitation. I will also discuss the steps I took to ensure reliability and trustworthiness of the information collected.

## Chapter 3: Research Method

### **Introduction**

The purpose of this qualitative phenomenological study was to explore the role of local and political leadership in partnership with community residents in enhancing the demand for improved sanitation in the rural Njinikom village in Cameroon. Community and political leadership in this context involved traditional neighborhood chiefs, health professionals, traders, the local municipal council, and Irina Project Initiative, Inc. Irina Project Initiative, Inc. constructed the first public toilet in the Njinikom open market in 2014. Because the goal of the study was to provide an understanding of participants' experiences of poor sanitation and their perception of the role of leadership in addressing or not the problem, the data analysis involved a detailed description of shared experiences.

In Chapter 3, my discussion will focus on the research design and method. I will discuss the rationale for the study as well as include the research questions, data collection techniques, and methodology. This chapter will also contain a discussion and justification of the sample size, the role of the researcher, potential threats to validity, and any ethical concerns that may have arisen during the study.

### **Research Design and Rationale**

My focus in this dissertation study was to explore the role of local and political leadership in partnership with the community in enhancing the demand for proper excreta management in the rural Njinikom village. Because of the social and cultural background, a qualitative approach was suitable to analyze the study within a cultural context.

Qualitative research is useful in understanding human behavior, beliefs, perspectives, experiences, and the relationship among members of a given community (Quick & Hall, 2015). The phenomenological approach was suitable to explore the phenomenon of inadequate feces disposal management and provide an understanding of the shared experience among the study participants. I carried out data collection for the study through in-depth face-to-face interviews, documentation, and observation of the environment.

Quantitative research, on the other hand, involves the process of quantifying variations in a study and is deductive in nature (Creswell, 2009). A quantitative structured survey and questionnaire, though easy to administer, was insufficient to capture a detailed description of the participants' experiences of inadequate feces disposal. Quantitative researchers predict cause and effect relationships as opposed to exploring a phenomenon or describing individual experiences in a natural habitat (Creswell, 2009). Researchers have studied human behavior based on lived experiences in the environment in which they live; hence, a quantitative design would not be appropriate to describe individual experiences of inadequate sanitation and explore the role of leadership in enhancing improved sanitation in Njinikom. I identified a qualitative, phenomenological approach as the most appropriate approach for this study.

I chose the phenomenological design as the research tradition for this study. Phenomenology accords researchers the opportunity to investigate an actual phenomenon as experienced by individuals and populations without injecting preconceived ideas (Converse, 2012). This design provides insight into people's lived experiences and the



commonality of their environment, beliefs, culture, and social and economic circumstances (Converse, 2012). By studying the meaning of a phenomenon as experienced by participants, phenomenology provides useful insight into public health issues and informs public health practice. Understanding inadequate sanitation and the role of leadership in fostering behavior change as experienced by the people of Njinikom underlined this study. Qualitative interviewing allowed me to obtain detailed information on the experience than through quantitative data collection techniques.

The philosophical origins of phenomenology, according to Converse (2012), can be traced to the 18th and 19th century in the works of philosophers such as Kant, Hegel, and Brentano. In the early 20th century, a German philosopher and student of Brentano, Edmund Husserl, formally introduced the concept and became known as the father of phenomenology (Converse, 2012; Tuohy, Cooney, Dowling, Murphy, & Sixsmith, 2013). The central tenet of phenomenology is connecting to the world as participants experience it, and it involves a rich description and in-depth analysis of the experience based on interviews with individuals living the phenomenon without preconceptions (Converse, 2012; Creswell, 2013; Finlay, 2009).

While all phenomenology is descriptive by nature, researchers have distinguished between descriptive and interpretive methods (Finlay, 2009). In descriptive phenomenology, inspired by Husserl, the researcher discounts all prior personal knowledge or experience of the phenomenon under study and focuses exclusively on the meaning of the concept as experienced by study participants (Dowling & Cooney, 2012; Finlay, 2009; Lopez & Willis, 2004). Interpretive (hermeneutic) phenomenology, on the

other hand, emanated from Heidegger's philosophy that interpretation of a study takes place in the context that the researcher is part of the social, political, and historical world (Converse, 2012). As a result, the essence is contextual, and the researcher's personal experience and knowledge impact interpretation of the study findings (Finlay, 2009; Tuohy et al., 2013). In interpretive phenomenology, the researcher explores the lived experiences of a population or group with the knowledge that their experiences are influenced by the world in which they live (Tuohy et al., 2013). For this study, the interpretive method was most suitable. My goal with this research was to explore the role of collaborative leadership in addressing the issue of inadequate toilet sanitation within the context of the social, political, economic, environmental, and community realities of the people of rural Njinikom.

Other qualitative approaches that were less suitable for this study included ethnography, case studies, grounded theory, and narrative. Ethnography was not applicable to this inquiry because it seeks to describe the culture (belief system, behavior, and language) of a particular group to increase understanding of how the people live (Byrne, 2001; Petty et al., 2012). On the other hand, in this study I focused on a particular phenomenon within the culture of the Njinikom people and did not require long periods of observation or data collection. Ethnography also requires extended periods of data collection (Petty et al., 2012) and has its roots in anthropology. Grounded theory emanated from sociology and is useful in generating theory or constructs from data collected from study participants (Habermann-Little, 1991). A narrative study focuses on detailed stories that may pertain to a single event or multiple occurrences of an

experience (Petty et al., 2012). Unlike the aforementioned qualitative research approaches, the case study design is an investigative and analytic qualitative method of inquiry that seeks to explore an individual or group phenomenon at a given point in time or multiple cases or events over a period (Starman, 2013).

### **Research Questions and Central Phenomenon of the Study**

I formulated the RQs for this study to explore inadequate sanitation and the role of leadership in the Njinikom community in addressing the concern. The following RQs increased understanding of the key concepts of the study:

RQ1: What is the role of local community and political leaders, if any, in increasing the demand and resources for sanitation for residents in the Njinikom village?

RQ2: For individuals of the Njinikom community with or without access to sanitation, what is their perspective on the current state of sanitation and the importance and effectiveness of leadership in addressing the problem?

For the purposes of this study, sanitation is defined as adequate excreta disposal facilities such as pit latrine with slab, ventilated pit latrine, piped sewer system, or a septic tank that can effectively prevent human, animal, or insect contact with human excreta (see Jacobsen, 2008). Collaborative leadership entails partnership between members of the community, local and traditional leaders, health officials, government entities, and NGOs.

My goal with this research was to explore and analyze the current state of sanitation in Njinikom from the view of the residents of the community to gain insight

into their experience to help inform intervention strategies. Another goal of mine was to provide an understanding of the role of leadership and determine how leadership commitment in partnership with community residents can provide relevance and priority to the problem. I used the phenomenological design to explore, describe, and advance an understanding of the current sanitation situation vis-à-vis the cultural beliefs and perspectives, structural and organizational capacity, and the leadership structure of the underserved Njinikom community.

### **Role of the Researcher**

The researcher in qualitative research functions as the data collection instrument (Sanjari, Bahramnezhad, Fomani, Shoghi, & Cheraghi, 2014). As the principal investigator, I took the lead role in data collection and analysis. I also ensured that the data collected were both reliable and valid. I explained my role as the principal investigator and provided informed consent to study participants to ensure adherence to research ethics, developed rapport, and gained their trust. I conducted interviews in either participants' home or office environment, where they were most comfortable. During this time, I also functioned as a participant observer. Participant observation of the community environment further determined the status of excreta disposal management and living conditions of the people. To further inform the interview process, my nonparticipant observations of the environment preceded the participant interviews.

### **Researcher's Positionality and Relationship with Participants and Bias**

My parents were born in Njinikom, where I spent 4 of my teenage years as a student. While I have extended family relatives in the community, participants were not

comprised of my family members. I had no supervisory or instructor role in my research study. I initiated Irina Project Initiative, Inc., dedicated to improving sanitation and hygiene conditions in Njinikom. Irina Project Initiative, Inc., constructed the first public toilet in the community's open market in December 2014. The former mayor of the municipality gave the land on which I constructed the first ultra-modern toilet in Njinikom.

I was born in Buea, Cameroon, where I spent my formative years and the early part of my adult life. I have a residence in Njinikom, consider it home, and continue to engage directly in the community through Irina Project Initiative, Inc. I have personally experienced the practice of open defecation and was affected by it. It is as a result of this that I initiated Irina Project Initiative, Inc. My personal relationship with the community and passion for improving the sanitary conditions of the people may have led to a researcher bias. To mitigate this possible bias, I strived to keep an open mind and ensured that my background did not interfere with the process of data collection and analysis. While bias can occur at any phase of the research process (Pannucci & Wilkins, 2010), it is imperative that researchers take the necessary steps to limit its occurrence. To reduce researcher bias, I was open to how my unique personal experience may have played a role in my interpretation of the data. To address this potential limitation, I used informant feedback and provided a detailed description of information collected.

### **Methodology**

The qualitative methodology and the phenomenological design formed my method of inquiry for this study to determine whether a partnership approach to increase

the demand for sanitation in the village of Njinikom would help address current sanitation problems. Researchers use phenomenology to understand how participants' everyday experiences influence their worldview (Creswell, 2013; Tuohy et al., 2013). By using this design, I was able to identify themes that showed the commonality of participants' experiences of inadequate sanitation and how these shared experiences can contribute to collective action to address the crisis in Njinikom. The phenomenological approach was useful for me to assess and explore the phenomenon of inadequate feces disposal and collaborative leadership against the background of the culture, traditional belief systems, and organizational structure of the Njinikom people.

### **Participant Selection Logic**

I conducted face-to-face interviews with residents of the Njinikom community to explore the people's knowledge and experience of lack of sanitation and the role of collaborative leadership in advancing improved sanitation and health. The target population for the study included healthy adults aged 18 years and above, indigenes of the community, and those residing in the Njinikom area. Given that Cameroon is a multilingual nation, participants were speakers of both the English language and the local languages. Participants included key informants such as local government officials, local traditional chiefs, local community organizations, health representatives, and members of the general public.

The sampling strategies that I selected for this study was purposeful and convenience sampling. In qualitative research, purposeful sampling is useful in selecting informants with in-depth knowledge of the phenomenon being studied and can provide

detailed information (Coyne, 1997). Eligible participants included residents of rural Njinikom with or without access to basic toilet facilities and speakers of English and local languages.

There was no predetermined sample size for the study. Qualitative research, according to Cleary, Horsfall, & Hayter (2014), relies on a small sample size intensely studied to the point of saturation where interviews no longer produce any new information. As a result that qualitative approach produces a process, Trotter II (2012) identified the ideal standard in qualitative research is to interview to redundancy and saturation to the point where there are no new concepts or emerging themes. I interviewed a total of 25 participants and from the data I developed and formulated key ideas and themes based on the determinants of inadequate sanitation in Njinikom.

### **Data Collection Instruments and Source**

I collected data in rural Njinikom from January to March 2017 following approval from Walden University Institutional Review Board (IRB approval 01-25-17-0371389 and expires January 24, 2018). In qualitative research, the researcher operates as the primary data collection instrument (Creswell, 2009). The researcher collects information in the participants' natural environment through environmental observation, face-to-face interviews, and use of existing documents. Participants' that voluntarily agreed to participate signed informed consent forms prior to my interview. I collected data using in-depth face-to-face interviews with residents and key informants, used field notes to record observations, and field notes and digital recorders to record interviews for

accuracy. Interviews provided useful insight into the community, the people's experience of toilet sanitation, and the need for leadership to facilitate demand.

I conducted interviews in agreed locations that included homes of participants in the general public and traditional leaders, and offices of local government officials and health professionals. Participants reported they felt at ease meeting in their homes and office environment. I also informed participants of the need for a follow-up meeting to review interview transcripts and carried out member check to validate researcher's interpretation of data collected.

I developed and adapted the interview questions from Englander's (2012) interview format from a phenomenological psychology study and Harris (2010) approach to designing an interview instrument. Dr. Nelson Ngoh of the University of Bridgeport, CT, and Dr. Emmanuel Chiabi of Highland Community College in Seattle, WA reviewed my interview questions and methodology. These individuals are not in any way affiliated with my research study. They are not stakeholders, community partners nor study participants. Dr. Ngoh and Dr. Chiabi are knowledgeable people who agreed to read my methodology and questions and make suggestions. Their feedback enabled me to make changes to the interview questions before engaging in live interviews.

I used the interview questions to examine how local government, traditional and health care leadership, and community organizations influenced sanitation activities in Njinikom. From the interviews I also identified the community's perception of sanitation, socio-cultural, economic factors, and beliefs that influenced proper excreta disposal. In qualitative phenomenological studies, the emphasis is on the meaning of a phenomenon



that is made possible through detailed description (Englander, 2012). Participants, during meetings discussed their sanitation experience, its effect, and their perception of leadership. In addition, I reviewed records from the local municipal council to ascertain sanitation policies and regulations. There is a lack of an institutional framework in Cameroon with clearly defined roles and responsibilities for the multitude of ministries associated with the management of sanitation and water resources (Ako et al., 2010).

### **Procedures for Recruitment, Participation, and Data Collection**

I conducted an initial observation of the physical environment to enable me to purposefully select key informants. I identified officials in the local government responsible for health and sanitation services as well as influential traditional leaders and health professionals. I also sought out community organizations engaged in improved sanitation activities within the community. I met one-on-one with potential participants and explained the nature and purpose of the study and requested their participation in the research. All participants spoke the local language and English. Cameroon is a multilingual nation with English and French being the official languages of communication and education in addition to local languages.

I collected information using a semistructured interview guide and open-ended questions with major informants, community residents as well as participant observation. The key informant interview method facilitated the procurement of relevant information about the community and its needs. I selected potential participants by way of purposeful sampling. As the principal investigator, I also collected the data. Face-to-face interviews provided an opportunity to discuss the current sanitation situation and provided insight

into participants' experience, knowledge, and perception of the crisis. It also provided an opportunity to examine the role of local, health, and traditional leadership in making improved toilet sanitation a reality in Njinikom. Interviews lasted from 30 minutes to an hour depending on the interviewee's knowledge, flexibility, and details. I also used field notes to record observations and interviews, and digital recorders to record interviews. I also conducted a one time up to 30 minutes follow-up of certain participants to ascertain information collected and cross-checked data.

Another method of data collection used for this study was observation. I took the position of an observer as participant (Creswell, 2009). As observer- participant, study participants are aware of the researcher's presence and role. The researcher in this position, according to Creswell, has full access to the community and can record up to date information. A windshield survey of the community was also useful to collect primary data on the community environment with regards to the mode of defecation.

Additionally, I employed secondary data to obtain documents from government sources, unpublished articles, and journals. I also used a research assistant to facilitate the acquisition of public records from the various ministries and institutions responsible for the management of sanitation and water resources in Cameroon. According to Ako et al. (2010), Cameroon lacks an institutional framework that governs water and sanitation. The organization and management of water and sanitation are under the jurisdiction of multiple ministries without any formal coordination or interaction (Ako et al., 2010).

I also used informed consent to inform participants of the objective of the study, study benefits, potential risk, and their right to participate voluntarily without fear of

retaliation. I informed participants' that no personal identifiable information was collected and that I assigned numerical values that included the date and time of interview to ensure privacy and confidentiality. I also informed study participants that all responses from interviews were kept confidential except for the research team.

### **Data Analysis Plan**

I collected and analyzed data using the ecological model and sanitation framework. Analytical tools included a detailed description of participants' perspectives and worldviews and observation of the environment. To analyze data, I focused on the content of the information collected to develop themes and patterns. Content analysis of words, phrases, and sentences were essential to find and identify meanings and patterns of behavior, and developed ideas as related to sanitation and health. I transcribed interview notes and recordings soon after each interview session. This ensured accuracy of all information received. I also made use of a numerical value coding scheme whereby participants were assigned code numbers by date and time of interview and ensured the privacy of all study participants.

### **Issues of Trustworthiness**

In the pursuit of high quality research, researchers are often faced with the challenge to demonstrate credibility in a research study (Cope, 2014). Because both qualitative and quantitative research studies make use of differing methodological perspectives, evaluating quality requires different criteria (Cope, 2014). For instance, validity and reliability are used in the quantitative research process to demonstrate and communicate trustworthiness in a study outcome (Roberts & Priest, 2006). Validity

ensures that a study or test measures what it intended to measure and reliability refers to the consistency of the measurements (Roberts & Priest, 2006; Shenton, 2004).

Quantitative research is subject to randomization and statistical analysis that allows for the objectivity of findings. Qualitative research, on the other hand, involves exploring human behavior and experiences, describing a phenomenon or developing a theory (Cope, 2014). High-quality research in qualitative approach is dependent on the following considerations: credibility, trustworthiness, transferability, and dependability (Cope, 2014; Shenton, 2004).

### **Credibility**

Credibility is the equivalent of internal validity in quantitative research (Shenton, 2004). Credibility in qualitative research evolves from the quality of the information collected and refers to the truth in the interpretation of the data (Polit & Beck, 2008). Cope (2014) further noted that quality in research is achievable by way of adequate sampling, data saturation that thoroughly explores the phenomenon and maintains consistency between the research question and method, data collection and analysis, current study and previous literature, and between results and implications.

To ensure credibility, I demonstrated engagement in the data analysis process and presented detailed and vivid description of experiences in a way that was relatable to the target audience (Cope, 2014). I used triangulation to collect data from multiple sources including participant observation, informant interviews, and documentation to gain insight and provide in-depth, vivid descriptive analysis of the phenomenon of the study (Cope, 2014; Shenton, 2004). I also initiated member checks, in which participants were

asked to review the accuracy of the data to limit bias (Shenton). To increase credibility, I explained myself, the context of the study, and informed participants of their right to voluntary participation to ensure honesty in reporting.

### **Transferability**

Transferability refers to the degree to which research findings apply to another context, situation, and setting in qualitative research (Cope, 2014; Shenton, 2004).

Transferability is equivalent to external validity or generalizability in quantitative studies.

While researchers have argued that generalizability is not entirely achievable in qualitative research, Cope (2014) and Shenton (2004) claimed that it could be achieved at the individual level when readers not involved with the study can identify with the experience and findings of the study. To increase transferability, I provided detailed background information on the village of Njinikom. I also provided the context of the study and details on the main informants and study participants without personally identifiable information to allow for a full assessment of the findings by readers (Cope, 2014). I also presented a detailed description of the phenomenon of sanitation and the role of leadership in enhancing excreta disposal management in Njinikom.

### **Dependability**

Dependability refers to the consistency or reliability of data over time (Shenton, 2004). To increase dependability, I presented a detailed description of the research design and implementation including methods of data collection, and analysis (Shenton, 2004). I vividly explained my role as the researcher in the study and offered information about my background and activities in the community.

### **Confirmability**

Confirmability is the qualitative equivalent to objectivity in quantitative research (Shenton, 2004). To increase confirmability, I ensured that the findings of the study represented participants' views and experiences and not that of the researcher (Shenton, 2004). I clearly stated my role, expertise, and experience. To reduce bias, I used multiple sources of data (interviews, observation, and documentation) and interviewed informants from different works of life and background.

### **Ethical Procedures**

Ethical considerations for this study included collecting information through interviews from participants and key informants in an underserved village in Cameroon. Protecting the research participants was a priority during this study. Ethical procedures to protect participants included the use of specific codes to describe statements from interviews (Roberts & Priest, 2006) and ensure confidentiality and anonymity of participants. No personally identifiable information was obtained from research members. I also ensured that the study would remain beneficial to the entire Njinikom community to enhance the ethical principle of beneficence. I hope to present the findings of this study to the residents and the local municipal council.

According to the Institutional Review Board (IRB) protocol, researchers must safeguard the rights and safety of all those involved in the research before data collection. I obtained verbal and written consent during recruitment and selection of participants to demonstrate respect and safety of individuals participating in the study (Hardicre, 2014). Informed consent entails informing participants about the researcher, the research and

purpose, potential risks of the study, participants' choice and willingness to participate, confidentiality, duration of the study, and potential benefits of the study (Hardicre, 2014). I also encouraged study participants to express concerns and asked questions. I included the informed consent document in my final study. My dissertation proposal was approved in January of 2017. The IRB number, and the expiration date are included in Appendix C.

In keeping with IRB requirements, I advised participants of their ability to withdraw at any time in the course of the interview without fear of retribution. I also informed participants that all data were coded to enhance confidentiality and protect their identity. No personally identifiable information was collected.

I kept audio recordings of interviews and transcripts locked. I transcribed and stored all audio recordings in a secure location during the data collection process. I also maintained all field notes in a locked box throughout the process. I ensured that my personal computer had a secret password and all data encrypted. As the principal investigator, I alone had access to the data. A numerical value coding scheme whereby participants were assigned code numbers by date and time of interview ensured the privacy of all study participants. At the end of the interview, I thanked participants for their support, asked if they had any concerns, and discussed the way forward sharing the study findings with participants.

### **Conclusion**

The research design for this study was qualitative research and underlies the process of data collection and analysis. The process of data collection followed the ethical standards of research that include protecting study participants against potential

abuse, exploitation, and any threats of harm. As the principal investigator, I initiated verbal and written consent to recruit and interview participants. I collected meaningful data by recruiting and interviewing key informants within the Njinikom village. I used face-to-face interviews, participant observation, and windshield survey of the environment to obtain relevant information in Njinikom. All data were collected and analyzed in line with the IRB approval process. In Chapter 4, I will present the actual process of data collection and analysis.



## Chapter 4: Results

### **Introduction**

My goal with this qualitative phenomenological study was to observe the physical environment and interview key informants and members of the Njinikom community regarding basic sanitation practices and the role of leadership in promoting adequate excreta disposal. Inadequate excreta disposal remains a challenge in rural Njinikom. Inadequate sanitation and the absence of leadership as manifested by clear sanitation guidelines, regulations, and policies; a budget for remediation; and collaboration between various ministries, health agencies, and stakeholders is a challenge in marginalized communities in developing nations (Mara et al., 2010). The information I gathered from the interviews helped me identify factors that may hinder or increase access to improved sanitation and determine the role local leaders, health sector professionals, and political leaders can play to improve human waste disposal in Njinikom. In this chapter, I will discuss the data collection methods and findings of the study.

### **Purpose and Research Questions**

The goal of this qualitative phenomenological study was to determine whether a partnership approach to increase the demand for sanitation in rural Njinikom could help address current sanitation problems. To achieve my purpose, I used various qualitative data collection techniques among which were the observation of the physical environment, face-to-face interviews, and documents. I observed the environment for different toilets and latrine types as well as housing infrastructure. I conducted individual face-to-face interviews with 25 members of the Njinikom community during the months

of January to March 2017. I reviewed documents on the customs and traditions of the people of Njinikom. I also examined sanitation and hygiene records from the Njinikom municipal council and organizations present in the community addressing the problem of inadequate sanitation. My aim with this study was to explore the current state of sanitation, participants' experiences of inadequate sanitation, and the role of leadership in addressing the problem in rural Njinikom. Coming to an understanding of how local leadership in partnership with community residents can increase awareness and the demand for sanitation is necessary to solve the problem.

I developed two RQs to guide this study:

1. What is the role of local community and political leaders, if any, in increasing the demand and resources for sanitation for residents in the Njinikom village?
2. For individuals of the Njinikom community with or without access to sanitation, what is their perspective on the current state of sanitation and the importance and effectiveness of leadership in addressing the problem?

Leaders in this setting were influential members of the community or organization who may or may not possess formal leadership titles (Nahavandi, 2012). For purposes of this study, leadership included local political leaders, health professionals, traditional leaders and healers, community organizations, teachers, traders, and businesspeople.

### **Pilot Study**

Prior to collecting data, two experienced individuals reviewed my interview questions and methodology, Dr. Nelson Ngoh of the University of Bridgeport, CT, and Dr. Emmanuel Chiabi of Highland Community College in Seattle, WA. These individuals

are not in any way affiliated with my research study. They are not stakeholders, community partners, nor study participants. However, Dr. Ngoh and Dr. Chiabi are knowledgeable people who agreed to read my questions and methodology and make suggestions. Their feedback enabled me to make minor changes to the questionnaire before engaging in the live interviews. Their knowledge and feedback also helped enhance both the rigor of my study and my confidence in the process of data collection and analysis.

### **Setting**

In this study, I conducted individual face-to-face interviews at agreed consensual locations that included participants' homes for people in the general public and traditional leaders and office environments for government officials and health professionals. I recorded the interviews using a digital audio recorder and also took field notes. I interviewed 25 people from different neighborhoods within the Njinikom rural area. Factors that may have influenced the meetings included the availability and flexibility of participants, the participant's choice of interview location, and member's interest and willingness to address the problem of inadequate sanitation.

I also observed the physical environment of the participants to gauge the system of feces disposal, toilet, and latrine types as well as housing infrastructure. Because I used purposeful sampling, the windshield survey allowed me to purposefully select study participants based on their method of excreta disposal. I observed 42 latrines and toilets. Most of the latrines found were open shallow holes without a roof, a floor, or walls for

safety, privacy, or security. I will further discuss my observation of the physical environment in detail later in the chapter.

### **Demographics and Participation Criteria**

Participants in this study included healthy adults aged 18–70 years old residing in Njinikom. The criteria I used to select study participants comprised of (a) being a resident of the Njinikom community; (b) health professionals and community leaders with knowledge and understanding of the sanitation situation; (c) individuals with or without access to adequate feces disposal facilities; and (d) people with the ability to understand and speak English, French, as well as the local languages (itanghikom and pidgin English). Cameroon is a multilingual country with English and French being the official languages of communication. Possible exclusion criteria were not speaking English, French, or any of the local languages. However, being a homogenous community, all study participants spoke English and the local languages.

Using purposeful sampling, I selected healthy individuals without any vulnerability such as mental, physical, or behavioral conditions. Study participants were composed of both men and women and included local government officials (mayor and local council members), health care officials in the community, traditional leaders (neighborhood heads), traders, teachers, traditional healers, students, and the general public. All study participants were engaged in the community and working for the government, hospital, and private businesses or self-reliant. Hence, they were healthy enough to participate in the study. This diverse group of participants was representative of the population of the Njinikom community and the leadership structure.

### **Data Collection**

To collect data for this study, I conducted one-on-one interviews with residents and key informants within the Njinikom rural area. The interviews took place in an agreed consensual location that included participants' homes for people in the general public and traditional leaders and the office environment for government officials and health professionals. I interviewed participants on a date and time agreed on by them. While I engaged participants in a one-on-one, in-depth, open-ended discussion, I used a semistructured interview questionnaire to guide the interview process. The interviews with 25 residents of the Njinikom community provided a sufficiently large sample size to answer my RQs.

There was no preconceived sample size for the study. After interviewing 25 participants, I reached data saturation. Morse (1995) described the concept of saturation as data adequacy and the point at which no new information is derived in data collection. Morse further noted that the process of saturation is determined not by the quantity of data collected in a category but by the richness of data from a detailed description. The development of a rich and thorough description of inadequate excreta disposal management, participants' experience and perception of the problem, and the role of leadership in addressing the issue determined the sample size. I achieved saturation in this study when no new information or ideas from participants' perceptions and experiences of inadequate toilet sanitation emerged and was marked by a consistent repetition of familiar themes.

When beginning the interviews, I introduced myself as the principal researcher and provided a brief overview of the study. I informed participants that no personal identifiable information was collected to gain their trust and ensure privacy and confidentiality of information. I also reviewed the information contained on the informed consent form. Participants that agreed to participate signed the consent form informing them of their right to voluntary participation, potential benefits of participating, minor risks involved, and the confidentiality of information collected. The interviews took approximately 30 to 60 minutes. I used a digital recorder to record and then store the interviews in separate folders. I informed study participants of the recording and also took notes during the interviews to facilitate transcription and ensure accuracy of the data collected. I listened to audio recordings at least twice and manually transcribed the notes after each interview. I read each transcribed session at least three times for coding and identification of themes. During reading, I made notes on the margins and underlined key words and phrases. I also color coded key terms to distinguish identified themes and tabulated the different categories of words and themes.

I also personally observed about 42 latrines, toilet types, and housing infrastructure belonging to participants and nonparticipants in the environment. I took field notes to record observations and enhance the accuracy of this data collection. The field notes and audio recordings are saved in a locked box and are only accessible by me. I used numerical value codes to identify each participant. I also did not collect any personal identifiable information and did not provide any financial incentive for participation in the research.

In addition to interviews and observations, I also obtained documentation (official reports) related to public health activities from the local municipal council and the lone government-run health care center in the vicinity. I used a research assistant to facilitate the acquisition of public records from the ministry of public health at the regional level. There was no available information related to policies and regulations pertaining to water, sanitation, and hygiene from the ministry of public health. It is also worthy to note that the department of public health is not represented at the local municipal or district level. The tenuous political situation in Cameroon produced some challenges in the regional headquarter of Bamenda. Internet access was cut off in the region and hampered my training in NVivo software for the data analysis. Therefore, I engaged in manual transcription of interview data. Though time consuming, manual transcription accorded me a full view of the written transcripts that I could compare with the written field notes and the audio recording for accuracy.

### **Data Analysis**

Once the physical environment was observed, I categorized the various latrines and toilet types and developed a detailed description of the latrine or toilet and housing structure. I categorized the latrines into two categories: improved and unimproved. Table 2 shows the categories of sanitation facilities in Njinikom. I found that open pit latrines were commonly used without slabs, walls, or roofs in the community. I hoped to use these to develop a vivid description of the current sanitation problem and add to the themes and patterns fundamental to answering my RQs.

Table 2

*Characteristics of Common Latrine Facilities*

Latrine/toilet category	Facility location	Characteristics
Improved	Indoor flushed. Detached within household compound.	Cement or brick walls, door providing privacy and security. Roofed, cement floor, and lid.
Unimproved	Detached within household compound. Or no latrine facility (open defecation).	Palm tree leaves, pieces of cloth/plastic bags for walls or no walls, no door (no privacy or security). No roof, wood or planks for floor.

I transcribed all the interviews, assigning coded names for all participants. For instance, I used the following codes P1, P2, P3 (P for participant) sequentially for study participants in the order of the interviews held. I also coded schools observed using codes such as S1 (S for school). I also made reflective notes on margins of transcribed texts to emphasize points relevant to my RQs. These helped me keep track of the information gathered, the speaker, and enabled member checking for accuracy of information.

Following my transcription of the data, I tabulated emerging themes from participants' perspectives, experiences, and challenges to improved sanitation and leadership activities. I also compared responses from participants' interviews to sort out commonly shared beliefs and discrepancies and further develop themes to answer my RQs. In case of discrepant information counter to a particular theme, I validated the accuracy of the information by verifying the question and responses with other participants. This practice enhanced the validity and accuracy of the data. For instance, some participants argued there are no cultural barriers to adequate sanitation and that the



use of open pits for feces disposal has become a habit over time. Others noted that the use of open pit latrines is “a traditional practice that hinders good sanitation” (P17) as often times some traditional healers use it as treatment for convulsion. One participant described what she considered a cultural “malpractice” (P17) that continues to impede adequate sanitation,

So many people believe that when a child has convulsion, the only thing to do is to carry the child to the latrine, turn him or her upside down and send their head inside the latrine for the person to inhale the odor. (P17)

Another participant noted that:

In the past, the only known first-aid treatment for convulsion in this community was to rush the individual to the nearest pit latrine. The person’s head would be sent into the latrine through the pit opening and allowed there for some time. If the situation were really convulsion, then the person would regain consciousness immediately. (P24)

In addition, I observed and developed patterns in sanitation possession. For instance, is access to improved sanitation based on socioeconomic status in the community? Even though a majority of the residents without access to adequate sanitation are poor, there are also individuals with white-collar jobs and successful businessmen without improved sanitation in their households. This is contrary to the widely held view that poor sanitation is an issue that is directly related to poverty. Poverty is therefore only one factor among a multitude of challenges. I also highlighted key words and texts that emerged frequently in the transcribed data and used by multiple

participants to create common beliefs, perceptions, and varying viewpoints about sanitation. In response to RQ1, data from the interviews revealed there is the perception among individuals identified as farmers and traditional healers (lower socioeconomic status) that leadership is doing well to solve the issue of poor sanitation. On the other hand, individuals such as health professionals, teachers, students, business class, and local government employees perceived that leadership was not doing enough to address the problem. For instance, when asked whether leadership was doing enough to address the problem of indiscriminate excreta disposal some participants who described themselves as farmers responded:

In Njinikom as a community, I am seeing improvement with this current mayor.

All the time now we receive letters in the church from the mayor asking people to keep their compounds and community clean especially the toilet as people would be going around to check. (P16, P22)

Community leaders are doing well to improve sanitation in this community. Like my subchief, his compound is always clean in all aspects, which is an example to the community. For a leader like the mayor, he always passes an announcement from time to time notifying people that they should keep their latrines and environment clean. I think this is his way of ensuring good sanitation in the community. (P21)

On the other hand, individuals who identified themselves as students, health professionals, and employees of the local government discussed the shortcomings of local leadership:

At the moment not enough is done to address the issue. In the old days there were these sanitary activities – sanitary officers used to go around visiting compounds. Most of the compounds had average latrines and the program suddenly stopped. (P2)

No, private initiatives instead are creating an impact. Feces disposal is still a major problem. People especially children still dispose of feces in the backyard. Even old men still squat on the way. You still find lumps of feces on the way as people move along. You still find feces within the compounds due to exposed pit latrines. (P3)

I would like the mayor of Njinikom to increase the number of sanitary workers and the frequency with which they move around because it is the best way to tackle those who practice poor sanitation out of ignorance and also make sure they hand field reports to the mayor. (P17)

### **Evidence of Trustworthiness**

The value of a research study is dependent on the quality of the information collected, data analysis, and the ability to establish the accuracy of the results. The goal of phenomenology research focuses on the shared meaning of a collective experience of a concept or phenomenon of a group or community of people (Creswell, 2013). High-quality research in qualitative studies requires establishing the process of credibility, transferability, dependability, and confirmability (Cope 2014; Shenton, 2004).

**Credibility**

I used triangulation to collect data from multiple sources including participant observation, informant interviews, and documentation to gain insight and provide in-depth, vivid descriptive analysis of the study (Cope, 2014). I also interviewed participants from a diverse background that included students, teachers, business people, farmers, builders, health care professionals, traditional healers, traditional leaders, and local government officials to enhance the credibility of the study. To gain insight into participants' perspectives and provide a rich descriptive analysis of the findings, I asked questions such as how satisfied are you with your excreta disposal facility? Describe any experiences that represent your views about access to toilet sanitation? What do you consider to be the major problem regarding access to sanitation? Do you think leadership is doing enough to address rampant open defecation in Njinikom? I also introduced myself, provided the context of my study and informed study participants of their right to voluntary participation to ensure integrity in the reporting during data collection. I initiated member checking throughout the data collection process by conducting follow up interviews on specific descriptions or themes to the ascertain accuracy of data and limit bias. For instance, I conducted follow-up interviews during which I asked participants to review the accuracy of information related to the question of tradition and culture and its impact on excreta disposal.

**Transferability**

Since qualitative research is context-specific, and there is no real generalizability, I presented a detailed description of the phenomenon of inadequate toilet sanitation, the

Njinikom community, and the role of leadership in improving the problem in the study. I also discussed the study findings in detail. While each qualitative research study is context-specific and unique to the particular situation, it is my hope that readers of this study would find the results consistent with their experience (Miles et al., 2014). I also hope that the results will contribute substantially towards addressing the current gap in literature identified in the study.

### **Dependability**

I used a semistructured interview guide (Appendix A) to ensure consistency of data collection. I also presented a detailed description of the research design and implementation including methods of data gathering and analysis (Shenton, 2004). I used audio recording and field notes to engage participants and produce a reliable account of the data.

### **Confirmability**

As someone with roots in the Njinikom community, I used multiple sources of data (observation, interviews, and documentation) and interviewed individuals from a diverse background to prevent researcher bias and increase confirmability of the study. By using open-ended interviews, I derived direct quotes that provided rich and detailed descriptions to convey the findings of the data (Creswell, 2009). The results from multiple sources ensured that the study is a reflection of participants' and the community's perspective and experiences and not that of my views as the principal investigator. To increase dependability, I presented a detailed description of the research

design and implementation including methods of data collection, and analysis in the study.

### **Findings**

The leadership structure, the socioeconomic status (economy, income, gender, and education); community characteristics (physical environment, community leadership, and organizations); and public policy (local, state, and national policies for sanitation practices and surveillance) that influence behavior change and health formed the basis for interpretation of this study. Results of the data analyses revealed a community rift in poverty, poor organizational and infrastructural development, and low socioeconomic status. Factors such as low socioeconomic status, inadequate organizational capacity, and limited resources make access to improved sanitation a low priority to individuals, households, and leadership.

### **Socioeconomic Status**

#### **Economy**

Peasant agriculture carried out with rudimentary farming tools (hoes, cutlasses) is the principal economic activity in the Njinikom municipality (Njinikom Council Development Plan, 2011). While men own the farmlands, their women counterparts farm the land cultivating food crops (corn, bananas, plantain, cocoyam, and fowls among others) for home consumption and potential marketing. According to the Njinikom Monographic Survey (2011), 70% of households in Njinikom invest between 0–100'000 frs cfa (up to \$170.00) in agriculture per year, 14% invest between 100'000–300'000frs

cfa (up to \$500.00), and 6% invest above 300,000frs cfa (over \$500) and approximately 10% investing in nothing.

Besides the practice of subsistence agriculture, the local economy is dominated by informal trading activities. The following statistics illustrates the state of employment: traders 9%, drivers 6%, computer technicians 1%, teachers 9%, 1% engaged in weaving, carpenters 1%, traditional rulers 1%, traditional doctors 1%, builders at 4%, photographers 1%, church leaders 4%, and 59% for other nonagricultural activities such as carving, motor mechanics, electricians, repairers (shoes, radios, watches, etc.) (Njinikom Monographic Survey, 2007). There are no industrial activities in the area. Robuster coffee is the only significant cash crop cultivated in the region. Despite farmed in small scale by individual households, the fall in prices over the years resulted in the farms being abandoned or neglected causing increased hardship (Njinikom Monographic Survey, 2007).

### **Income**

A majority of the residents of Njinikom are not only self-employed, they live in poverty. Approximately 90% of the population practice subsistent agriculture as the only source of income (Njinikom Monographic Survey, 2007). Meanwhile money to invest in agriculture comes from a variety of sources. 77% of households obtain financial investment in agriculture from *Njangi* (system of savings whereby individuals come together and contribute an amount of money for the benefit of one then the other), 43% from family income, 7% from bank, 13% from friends, 35% from cooperatives, and 14% from other sources (Njinikom Monographic Survey, 2007). Other sources of income

include low paying jobs such as bartending, hairdressing, traditional arts and craft among others. To supplement income from agricultural activities, households also engage in small scale livestock rearing.

### **Education**

The educational standard in the Njinikom community is quite low. There are no institutions of higher learning such as colleges or universities. Secondary education forms the highest institute of learning. A majority of the individuals and families have no formal education. According to the Njinikom Monographic Survey (2007), 48% of women have no formal education, 49% have primary education and 3% have secondary school education. Among men, 24% of male household heads have no formal education, 56% have primary education, and 20% have secondary education (Njinikom Monographic Survey, 2007). The low standard of education is consistent with the high rate of illiteracy in the community and lack of organizational capacity fundamental to improved sanitation. The educational background of the 25 individuals interviewed for this study included: three with high school diplomas, one with an equivalent of a bachelor's degree, one with an equivalent of an associate degree, one university student, and the remaining nineteen are either high school dropouts or individuals without any formal education.

### **Gender**

According to the Njinikom Council Development Plan (2011), females make up 18, 101 of the total population while their male counterpart comprise of 11,485. A kom woman has no direct right to property as only men are allowed to inherit (Njinikom



Council Development Plan, 2011; Njinikom Monographic Survey, 2007) resulting in hardship for women. Following the matrilineal system of inheritance, only sibling brothers or nephews of the deceased are allowed to inherit property. A woman and her children in the kom culture are considered the property of her husband's lineage following payment of a bride price (Nsom, 2015). The decision making process is dominated by the men folk leaving the women mostly helpless and relegated to cultivating food crops. In a culture that practices matrilineal succession and inheritance, women are predominantly uneducated and underdeveloped (Njinikom Council Development Plan, 2011). Such traditional customs tend to deprive women of equal opportunities and disproportionately affect their ability to build and maintain a healthy home environment for themselves and their children.

## **Physical Environment**

### **Housing**

Infrastructural development is a reflection of the living conditions and standards of a people. Housing infrastructure in Njinikom and within the kom culture ranges from a typical traditional thatched house to the modern day building. Observation of the environment revealed a typical housing infrastructure comprises of compound houses of at least two buildings – one belonging to the man (*bobe*; head of the household) and the other to the woman (*nawain*) with her children. A courtyard separates the man's house from the woman's or women in case of multiple wives (Nsom, 2016). A majority of these houses belonging to the poor are either built with earth blocks or sticks and mud and roofed with grass or aluminum zinc sheets. These structures are poorly ventilated with a

single door, no windows, overcrowded, and no indoor piped water. Though one can easily notice standing water pipes in some compounds. A woman's hut comprises a single room with a pit in the center for cooking and dirt floor. The room serves as the living area, dining, sleeping, and kitchen for her children and strangers. The ceiling is crafted with bamboo and serves as a storage unit.

### **Toilet Sanitation**

In addition, coffee farms and other food crops such as plantain and banana trees, cocoyam, and fruit trees surround the compound. Most of the excreta disposal facilities (pits) are found in the coffee farms. The pit latrines observed are located between 1.5–30 feet behind or beside the compound houses. Several are located along footpaths leading to public arenas such as schools, local markets, and farms. In some cases multiple compounds share the same open pits. A majority of these latrines are shallow holes with wood or plank placed across the pit as slab (floor) and no roof. While most of the latrines or pits are open with no walls, some have palm leaves, pieces of cloth or plastic papers for a wall. Such latrine conditions offer no means of cleaning, no privacy or security. Footpaths also lead to the pit latrines.

Observations also revealed decayed wood and planks over a majority of the open pits making for a dangerous situation. Other exposed shallow pits still in use were more than half full with collapsed wood and planks and visible feces. In some instances, repairs involved reinforcement of decayed and collapsed wood and plank instead of construction of improved latrines. Some pits have multiple squatting holes between the wood and planks depending on the width of the pit. Once a pit becomes full, a new pit is dug close

by without attempts to close the old one increasing hazardous health conditions in the environment. Of the 42 pit latrines observed seven are considered improved - constructed with walls (mud or cement bricks), roofed, have doors, cemented floors with squatting holes and lids in some. Among the seven improved latrines, three are among the ventilated improved pit latrines constructed by the African Development Bank in collaboration with the local municipal council. Figures 1–3 illustrate typical excreta disposal facilities used in rural Njinikom.



*Figure 1.* Unimproved toilet sanitation in Njinikom



*Figure 2.* Unimproved toilet sanitation in Njinikom



Figure 3. Unimproved toilet sanitation in Njinikom

There are also some modern homes in the community equipped with both internal flushed toilets and external pit latrines. One of the reasons for this is the scarcity of water in the environment. However, most of the pit latrines are not properly cared for creating room for flies and smell. While inadequate sanitation in developing nations is considered an issue of the poor (Bartram et al., 2005), there is no set pattern in the Njinikom rural area. Data from observation and interviews revealed that some relatively well to do households lack access to improved sanitation and continue to use open shallow pits. Some of the reasons advanced include community solidarity and people expecting subsidies from the local council. The habit of utilizing the open pit over time has also made it difficult for certain elites to prioritize sanitation over other concerns. From the data collected one participant discussed prioritizing other needs over toilet sanitation as follows:

If I do it I will be challenging my neighbor who does not have one. If I take money and put into a toilet and my neighbor is there in a grass house, how will that feel? (P10)

I also observed some schools in the community that highlighted the problem of poor sanitation. S1 (School) is a block structure that houses three classrooms. There was no visible toilet facility on the school campus. The school has a population of about 120 pupils. S2 had a pit latrine with two stalls a few feet away from one of the classroom structures. The floor had planks lined across the pit, aluminum zinc sheets for walls and roof, and no door shutters. The collapsed entrance is supported and reinforced with planks and sticks. The inside of the pit is visible through gaps between the planks. The absence of safety and privacy measures is worth noting here. The structure is located at the end of a bushy footpath. The school is home to about 400 pupils.

### **Community Leadership and Organizations**

#### **Quarter Head or Traditional Neighborhood Chief**

Based on the Kom traditional government, the quarter head is responsible for the management of the day-to-day affairs of his area including the sociocultural and economic development (Nsom, 2015). Administratively, the quarter head is subordinate to the district officer and the mayor of the municipality. Meetings to settle disputes and other community concerns take place in the compound of the quarter head. Each neighborhood has a traditional council under the quarter head.

**Traditional Council.** A traditional council is an arm of the traditional government created by the local district administrative authority to assist the administration in settling disputes among the local population within a particular locality. The traditional council does not substitute institutional courts. The council is slated to work in close collaboration with traditional rulers in the different localities and render

account to the competent administrative authority. Additional duties of the traditional council include health promotion within its local jurisdiction. This involves the provision of general education on basic sanitation and environmental cleanliness. The traditional council sets up an inspection team from within its ranks that assesses the environmental and sanitary conditions of compounds in the locality and makes recommendations.

According to a chairperson for one of the traditional councils, the sensitization campaign involves announcements in churches and unannounced visits to compounds to inspect latrines and general cleanliness. During these visits, members often encounter individuals and households with no latrine facility and others with shallow open pits. Delinquent individuals who are unable to acquire latrines despite warnings are then reported to the quarter head for sanctions that can include fines of monetary value. The traditional council chairperson is required to generate a report to the municipal Mayor on their activities and uncompromising individuals for further sanctions. A duty not yet accomplished by this traditional council, according to the individual interviewed.

The quarter head is the president of the traditional council. Other members of the traditional council include elected officials among who are the chairperson, counselors, and other nominated members. Within the traditional council is an executive committee comprising of the president, secretary, financial secretary, and treasurer. The chairperson coordinates its affairs.

***Role of the traditional council from participants' perspective.*** In the words of one participant, while traditional council is not a new concept, its expanded role in community sanitation is unprecedented. Key informants identified the following

functions of the traditional council: ensure proper feces disposal in communities through monitoring and reporting to the appropriate authority; provide knowledge of health implications of poor sanitation to deter rampant open defecation and promote health. Study participants reiterated the need for health education even though a majority of the traditional council members are not educated or literate enough to provide effective and evidence-based teaching.

***Challenges of the traditional council.*** Traditional council members and quarter heads interviewed in this research identified the following barriers to health promotion in their locality: Lack of formal education and lack of training for the task. This makes it difficult to provide the sensitization needed to improve basic sanitation as members acknowledge they are unfit for the job. Instead of formal training or workshops traditional council members are typically briefed on elementary knowledge regarding the depth of a pit, flooring (wood/planks), walls, roof, squatting hole and lid. A good latrine in the rural or traditional setting is a well dug pit, one that has a slab, a lid to cover, no flies and without a hand wash basin (P3).

Other challenges include lack of financial resources, uncompromising individuals, and the fact that not all traditional councils are engaged as some lack the will to work. Because traditional council members and some quarter heads lack improved feces disposal facilities in their own compounds, educating the public remains a challenge. Some traditional council members noted that they often meet with unruly residents who are aware that they also do not have proper sanitation in their households and are faced with questions such as “do you have a latrine in your compound? Come and talk to me

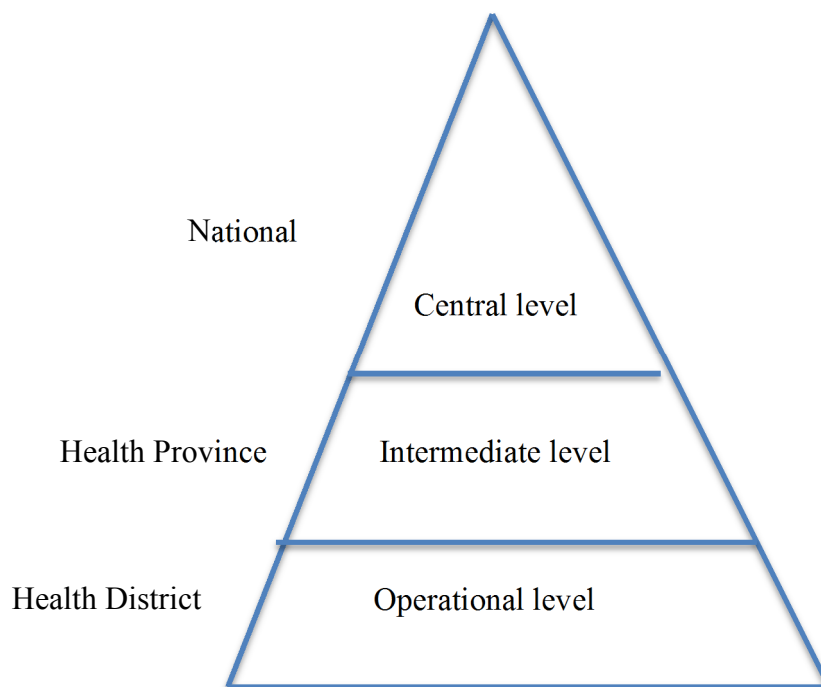
about sanitation when you have one for yourself’ (P9). Another participant commented on the state of toilet sanitation in a quarter head’s compound:

It was embarrassing to get into that compound and notice that there was nothing. I mean there was nothing. I mean a traditional leader’s compound and we have village traditional council that goes around visiting to ensure that toilets are adequate. (P3)

### **Municipal Council/Mayor**

Political leadership has a consequential role in health promotion and disease prevention in any community. Following decentralization of the government in Cameroon, the responsibility for environmental sanitation was left with the local municipal councils, defined as the health district or operational level of the health system. The operational level forms the core of the health system designed to reach a wider population and improve community participation and mobilization (Ghogomu et al., 2000) in health promotion activities. The Cameroon national health system is divided into three levels: national, provincial, and district. Figure 4 shows the national health system pyramid in Cameroon.





*Figure 4.* National health system pyramid in Cameroon

The municipal council is divided into four committees to run its activities. Sanitation and hygiene is under the sociocultural committee and managed by the council sanitation officer. There are no policies or regulations that set the standard of practice to guide sanitation activities in the municipality. Article 1 of municipal order No. 18/2015 that bears on keeping the municipality healthy and clean sub-divided the council area into zones and assigned municipal councilors to follow up sanitation and hygiene activities in the zones. There is a general understanding in the community and within the local council that the sanitation and hygiene department is not equipped to enforce any sanitation and hygiene standard. Hence the department is not functional. In the words of a key informant the failure of the sanitation department led to the expansion and empowerment of the traditional council to manage the state of sanitation in communities.

**Role of municipal council from participants' perspective.** According to one key informant the current Mayor and council are attempting to revive the sanitation and hygiene sector within the council (P2). Another informant noted that improving basic standard of living in the area of water, sanitation, and hygiene is a priority for the local government and that “they have the duty and responsibility to provide for the health of the community” (P1). There was general consensus from the interviews on the role of the municipal council as follows:

- a. Develop regulations and policies as a way to assess and evaluate success at the municipal level.
- b. Ensure qualified and competent staff for all council positions.
- c. Provide training workshops and seminars for community extension workers and volunteers such as the traditional council.
- d. Promote better sanitation practices through education and sensitization seminars for the general public.
- e. Strengthen collaboration with the traditional council through regular reporting of activities in the community.
- f. Provide financial assistance to enable construction of improved latrines and revive the use of former sanitary officers who were tasked with monitoring and surveillance of the state of excreta disposal in the community. In addition, posters highlighting the dangers of inadequate feces disposal should be made available to the public.

- g. Provide financial incentives to volunteers to encourage and motivate their activities.

***Challenges of the municipal council.*** While the local council forms the core of the operational level of the health care system, Ghogomu et al (2000) noted that ministerial instructions that clearly define roles and responsibilities are still lacking. Key informants also lamented the absence of key policies and regulations to guide sanitation activities. Other challenges advanced by study participants include limited financial resources that impact the prioritization of goods and services and absence of trained and qualified staff to lead the sanitation sector. Additional challenges at the level of the population include poverty whereby people are unable to pay fines when levied (P1) and illiteracy and ignorance with respect to rampant feces disposal and associated diseases. Neglect and lack of concern used to describe individuals and households without latrines and using a neighbor's pits. Other key challenges included the lack of oversight and enforcement strategies to accompany community volunteers charged with community monitoring and surveillance.

### **Health Professionals**

Health professionals for this study are mostly individuals working in the hospital setting in rural Njinikom and include nurses, medical doctors, nursing aids, pharmacists, laboratory technicians, and hospital administrators among others. Public health representation in Cameroon exists at the national, regional, and divisional levels only. Documentation records from the local municipal council and interviews of local government officials pointed to the town council health committee and sanitation officer

as health representatives at the district operational level. According to the local administration officials in rural Njinikom, the district medical officer who is the public health representative is at the divisional headquarters. While the local government officials acknowledged the absence of oversight from the district medical officer, one participant described a single visit in the Njinikom municipality where the district medical officer reviewed sanitation in public places such as drinking parlors (P2). The failure by the government to institutionalize and develop a clear strategy for sanitation is evidence in the absence of a framework for improved sanitation and lack of investment. One participant described what he thought was a lack of prioritization on the part of the government in rural Njinikom:

There is no practical framework to guide sanitation activities. We have to meet the district medical officer. That is a big hindrance. At any time, we may be doing something contrary to the law. It is good that we meet the district medical officer and find out. (P10)

Following the reorganization of the national health system, the Ministry of Public Health in Cameroon created dialogue structures at the provincial level, district level, and the health area level (Ghogomu et al., 200). At the health area level is the health area committee (HAC) and performance based financing structures. Engaged in HAC are health care professionals and lay members of the community. A health worker described their view of adequate feces disposal:

Sanitation is a major priority. It is the gateway to health, an entry point to having good health, and a priority that requires us to rethink, revisit, and review how it is

done. The greater chunk of health problems – enteric fevers, malaria will be significantly reduced. (P5)

**Health area committee.** This is a community-based government sponsored program that is not fully developed. Documentation on HAC from the Ministry of Public Health focuses on the assembly of the committee and its role in identifying a community's needs and problems (Ghogomu et al., 2000). HAC was created to facilitate community participation in health promotion activities and carries no clear or specific policies. Local governments are left to design their own policies and regulations. The lack of educated and trained staff impedes any progress or success. In the Njinikom area, health area committee members are grassroots volunteer health workers tasked with sensitizing the public on primary health related issues such as malaria prevention and hygiene and sanitation (P5). The idea of HAC is consistent with Barzgar, Sheikh, and Bile (1997) assessment of grassroots health workers as the primary drive for the promotion of primary care with services most suitable for the population. There is limited information about HAC activities given that it is not functional. According to an informant, the absence of financial incentive, lack of follow-up, and the inability of the government to fulfill its promises resulted in minimal success in Njinikom.

### **Nongovernmental Organizations (NGOs)**

Independent groups not affiliated with any government play a role in advancing improved sanitation in the village of Njinikom. The gravity of the problem requires an inclusive approach that is also relevant, effective, and sustainable (Wateraid, 2011). Irina Project Initiative, Inc., and Plan Cameroon are some NGOs in the region engaged with

the community to improve health conditions through access to improved sanitation.

Additional organizations include African Development Bank that worked in partnership with the Njinikom council to construct nine ventilated improved pit latrines (VIP) in the community in 2012. These latrines were constructed for individual households. The goal of this role out was to sample the VIP latrines bearing in mind land scarcity and the need for sustainable sanitation.

VIP latrines are also suitable in underrepresented communities given that they can be constructed on any geographical surface. The required depth is about 4m deep. The internal walls of the pit are constructed with concrete and stones (local materials prevalent in the community) to prevent ground water contamination and potential water borne diseases. Meanwhile the hut is constructed with mud bricks or cement blocks to provide privacy and protection. The floor is cemented and can be easily cleaned. While the African Development Bank subsidized the construction of these latrines qualified individuals contributed 10% of their personal income to be eligible for one.

**Irina project initiative, Inc.** Irina Project Initiative, Inc. is a common initiative group in the Njinikom locality. I am the founder and chief executive officer. Irina project initiative has eight volunteers providing education on the benefits of adequate sanitation and the health effects of inadequate sanitation in their various neighborhoods. These volunteers are former sanitary officers who have experience in community approach to sanitation. Irina project initiative constructed the first modern toilet in the Njinikom community open market in 2014. One participant described the impact of the Irina project ultra-modern toilet:

It came in powerfully. Thanks to Irina public toilet people in the community came face-to-face or experienced a modern toilet. Thanks to Irina Project Initiative that even some of us had to see what is called a modern toilet. To some people they are still imagining that the structure is actually a toilet. In our cultural setting people's idea of a toilet is that feces is waste and therefore a toilet should not be good or neat. This toilet is too decent. (P5)

The idea that feces is waste and therefore does not warrant proper disposal is a potential impediment to improved sanitation. This also reflects other key informants view that some indigenes consider defecating indoors as nasty. The presence of the first ultra-modern toilet did not only increase awareness, it enlightened the indigenes and reduced rampant open defecation around the market area:

In the past people randomly excreted in the market area. The presence of this structure and the cleanliness of the environment scare individuals and also provide a ready place for people to defecate or urinate. (P2)

In the words of another informant:

The presence of the public toilet in the market is a big help. People who are going to the market either to buy or sell are using the toilet now. At first when the toilet was not there, people were going into other people's compounds and coffee farms around the market to defecate. So that toilet is very important and has helped the Njinikom community. (P9)

Irina Project Initiative, Inc. is currently in the second phase of its sanitation intervention program. It is a three-way partnership with the Njinikom municipal council

and community stakeholders to sensitize, mobilize, and increase demand for sanitation in schools and private homes. The local leadership of Irina Project Initiative registers interested consumers during sensitization and mobilization campaigns. In this initial phase the program earmarked four VIP latrines for the year 2017 – one for a church with a population of over 200 people (seven compartments and a shower), two for individual households, and one for a government run primary school (seven compartments). They are all designed to have wash hand basins on the side. The sizes vary depending on the population and the availability of cash or kind contribution from interested consumers.

Among the four, the oldest primary school in the community with approximately 400 students emerged as one of the beneficiaries. Based in part on meetings with the school officials the school has not successfully had a sustainable feces disposal facility. Observation of the environment revealed a hazardous set up for the pupils. On the school campus is an open pit latrine with pieces of wood placed across the pit (as slab), the entrance is collapsed and reinforced with pieces of wood with some decayed. Stepping on the wood is not only dangerous, one can see right through the pit. For privacy, the pit is covered with aluminum zinc sheets for wall and roof. The school authorities acknowledged the dangerous condition and expressed their desperation for a better facility. Limited funds make it difficult to incorporate large numbers of people in the program at this time. Funding for Irina Project Initiative at this stage relies on small donors – colleagues, family, friends, and people of goodwill.

The intervention plan for Irina Project Initiative, Inc. embodies an inclusive approach designed to reach the entire community. Irina project volunteers together with



the local council and health committee do the outreach by way of sensitization and mobilization. To make it relevant, Irina Project Initiative offers latrine types that already exist in the community such as the VIP latrines constructed by the African Development Bank and the local council in 2012.

In addition, the VIP latrine is constructed with local material and community labor. The VIP latrine is a suitable option given that it is adaptable to areas with high water table and collapsing soil (Wateraid, 2011). Because the VIP latrine is constructed outside of the home, it is also relevant to the culture. For instance, there is a notion among the indigenous people that one cannot cook, eat, sleep, and defecate in the same house. Residents and institutions interested in acquiring improved sanitation are required to make a 30% contribution either in kind or in cash. This also ensures affordability in a community rife with poverty. Meanwhile schools with large populations are encouraged to provide a management plan in the planning phase. Moreover, collaboration between Irina Project Initiative, Inc., Njinikom municipal council, and community stakeholders enhances the effectiveness and sustainability of sanitation services. Stakeholders are also encouraged to attend workshops in the local council on the usage and management of the VIP latrines as a way to enhance ownership, sustainability, and maintain public health gains associated with improved sanitation (Wateraid). Figures 5-7 show case Irina public toilet in the Njinikom open market.



*Figure 5.* Irina public toilet in the Njinikom open market



*Figure 6.* Irina public toilet in the Njinikom open market



*Figure 7.* Irina public toilet in the Njinikom open market

***Irina project initiative partnership.*** Irina Project Initiative, Inc. signed a partnership agreement (memorandum of understanding) with the Njinikom Municipal Council in June 2017. The memorandum of understanding provides a framework of collaboration between Irina Project Initiative, Inc. and the Njinikom Council in the area of sanitation and hygiene. Both parties shall jointly engage in the initiation, planning, implementation, monitoring and evaluation of sanitation and hygiene related programs and projects within the Njinikom rural area. The Irina public toilet in Njinikom is currently staffed and managed by the Njinikom municipal council.

**Plan Cameroon.** Plan Cameroon is an international organization not affiliated with any one government and has activities in Cameroon since 1996. It has a field office in Njinikom. Plan Cameroon primarily focuses on children's wellbeing in developing countries through a child centered community development approach. It has eight focus areas including: water and sanitation, healthy start in life, sexual and reproductive health and HIV, Education, economic security, child protection, child participation, and protection and assistance in energy (Coulibaly, 2014). Plan Cameroon trains local community residents to provide education and training on sanitation as well as child health issues. In 2005 Plan Cameroon provided a ten day training on water, sanitation, and hygiene for improved ventilated pit latrines in the following neighborhoods in the Njinikom municipality: Kikfuini, Tinifoinbi, Balikumato, and Wombong Up (Plan Cameroon, 2005).

Plan Cameroon works in partnership with the local council. While Plan Cameroon provides funding and technical assistance, the council manages the projects from

planning, implementation, monitoring, and control. Plan Cameroon refers to this approach as council-managed projects (CMP). The basis of CMP is to work in line with the government's policies on local development, support the decentralization process in Cameroon, and ensure community ownership and project sustainability. In addition to household level latrines, Plan Cameroon has constructed pit latrine facilities in the following schools: Government primary school Kikfuini, government primary school Wombong Up, and government primary school Tinifoinbi.

### **Public Policy**

Environmental sanitation remains an essential determinant of the health situation of any population (Pandve, Fernandez, Chawla, & Singru, 2011). Yet, environmental sanitation is a neglected public health issue in Cameroon. This neglect is visible in the area of public policy where there is an absence of policies and regulations important in setting standards of practice. The lack of a standard sanitation practice is not unique to Njinikom. The situation here is a reflection of what is going on in the entire country and particularly rural areas. This is also reflective of the considerable decline in sanitation coverage in Cameroon since 1990 (Sanitation and water for all, 2012). Government investment (financing and institutional framework) is necessary to create an environment conducive for sustainable sanitation without which localities, individuals, and households are left on their own.

**Local, regional, and national policies.** It is interesting to note that there is no institutional framework promoting sanitation and hygiene in Cameroon. As a result there are no documents in the local council or at the regional level that spells out budget

allocation for sanitation and hygiene, appropriation of resources, clearly defined roles and responsibilities for committee heads and enforcement strategies among others. To promote sanitation and hygiene in the municipality, the mayor issued a municipal order (No. 18/2015) with a goal to keep the community clean and healthy (The Mayor for Njinikom Council, 2015). Article 1 of the order involves dividing the municipality into five zones and delegating municipal councilors to follow up on sanitation and hygiene activities. In Article 2, the traditional councils are required to organize bimonthly clean up campaigns with follow-up and reporting of noncompliant issues to the mayor. In Article 3 the council secretary general and head of the sanitation and hygiene services are charged with the implementation of the order. While Article 5 sets the responsibility for the program's success on partnership between the traditional council and municipal councilors followed by monthly reports to the mayor from the secretary general.

In addition, no formal report has been submitted to the mayor's office since the inception of the aforementioned program (P9). As a result that there is no budget allocated for the program, success remains far-fetched. The lack of financial resources hinders movement and visits to various traditional council areas for follow-up intervention (P3). Municipal councilors as well as traditional council members have no clear responsibilities. Hence it is difficult to ascertain any achievement or results from their activities.

### **Themes**

I focused on identifying themes common among study participants. To do this I compared participant's responses, underlined, and marked data pertinent to my RQs.

Some of the themes developed from the raw data are associated with leadership, finance, poverty, health, safety, negligence, ignorance, education, illiteracy, subsidies, age, monitoring and surveillance, personal responsibility, collaboration, training, gender, knowledge deficit, and social status. Further interpretation of the data based on the research questions and identified themes will be provided in Chapter 5.

### **Leadership**

The ability to lead has emerged as one of the most controversial factors influencing behavior change. It emerged as both a facilitating factor and a hindrance to improved sanitation. For the theme of leadership, I coded for ideas, perspectives, experience, and words associated with leadership and its impact on the demand for sanitation. I included codes that demonstrated indigenes willingness or lack of willingness to adopt behavior change based on the activities of community leaders including health professionals, traditional leaders and healers, political, municipal councilors, and role of government among others. Leadership is necessary to create an enabling environment (Okurut et al., 2015). This includes the expectation among informants that leaders should lead by example, provide incentives to motivate volunteers, employ qualified technicians and staff, provide training, and follow up on training workshops to sustain sanitation programs in the community. The following responses depicted leadership shortcomings that may be a barrier to participants' adoption of toilet sanitation:

The quarter head's compound should be an example and be of standard. 90% of community meetings take place there. (P4)

We told our quarter head on two occasions that it is not good that he does not have a toilet in his compound. He should be an example in the community. People are entering his compound day in day out. We told him we cannot be entering his compound and using his latrine this open. (P9)

We have not been trained. I asked the district officer to call a meeting of the leadership of the traditional council for a training session. There are some people who do not even know why they are there and what they are supposed to do. (P9)

You cannot go out to talk hygiene and sanitation to someone when you are not practicing it. The people educating should be people who are leading examples, practicing sanitation and hygiene properly. In our rural setting everybody knows each other. (P5)

However, when participants saw leadership as a motivating factor, it was because they understood or gained knowledge about better sanitation practice and health benefits from a representative through a training workshop, community organizing campaign or church newsletter and announcement. They presented experiences that showed positive effect of community leadership and organization:

This sanitation program is teaching me a lot about sanitation. If I tell you that I need a toilet it is because the current sanitation is not satisfactory. It is not good at all. There is a lot to be done. I now have knowledge of what a toilet should be and this sanitation program is teaching me something that I need to know more about. (P2)

Another aspect of leadership involves the role of government. Recognizing the problem of inadequate sanitation as a public health crisis would help provide the impetus for the government to prioritize and act by investing in health and hygiene programs for the best interest of the population and community. From the interviews, there is no clear strategy for sanitation at the national, regional or local level. One participant discussed what he saw as a failure on the part of the government to engage, institutionalize, and develop a framework for sanitation and hygiene:

The state of sanitation is horrible, very primitive. Some people are still excreting in the bushes. It actually needs serious education. The council lacks the funds to employ sanitation experts capable of moving from place to place to educate the people on modern sanitation techniques and the use of modern toilets. People without toilets continue to excrete in farms. In larger compounds with about five houses and over 20 children, you find that the toilet situation is deplorable with children excreting beside the houses. (P1)

### **Finance**

Finance refers to the availability of monetary resources to individuals, households, local government, and economy. Lack of finances and poverty are terms that occurred repeatedly in the interviews. In a continent where almost half the population is disproportionately poor and living under the international poverty standard of less than US\$1 - US\$2 a day (Atinmo, Mirmiran, Oyewole, Belahsen, & Serra-Majem, 2009; The stigma of poverty, 2011), the concept of sanitation is hardly considered a priority. This is compounded by decentralization of sanitation to municipal councils without clear



guidelines, adequate staffing, and resources. Participants' expressed their views and experiences as follows:

People are poor, absolutely poor and cannot afford money for construction. The little they have is for taking care of their children. You may find a man whose income a month is just 5,000frs – 10,000frs (US\$8.50 – US\$16.75). He can only afford a piece of plank. So having a pit with just that plank to him is a good standard. If he finds used aluminum zinc sheet he can cover part of it and be very satisfied. He is not satisfied that it is good for him it is because he has no means. (P4)

I am ok with it. We are in a village milieu where to afford a decent latrine is a little expensive for our family. (P16)

Everybody would like to use a good toilet but the means is not there. (P10)

The toilet situation in this compound would have been a good one but for lack of financial capability we have not been able to dig a new one since this one collapsed. (P13)

Sanitation is important as it improves the living conditions of the population. But the council has limited funds to prioritize sanitation in the community that includes training of sanitary officers and technicians, call for seminars and workshops, monitoring and surveillance. It therefore relies on donors to construct toilets in schools and public places. (P1)

**Health**

There is a general sense among some study participants that good sanitation is necessary to improve health despite underlying challenges. Study participants identified motivating factors that included the health of their family and the entire community. I included codes that demonstrated the association between health and inadequate sanitation and codes that I interpreted as highlighting people's motivation for change. Participants' responses included the following:

I desire a well dug toilet, covered, can't see anybody, running water and soap as we were taught some time ago first for the health of my family and visitors (P5).

Sanitation whether personal, environmental or general is the gateway to talking health. These shallow pits are pretty dangerous. Insects, fowls feed from the excreta in them and settle on food and utensils in homes. I have talked to one of my neighbors about the risk of cholera and dysentery. (P5)

A good toilet system improves health and thinking. If you are going to a good toilet you feel happy and good to ease yourself. (P4)

Improved sanitation is of a lot of importance to me. It prevents the acquisition of some life threatening diseases. It ensures a longer life and improved society.

Health is wealth. (P11)

**Safety**

Participants discussed their experiences of the risk and hazards of exposed pit latrines demonstrating the gravity of the problem. The views and experiences of the people also highlighted the need for stronger, efficient, and effective leadership in

addressing the problem. People portrayed the risk to domestic animals, children, and adults in their own words:

Around my own community where I live it is a major problem. During the rainy season it is easy to fall in them as the planks are slippery, decayed, and can easily give way. Children, adults, and animals fall into exposed latrines. A couple of weeks ago we rescued one to two goats that fell into a latrine. (P5)

It is risky. One must need a flashlight at night to use otherwise one can easily slip off on a plank. It is also dangerous because one can come into contact with dangerous animals such as snakes. There is no wall. (P17)

I experienced a child fell into a nearby pit and one leg was completely buried in feces. The adults that rushed to the scene removed, bathed the child and performed traditional rituals. No one bothered to seek medical attention. (P16)

The failure to seek medical attention for a child that fell in a pit full of feces could be a sign of limited knowledge about health related issues, and the dominant role of culture and tradition vis-à-vis health. The aforementioned safety concerns also underscore the sentiment in the community where indigenes acknowledged helplessness in the face of leadership shortcomings at the national, regional, and local level.

### **Culture and Tradition**

Culture and tradition emerged as an important theme from the interviews. For this theme, I included codes from participants' worldviews that I interpreted as demonstrating its impact on the demand for sanitation either negatively (traditional medicine) or positively (traditional institutions). The traditional council functions as the secretariat in

the local culture tasked with settling disputes and reporting to the local government (Nsom, 2015). The local administration has also empowered the traditional council to address the problem of poor sanitation in the community at the household and community level. This grass root effort ties in with the ecological model approach that focuses on determinants of health and interventions at multiple levels (community, institutional, public policy, interpersonal, and individual; Richard, Gauvin, & Raine, 2011). In addition, the sanitation framework merges issues of culture, tradition, and inclusiveness for an effective and sustainable intervention. Study participants expressed their views on the activities to promote the demand for sanitation:

The council has nominated many elders at the moment to coordinate sanitation activities. These people always make sure to make at least three visits a year in the quarter to assess and sensitize the population on the need for good sanitation and hygiene practices. (P18)

However, some participants also expressed how tradition and culture over time has undermined the demand for sanitation in the community. Some participants pointed out that first aid treatment for children suffering from a convulsion attack involves tipping the individual's head inside a pit latrine (P17, P23). It is believed that the person regains consciousness once they inhale odor from the feces in the pit. Participants acknowledged that this practice is not as frequent today as it was in the past given that people were attacked in places without nearby pit latrines. This first aid treatment is also less applicable today as a result that it was difficult to carry convulsive adults or heavy weight individuals to a pit latrine, advancement in traditional healing, and the presence of

medical centers (P24, P25). Additionally, it was believed in the past that certain traditional medicines could only be prepared on the floor (plank/wood) of a pit latrine (as directed by the spirits through incantations) or sitting stool and administered on the spot to treat certain diseases (P24, P25). This was used to treat diseases associated with witchcraft (P24).

### **Gender**

Several participants discussed their perspective on the current state of sanitation in relation to gender. Evidence in literature suggests that women education and empowerment is directly linked to improve quality of toilet sanitation and better standard of living (FangHsun, Pillai, & Maleku, 2014). In contrast, in a male dominated culture where tradition and its values disproportionately favor her male counterpart, women are left helpless. In the words of key informants:

Sometimes you go to a compound and there's just an old woman living alone with no money and no toilet facility. She tells you I am waiting for the successor to come. What do you do? (P9)

We have plans to dig a different latrine but it is delayed because my husband has been away for a while now. The current latrine is getting full and dangerous for the children. The floor planks seem decayed and can easily give way. (P16)

In our culture women are still put at the rear. The woman is still not fully empowered, not well listened to. (P5)

## **Education and Capacity Building**

Education and capacity building emerged as another recurrent theme from the data. It includes aspects such as trainings and workshops, community sensitization and awareness, educated and qualified staff. Participants felt that an educated and trained staff is required to teach and mobilize the population for better sanitation practice. The absence of educated, skilled, and trained staff is not surprising given the low standard of education in rural Njinikom. Some participants blamed the current crisis on ignorance of the health consequences of inadequate sanitation and knowledge deficit.

The people do not understand the concept of sanitation and use of modern toilets. There are still compounds without latrines or toilet facilities and therefore people excrete in farms and surrounding bushes. It is deplorable, primitive, and horrible. It actually needs serious education. The situation can be salvaged if we have trained technicians. (P1)

Other participants perceived neglect was more of a barrier to improve sanitation than ignorance. They argued that sensitization and mobilization campaigns by different groups such as Plan Cameroon, Irina Project Initiative, Inc., the local council, and traditional council provide sufficient knowledge on the importance of sanitation.

To me it is not a question of ignorance. People have been sensitized in the community by the local council, health area community volunteers and the traditional council and are aware of the need and benefits of adequate sanitation. It is therefore an issue of neglect or other things are a priority. (P5)

On the other hand, not all participants had come into contact with volunteers providing sensitization campaigns. Several participants expressed skepticism about the existence of such groups in the community.

I do not know if the council has any groups that coordinate sanitation. Maybe they have visited some other compounds. But for this compound, I have never received any such group. (P14)

To talk of people like health workers in this community, they hardly show interest in sanitation. When you see them in your compound, it must be because of an ongoing vaccination campaign. I do not know of such groups striving to improve sanitation in Njinikom. (P15)

This is an important aspect of the sanitation debate. It spells out the need for an integrated approach by the local government that is inclusive, collaborative, and effective in nature. Capacity building as evidence by supervision and follow-up and partnerships between the municipal council, nongovernmental organizations and community is fundamental in the implementation and monitoring of community based interventions (Crocker, Shileds, Venkataramanan, Saywell, & Bartram, 2016; Ohnishi & Nakamura, 2009).

### **Partnership**

Several participants expressed the need for active collaboration between the municipal council, traditional council and existing structures such as community-based organizations. Community based organizations in Njinikom are women social groups that are trained to educate the population on a variety of health related issues including water

treatment in homes and toilet sanitation. The lack of continuity, follow-up, and evaluation of such programs by the local administration resulted in their complete collapse. In the words of a participant involved in a community organizing and mobilizing program “the lack of continuity is a common problem within the community. Projects fail when you train, empower, and you do not follow up.” (P5)

### **Attitude and Personal Responsibility**

Attitude and personal responsibility are additional themes informants perceived to impact the demand for sanitation in Njinikom. The attitude among a majority of the study participants is that of dissatisfaction with their current situation and considered toilet sanitation a major priority especially if the means is there. They recognized the role and value of leadership in promoting adequate sanitation while also complaining about the lackluster performance of health professionals, political, and traditional leaders in addressing the problem. Some informants who considered toilet sanitation first as a personal responsibility also espoused the issue of citizen responsibility. It was interesting to know that more women than men espoused this view. Mwai, Njenga, and Barasa (2016) noted that attitudes and practice are important attributes to consider when establishing sustainable intervention measures. Some participants espoused attitude and personal responsibility as important attributes to adopting behavior change “in every community sanitation is the duty of everyone as an individual. It all begins from within.” (P19). Another participant noted:

I see a greater need for people in this community to improve on their sanitation and that should begin with everyone as an individual and on my part, I will try to



talk with those people who are still ignorant about good hygiene and sanitation.

(P17)

It is the duty of every citizen of a community to keep his or her self and environment clean. The first thing to target in every household when talking about sanitation should be the toilet (P16).

### **Privacy and Clean Environment**

Participants also cited the need for privacy and an environment without feces, flies or smell as motivating factors for improved household sanitation. A majority of household latrines are void of privacy and security given that they are exposed pits without walls, roof or floor. In addition, the perception that the current state of sanitation is unsustainable based on participants' desire for comfort and improve social status was apparent in the interviews. One participant's experiences representing their views:

It is not covered and has no floor or roof but a piece of zinc for a partial wall. It is not comfortable going there during the day. It is located near a footpath behind my house and my sister's house. There is also a path dividing the two houses and leading to my father's house. There is a strong smell in the morning hours when most people use it. Children using it miss the squatting hole bringing flies around.

(P2)

Where I live is a major road leading to a school and market square. My compound is beside the road. I would like to have a toilet and not be shy to show people. I have an exposed latrine with part of the plank (floor) affected by termites and prone to flies. (P5)

A single participant verbalized that travel and exposure was a motive for toilet ownership in their household “for someone who has traveled out of the local community, it is imperative for me to have one” (P6).

The theme of travel and clean environment also reinforced the discussion in the literature reviewed. Participants in a study in rural coastal Odisha in India and households in the rural Philippines perceived the following as motives for latrine adoption: absence of smell and flies, privacy, dignity, status, a cleaner environment, travel and exposure, less embarrassment (Cairncross, 1992; Routray et al., 2015).

### **School Environment**

One outstanding outcome of the data is the perception by a single participant that improved sanitation had a positive impact on school attendance in his neighborhood. The participant felt that the construction of a decent pit latrine in the school created an environment conducive for learning following an uptick in school enrolment. This is in accordance with the point discussed in Chapter 2 that toilet sanitation is important in enhancing education as school enrolment for girls increased following the provision of new school toilet facilities in a study in Bangladesh (UNICEF, 1999). One participant discussed the perception in their neighborhood community following the newly constructed latrine “some parents said that they want their children to enroll in the school so as to enjoy the new toilet” (P5).

## **Discrepant Cases**

### **Leadership Effectiveness**

There is a discrepancy with regards to participants' perception of the effectiveness of leadership in addressing the sanitation problem. Findings from the data indicated that a majority of those who perceived that local leadership in Njinikom is not doing enough to solve the current problem are individuals with higher socioeconomic status (health professionals, business class, government officials). On the contrary, a majority of people with low socioeconomic status such as farmers, and bricklayers perceived that leadership in the community is doing enough. Understanding this gap is important when establishing intervention strategies necessary to address the problem in the community. I will further address it in the recommendation section of Chapter 5.

### **Summary**

Evidence from the data portrayed some themes that I consider critical in addressing the problem of indiscriminate excreta disposal in rural Njinikom. Leadership as it pertains to the role of government, partnership, and community engagement is fundamental to addressing and prioritizing toilet sanitation. Leadership provides the guiding framework for sustainable sanitation. Additional themes include knowledge deficit and finance.

### **Role of Government**

Historical evidence points to the fundamental role of government in protecting the environment and the life of its citizen through advocacy, financial investment, enforcement, monitoring, and the development of policies, rules, and regulations to

provide a guiding framework for health. This on the basis that indiscriminate excreta disposal is a public health crisis. From the data, there is no surveillance of toilet sanitation and hygiene, no budget allocation or direct investment in sanitation in rural Njinikom. Leadership is needed to address the larger problem of rampant open defecation in the community, poverty, education, and organizational capacity.

### **Knowledge Deficit**

Information from the study also demonstrated a lack of knowledge, skills, and organizational capacity in the community. Knowledge deficit is underscored by ignorance and limited education on the importance and health benefits of improved sanitation. The absence of knowledge leads to complacency with the status quo and the lack of urgency in the community.

### **Partnership and Community Engagement**

Evidence in the data underscored the importance of engaging all stakeholders including community organizations and residents in sanitation and hygiene related activities. For instance, empowering women can make a difference in increasing access and demand. Irina Project Initiative, Inc. is currently working in collaboration with the local council and community residents and has embarked on the construction of four VIP latrines in a school, a church, and households this year. Irina Project prioritized these toilets from a list. Due to financial constraints, Irina Project Initiative could only embark on the construction of a certain number of latrines each year. The list is indicative of the community's embrace of the new approach and desire for a clean, safe, and healthy environment. Partnership with community residents signifies a new way of dealing with

the problem of inadequate sanitation in rural Njinikom. Unlike Plan Cameroon and the African Development Bank that are outside organizations, Irina Project Initiative, Inc. is a local community organization with volunteers that are community members living in the community as part of the community.

Findings from interviews, observation, and documentation data on the role and effectiveness of leadership and the community's perception of the problem indicated that the current state of toilet sanitation is primitive and unsustainable. The absence of privacy and security is the hallmark of the exposed pit latrines commonly used in rural Njinikom. The common toilet type found are located outdoors in the coffee farms at a distance from the compound houses. The standard is a pit dug with no walls or improvised walls with palm leaves, pieces of cloth or plastic papers. While adequate sanitation was considered a priority, the demand is overshadowed by financial constraints and failure to institutionalize the water, sanitation, and hygiene sector. These challenges are apparent at the level of the local government and individual households, lack of education, absence of qualified staff for sanitation programs and engineering, ignorance, neglect, the lack of policies and regulations (national and local level), culture and tradition among others. Besides, participants advanced various motivating factors for better sanitation including good health, safety, privacy, comfort, and clean environment.

There is also evidence from the data that effective leadership based on established institutional responsibilities (policies and regulations, budget allocation, and collaboration between stakeholders) is one of the most important strategies for improved sanitation. The perception among a majority of study participants is that leadership at the

local (Njinikom), and national level (Cameroon) is not doing enough to enhance improved toilet sanitation practice. I will further explore the role of leadership and the people's perspective as it relates to feces disposal in Chapter 5 with recommendations. I will summarize the findings of this study in Chapter 5 with suggestions on the dissemination of the data. In Chapter 5, I will also discuss potential social change implications of the study.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

My goal with this qualitative phenomenological study was to observe the physical environment and interview key informants and members of the Njinikom community regarding basic sanitation practices and the role of leadership in promoting adequate excreta disposal. Inadequate excreta disposal remains a challenge in rural Njinikom. Previous studies identified inadequate sanitation and the absence of leadership as manifested by clear sanitation guidelines, regulations and policies, a budget for remediation, and collaboration between various ministries, health agencies, and stakeholders as a challenge in marginalized communities in developing nations (Mara et al., 2010). The information that I gathered from the interviews in this study identified factors that may hinder or increase access to improved sanitation and determined the role local leaders, health sector professionals, and political leaders can play to improve human waste disposal in Njinikom.

In this study, I focused on the following RQs:

1. What is the role of local community and political leaders, if any, in increasing the demand and resources for sanitation for residents in the Njinikom village?
2. For individuals of the Njinikom community with or without access to sanitation, what is their perspective on the current state of sanitation and the importance and effectiveness of leadership in addressing the problem?

In Chapter 5, I will interpret the findings from Chapter 4 and discuss the results vis-a-vis the conceptual framework. I will also examine the limitations of the study, recommendations for further research, and social change implications.

### **Purpose and Nature of Study**

The purpose of this qualitative study was to determine whether a partnership approach to increase the demand for sanitation in rural Njinikom can help address current sanitation problems. To achieve my purpose, I used a phenomenological approach with the in-depth, face-to-face interviews of 25 residents of rural Njinikom, observation of the physical environment, and documentation to collect data. Phenomenology seeks to explore and understand the meaning of everyday experiences of a phenomenon from individual's perspective (Converse, 2012; Ellis, 2016). I observed the environment for different toilets and latrine types as well as housing infrastructure. The interviews were audio recorded for accuracy, and I reviewed documents on the customs and traditions of the people of Njinikom. I also examined sanitation and hygiene records from the Njinikom municipal council and nongovernmental organizations present in the community. I used an inductive content analysis process (Creswell, 2013; Elo & Kyngas, 2008; West, Rudge, & Mapedzahama, 2016) to analyze the substance of the data. The inductive content analysis allowed me to find, identify, and develop themes and patterns from the data collected.



## **Interpretation of Findings**

### **Socioeconomic Status**

My overview of the socioeconomic circumstances that influence the health status and access to sanitation and hygiene of Njinikom portrayed a community with limited economic opportunities, gender inequality, low standard of education, and deep in poverty. This finding was consistent with research by Adjei and Buor (2012), where they found rural communities in Africa were rift by extreme poverty and lack of educational and job opportunities. Rural poverty poses health and developmental challenges (Adjei & Buor, 2012). Addressing the sanitation crisis requires a focus on social and economic development factors that determine health status for effective planning policies, strategies, and practices. According to Blas et al. (2008), national governments and community stakeholders have an important role in addressing health inequity where there is the will. Evidence that I found in the literature reviewed (see Chapter 2) suggested that leadership that prioritizes the provision of services (sanitation, clean water, education, and health services) through national policies and regulations is useful in improving the health status of communities (Blas et al., 2008).

### **Physical Environment**

In the underserved rural community of Njinikom, household excreta management remains a challenge. I observed poor housing infrastructure in the community. Housing constitutes an important indicator of health outcome (Wahowiack, 2016). The condition in which people live directly impacts their health situation. A majority of the indigenes in rural Njinikom live in abject poverty as evidenced by poorly constructed compound

houses and use of outdoor shared amenities like exposed pit latrines and in some cases, standing water pipes if available. Even though some participants verbalized satisfaction with their excreta disposal facility (open pit, with no walls, roof, or floor) because of poverty, inadequate toilet sanitation remains a major concern globally (United Nations, 2015). Data from my observation and in-depth interviews found that poor housing conditions were related to an unsafe environment. In a study in Rwanda, people expressed fear of falling into pits of toilets constructed with sticks and timber and walking distances at night to defecate (Tsinda et al., 2013). A comprehensive understanding of the physical environment and the living conditions are necessary to determine intervention strategies and health promotion activities that include education, awareness, and mobilization campaigns aimed at increasing demand for toilet sanitation.

### **Community Leadership Organization**

**Traditonal council and quarter head.** All traditional council meetings took place at the quarter head's compound led by a chairperson and other appointed and elected members of the population. The traditional council is a village institution that forms the traditional arm of the local government. Based on the data I collected, the activities of the traditional council signal an understanding that success in building healthy communities rest on the people's interaction as a social group. Ideas in local traditions and values are fundamental in community organizing to bring about social change in traditional communities (Martinson & Su, 2014). The challenges of the traditional council include the lack of talented, skilled, and educated staff and poverty are emblematic of problems pervasive in rural communities in developing nations (Adjei &

Buor, 2012).

**Municipal council.** The municipal council led by the mayor constitutes the lowest tier of the local government. While the responsibility for toilet sanitation promotion rested with the local town council, there was no functional task force, policies, or regulations and no budget allocation for sanitation standards in rural Njinikom. Respondents in the study associated the lack of resources with the failure or inability of the council to directly monitor the state of sanitation and hygiene. One study participant lamented the absence of a guiding framework for sanitation and the lack of collaboration between the local council and the medical district officer at the divisional level. This experience of the Njinikom council is consistent with other research studies in impoverished communities in the literature I reviewed (see Chapter 2).

**Health professionals.** Populations without clean water and adequate human excreta disposal management remain vulnerable to preventable sanitation-related diseases worldwide (Robbins, 2014). Health professionals have a role in improving the health status of people in such communities. From the data I collected, it was apparent that rural Njinikom lacks qualified professionals for education and awareness campaigns to improve the state of sanitation and hygiene. The HAC created by the Ministry of Public Health in Cameroon had no clear mandate or responsibility to address community concerns. Study participants noted that the HAC members in Njinikom were mostly volunteering with no formal training from the ministry of public health. One study respondent stated that community-based organizations not affiliated with any government institution had nurses and hospital workers address health issues such as hand hygiene

and sanitation through churches. In a study in Eastern Cape rural communities in South Africa, Phaswana-Mafuya (2006) found that the unavailability of health workers (such as sanitation and health committees and environmental officers) and the absence of health facilities were related to adverse health outcome in the community.

**Nongovernmental organizations (NGOs).** Asked whether any organization, project or local authority had made contact regarding improved sanitation, participants mentioned two prominent organizations: Irina Project Initiative, Inc. and Plan Cameroon. A fraction of participants in the study stated they were not aware of any organization actively engaged in promoting toilet sanitation and hygiene in rural Njinikom. When asked if participants thought leadership in the community was doing enough to address the problem of sanitation, one subject noted that private initiatives such as Irina Project Initiative, Inc. and Plan Cameroon were in the lead and creating an impact, unlike the government.

NGOs are agents for change that work in close collaboration with community stakeholders and local populations (Ohnishi & Nakamura, 2009) due to limited government initiatives (Islam, 2017) and leadership. Based on the findings of this study, the NGOs, Plan Cameroon, and Irina Project Initiative, Inc., continued to exhibit leadership in improving toilet sanitation in rural Njinikom. Irina Project Initiative, Inc. had a significant role in increasing community participation in development activities. Their involvement was apparent in the planning and implementation of sanitation and hygiene projects through a partnership with the local council. Islam (2017) supported the important leadership role of NGOs in a study in Bangladesh. According to the study, two

NGOs in Bangladesh played a considerable role in community development by improving social networking, community participation, and partnership.

**Public policy.** The results from this study also showed evidence of a lack of sanitation planning in Cameroon and rural Njinikom. When asked about policies, regulations, and norms to promote sanitation and enforcement, study participants cited the absence of a guiding framework for sanitation and a defunct sanitation department within the municipal council. Regarding the disposition of the government with regards to sanitation planning, study participants stated that the limited resources at the disposal of the town council and the absence of prioritization by the national government make improved sanitation a struggle. Another participant also verbalized that the government successfully funded latrine construction in a single school in rural Njinikom out of a total of 30 schools.

The absence of sanitation planning in rural Njinikom and Cameroon contradicts the notion that public policies fundamentally influence population health. For instance, the public health acts of 1848, 1872, and 1875 in Britain (Brewer & Pringle, 2015) laid the foundation for improved health and sanitation in the United Kingdom. Those 19th-century public health acts paved the way for investment, institutionalization, and creation of strong leadership for water and sanitation (Brewer & Pringle, 2015). Sanitation planning in India also resulted in increased sanitation coverage from 21% in 2001 to 57% in 2008 (Tiwari, 2015).

## Themes

### Leadership

The historical perspective on toilet sanitation that I reviewed in this study indicated the importance of competent leadership (political and health) at the national and local levels in solving the problem in the West. While countries in the West may have overcome the critical issue of inadequate sanitation by the 19th century, the situation at that time is not comparable to the current situation in developing nations (Konteh, 2009). My findings from the literature review suggested that sanitation in the West became prioritized once it was recognized as a public good and elevated to a political issue as demonstrated in Chadwick's report (Evans, 2004). Leadership (political and health) emerged in the literature as a potential determinant of health.

Leadership imbued with skills, knowledge, organizational capacity, political will, financial capability, sanitary policies, and regulations are fundamental to increase the demand for toilet sanitation and improve health (Evans, 2004; Mara et al., 2010). Participants in this study acknowledged the lack of funds and absence of sanitary officers, who in the past had monitored toilet sanitation in rural Njinikom. In the words of two participants, "the council is not capable enough to train sanitation officers due to limited finances ... I will consider sanitation a priority if the means is there" (P1 and P10). A participant also lamented the absence of rules, regulations, and policies stating "normally we are supposed to have something that guides us. We do not have a policy manual. My colleague and I plan to meet the district medical officer" (P10).

**Finance**

Financing remains an essential factor in toilet sanitation adoption. One result of the findings is that the demand for improved toilet sanitation is low in rural Njinikom. This finding raised the question of affordability and willingness to pay for sanitation services. Two participants described their household experience “everybody would like to use a real toilet, but the financial means is not there (P5, P10)” and described the lack of financing as the most critical problem affecting access to better sanitation. Similarly, in rural Southern India researchers found that the absence of financial resources had a direct association with weak toilet demand and sustainability (Banda et al., 2007).

While weak demand is associated with poverty and limited financial resources, some relatively wealthy middle-class households still lacked adequate toilet facilities. This knowledge underscores the need to improve community awareness of the health benefits of proper excreta disposal, the availability of sanitation services, and the potential effect on household income (Evans, 2004). The financial struggle is also evident in the latrine types visible in the community – open pits without floors, walls, and no roof for safety or privacy. Another participant noted that while they may not be satisfied with their open pit latrine because children and the elderly cannot comfortably use it, it is all they could afford. Such knowledge conformed to the understanding that to increase demand, governments and service providers need to create an enabling environment that offers stakeholders the opportunity to nurture the idea that proper excreta disposal is an essential service worthy of investment.

**Health**

Health featured high on some residents list regarding the desire for improved sanitation among participants with knowledge of the health consequences of inadequate sanitation. As a motivating factor, participants expressed the need for better toilet hygiene for their families and visitors. Others expressed the need to eliminate disease causative factors and conditions prevalent in the locality such as dysentery. Participants' perception of good health adds to the knowledge base and is consistent with findings from the literature reviewed.

Evidence from the results also suggested a lack of awareness of the adverse health consequences of inadequate sanitation. Results disclosed influential members of the community (quarter heads among others) with a responsibility to promote sanitation and health lacked access to a toilet facility. In the words of one participant, "it was embarrassing to visit a quarter head's compound and not find adequate toilet facility" (P2). Another respondent in the study noted that "even old men still squat as they move along, you find lumps of feces within compounds and in open areas" (P5). This finding is similar to a study in rural Southern India where researchers found that residents did not believe that rampant open defecation was related to diarrhea diseases (Banda et al., 2007).

**Safety**

Many respondents addressed the need for improved sanitation for the safety of the community. One participant expressed that with improved toilet sanitation children can safely play in the environment. Most participants described the dangers of decayed wood



collapsing, large squatting holes that can result in people falling in feces and dangerous animals such as snakes lingering around the open pits. Other participants described actual experiences of individuals and animals rescued after falling into the open holes. Evans (2004) suggested a new approach at household level with a focus on relevance that includes the delivery of appropriate hardware, inclusiveness, effectiveness, and sustainability that requires partnership with all stakeholders (government, community beneficiary, and private agencies).

### **Culture and Tradition**

Respondents discussed cultural and traditional practices that may hinder or improve excreta disposal in Njinikom. One participant described what he saw as a cultural habit:

It is just like a culture that is difficult to abandon. People who are viable are still using shit holes. It is inculcated in them. That is how they have grown and they are used to that system and it is like being difficult to abandon. (P10)

This finding was consistent with a study by Banda et al. (2007) who found that open defecation in rural Southern India was an age-old tradition difficult to change.

Also, culture and tradition featured as a prominent barrier to toilet sanitation. Some participants acknowledged that traditional healers use open pit latrines to treat epilepsy. The idea of using feces odor as convulsion therapy was an interesting finding and not consistent with the literature reviewed. On the other hand, the concept that certain rituals associated with good health could only take place in an unsanitary toilet environment appeared to conform to the literature reviewed in chapter 2. The role of

ritual here is in line with the concept that individual and household attitudes determine the choice of toilet type.

### **Gender**

Gender is another important aspect of sanitation. Women and girls have a greater need for privacy when using bathrooms and dignity when menstruating (United Nations Human Rights Office of the High Commissioner, 2011). They are often the primary users and caretakers of the family and children who are more vulnerable to sanitation-related infectious diseases (Vivas et al., 2010; Water and sanitation programme, 2010). Although women have different needs from their male counterpart, in rural Njinikom, the decision to construct a toilet or not depends on the male household head. One study participant stated she was not in any position to build a latrine for her family, despite the collapse of the facility currently used, because her husband was away. Even when women are empowered, they are not listened to one study participant verbalized. Another respondent noted that in women-only households women do not have the power to construct toilets. This finding is consistent with previous research. For instance, Routray et al. (2015) noted that in rural coastal Odisha, India, the construction of household sanitation facilities depended on the male head in 80% of homes and women in only 9%. Women's inability to make important health decisions in this area absolves them of their right to dignity, self-esteem, and empowerment.

### **Partnership**

The findings made clear the importance of engaging with the community and involving them in health promotion activities. One participant cited the lack of continuity

and ownership of training programs as a factor that inhibits adequate sanitation. A surprising aspect of the study is that after the construction of the nine household VIP latrines, members of the African Development Bank never returned for follow-up evaluation. The activities of Plan Cameroon, Irina Project Initiative, Inc., and African Development Bank in the village of Njinikom underscore the global focus on household excreta management. Since the initial construction by African Development Bank, no other group or individuals engaged in the further construction of VIP latrines until the initiation of Irina Project Initiative, Inc.

Also, the traditional council under the leadership of the quarter head has the prerogative to monitor the environmental condition of household compounds. This grassroots approach practiced in Njinikom is unlike the community-led total sanitation or community health clubs approach practiced in other parts of Africa and Asia. It has a unique perspective. The approach in Njinikom seeks to promote low-level sanitation standard at the family level, unlike the community-led total sanitation model that supports behavior change at the community level. The standard does not require a hut with walls, roof, or decent floor. One traditional council chair noted that their goal was to ensure that each household had a particular place to deposit excreta instead of people randomly defecating in the community. It also differed from the community health clubs in that the traditional council has elected members who deliberate on different issues with environmental sanitation being one of them.

## **Education and Capacity Building**

The results of the study showed that study participants perceived education as essential to health promotion and disease prevention. Participants expressed the need for health literacy to enable community residents to understand the benefits of adequate feces disposal as well as the negative consequences of open defecation. Participants also verbalized the need for leadership to provide training workshops and seminars on sanitation and hygiene issues in the community, hire skilled and educated staff at the level of the local government. Participants perceived education and awareness as a way to bridge the knowledge gap:

The people do not understand the concept of sanitation. They need serious education. In a rural area, the population is not informed or educated on the value of basic sanitation. The government should be able to revive sanitation services with emphasis on the need for education, train community volunteers to provide education, and sensitization to remedy the situation. The situation can be salvaged if we have trained technicians. (P1)

Study findings also showed that level of education did not influence the type of toilet facility used in households in rural Njinikom. It was a surprise to find that a significant number of educated, informed, and influential members of the community with knowledge of basic sanitation and health consequences utilized the same level of exposed pit latrines in their households. In the words of one study participant:

Personally, I am not satisfied with my current household sanitation. I still have an exposed latrine covered with plank (floor) that is affected by termites. It is prone

to flies, and no roof or walls. For walls, it has palm leaves and plastic bags, which need replacement every time winds tear off the plastic. (P5)

This finding is consistent with a study in Kenya in which researchers found no significant association between educational level and the type of toilet facility used by households in Bomet municipality (Koskei, Koskei, Koske, & Koech, 2013). On the other hand, a study in India on the role of women's education on sanitation coverage found that level of education among women corresponded with a particular toilet type (Wei, Pillai, & Maleku, 2014). For instance, women with incomplete secondary education were associated with ventilated pit latrine type, those who completed secondary school had a flush to septic toilet model, and those with a higher level of education were linked with flushed to pipe sewer system (Wei et al., 2014). This information underscores the importance of education as a crucial component of public health particularly in developing nations where inequality, low educational standards, illiteracy, superstition, and ignorance are predominant (Osuala, 2011).

### **Attitude and Personal Responsibility**

The general attitude from the results among study participants was that toilet sanitation is a priority. Participants overwhelmingly expressed dissatisfaction with their bathroom facilities. Other members even went further to state that hygiene cleanliness is an issue of individual responsibility. According to Vivas et al. (2010), perception influences people's beliefs and practices. This knowledge is essential when adopting policies and intervention strategies. Because behavior change is critical to sustaining

health benefits from improved sanitation, positive participant perception and household decisions are central to increasing demand.

### **Privacy and Clean Environment**

When asked to discuss the importance of sanitation, individuals shared their experience and perspective on the value of privacy and clean environment as motivating factors for improved feces disposal facilities. Results of the study showed the desire for privacy, dignity, and a cleaner environment free of flies and smell. Participants discussed the embarrassment and discomfort of using open pits located around intersections and footpaths that divide compound houses during the day. Research shows that individuals value sanitation for a multitude of reasons other than health (Cairncross, 2003; Routray et al., 2015).

### **Theoretical Alignment**

The ecological model formed the basis of this research study. The different levels of communication and interaction – community, individual, and public policy are characteristics that influence behavior change and health. The model offered me the opportunity to develop and formulate my interview questions, refine my research questions, and methodology. The study participants included individuals from different backgrounds - health professionals, local government officials, municipal councilors, business people, teachers, farmers, traditional healers, village chiefs, and students.

For residents of rural Njinikom, improved bathroom sanitation in the community is dependent on financial viability, knowledge, and understanding of core practices, health benefits, and burden of sanitation-related diseases. From a socioeconomic level of

influence, study participants shared that ignorance, poverty, and women's inability to make decisions in a male dominated household hampered access to improved sanitation. Besides, the interpersonal and intrapersonal level of influence was evident in the sense of personal responsibility expressed when discussing views and level of satisfaction with personal household toilet sanitation.

From a community perspective, the residents expressed the desire for good governance based on leadership's ability to develop, operate and collaborate with skilled and knowledgeable professionals and volunteers. To community members, the role of leadership requires the municipal council under the Mayor to work in close tandem with community beneficiaries, the village chiefs, health area committee, and the traditional boards representing the people of Njinikom as a way forward to addressing the toilet hygiene problem. Partnership activities should include evaluating the job community volunteers do by ensuring that they present reports of their operations; commit to providing incentives to motivate community volunteers, and engaging with organizations assisting with sanitary conditions in the municipality. Participants' desire for a clean environment was also a motivating factor for improved sanitation as human health is dependent on the environment.

Additionally, the public policy level strongly influences how sanitation and hygiene are managed and sustained. As noted, public health policy is an essential component of health that affects the environmental health of any population. The lack of policies, rules, and regulations to guide practice in rural Njinikom meant individuals and households are on their own.

The sanitation framework also helped to guide my research and interview questions. Together with the ecological model, it offered an integrated approach to community assessment, evaluation, advocacy, partnership, and interaction at different levels for improved health. Characteristics of the sanitation framework include inclusiveness, relevance, effectiveness, and sustainability (WaterAid, 2011). Members of the Njinikom community discussed the interactive benefits of these attributes by expressing the need for subsidies for despondent households and financial incentives to motivate volunteers (inclusiveness); the need for competent leadership that collaborates with stakeholders to provide appropriate services. I also used both the sanitation framework and the ecological model to address a gap in the literature, which is exploring the role of leadership in bringing about improved sanitation in rural Njinikom.

### **Limitations of the Study**

Limitations in this study include the phenomenological design, sampling technique used, sample size, and a potential for bias. The phenomenological design provided a framework for understanding the phenomenon of inadequate toilet sanitation and the role of leadership in enhancing sanitation in rural Njinikom from the participants' perspective. Unlike other qualitative designs such as ethnography and grounded theory, the phenomenological approach provided unique insight into the phenomenon of toilet sanitation and leadership and the commonality of the environment, culture, beliefs, social, and economic circumstances of the people of rural Njinikom.

The sampling strategy for this study was purposeful and convenience design, which limited the ability to generalize the study results beyond the Njinikom community.



However, given that this study is an exploration of excreta disposal management and the role of leadership in increasing demand for toilet sanitation in rural Njinikom, the findings may offer insight into similar communities. Secondly, the sample size was limited to 25 study participants. This sample size may not represent the views of all the residents within the wider population of rural Njinikom. Third, because the responses to interview questions were self-reported by members of the study, there is the risk of recall bias or distortion of facts due to inability to remember experiences or relate events.

### **Recommendations**

This study was used to explore community leadership's ability to address the problem of inadequate feces disposal and participant's perception of excreta management in rural Njinikom. A majority of the approximately 39% of the global population without access to improved sanitation (Bartram & Platt, 2010) live mainly in the countryside (United Nations Sustainable Development, 2015). Inadequate toilet sanitation remains an inherently critical issue in rural Njinikom. Albeit efforts to address the problem evidence from the study indicated minimal inroads in adopting toilet hygiene. A majority of families still defecate in the open by way of exposed pits. Some households that either cannot afford adequate sanitation; break the habit of utilizing exposed holes, or faltered due to neglect or ignorance expressed a lack of awareness of community and leadership efforts in addressing the problem. This lack of knowledge underscores the need for local government, health professionals, traditional leaders, and community volunteers to ramp up outreach efforts to reach a broad majority in different areas of the municipality.

There is also the need for leadership to prioritize excreta management by focusing the limited resources in education and training that would enable staff and volunteers to fulfill their prerogatives. The findings of the study revealed that the problem of inadequate toilet sanitation is compounded by limited financial means at the level of the local government and households and absence of adequate oversight, poorly educated, and trained staff and volunteers for better sanitation and hygiene practices in Njinikom. Similarly, traditional council and health area committee members need to report on their monitoring activities that include challenges in the field and any progress achieved. Such reporting would offer the local government an opportunity to review sanitation and hygiene strategies and advance applicable rules and regulations that could serve as a framework for planning and enforcement.

Another recommendation involves the need for a standard of practice. Among study participants' complaint is the absence of policies, rules, and regulations that guide the level of sanitation practice in rural Njinikom. From the findings of the study, people and animals have fallen into open excreta disposal pits. A situation made worse by the fact that sanitation is within the purview of the municipal council with minimal resources and no established links with the department of public health. Public health reform at the local and national level is needed to reverse this dangerous aspect of open pits and holes that continue to litter the environment. Bartram and Platt (2010) noted that policies and regulations when implemented, promoted, and monitored have the potential for significant health gains in developing nations. For instance, the government of Ghana in 2008 instituted a policy that banned the use of pan latrines and offered a target deadline

for compliance, enforcement strategy, as well as incentives for compliance (Bartram & Platt, 2010).

The results of this study contribute to the knowledge base of poor excreta management and the underlying factors that influence the demand for proper sanitation in marginalized communities. On the question of leadership effectiveness, participant's response split along socioeconomic lines. The more educated and informed participants viewed community leadership as inept in addressing toilet sanitation while a majority of individuals with lower socioeconomic status had a more positive view of leadership effectiveness. This finding shows a gap in sanitation knowledge in rural Njinikom. Given the limited nature of this study, more research is needed to further assess sanitation knowledge in rural Njinikom. Further research is also necessary given that individuals with higher socioeconomic status in Njinikom also lacked improved sanitation. To effect change, leadership in Njinikom could review water, sanitation, and hygiene programs in other marginalized communities and develop a program unique to the needs of the people of Njinikom. An integrated health program in Pakistan that trained community health workers on sanitation and hygiene practices saw a decline in infant mortality from 33% to 15% and increased access to sanitary latrines from 14% to 19% (Bartram & Platt, 2010; Barzgar et al., 1997).

The issue of toilet sanitation in rural Njinikom involves a complex interplay of a myriad of social, economic, health, cultural, traditional, political, and environmental issues. The findings of the study offer areas for continued research on various topics such as further exploring the use of open pit latrines as first aid treatment for convulsion.

Subsequent research can be undertaken to determine how widespread this traditional practice is and potential health consequences. Further research exploring women's role in sanitation decision and the impact of inadequate feces disposal management on the needs of women and girls in rural Njinikom is necessary. Findings from the study revealed that women in male-headed households have no input into toilet sanitation decisions. In a study on the current status and future solutions of sanitation in developing countries, Cairncross (2003) noted that sanitation does not only prevent diseases, it is notably beneficial for women. Research is also needed to explore how public health reform will impact improved human waste management in rural Njinikom. Lastly, further research could benefit from assessing the impact of the first ultra-modern toilet in the Njinikom open market and the limited household latrines constructed by the African Development Bank in the community in changing behavior and perception.

### **Implications for Social Change**

Walden University uses research to create a positive impact on the world stage. The findings of this research study have the potential to create social change for an underserved community. First, the findings contribute to the current knowledge about the lived experiences of individuals and households in marginalized rural communities regarding the problem of inadequate excreta disposal management. It also increases knowledge and awareness of the struggles of Njinikom indigenes with environmental sanitation.

The presence of Irina Project Initiative, Inc. and the construction of the first modern toilet in the Njinikom open market changed the discourse on human excreta

disposal. It renewed interest in improving toilet sanitation and health as well as increased awareness and understanding of the importance of adequate feces disposal. For instance, one study respondent verbalized the presence of the structure provided him the opportunity to experience a modern toilet for the first time in a culture where some consider indoor toileting a travesty. Another participant verbalized that the current structure has also changed the outlook of the environment and made people more aware of their immediate surroundings.

Leadership from a historical perspective is critical to providing the framework and resources necessary to address the problem and achieve health, social, and economic gains without which the impoverished population of Njinikom will continue to suffer. To improve environmental health, Irina Project Initiative, Inc. signed a partnership agreement with the local town council. This partnership approach ensures sustainability of sanitation and hygiene programs through knowledge sharing and a plan that includes subsidized toilets for the most vulnerable residents as an incentive to boost demand. Based on this partnership, three ventilated improved pit toilets are in line for construction by the end of 2017 in Njinikom. These toilets once completed would benefit a school with about four hundred students, a church with a congregation of over 200 participants, and two households. Investing in the construction of toilet facilities drives social change through the provision of job opportunities as well. Community beneficiaries include housekeepers employed to clean Irina public toilet and local builders engaged in the construction of toilet facilities.

Also, I intend to disseminate the findings of this study to local authorities as well as study respondents. The knowledge can be used to influence local administrators to develop public health policies and regulations for sanitation and hygiene. There are currently no guidelines or framework for sanitation planning. By disseminating the findings, I hope to serve as an advocate for better health and hygiene practices in the impoverished Njinikom community.

### **Conclusion**

Inadequate excreta disposal continues to plague underserved communities in the developing world with severe health, social, and economic consequences. The findings of this study indicated that the low demand for toilet sanitation in Njinikom is associated with financial constraints, neglect, limited knowledge and education, and inefficient leadership at the national, regional, local, and traditional levels. The findings also revealed that there are varying motivating factors for toilet sanitation in addition to health. Participants voiced their desire for a cleaner environment without flies or smell, privacy, safety, comfort, convenience, dignity, and social standing in the community.

If historical precedence is something to consider, the sanitary revolution in the West in the 18th and 19th century is an indication that leadership plays a critical role in building healthy communities. While the two communities are not comparable, the underlying premise and the lesson to learn is that leadership has to be competent, structured, organized, have the political will, and financial capital to do big things for the benefit of the people and the environment. Creating an enabling environment involves the

interplay of the different determinants of health (public policy, community, individual, socioeconomic) and an approach that is inclusive, relevant, useful, and sustainable.

Researchers, health professionals, and world organizations such as the United Nations have addressed the importance of promoting better toilet hygiene practices as a critical aspect of human and environmental health. Research studies have noted the essential role of leadership empowerment in sanitation by highlighting an integrated leadership approach as central to improving excreta disposal in marginalized communities. A partnership between Irina Project Initiative, Inc. and the Njinikom town council signaled a new approach to addressing the problem of inadequate sanitation. This collaborative leadership approach seeks to engage residents as partners in health promotion and disease prevention. Individuals that qualify for a subsidized facility pay a fraction of the total cost either in kind (labor, local material such as stones, sand) or cash.

By exploring inadequate toilet sanitation in Njinikom, the results of this study may reinforce the knowledge, significance, and importance of building healthy communities. Improved sanitation is fundamental not only to prevent and eliminate preventable infectious diseases transmitted via fecal-oral contact; it underscores the need to uphold individual's right to dignity, safety, privacy, security, and comfort when nature calls. It is my fervent hope that the dissemination of this study will appeal to local community leaders within the Njinikom municipality to address shortcomings that continue to hinder any meaningful progress towards improved toilet sanitation.

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## Appendix A: Interview Guide

## Respondent Interview

1. Define your position in your household.
2. What do you do for a living? Identify source of income.
3. Discuss your view of the current sanitation situation.
4. How satisfied are you with your latrine/toilet? Please, explain
5. Is your latrine/toilet accessible to children, handicapped individuals, women, the elderly, and men?
6. How important is improved sanitation to you?
7. Do you consider sanitation a priority? If yes, explain
8. Describe in your own words any experiences that represent your views about access to sanitation in Njinikom?
9. Do you have plans to improve the current state of sanitation in your household?
10. What do you consider to be the major problem regarding access to sanitation?  
Are there cultural norms or taboos with regard to sanitation use? Financial constraints? Knowledge deficit? Etc.
11. Have you been approached by any organization, project or local authority regarding improving your sanitation situation?
12. Do you think local leadership is doing enough to address the issue? Why or why not?

13. What in your opinion is the role of each of the following in bringing about improved sanitation in Njinikom:
  - a. Mayor/municipal council
  - b. Political leadership
  - c. Traditional leadership
  - d. Health professionals
14. What would be your advise to the community leadership – political and traditional leaders regarding the problem of poor sanitation and promotion?
15. Are you aware of any program, project or organization such as the Irina Project Initiative, Inc. promoting access to improved sanitation?

#### Local political leadership

1. What is your view of the current state of sanitation in the Njinikom municipality?
2. Do you consider the problem of poor sanitation a priority? If so, how?
3. Do you see the need to improve the current sanitation situation in the community?
4. If yes, who needs to improve the situation and what needs to be improved?
5. How is your leadership engaged in addressing the issue of inadequate sanitation? Explain your role.
6. How do you intend to improve the current sanitation situation in Njinikom?
7. Within the municipal council, is there a separate entity charged with improving health by specifically addressing the current sanitation problem?

8. What ministries are involved? Are there other organizations (e.g. NGOs) involved in addressing the problem?
9. How is the health department engaged in addressing the current sanitation crisis?
10. Describe any partnership involvement targeting the sanitation problem in Njinikom.
11. Are there policies, regulations, public health act, and norms to promote sanitation? Please describe.
12. Do you have an environmental surveillance system in place to investigate sanitation concerns in your municipality?
13. What are some constraints to improving the sanitation problem?
14. Did the construction of the first ultra modern public toilet in the community open market by Irina Project Initiative, Inc. in the community open market result in any improvement of the sanitation situation?

## Appendix B: Confidentiality Agreement

Name of Signer:

During the course of my activity in collecting data for this research: “Assessing community leadership collaboration in bringing about sanitation in Njinikom, Cameroon”. I will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing this Confidentiality Agreement I acknowledge and agree that:

1. I will not disclose or discuss any confidential information with others, including friends or family.
2. I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized.
3. I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant’s name is not used.
4. I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
5. I agree that my obligations under this agreement will continue after termination of the job that I will perform.
6. I understand that violation of this agreement will have legal implications.
7. I will only access or use systems or devices I’m officially authorized to access and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

Signing this document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.

Signature:

Date: