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**The Critical Factors That Influence Beliefs and Attitudes of the  
Elderly Jamaican to Medication Adherence**

Caroline E. Smikle

THE CRITICAL FACTORS THAT INFLUENCE  
BELIEFS AND ATTITUDES OF THE  
ELDERLY JAMAICAN TO MEDICATION ADHERENCE

DISSERTATION

Presented in Partial Fulfillment of the  
Requirements for the Degree of  
Doctor of Philosophy in Nursing

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Caroline E. Smikle

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2013

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## Abstract

**Background:** Medications are crucial healthcare products and work best when taken correctly (World Council, 2009). As the population of the elderly spikes, elderly adults (defined as 60 years and older) will be challenged to manage their health needs more than any other demographic population (Canadian Council, 2007). In Jamaica, it is imperative to address the factors influencing medication adherence, as the island is experiencing an elderly population growth that will increase 14% by 2025 (Clarke, 2008).

**Purpose:** The purpose of this grounded theory study was to determine the critical factors that affected medication adherence in elderly Jamaicans residing in Jamaica.

**Philosophical Underpinnings:** The philosophical underpinning that guided this grounded theory study was an ontological assumption that was rooted in the interpretive paradigm.

**Methods:** The study was conducted in two phases: Phase I consisted of the participants in the individual interviews. Open-ended questions were used to collect data according to Strauss and Corbin's methodology. Interviews were audio-taped in a semi-structured setting. Phase II was the focus group interviews with participants who claimed adherence to medication regimen and supported the themes and categories that emerged from the participants in Phase I.

**Results:** The central core category that evolved from the data was eudaimonia. Four dominant themes emerged from the data and supported this core category: believing, self-efficacy, supporting, and socio-economic factors. This conceptual model was used to better understand the critical factors that influence the beliefs and attitudes of the elderly Jamaicans to medication adherence.

**Conclusion:** The conceptual model identified in this study served to understand the increasing elderly population of Jamaica in the future. Implications for the need to understand the increasing population of the elderly in Jamaica existed in nursing education, practice, research, and public policy.

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## **DEDICATION**

To my daughter Jheaneil D. Smikle, who encouraged me.

For God hath not given us the spirit of fear;  
but of power, and of love, and of a sound mind (2 Timothy 1:7 KJV).

To my Dad and Mom, Kenneth and Ann Veronica Cole

I love you

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## CHAPTER ONE

As Mattie, a 66-year-old Jamaican on multiple medication, sits at her table and opens her pill bag, she begins to cry, “I can’t bear this anymore; all these pills. I am over it. I might as well die!” This anecdote represents an elderly individual’s cry of frustration in Jamaica. In view of witnessing other elderly Jamaicans who had verbalized similar frustration, the aim of this grounded theory study was to generate an awareness and understanding about the critical factors that influence beliefs and attitudes of the elderly Jamaican to medication adherence in Jamaica. Therefore, this study explored the possible influencing factors: increasing elderly population in Jamaica and the associated age related growth in chronic illnesses, related costs, culture, beliefs/attitudes, and literacy.

Medications are crucial healthcare products and work best when taken correctly (World Council of Churches, 2009). They can be administered for brief periods to treat an acute condition or prescribed for chronic conditions to sustain optimal wellness. When used properly, they can prevent complications, hospitalizations, and prolong life. Medications work best when taken as directed (National Institute of Mental Health, 2012). The literature reviewed revealed many reasons for the elderly’s poor adherence: Piette, Heisler, and Wagner (2004) suggested that most people in the United States of America are not adhering to their physician’s orders regarding the prescribed medications because of cost. Cline, Bjorck-Linne, Israelsson, Willenheimer, and Erhardt (1999) researched that elderly in South Africa had poor adherence to medication because of lack of knowledge despite adequate information. Saratsiotou et al. (2010) reported that in Greece, confidence in treatment efficacy appeared as a significant adherence determinant.

The World Health Professions (2002) reported that adhering to medication is related to a person's knowledge and beliefs about his or her illness and motivation to manage it. The World Health Professions (2002) also reported that adhering to medication is confidence in his or her ability to engage in illness-management behaviors and expectations regarding the outcome of treatment and the consequences of poor adherence.

As the population of the elderly spikes, elderly adults (defined as 60 years and older) will be challenged to manage their health needs more than any other demographic population (Canadian Council, 2007). As they age, the elderly may become stressed with physiological, psychological, and emotional challenges and are predisposed to chronic conditions that require use of multiple medications (Modawal, 2000; Bourne, 2009). Research on the elderly with chronic diseases has revealed that a major problem is medication adherence (Kelloway, Wyatt, and Adlis, 1994). Age-related factors, such as forgetfulness, failure to fill prescription, expense of medication, coping style, stigmas attached to medications, and lack of understanding, are also some of the factors influencing adherence in the elderly population (The Council of State Government, 2007). Consequently, poor adherence leads to a shorter lifespan, decreased quality of life, and increased complications from diseases that require costly long-term care (The Council of State Government, 2007).

Medication adherence is a global phenomenon (Bisharat, Hafi, Baron-Epel, Armaly, and Bovirrat, 2012). The term "medication adherence" means taking the right amount of medication (no more, no less) at the right time and in the right way for as long as the health care provider advises (Rx Canada, 2007). Adhering to a medication regimen poses a risk to the mortality of elderly adults on multiple medications (Modawal,

2000). Globally, adherence to long-term therapy for chronic illnesses in developed countries averages 50% of the world, and the rates are even lower in developing countries (World Health Organization, 2003). In the United States of America, 89,000 chronic illnesses cause premature deaths in patients not adhering to medication regimen (Cohen, Christiansen, & Feldman, 2011). In Jamaica, it is imperative to address the factors influencing medication adherence, as the island is experiencing an elderly population growth that will increase by 14% in 2025 (Clarke, 2008). As increased growth in the elderly population occurs, the rate of chronic illnesses will rise (Centers for Disease Control and Prevention, 2003). The increased growth of the elderly in Jamaica has a challenging impact on the economic growth and public funding if this population growth is addressed inappropriately (Clarke, 2008). The risk for poor medication adherence increases with the aging population in Jamaica and is potentially of significant concern as rapid growth of elderly population occurs in Jamaica, and calls for urgent attention for planning of suitable health services. Thus, the phenomenon explored in this qualitative study to determine the critical factors influencing the attitudes and behaviors of the elderly Jamaicans to medication adherence.

### **Background of the Study**

To explore the phenomenon, the term “adherence” needs to be fully understood. Ungvarski (1997) defined the term “adherence” as following closely, without variance to a medication regimen because this behavior will improve health and achieve the desired outcome. Adherence is classified as positive or negative (poor adherence) in this research study. Adherence (positive) means the medications are taken, the therapeutic desired goal is reached, and the desired (positive) health outcome is attained. Adherence

improves the effectiveness of interventions aimed at promoting healthy lifestyles, such as diet modification, increased physical activity, non-smoking, safe sexual behavior, and the pharmacological-based risk-reduction interventions (World Health Organization, 2003).

The American Society on Aging (2006) noted that poor adherence brings negative outcomes in health, such as uncontrolled hypertension, high blood sugars, increased symptoms of the illnesses, increased hospitalizations, and unmet therapeutic goals. In poor adherence, a non-therapeutic health outcome is attained. The American Society on Aging (2006) reported that poor adherence means failure to follow advice and is depicted in several ways: 1) failure to fill a prescription, 2) taking incorrect doses, 3) taking medication at incorrect times, 4) forgetting to take medications, or 5) stopping treatment before the course is completed. Poorly adhering to medication regimen affects the country's healthcare system by increased healthcare costs, frequent re-admissions, and costly long-term care (The American Society on Aging, 2006).

According to the Affordable Care Act (2012) in the United States, every citizen has a right to healthcare with insurance plan in place (Healthcare, 2012); however, the effects of medication adherence may make this provision sub-par, especially if the healthcare infrastructure is fragile. Whereas every citizen has a right to healthcare, he or she has to be an active participant as a recipient of that care; thus, the need for education and culturally appropriate care becomes crucial to ensure adherence to the medical regimen. The populace probably will be more compliant if its circumstances are understood and care is planned appropriately.

Piette et al. (2004) reported that many chronically ill adults frequently cut back on medications because of cost and that patients are selective about the treatments, as they

will sacrifice their health because of the high cost. Bourne (2009) suggests that improvement in chronic illness and health status in Jamaicans can be achieved with patient education on the importance of adherence. The findings on adherence to medication may help the healthcare discipline to understand and fill the gap in literature about healthcare practices of elderly Jamaicans. These findings will allow the implementation of appropriate interventions to promote medication adherence and in doing so, there will be a reduction of impending costs, improving healthcare for the elderly not only currently but also in the future as well.

### **Trends of the Elderly**

Medication adherence may occur in any age group. However, the elderly are at a higher risk for chronic diseases and therefore prone to multiple medication use, leading to a lifetime of administration. Thus, they are propelled to manage their own care at home, which causes stress for many chronically ill elderly. Diseases such as diabetes, arthritis, renal diseases, hypertension, and cardiovascular diseases are common with this dilemma. Adherence to the constraints of medication becomes more difficult to the elderly with these chronic conditions, and hence, poor medical outcomes are inevitable. To have longevity of life, adhering to a stringent medication routine becomes crucial. Frustration and depression may be the result of this problem.

### **Globally**

The elderly are among the fastest growing population group in the world, and the first Baby Boomers (individuals born 1946- 1964) turned 65 in 2012. More than 37 million people in this group (60%) will have to cope with more than one chronic condition by 2030 (Healthy People, 2012). Kelloway et al. (1994) noted that adherence

to medication may be one of the most serious problems confronting the world today as rapid population aging occurs. The number of elderly aged 70 years or older worldwide is expected to increase from 269 million in 2000 to one billion in 2050 (WHO, 2005). Reductions in mortality rates were noted in the developing regions of the world in the 1950s with the increase in technology and advances in medicine (United Nations, 2002a). The world's life expectancy is 65 years, which has increased by 20 years since 1950s. By 2050, life expectancy from birth is projected to be 76 years (United Nations, 2002a). Therefore if people are living longer, they must adhere to medication to prevent comorbidities.

People 60 years or older currently represent more than 3% of the population of North America and almost 3% of the population of Europe, compared with less than 0.9% in Asia, Latin America, and the Caribbean and less than 0.4% in Africa (United Nations, 2002b). A growth in the elderly populations is expected to reach an enormous figure of about 870 million or an increase of 380% between 1970 and 2025. This growth could result in a population of approximately 1.2 billion elderly over the age of 60 in 2025 (World Health, 2002).

Between 2000 and 2050, the aging index is expected to rise significantly in Asia and Latin America and the Caribbean, in particular where these countries are projected to experience remarkable increases in the aging index that will more than quadruple (World Population Aging, n.d.). Kinsella and Gist (2005) projected that by 2030; there will be a significant universal increase in the elderly population. Figure 1 shows reflected data.

## Speed of Population Aging in Selected Countries

Number of Years for Percent of Population Age 65 or Older to Rise from 7% to 14%

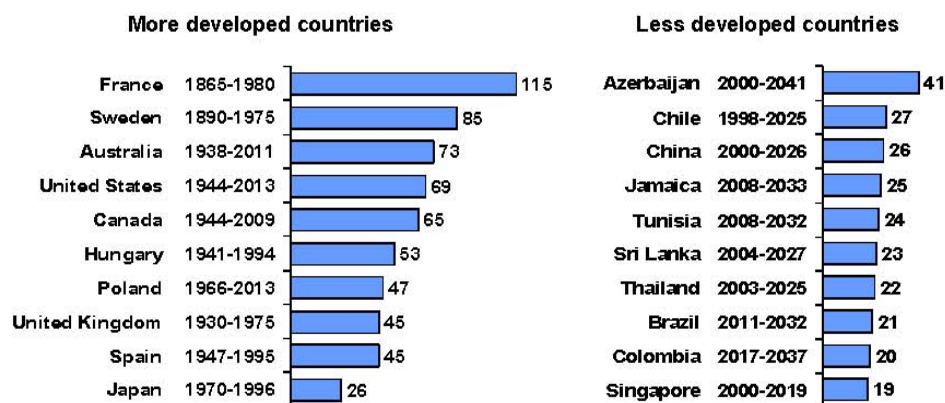


Figure 1. K. Kinsella and Y. J. Gist, *Older Workers, Retirement, and Pensions: A Comparative International Chart book* (1995) and K. Kinsella and D. Phillips, "The Challenge of Global Aging," *Population Bulletin*, 1 (2005).

### The United States of America

Adherence to medication costs the United States of America an estimated \$396 to \$792 million each year (Latif & McNicoll, 2009). Research shows that, depending on the characteristics of the condition, the treatment, the patient, and the setting, estimates of medication adherence rates typically range from 30% to 60% with the adherence percentage greatest when the patients are symptom-free (Gottlieb, 2000). The Centers for Disease Control and Prevention (2011) revealed that yearly, adverse drug events (injury from misused medication) result in more than 700,000 visits to emergency rooms.

Many drug mishaps are avoidable. Patients and caregivers can be taught the effects and risky habits surrounding medication adherence. The Affordable Care Act (2012) aims to improve current healthcare system by increasing access to health coverage for Americans and introducing new protections for people who have health insurance (Healthcare, 2012). The law aims to decrease cost, advocate for patients with and without insurance, and improve the healthy habits for the American people, including the elderly 65 and over. In some areas, poor medication adherence in the United States might be lowered due to this new healthcare act.

The growth of the population age 65 and over influences many areas of the society, challenging policymakers, families, businesses, and healthcare providers to meet the needs of aging individuals (Aging Stats, 2010). In Figure 2, the U.S. Census Bureau (2011) reported that by 2030, the population of the United States elderly 65 years and older will double to about 71 million. Hence, the risks associated with medication adherence will intensify in the United States of America.



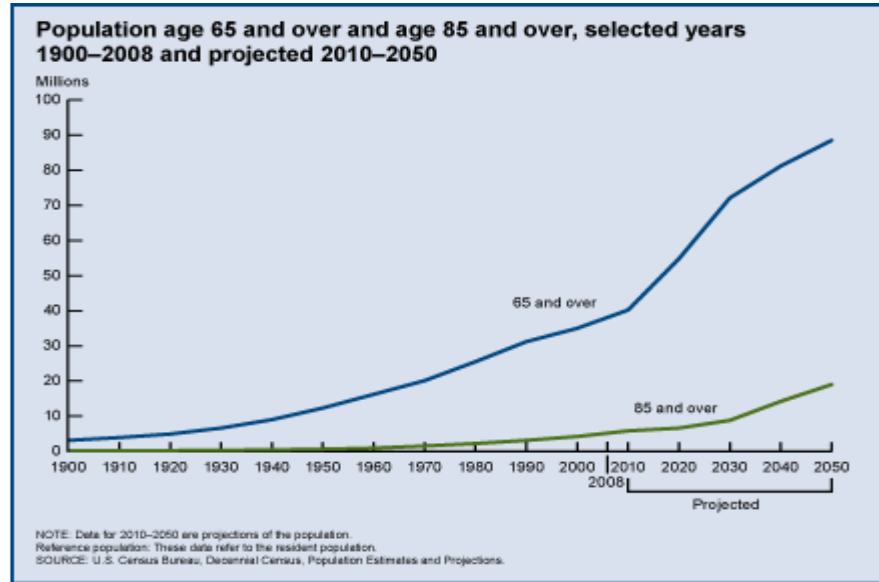


Figure 2. Number of Older Americans. From U.S. Census Bureau Decennial Census, Populations Estimates, and Projection.

### The Caribbean

The literature review is very limited about the elderly and medication adherence in the Caribbean. This is a contrast to the plethora of studies that have been conducted in the United States, Britain, and other developed countries. The statistics show that aging is occurring at an incongruous rate around the world, which is evident in most countries. In Latin America and the Caribbean, the increase was estimated to be 5.4% in 2000 to 16.9% in 2050 in elderly growth, which is higher than the 10% increase in Europe (Gavrilov & Heuveline, 2003). Many aged emigrants are returning to the Caribbean to retire, and this is accelerating the growth of the elderly. Therefore, medication adherence may pose the same negative outcome to the elderly in this area as it predicted in the other areas of the world.

## **Jamaica**

This study took place in Jamaica, which is one of the many islands in the Caribbean. It is 885 kilometers south of Miami, Florida (United States of America). It is the largest English-speaking island in the Caribbean with a population estimated to be 2,868,380 (U.S. Department of State, 2012). Life expectancy from birth was approximately 71.83 years for males and 75.3 years for females in 2011 (Bourne, 2011). Males represent 49.7% of the population, whereas females make up the remaining 50.3%. The current leading cause of death in Jamaica is from chronic, non-communicable diseases. In 1995, there were 110,430 males and 130,020 females 60 years and older in Jamaica. This represents 9.42% of the Jamaican population (Bourne, 2011).

The elderly population in Jamaica is on the rise. The Statistical Institute of Jamaica (2005) published data that reflects the increased trend of the elderly on the island (Figure 3). Census data in Jamaica shows that the demographic of elderly 60 years and older is proliferating and that by 2025; there will be a growth of 14% in Jamaica (Clarke, 2008). The United Nations Department of Economics (2009) stated that the aging population of Jamaica is of major concern, as developing countries will have less time to adjust to the consequences of a larger population causing the socio-economic system of the country to be affected. Figure 3 represents the demographic proportion of population increase in Jamaica from 1995-2005.

| <b>Proportion of Population Age 60+ (1995-2005)</b> |                    |        |
|---|--------------------|--------|
| Year  | Population Age 60+ | %      |
| 1995  | 252,225            | 10.096 |
| 1996  | 254,785            | 10.105 |
| 1997  | 257,612            | 10.107 |
| 1998  | 259,925            | 10.126 |
| 1999  | 261,694            | 10.136 |
| 2000  | 263,519            | 10.147 |
| 2001  | 265,775            | 10.174 |
| 2002  | 268,088            | 10.227 |
| 2003  | 274,015            | 10.283 |
| 2004  | 274,920            | 10.381 |
| 2005  | 279,051            | 10.488 |

Figure 3. Proportion of population age 60+ (1995-2005). From Demographic Statistics 2005, Statistical Institute of Jamaica.

The elderly (60 years and older) in Jamaica have had an increase of 32.5% in chronic non-communicable illnesses, such as hypertension and diabetes, and cancer (Ministry of Health, 2010). A statement from the Ministry of Health in Jamaica revealed that the elderly's increase in chronic illnesses required close monitoring from the Ministry as the elderly population had declining income and was largely dependent on the generosity of family members and kind neighbors. This population experienced longer periods of illness, faced recurrent illness, and had the highest percentage of persons seeking medical care (Ministry of Health, 2010).

To achieve optimal care of the elderly population and reduce these chronic illnesses, a tertiary prevention program is in place in Jamaica. Tertiary prevention is aimed to improve the quality of life for people with chronic illness and disabilities. Healthy People 2020 identified four overarching goals that have implications for the elderly in relation to adherence. They are:

1. Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.

2. Achieve health equity, eliminate disparities, and improve the health of all groups.
3. Create social and physical environments that promote good health for all.
4. Promote quality of life, healthy development, and healthy behaviors across all life stages (Healthy People, 2012).

The National Council for Senior Citizens of Jamaica (2011) emphasized in its tertiary prevention program that its primary goal is to allow the elderly to enjoy a high quality of life by optimizing functioning level and delaying disabilities and impairments in elderly for as long as possible. The Drugs for the Elderly Program was started in 1996 in Jamaica to reduce hardship for the elderly by making drugs for arthritis, asthma, glaucoma, and hypertension available. These services may be beneficial for the elderly of Jamaica, but the aging population still poses a risk for medication adherence in the chronically ill elderly. Due to limited studies found on the adherence patterns in the Jamaican elderly, this study served to fill the gap of literature about this population by providing knowledge and interventional strategies for healthcare professionals.

### **Statement of the Problem**

Medication adherence has been studied extensively in various countries of the world, but studies about the elderly in Jamaica and medication adherence have been very limited. With the aging population worldwide, chronic illnesses have been on the rise, and thus, an increased risk of medication adherence in the elderly population is evident. The literature suggests that the elderly Jamaican population (age 60 and older) will increase over 14% by 2025 (Clarke, 2008). This may have an effect on the Jamaican healthcare system, as the Jamaica government may be challenged to develop strategic interventional plan for a large elderly population by 2025.

Ultimately, the health risks associated with medication adherence may cost the healthcare system and the population millions of dollars. Poor medication adherence in the Jamaican elderly may expose them to health risks, exacerbation of chronic illness, and premature death, all of which may be preventable if medication is used correctly.

### **Purpose of the Study**

The purpose of this grounded theory study was to determine the critical factors that affect medication adherence in elderly Jamaicans residing in Jamaica. The aim was to generate a theory about medication adherence in the elderly Jamaican population and to develop a substantial statement that may promote effective interventional and educational strategies about medication adherence.

### **Research Questions**

This study was guided by the following two research questions:

- 1) What are the critical factors that influence the beliefs and attitudes of the elderly Jamaican to medication adherence?
- 2) What are elderly Jamaicans' attitudes and behaviors regarding medication adherence?

### **Philosophical Underpinnings**

The philosophical underpinning that guided this grounded theory study was an ontological assumption that was rooted in the interpretive paradigm. When proposing a study, the researcher has to choose an approach that answers the questions asked. The approach may be a quantitative or qualitative study. Qualitative research starts with assumptions (worldview) and the possible use of a theoretical lens, inquiring into the meaning that the participants assigned to a particular social problem (Creswell, 2007).

This type of research is used when little is known about the phenomenon investigated or when the research question relates to a particular event (Jones, 2000). Boyd (1993) described qualitative research as broadly stated questions about human experiences and realities, reported through continued contact with participants in their natural habitat, and generating rich descriptive data that helps to understand the those participants' experiences. It discusses that meaning is derived from a particular standpoint, and many people share different viewpoints in which many perceptions or sides may be interpreted. Interpreting and understanding human experiences are the main focus of qualitative research. Munhall (2012) stated, "Qualitative researchers break new ground by revealing what had been concealed because they look beyond appearance" (p. 11).

Qualitative research is used when the voice of the participant needs to be heard or when his or her story needs to be told. Creswell (2007) noted that is a form of inquiry in which researchers make an interpretation of what they see, hear, and understand. In qualitative research, context is important. Values are present and precise. Initially, in qualitative research, there is a philosophical assumption, and a theory is formed after the research is complete. The assumption is that rich knowledge will be obtained about the phenomenon.

### **Grounded Theory**

Hutchinson and Wilson (2001) stated that grounded theory is directed by the assumption that people have a need to make sense of their circumstances, despite of the illogical or incongruent their world may seem to others. The method was developed by two sociologists; Barney Glaser and Anselm Strauss (1967) were influenced by the ideas

of Mead (1967) and Blumer (1969). George Herbert Mead was one of the first philosophers of pragmatism, who later developed symbolic interaction (Crotty, 1998).

According to Creswell (2007), the intent of grounded theory is to move beyond the description of the subject and to generate or formulate a theory. All participants in the study would have experienced the phenomenon or the process, and a theory will emerge to explain the practice or provide a framework for further research. Grounded theory is governed by two philosophical underpinnings. They are symbolic interactionism and pragmatism.

### **Symbolic Interactionism**

Blumer (1969) described symbolic interactionism as people interacting and responding to society on a symbolic level. The symbolic interactionism theory focuses on the interaction between people and symbols, words, gestures, rules, and roles (Blumer, 1969). Within his perspective, people are active participants and creators of their own experiences and the contexts in which they live. Blumer believed that people determine reality based on their social interaction with others.

George Herbert Mead (1967) believed that symbolic interactionism is a world of intersubjectivity, interaction, community, and communication in and out of which we come to be persons and to live as persons. Interactionists study their participants' action through observation. They closely watch their participants' action and body language, rather than using surveys. Interactionists believe that meaning is created by previous social interactions and thus influences behaviors. They tend to use the participants' social interaction with others as an observable fact of interest. The interactionists believe that behavior is affected by several factors, including language, society, culture, and self-

concept. The elderly population in Jamaica's counteracting culture and personal beliefs were a major test for the researcher.

### **Pragmatism**

Pragmatism was developed by Charles S. Peirce, John Dewey, and William James (Crotty, 1998). It is the doctrine that the meaning of an idea or a proposition lies in its observable practical consequences. Pragmatism states:

- (1) Truth consists of experience and not with the facts.
- (2) It is the attribute of accepting the facts of life, favoring practicality, and the truth.
- (3) All learners create their own realities, and ontologically, it recognizes the existence and importance of the natural or physical world and a high regard for the reality and influence of the inner world of experience (Creswell, 2007).

A pragmatist believes that truth is individualized, and it may never be known. Epistemologically, the pragmatist believes that knowledge is subjective and practical (Creswell, 2007). Truth cannot be acquired from a current or existing theory; rather, it must be obtained from inductive data with uninterrupted empirical verification (Wuest, 2000). Thus, interviewing the elderly in Jamaica may reveal practical knowledge, subjective and individualized from their experience with medication adherence.

### **Significance to Nursing**

Hospitals and regulatory agencies have issued various means of ensuring medication administration safety for patients, yet medication adherence issues continue. Various quantitative and qualitative studies have addressed medication adherence in the elderly; however, a theory that identifies Jamaican elderly's perceptions of their beliefs



and attitudes toward medication adherence in Jamaica was not found, leaving a knowledge gap in the literature. Thus, this study may generate a theoretical framework supported by themes that may emerge, which may alert nurses and other healthcare professionals to the critical factors regarding the Jamaican elderly in Jamaica to medication adherence.

This study is significant as it brings forth the importance of how nurses strive to achieve quality of life for their patients, regardless of disease or disability (Hughes, 2008). As clinicians, we are duty-bounded to provide the best care (Hughes, 2008). Medication adherence is significant to nurses, as this promotes wellness in patients. Nurses use their clinical judgment to promote health, prevent illness, and limit suffering by providing holistic care for their patients. They face the obstacles of providing quality care to patients despite non-adherence to their medication (Kammerer, Garry, Hartigan, Carter, & Erlich, 2007). Therefore, the study was beneficial to nurses and other healthcare professionals. It provided knowledge regarding the reasons for continual readmission to hospital, death rates, and increased rates of exacerbation of chronic illnesses in Jamaica and the problems that will occur with the aging elderly population in Jamaica.

The study of the participants may reveal the high-risk behaviors of this population that will open the pathway for healthcare professionals to intervene and treat. Thus, exploring, describing, and assessing this population created a positive outcome as knowledge will be gained; thus, the life span of the Jamaica elderly may be increased. This study had significance for nursing in the areas of education, practice, and research, health, and public policy.

### **Implications for Nursing Education**

Nurses learn evidence-based practices, theories, and concepts about different populations through continuing education. Nurses play a vital role in caring for and educating the public. Preventative and primary care are the core aspects in nursing. Assessing, planning, intervening, and evaluating are major components of the nursing process. Therefore, education is the key to preventative and primary care interventions. A patient who can grasp the understanding and importance of the medications regarding prescriptive medications may be inclined to adhere to the plan of treatment because knowledge is power. Providing education to the elderly in Jamaica may increase their awareness and perceptions about diagnosis. There is evidenced-based data indicating that with the proper motivation, education, and support, older persons may overcome many barriers to medication adherence (The American Society on Aging, 2006). The information acquired from this study may provide research that may affect the learning in educational institutes and hospitals worldwide about the medication adherence of the elderly Jamaican.

### **Implications for Nursing Practice**

Understanding medication adherence in the elderly is important for the nursing practice as it may allow nurses to understand the culture and beliefs of the Jamaican elderly when they are admitted to the hospitals or healthcare facilities. Nurse educators may formulate a plan of care for this culturally sensitive population based on the published literature. Nurses may work together and help patients to be more independent with their healthcare throughout the community and hospital by developing nursing interventions for the specific condition.

### **Implications for Nursing Research**

Research provides a scientific ground for practice, future research, and health or public policy. Without research, nurses cannot have evidence-based practices to continue as a profession. Advanced practice nurses have an essential role in leadership and incorporating the findings of research with health promotion programs in the clinical areas and the community.

The literature revealed that medication adherence is a global issue for the elderly. Nurses conducting this research in Jamaica and worldwide may gain a better understanding about the culture, attitudes, and practices of the Jamaican elderly. It may orient the medical professionals to options available for positive goals and interventions that must be implemented to assist this population. Studies have not yet addressed a theory about medication adherence and the growing aging population in Jamaica. The findings of this research study may help to guide important decisions that may be made about the specific attitudes, practices, and beliefs of the elderly in Jamaica. It may also guide in the development of quantitative and qualitative studies in Jamaica in this population.

### **Implications for Health and Public Policy**

Policies have been issued on a national level to support medication adherence in various areas of the world. In 2007, several researchers and experts in medication adherence met in their respective countries (Denmark, England, Finland, Spain, Sweden, and the United States) to discuss policies, complications, and practice (Schneider & Aslani, 2010). Results reflected that a global plan for medication adherence was needed. In the United States, various agencies (Centers for Disease Control and Prevention, 2011;

Kaiser Permanente, 2011) have addressed the issue of medication adherence. California State Bill 72, which offered considerations for implementing a successful medication dispensing machine pilot project, was launched (2011). The project delivered medication reminders through the Internet, cell phones, or landlines as the primary alternatives to medication dispensers. The results reflected a 79% reduction in emergency department visits and a 57% reduction in hospital admissions (Center for Technology and Aging, 2011). However, there is limited research that shows any policies in place for the Jamaican elderly and medication adherence.

It is predicted that lack of medication adherence may increase the cost of healthcare to the public sector and cause more deaths if it is not corrected or reduced. Medical assistance is free to the public in Jamaica, but it can take months to obtain a visit to see medical personnel for diagnosis. Policymaking affords an opportunity for nurses in Jamaica to advocate for more effective standards and programs to assist patients and the community with better healthcare standards and protection from illnesses.

### **Scope and Limitations of the Study**

Grounded theory study is an ideal framework to obtain authentic behaviors and attitudes pertaining to medication adherence of the elderly Jamaican. The study was conducted using purposeful and theoretical sampling to achieve the accurate number of participants and reach saturation. To remain within the realms of a qualitative study, approximately 17 participants were used. There were two groups of participants (focused and unfocused group). The focus group, which had reported poor medication adherence, and the unfocused group, which had acknowledged strict adherence, was interviewed.

All participants were between the ages of 65-85 and could communicate in English.

Participants lived in Jamaica at the time of the study.

The researcher conducting the study is a novice, and this may cause the study limitations. The sample size used in a qualitative research study might be limited, and as such, it was not representative of the entire elderly population in Jamaica. The researcher believed that the participants during their interview process might believe that their answers could create a negative perception for them, so they might not give the entire truth regarding medication adherence. The area chosen to do the study was small, and everyone was familiar with each other in this area. The stigma of their illnesses also was a factor. The demographic data profile is not a good representation of the island of Jamaica. The researcher believes that more cities in the island should have been included to get the best demographic data profile.

### **Chapter Summary**

This chapter provided an overview of the qualitative research study that addressed critical factors that influenced the attitudes and behaviors of the Jamaican elderly to medication adherence. It introduced the elderly population and one of the problems (medication adherence) this population faces as it ages. An overview of the phenomenon regarding the rate of growth of the aging population globally and how it relates to medication adherence and the elderly was presented. Jamaica is facing an unprecedented growth in her elderly population in the near future, and this poses a serious challenge for the Jamaican healthcare system as the Jamaican government is not equipped to deal with a large elderly population.

Adherence to medication may be one of the most serious problems confronting the society today as rapid aging occurs. Thus, medication adherence issues pose a problem for the Jamaican elderly. The qualitative method that guided the study was grounded theory. The philosophical underpinnings of grounded theory were also discussed. Finally, the scope and limitations of the study were reviewed.

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

The purpose of this grounded theory study was to determine the critical factors that may affect medication adherence in elderly Jamaicans residing Jamaica. The aim was to generate a substantive theory about medication adherence in the elderly Jamaican population and to develop a premise that would promote effective interventional and educational strategies about medication adherence in the elderly Jamaican.

Over the past decade, extensive research has addressed the consequences of poor medication adherence, and strategic interventional programs were implemented as a result, yet medication adherence is a complex problem and each country needs to create its own unique interventions and strategies to lower the rate of morbidity. In this chapter, a literature review was conducted globally on medication adherence in the elderly. In grounded theory, the literature review can aid in data collection and serve as a foundation of the emergent theory. Using ProQuest Direct and Bliss Web Catalog search engines, the following computerized databases was used for the search: the Cumulative Index to Nursing and the Allied Health Literature (CINAHL), Medline in PubMed, Drug Aging, Archives of Internal Medicine, PsychInfo, Sociological Abstracts, and Adis Data Information. The literature review conducted was limited to English-speaking articles ranging between January 1, 2000, and December 31, 2011.

The key words used in the search were qualitative, grounded theory, medication adherence in elderly, aging population, elderly and chronic illnesses, literacy, culture, beliefs/attitudes, and elderly in Jamaica. The literature review sought the perspectives of different disciplines. The results were presented and discussed under subheadings as

follows: beliefs/attitudes, cost-related factors, literacy, and culture, as major risk associated causes of medication adherence problems in the elderly. This literature sought to identify the gap in literature in Jamaica and thereby support the need for this study.

### **Historical Context**

Poor adherence to medication may be to blame for ill health and sometimes even death. It is often undisclosed by patients and unrecognized by prescribers. Chronic illness (diabetes and hypertension, etc.) places increased stress on managed care as it continues to rise, and many healthcare professionals are looking for ways to increase adherent behavior with medication regimen.

During the 1970s through 1980s, the National Consumer League (NCL) Executive Director Sandra Willet Jackson increased the consumer's attention to education of the products being used, and attention was brought also to healthcare system (National Consumer League, 2009). Today, under the leadership of Sally Greenberg, executive director (NCL), a task was undertaken to promote the safe use of medication, including organizing a multi-faceted, multi-stakeholder operation to promote better medication adherence (ensuring that patients adhere to their medication regimen) in combination and with the support of a federal agency (National Consumer League, 2009).

However, medication adherence is a multifactorial behavior that requires a multifactorial response (Morisky, 2011). A large range of strategies have been implemented by various healthcare professionals to decrease medication adherence. These healthcare professionals have explored the beliefs and attitudes, culture, cost-related factors, and literacy of patients toward their illness and how well they adhere to their medication/treatment regimen. The patients' failure to follow the directions of the



health professionals may lead to increased morbidity. Findings from the literature review link relationship between beliefs and attitudes to medication adherence in the elderly Jamaicans in Jamaica.

### **Effects of Beliefs/Attitudes to Medication Adherence**

The following studies illustrated the perceptions and attitudes of the elderly in different areas of the world and attempted to reveal in each article the different variables that could affect medication adherence. Each article, however, failed to fill the gap in knowledge in the Jamaican population, as it did not directly address the elderly in Jamaica. The perception of the elderly in Jamaica was needed to be heard as a unique voice.

In 2007, Bane, Hughes, Cupples, and McElnay explored the perspectives of patients with hypertension on issues relating to concordance in prescription medication in a grounded theory. In this qualitative research, participants of different ages and gender were recruited from a list of six different general 132 practices in Northern Ireland. A purposeful sample of patients with no cognitive impairment, who had been prescribed hypertensive medications for at least one year, was invited to participate. Twenty-five individuals participated in five focus groups; two participated in semi-structured interviews. The participants, prescribed more than one other cardiovascular medications or medication for any other condition, were excluded.

The themes that resulted from this study were negativity about medications, personal experience, and confusion. The researchers revealed that there is a need for doctors and other healthcare professionals with responsibility for prescribing to develop skills specifically to explore the beliefs and views underlying an individual's medication

use. Such skills may need to be developed through specific training programs at both undergraduate and postgraduate level. The ethical implications and critique revealed that self-efficacy (an individual's belief that a behavior is or is not within his or her control) may be negatively affected in patients with hypertension, leading to lower adherence. Participants in the present study expressed confusion in understanding the causes of hypertension because of its asymptomatic nature. These expressions may reduce feelings of autonomy and control and suggests that there is a need for improved communication between these patients and healthcare providers. The findings revealed that in the Health Belief Model, the likelihood of an individual carrying out a particular behavior is a function of his or her personal beliefs about the perceived threat of the disease and an assessment of the risks and benefits of the behavior.

Tordoff, Simonsen, Thomson, and Norris (2010), in a grounded theory study, explored how New Zealanders aged 65 years and older managed their medicines in their own homes and determined the problems and concerns that they might have with taking them. Using in-depth interviews, 20 people 65 years and older were interviewed in their own homes about their medicine-taking practices and experiences. A list of 80 people 65 years and older (40 men and 40 women) was extracted at random from the electoral roll for Dunedin (North and South Dunedin), New Zealand.

The research revealed that the people 65 years and older in this study believed that they could access, afford, and manage their medicines well. Although many participants had experienced adverse effects, their beliefs about medicines were mainly positive. Practical problems and concerns should be routinely inquired about and

addressed and prescribing and monitoring optimized to minimize adverse effects to assist older people take their medicines.

In a qualitative study, using grounded theory research method, Nunney, Raynor, Knapp, and Closs' (2011) aim was to determine how the attitudes and beliefs of older people and healthcare professionals influenced the use of multi-compartment compliance aids by older people living at home. This initial analysis allowed themes to emerge, and memos were written that allowed conceptualization of the data.

The critiques and ethical implications revealed that the interviews with the older people highlighted that older people needed to remain in control of their lives and maintain their independence. It is important to understand the older person's attitudes and beliefs concerning his or her medicines, his or her health, and to set these within his or her home environment. Complaints were frequently voiced concerning the lack of opportunity for discussion, and the older people frequently thought their voices were not heard. A recent comprehensive review of adherence to and compliance with medicines concluded that a patient-centered approach encourages adherence.

Schuz, Wurm, Ziegelmann, Warner, and Tesch-Romer (2011), in a quantitative study, using a longitudinal method, examined the associations between changes in health, changes in beliefs, and changes in medication adherence. Participants (between 40 and 85) were recruited from a population-based representative survey in the German population. The results revealed both ANOVAs for changes  $F(3,303) = 5.84, p < .01$  and changes in specific concerns,  $F(1,303) = 2.89, p < .01$  were significant. Participants suffered on average from 5.55 illness (SD=2, 99). On an average, participants consumed 4.26 (SD=2.96) medicines per day. The study concluded that

changes in functional health predict changes in medication beliefs and that these changes in medication beliefs can predict medication adherence in multi-morbid older adults. In particular, the finding that improvements in functional health lead to decreases in specific necessity beliefs and those necessity beliefs are important predictors of intentional adherence suggests targeting such beliefs in interventions. Such interventions might stress that even relatively few or improving symptoms warrant medication adherence.

Each article was analyzed critically for the theoretical and methodological works of each researcher in relation to medication adherence in the elderly Jamaican. The research articles showed the beliefs/attitudes of participants regarding medication or treatment adherence from different areas of the world. The findings revealed that poor medication adherence may occur when patients are asymptomatic of their illness, but medication adherence is multifaceted, and reasons may not be uniform.

The articles revealed that beliefs and attitudes play an important role in adherence to medication. These articles revealed gaps in literature in the Jamaican elderly as the inclusion criteria (elderly, chronic illnesses and multi-drugs) are similar. The data revealed that attitudes/beliefs are important factors associated with medication adherences in the elderly. However, there is no data to explain the Jamaican elderly's experience. Hearing the voices of the participants in these studies may give some insight into the phenomenon of concern.

### **Effects of Culture on Medication Adherence**

In a quantitative study, using cross-sectional study design, Li, Wallhagen, and Froelicher (2007) explored hypertension control, predictors for medication adherence, and gender differences in the older Chinese immigrants. The researchers' goal was to

explore the relationship between demographics, culture, and antihypertensive medication adherence in the older Chinese immigrants. They used a convenience sample of 144 Chinese immigrants (75 older men and 69 older women). The criteria were that the participants were more than 65 years old and Chinese immigrants. Cronbach's alpha was used to test the consistency of reliability of each scale. SPSS 11.0 software was used for data analysis. A 95% confidence level was achieved by using multiple logistic regressions to compare the independent variables with medication no adherence. The logistic regression included the demographics such as living alone, religion, and economic status.

Major findings showed that 69% of the men and 75% of the women adhered to their prescribed medication. Length of stay in the United States of America was also a predicting factor along with demographics and cultural factors. The researchers concluded that more study was needed and interventions were needed to help this culture manage their blood pressure.

In a qualitative study, Connell, McKeivitt, and Wolfe (2005) explored how black Caribbean patients with hypertension understood their condition, and the strategies that they use in managing hypertension. In this grounded theory method, practice records were searched to identify black Caribbean patients with known and treated hypertension.

The study revealed that some participants were making reasoned decisions about blood pressure management, drawing on medical information, their own bodily experiences of illness, and sociocultural notions and practices. The ethical implications indicated that the persistence of these patients' beliefs and practices over a period characterized by significant advances in education, detection, and treatment of

hypertension highlights the strength of these beliefs, which may lead to medication use that diverges from that which is recommended.

Saratsiotou et al. (2010) in a quantitative study, using prospective observational methodology, explored the treatment adherence of cancer patients to orally administered chemotherapy in Greeks using a self-reported questionnaire. The results revealed that 99 patients completed the questionnaire (missing range from 1% to 8%). Unintended adherence was reported by 19 patients. Major cause was the beliefs about the treatment effectiveness. Some 16.7% thought the treatment was effective, and 62.5% believed their treatment was ineffective ( $p=0.03$ ). Intentional non-adherence was reported by 14 patients. Patients reported to have their illness less than 6 months reported 33.3% non-adherence, compared to 16.7% for those between 6 and 24 months and 8.3% for those 2 and 5 years ( $p=0.01$ ). The findings of the study revealed that Greeks have similar non-adherence pattern as in other countries. Confidence in treatment appears to be a major adherence determinant.

In a quantitative study, Delgoda, Younger, Barrett, Braithwaite, and Davis (2010) estimated the prevalence of the use of herbal medicines among persons on prescriptive medicines in Jamaica using a survey method. Three hundred sixty-six participants agreed to take part in the study. There were 306 adults and 60 children, and 243 adults (80.6%) and 45 children (75.6%) were engaged in the committant use of herbs and drugs. As a cluster sampling method was used to select participants, weighted data analysis that incorporated different levels of selection—county and parish levels—provided estimates within and across demographic and socio-economic groups. In addition, the Pearson chi-

squared statistic corrected the survey design. Data analysis was carried out using statistical package Stata version 9.0.

Results revealed that there is a high prevalence of herb-drug committant use in Jamaica, and awareness within the medical community and those monitoring adversities would serve well to mitigate risks from potential drug-herb interactions. The study concluded that economic indices, such as persons with higher salary ( $P < 0.1$ ) and those with health insurance  $P < 0.05$ , tended to have a lower rate of engagement in committant herb-drug use. The number of persons selected by the pharmacy was as low as three in some cases, which could have resulted in undue inflation of variability of parameter estimates-based these data. The study targeted those persons approaching pharmacy for purchase of their prescription medicine.

In summary, the previous articles on culture revealed that demographics, confidence in treatment, and herbal-drug committant are major antecedents to medication adherence. In Jamaica, there is a high herb-drug use among the residents, especially among the low income and uninsured residents. The majority of the elderly is retired and resides with families; thus, the risk of medication adherence is increased. The studies all focused on understanding the elderly. The studies revealed that culture plays an important factor in the perception of the elderly in different areas of the globe. This study sought to understand the experiences of the Jamaican elderly in relation to medication adherence.

### **Effects of Cost-Related Factors on Medication Adherence**

Piette et al. (2004) sought information about the cost-related medication underuse among chronically ill adults and the treatments people forego, how often, and who is at

risk in a survey study. This quantitative study was done between November and December 2002 by a nationwide panel of adults living in the United States. Panel members were identified from across the sociodemographic groups by random-digit dialing and a sampling frame consisting of all U.S. households with an assigned telephone number.

The results revealed that 18% of respondents cut back on medication use, owing to cost in the previous year, and 14% used less medication at least monthly. Although rates of underuse varied substantially across treatments, prescription coverage, and out-of-pocket costs were determinants of underuse across medication types. In conclusion, the researchers indicated that many chronically ill adults frequently cut back on medications owing to cost and inadequate prescription coverage, which may lead to adherence problems for many important medication types. Many also cut back on medication for one chronic illness to treat a more serious illness due to cost.

Heisler et al. (2010) explored hospitalizations and deaths among adults with cardiovascular disease who underuse medications because of cost in a longitudinal analysis. In this quantitative study, the researchers used a retrospective biannual cohort methodology across four cross-sectional waves of the Health and Retirement Study, a nationally representative survey of adults older than age 50. All analyses were performed in STATA 10. The findings revealed that middle-aged and older adults with cardiovascular disease who reported using less of their medication use because of costs were significantly more likely to report being hospitalized in the subsequent two years than those who had no cost-related medication underuse (adjusted predicted probability of 47% compared with 38%,  $p < 0.0001$ ). The more respondents reported cost-related



medication underuse during 1998 to 2004, the higher the probability of being hospitalized in 2006 (adjusted predicted probability of 54% among respondents compared to 42% among respondents reporting no underuse,  $p < 0.001$ ). This study revealed that underuse of medications due to cost-related factors meant more hospitalizations.

In an exploratory pilot study, Lau et al. (2008) researched how the cost of medication can influence patients' perception of the medication. In this quantitative study, they explored the level of importance of the drug in relationship to cost of the medication and if expense influenced the perception of the medication. A total of 20 participants were enrolled in the study. Ordinal logistic regression analyses were employed to test the association between perceived important and perceived worth of medication and the impact of cost. Medication importance was reported as 8.2 (SD 1.04) on a scale from 0 to 10 (0 not important to 10 being important). The factors that influenced the importance of medication were drug-related, patient-related (attitudes, etc.), and external factors such as family and friends. Regression analyses indicated an association between medication importance and inexpensive worth were (odds ratio [OR] 2.23;  $p = 0.002$ ) and an even greater association between perceived importance and perceived worth for expensive medications (OR 4.29;  $p < 0.001$ ). Findings show that medications were considered important if they were prescribed for a more serious health condition, and lower importance was placed on preventative medications used to extend life. In addition, if the medications cost more, they were perceived to be more important. Future research needs to examine if cost-sharing structures and perceived medication importance affect cost-related non-adherence behaviors as per researchers.

In 2012, Law, Cheng, Dhalla, Heard, and Morgan in a survey study researched the effect of cost on adherence to prescription medications in Canada. In this quantitative study, the responses of 5,732 people were analyzed through a Community Health Survey from data accumulated in 2007. The national prevalence of cost-related adherence was determined by using logistic regression to evaluate the association between cost-related adherence and a series of demographic and socioeconomic variables, including area of residence, age, sex, household income, health status, and prescription insurance. The results revealed that cost-related adherence was reported by 9.5% (Confidence interval (CI) 95%. People in poor health CI 95% (1.77-3.94, Odds Ratio (OR) 2.64), with low income (OR 3.29, 95% CI 2.03-5.33), and drug insurance (OR 4.52, 95% CI 3.29-6.20 and those who lived in British Columbia (OR 2.56, 95% CI 1.49-4.42) were likely to report cost-related issues with adherence. Findings revealed that 1 in 10 Canadians who receive a drug prescription reported cost-related issues with medication.

In conclusion of the cost-related articles, patients will delay filling a prescribed medication if they think the others medications are more important due to severity of illness or cost of the medication as perceived by the patient. The elderly Jamaican may not be different from any other elderly worldwide, and this might be the trend of elderly as the literature revealed. This study revealed the inner essence of the Jamaican elderly's thoughts as they perceive medications' worth and importance to their care. This study discussed the cost relating to medication, and it attempted to fill the gap of knowledge in the Jamaican elderly, which these articles did not explore, and formulated a theory to assist in the development of interventions to reduce cost-related adherence.

### **Effects of Literacy on Medication Adherence**

In a cross-sectional study, Gatti, Jacobson, Gazmararian, Schmotzer, and Kripalani (2009) investigated the relationship between beliefs about medications, health literacy, and self-reported medication adherence. In this quantitative study, patients (n=275) of various ages were selected systematically from inner-city pharmacy; 86.2% were African American, and 73.1% were women and could read at least high school level. The average age was 53.9 years. Multivariable logistic regression was used to determine predictors of self-reported medication adherence as determined by MMAS-8. Approximately half the patients (52.7%) reported low medication adherence MMAS-8 score of  $> 2$ . Multivariate analyses indicated several factors were associated with low self-reported adherence, including negative beliefs about medications, younger age, low medication self-efficacy, and Hyperlipidemia. Patients reporting low adherence were younger (mean age = 50.9 years) than patients with high adherence (mean age = 57.2 years), had lower medication self-efficacy (mean SEAMS score = 27.7 versus 33.5 for patients with high adherence), and were more likely to have depressive symptoms (53.1% of patients with low adherence versus 35.4% of patients with high adherence). Patients with high adherence were more likely to have diabetes (38.3% of patients with high adherence versus 24.8% of patients with low adherence) or hyperlipidemia (51.6% of patients with high adherence versus 36.9% of patients with low adherence). Health literacy was not independently associated with beliefs or adherence. Because poor adherence rates were found to be higher among African American populations, and this study's population was mostly African American, the risk for non-adherent behavior was higher. Two limitations of the study were noted: 1) The temporal association between

negative beliefs and low medication adherence behavior cannot be established from this cross sectional analysis, and 2) Medication adherence was self-reported, and it is possible that the patients overestimated or underestimated their adherence because of social desirability bias.

In a quantitative research study by Waldrop-Valverde, Jones, Weiss, Kumar, and Metsch (2008), low literacy and cognitive impairment were characterized in a sample of HIV-positive injecting drug users (IDUs) with their non-adherence to a medication regimen. The researchers hypothesized that the individuals with the low literacy score and cognitive impairment would be at the highest risk for non-adherence to a medication regimen. A sample of 57 HIV-positive IDUs were chosen. The variables were HIV men and women over the age of 18, and were also substance abusers from a larger study, who were on antiretroviral therapy, which causes neurocognition problems. The groups included high literacy/high cognition, low literacy/high cognition, and low literacy/low cognition. Chi-square and bivariate analyses were used to characterize the literacy and cognitive skills of the sample. Logistic regression was used to evaluate the relations to non-adherence. Major findings showed that low literacy and cognitive impairment placed HIV-positive drug users at high risk for medication non-adherence. It also showed that targeted interventions would improve skill deficits and improve adherence to HIV medication.

Kripalani, Gatti, and Jacobson (2010) examined patients' use of medication management strategies (e.g., reminders, pill boxes) to determine how their use influences the relationship between patient characteristics and medication adherence in retrospective and cross-sectional quantitative study. In an inner-city primary care clinic in Atlanta,

Georgia, 434 patients with coronary heart disease were examined by both refill adherence and self-reported adherence. After written informed consent, demographic characteristics, and medical co-morbidities were collected by interviewer-assisted questionnaire. The Rapid Estimate of Adult Literacy in Medicine (REALM) categorized patients as possessing inadequate (score 0-44), marginal (45-60), or adequate (61-66) health literacy. Patients also completed the Mini-Mental State Examination (MMSE), on which scores <24 indicate cognitive impairment. Patient characteristics, refill adherence, self-reported adherence, and medication management strategies were summarized. Spearman's rho tested the correlation between CMG and MMAS-4 scores.

The results revealed that most common strategy for managing refills was seeing a near empty pill bottle (89.9%) and for managing daily medications. The results associated medications with daily events (80.4%). Age < 65 (OR = 1.7), as well as marginal (OR = 2.0) or inadequate health literacy (OR = 1.9) were independently associated with low refill adherence. Patients <65 also had lower self-reported adherence (OR = 1.8). Adjustment for use of medication management strategies did not substantially change these relationships. Reliance on reminders from friends or family to take medications or waiting to refill a medicine only when the bottle was near empty, each were associated with threefold greater odds of non-adherence. Age <65 and marginal or inadequate health literacy were independently associated with medication non-adherence. In conclusion, use of medication management strategies did not explain these relationships.

A cross-sectional observational study Hegazi, Bailey, Ahadzie, Alabi, and Peterson (2010) explored literacy, education, and adherence to antiretroviral therapy in

Gambia. The relationship of formal education, Koranic education, and literacy to self-reported adherence, missed appointments, and virological outcomes was examined. This quantitative study was conducted at the MRC Genitourinary Medicine clinic in Gambia. Participants were over the age of 18. Literate participants had similar benefit at 12 months with improved virological outcomes associated with degree of literacy ( $p=0.003$ ). Information on education and literacy systematically collected before ART initiation was compared against selected adherence outcomes. Formally educated patients were significantly more likely to achieve virological suppression at both six and 12 months (87% vs. 67%, OR=3.13,  $P=0.03$ ; 88% vs. 63%, OR=4.49,  $P=0.007$ , respectively). Literate patients had similar benefit at 12 months (OR=3.39  $P=0.03$ ), with improved virological outcomes associated with degree of literacy ( $P=0.003$ ). No significant correlation was seen between sociodemographic characteristics and missed appointment. The study suggests that literacy, formal education, and possibly Koranic education may have impacted adherence to the therapy. The researchers concluded that a better understanding of barriers to facilitators of adherence will enable the more effective, targeted adherence support programs and clinical interventions.

The articles revealed low literacy, cognitive impairment, and skill deficit are all important characteristics of medication adherence. It is recognized in these articles that strategic interventions are needed to enhance successful medication adherence. This study of the elderly Jamaican sought to provide a theory that may facilitate creation of the strategic interventions and planning to decrease medication adherence in Jamaica and possibly help the healthcare system to improve the well-being of their elderly and reduce the cost to the government.

In conclusion, the reviewed literature revealed that beliefs, attitudes, culture, cost, and literacy are important or related characteristics of medication adherence. In fact, these characteristics are antecedents and consequences of medication adherence in the elderly population. Much research conducted on medication adherence has been with other disciplines and not nursing and has taken place in a quantitative setting. From the literature, innovative strategic interventions and educational programs would benefit the elderly's needs in Jamaica as well as psychological (elderly) approaches to create a therapeutic learning experience. Education seems to be a major factor as the low literacy of the elderly is assessed. There are limited studies found on the topic of the elderly Jamaicans and the effects of literacy on their understanding of medication adherence. This study addressed critical factors that influence the Jamaican elderly's medication adherence.

### **Experiential Context**

I have worked with the elderly population as registered nurse for 15 years. During this period, I have seen the frustrations on the faces and have heard the elderly's voices regarding their opinions on multiple medications. I have seen the effects of poor medication adherence and the comorbidity that it causes in the elderly. My experience as a registered nurse has opened my eyes to the issues related to medication adherence and the associated negative outcomes such as frequent readmission to the hospital setting and even death. This behavior is risky and life threatening and increases comorbidity of the illnesses already sickening the elderly population. Education and knowledge may be critical factors for medication adherence. My personal experiences of medication adherence have been with my own elderly parents whose lack of adherence to medication

regime has placed them in life-threatening situations. As a clinician, I have had the opportunities to meet people from every culture, and the interest of how the elderly mind functions is quite fascinating. It is amazing that some elderly want to live and will adhere to prescribed medication, whereas others are despondent and cry to their demise with each pill administered.

Poor medication adherence is occurring more often than the public wants to admit. It is necessary for the researcher to be aware of suppositions, personal beliefs, preconceived beliefs, and conceptions during this research procedure to decrease biases. The knowledge of the research procedures relating to grounded theory method is necessary to identify key explanatory ideas, characteristics, and consequences of medication adherence, and this knowledge is problematic if not known.

In qualitative research, it is important for the researcher to put aside his or her own feelings and opinions about the phenomenon of interest to achieve the true essence of the participants' experiences. Basically, I had to step outside the experience and look at it without any assumptions, prejudgments, or perceptions that medication adherence issues may be present or not. This gave me a new understanding of the problem from the participants' standpoint. Given my experience and involvement in this area, it was important to bracket. Bracketing is ensuring that the subjective data of the experience is not prejudiced and that the data is not intuiting (Crotty, 1998). Writing down my thoughts and any related ideas in journaling that benefitted this study was done throughout this research. The researcher was aware that ideas are sudden, so an audio-tape was placed in the possession of the researcher all of the time. By doing this, the pure essence of the elderly Jamaican's experience was voiced.



As a researcher with elderly parents on multiple medications for multiple chronic illnesses, I had to consider reflexivity for this research to be trustworthy. Researchers influence research, and research processes influence the researchers (Gilgun, 2010). Discussing my thoughts and feelings with others or close friends helped me to reflect on any prejudices or biases. Writing my thoughts or experiences in a journal also helped to reduce my influences and increase my accountability to my study. Writing, reflexing, and discussing my thoughts were important, as I am fallible as a human being. I was aware of what I thought or did in this research study.

I was fortunate to have the knowledge that allowed me to know the risks of medication non-adherence and to have the privilege of an insurance coverage to help to lower cost of healthcare and provide me, to some extent, with excellent doctors. I am aware that there are many less fortunate across the globe. Therefore, I did not pass judgment or assumptions regarding the limitations of the participants to healthcare issues.

Past professional experiences had provided me with some theoretical sensitivity, which had aroused my curiosity into the problem. However, I acknowledged any assumptions or prejudices regarding personal opinions on medication adherence problems in the elderly Jamaican. I suspended all judgment on the actions of the Jamaican elderly while conducting this research. I strove to maintain a receptive, non-judgmental, curious, and reverent attitude to the elderly Jamaican and the government of Jamaica while conducting this research study.

### **Chapter Summary**

This chapter presented a limited literature review on medication adherence and its antecedents and attributes using computerized data-bases such as CINAHL and ProQuest.

The findings supported the necessity of the study. Studies in this chapter set the stage for the necessity of medication adherence research in elderly Jamaica as it has been studied in various cultures around the world. This chapter revealed that medication adherence has special characteristics that might be predictors to poor adherence in the elderly residing in Jamaica. However, the elderly Jamaicans' beliefs and attitudes to medication adherence remain tentative until this grounded theory study unfolds. Finally, the researcher's experiences and biases were discussed.

## CHAPTER THREE

### METHODS

The purpose of this grounded theory study was to determine the critical factors that affect medication adherence in elderly Jamaicans residing in Jamaica. The aim was to generate a theory about medication adherence in the increasing elderly Jamaican population and to develop a substantial theory that would promote effective interventional and educational strategies about medication adherence in the elderly Jamaican. A qualitative approach using grounded theory method was used to guide this study.

In qualitative research, methods are designed to reveal connotations that people have to real-life experiences. Munhall (2012) stated, “Qualitative researchers break new ground by revealing what had been concealed because they look beyond appearance” (p. 11). Qualitative research is used when a more involved study is needed. It is used when the voice of the participant needs to be heard or when his or her story needs to be told. Creswell (2007) noted that is a form of inquiry in which researchers make an interpretation of what they see, hear, and understand (p. 39).

Qualitative approach was an excellent choice for this study as it examined the attitudes and behaviors of this select group of people. It gained a deep meaning regarding the truth about medication adherence in the elderly in Jamaica by letting the healthcare workers know their thoughts or feeling. Grounded theory research design was appropriate for exploring the elderly people’s experiences in their own words to develop a better understanding about medication adherence (Corbin & Strauss, 2008). An understanding of how beliefs and attitudes predisposed elderly Jamaicans to medication

adherence enabled the development of strategies to assist nurses toward effective health promotion in the Jamaican community.

### **Research Design**

Ground theory research was chosen for this study because of its human interaction process. It was developed by two sociology professors, Barney G. Glaser and Anselm L. Strauss in the 1960s (Glaser & Strauss, 1967). Although grounded in sociology, Glaser and Strauss (1967) focused on theory. They believed that theory should be tested logically both internally and externally and be seen through the lens of the world by sensory experience and experiment. Theory verification suggests that a statement is meaningful only and if there are observations that verify it (von Dietze, 2001, p. 14). Their original work included an inductive study examining the dying processes of patients with cancer. They wanted to discover the facts about patients' behaviors during the process of dying.

Glaser and Strauss (1967) reported that a theory should include predictions, explanations, and interpretations of the facts so that even individuals not researchers should be able to comprehend the material presented. Grounded theory can be conducted both quantitatively and qualitatively, but it was used qualitatively in this research study because of its flexibility of the research design that it offers (Roberts, 2008). Grounded theory was excellent when a theory was not available about a problem. Sometimes the problem is present, but it is incomplete because it does not address the variables of interest to the researchers (Creswell, 2007).

The objective of grounded theory is to generate a theory that explains a series of behaviors pertinent and challenging for those involved (Glaser, 1978). Grounded theory

research design was appropriate for exploring the elderly people's experiences in their own words to develop a better understanding about medication adherence (Corbin & Strauss, 2008). An understanding of how beliefs and attitudes predisposed elderly Jamaicans to medication adherence enabled the development of strategies to assist nurses toward effective health promotion in the Jamaican community.

The basic idea of grounded theory is to read and reread data or field notes and to discover variables and their interrelationship. The data does not have to be textual but could be behaviors, such as interactions or events at a mall or a football game. Notes may be entered in the form of a diary.

The five key aspects of grounded theory are as followed:

1. The conceptual framework is generated from the data rather than previous studies.
2. The researcher attempts to discover dominant processes in the social scene rather than describe the unit investigation.
3. The researcher compares data with all other data.
4. The researcher may modify data collection according to the advancing theory; that is, the researcher drops false leads or asks more penetrating questions as needed.
5. The investigator examines data as he or she arrives and begins to code, categorize, conceptualize, and write the first few thoughts concerning the research report almost from the beginning of the study (Speziale & Carpenter, 2007).

The pragmatist's view was used to explore the truth about behavior of participants in Jamaica. This view makes it an appropriate choice for grounded theory method. The pragmatist believes in freedom of choice and focuses on the outcome of the research (the action, situations, and consequences of the inquiry) rather than the antecedents (Creswell, 2007). Thus, grounded theory from a pragmatist view became an excellent choice for the study.

Developing a theory provides a way to identify and express knowledge about the principle of practice (Walker & Avant, 2011). Theories gave an understanding to the phenomenon of interest by systematically arranging and organizing statements made by the participants to give an essential viewpoint. Walker and Avant (2011) stated that theories are consistent group of relational statements that present a systematic view about a phenomenon, which is useful for description, explanation, prediction, and prescription or control (p. 61).

Developing theory by using the method of grounded theory gave a new insight into the lives of the elderly Jamaican. This insight promoted evidence-based clinical care and scientific theory for practice in the area of nursing care for the Jamaican elderly and the effects of medication adherence on their health practices. It helped to predict the basis actions for the elderly in Jamaica.

### **Sample and Setting**

The main focus of this grounded theory study was to gather data that would create concepts, patterns, categories, and themes to generate a theory regarding the Jamaican elderly's beliefs and attitudes to medication adherence. With this population, rich data could be collected on the elderly in Jamaica for a research study.

Data was obtained through structured individual interviews and a focused group. Data collection and data analysis was conducted in two phases. Phase I was faced-to-faced individual interviews between the participant and the researcher. Open-ended questions were used to collect the data using the steps according to Strauss and Corbin. Interviews were audio-taped. The interview took place at a mutually agreed upon area in Montego Bay, Jamaica. The area was comfortable and private to allow the free impart of information between researcher and participant. The intent of the interview was to have the participants' impart with information about their beliefs, thoughts, and perceptions to address the factors that influenced the attitudes of the elderly Jamaican to medication adherence. This brought forth their unique voice to the research community. The dialysis clinic in Jamaica was sent flyers that alerted the elderly to the study. The flyer sought their voluntary participation also. An informed consent was required before the interview began.

After data was categorized, from Phase I, the focus group (Phase II) was interviewed to confirm results from Phase I. Phase II consisted of the focus group and the researcher only. The focus groups consisted of five participants who had similar backgrounds and experiences as the participants in Phase I. This focus interview was conducted face to face and lasted for 60 minutes at the business of one of the participant's children. The purpose of this group was to support the data collected from Phase I by confirming the themes and concepts that emerged from Phase I data collection and analysis. An informed consent was required to be signed before the interview.

Purposive and theoretical samplings were used in this research study. Creswell (2007) stated that purposive sampling means that the inquirer selects individual and sites for study because that can intentionally inform an understanding of the research problem and central experience in the study. Purposive sampling added credibility to a research study (Patton, 2002). Both groups used in the study consist of purposive sampling. Creswell (2007) described theoretical sampling as a homogenous sample of individuals similar in backgrounds. According to Strauss and Corbin (1998), theoretical sampling is a process that occurs simultaneously as data is being collected and coded. Strauss and Corbin also noted that theoretical sampling gives way to theory formation, which is the intent of this grounded theory study. Research participants consisted of 17 elderly (individual and focus group) with ages ranging from 65-85 years on 2 or more prescribed medications.

Recruitment was done by flyers placed in the dialysis center after consent was obtained from both the administrators and the participants. Snowballing was used also to recruit voluntary participants who fit the criteria for both groups. The first group consisted of 12 elderly participants on 2 or more medications and had a diagnosis of chronic illnesses such as diabetes, renal disease, hypertension, arthritis, or cardiac problems. The participants were interviewed individually. Open-ended questions were used to collect voluntary information in relation to the problem in a comfortable atmosphere.

### **Access and Recruitment of the Sample**

The dialysis clinic was the study site in Jamaica and was contacted for access for the study. Verbal and written approval were given by the site' administrator. Upon



approval from Barry University Institutional Review Board (IRB), the site administrator was contacted for access and for permission to post the recruitment flyers. Once formal access from the dialysis clinic site in Jamaica was granted, the flyers (Appendix D) were mailed to the site administrator to post on the bulletin boards and in the main lobby of the clinic and at the nurses' stations. The flyers described the study, included the inclusion and exclusion criteria, provided the researcher's contact information, and offered an invitation for the elderly to participate in the study. Recruitment occurred by snowball sampling also. The study participants contacted the researcher by telephone. They were informed that participation was strictly voluntary and had no bearing on the services they received at the dialysis clinic.

The participants were recruited for two phases. Phase I consisted of 12 participants. Phase II included a focus group of five participants who claimed adherence to medications.

In Phase I, which included face-to-face individual interviews, the voluntary participants were the elderly Jamaicans who stated that they did not take their medications as prescribed by their physicians. A meeting was scheduled at mutually agreeable places at which time the researcher once again, confirmed inclusion criteria. The study criterion was reviewed, and any questions or concerns expressed by the participants were discussed and clarified. If they agreed to participate, the consent was reviewed with emphasis on the voluntariness and confidentiality of the study. The elderly were advised that he or she may withdraw at any time with no effect on his or her participation. They were informed that they received a small token of appreciation on the

form of \$10 US whether or not they completed the study. Upon agreement to participate in the study, they were asked to sign the consent.

Phase II included five elderly individuals from the dialysis clinic who stated they adhered to their prescribed medication, meaning they took their medications as prescribed by their physician. This group was used for confirmability. Emerging themes and categories obtained from the analysis of the individual interviews of Phase I were reviewed with the participants of Phase II. Additionally, their views about medication adherence were also sought to determine if there was any marked differences in their beliefs and attitudes about medication adherence. The participants met as a group at a mutually agreed area at a private office in Montego Bay. Before beginning the session, the study criteria were explained, and any questions or concerns expressed by the participants were discussed and clarified. Once they agreed to participate, the consent was reviewed and signed with emphasis on the voluntariness and confidentiality of the study. The elderly were advised that they could withdraw at any time without any adverse effects. They were informed that the researcher would maintain confidentiality to the extent possible but that the researcher cannot guarantee complete confidentiality. They were informed that they would receive a small token of appreciation on the form of \$10 US whether or not they completed the study. Upon agreement to participate in the study, participants were asked to sign the consent.

### **Inclusion Criteria**

The criteria for the study represented two groups. The individual participants (Phase I) met the following criteria: a) elderly Jamaicans (65-85 years), b) English-speaking, c) on two or more prescribed medications, d) one or more chronic illnesses, and

e) did not adhere to medications. The participants in Phase II included: a) elderly Jamaicans 65-85, b) English-speaking, c) on two or more prescribed medications, d) one or more chronic illnesses, and e) who stated adherence to their prescribed medications.

### **Exclusion Criteria**

The criteria for exclusion to Phase I included: a) non-English-speaking Jamaicans, b) elderly on fewer than two medications, c) less than 65 or over 85 years, and d) no chronic illnesses. Phase II is the same as Phase I but excluded if they verbally stated non-adherence to medications.

### **Ethical Considerations/Protection of Human Subjects**

The aim of this study was to explore elderly Jamaicans' belief and attitudes to medication adherence, with the aim of creating a theory from the data accumulated. The theory that emerged from this study would be shared with the scientific world, but the process of ethics was carried out under the rules of Barry University and the Internal Review Board for the dialysis clinic. The researcher completed the National Institute of Health's training course on the protection of human subjects. Letters of access were sent to the dialysis clinic where participants were obtained. The study presented minimal risk, and the patients' safety and comfort was maintained at all times. Researchers were expected to lessen risks of physical, psychological, social, or economic harm, or discomfort to participants (Israel & Hay, 2006).

Flyers were placed in the clinic in Jamaica for recruitment. Snowballing was used as recruitment for participants also. Seven of the participants were interviewed by snowballing. The flyers contained important information of access to the researcher, including a gift of \$10 US to each participant. This was a gift of appreciation and was

given to each participant even if interview was not completed. The procedures of the study were explained to both groups of the study. The patients were presented with informed consents (Appendix B) prior to the beginning of the study. Munhall (2012) stated that in fieldwork that existential and trustworthy requires cooperation between researcher and the participants (p. 496). The patients were given pseudonyms of their choice to protect their identity. The participants will be referred to by their pseudonyms in any published article.

According to deontology theory, obligations do not flow from consequences but instead from the core expectation that the researcher should treat others as he or she wants to be treated (Israel & Hay, 2006). The participants were protected at all times. Confidentiality was essential. Munhall (2012) described this as confidentiality of the exchanges between the researchers and the participants and the informed consents should be clear about the data in the study. Their information and interview notes were kept in a locked safe at the researcher's hotel during the time of the study. The audio-tapes were identifiers and were destroyed after the completion of transcription and selective coding. The signed consents were kept separately in a locked safe. All data will be destroyed after five years.

### **Data Collection Procedures**

Data may be collected by several processes. In qualitative research, data is collected by interviewing, observations, group interviews, journaling, photographs, videotaping, or audiotaping. In grounded theory, data collection is very important, and the researcher has to become fully involved and familiar with the process. Familiarity with equipment is very important also, as valuable information may be missed. It is best

to bring extra equipment in the field. Munhall (2012) stated that access to power outlets and extension cord is important in the interview process.

Once Barry University's IRB approved the study and all permissions (Appendix G) were received from the clinic administrators in Jamaica, data collection began. The researcher sent flyers (Appendix D) to the sites for public posting and distribution prior to her arrival to Jamaica. Flyers were placed in the dialysis clinic in Jamaica by the administrators prior to researcher's arrival in Jamaica. In the dialysis center, flyers were placed in the reception area and on the bulletin board. Participants saw flyers as soon as they entered the clinic site. The flyers included the time frame for interviews, which was a three-week period and contact number of researcher. Then, the researcher flew to the island of Jamaica.

Data collection was conducted in two phases. The first phase was the individual interviews of 12 participants. Saturation was reached at 10, but 2 more participants were interviewed to confirmed saturation. Prior to starting the interview, the study participants were informed regarding their rights as participants; information about the study, and clarifications were offered to any questions or doubts they might have had. Informed consent was obtained (Appendix B) for the study. The consent form along with the demographic form were given to the participants prior to the interview. The participants were informed that the interview would take one hour, and there would be another brief interview lasting up to 30 minutes to verify and clarify their answers (member check). An appointment was set up for their return, and they were advised that the study would not be completed until the second interview (member check) was done. They were told

that member check may be completed by telephone if they would prefer or if one were accessible.

Before the interview began, participants were asked to choose a pseudonym that would identify them throughout the study. The pseudonym did not appear on the consent. Informed consent was signed. The demographic data sheet was given for completion. The participants were informed of the audio-taping of the interviews. They were advised that the audio-taping would be terminated at their request. The purpose and ethical considerations (withdrawal, storage of material, and confidentiality) of the study were stated to the participant. Phase I included the individual face-to-face unstructured interviews. Once the participants agreed to the study, the consents (Appendix B) were signed and kept separate from the demographic questionnaire (Appendix C). Then, the interview commenced. The interviews took place at a mutually agreed upon venue. Munhall (2012) stated that interviews were fruitful if participants were comfortable and thought unthreatened with little disturbance. Time was respected. The interviews lasted 30-60 minutes approximately. The research started with open-ended questions and was used as the interview guide for probing (Appendix E).

During the interview, the researcher listened attentively. The researcher took notes throughout the interviews regarding non-verbal communication, areas for further exploration, and ideas for future interviews. Note taking was minimal and did not interfere with the participants' process.

Upon completion of the interview, the participants were thanked and informed that once the data was transcribed, the researcher would contact them to schedule a follow-up interview to review the transcript, clarify questions, and conduct member

checking. The participants were given a small token of appreciation in the form of \$10 US for their participation in the study. Journaling and memo writing took place immediately to two days after each interview in a quiet area to further document any additional cues that may need clarification with the second interview. According to Corbin and Strauss (2008), memo writing must begin early in the study, recording the events, environment, and expressions of the participant, which aid in category development. The researcher bracketed by removing all pre-existing thoughts about medication adherence from the literature reviewed.

Phase II included a focus group. The group had five participants. The data was collected to complete the analytical process following the grounded theory tradition. The meeting took place at a mutually agreed date, time, and place. The meeting lasted for 70 minutes. Consents were obtained (Appendix B). Demographic data sheets were completed. The focus group meeting started with a general open-ended question (Appendix F) and continued with questions to confirm, support, or refute the themes and categories generated from the one-to-one (individual) interview. The group was advised of audio-taping, which would be stopped at their request. During the focus group meeting and the study, the group participants were reminded that they had the right to discontinue participation in the focus group. They could stop the recording. The group participants could withdraw consent for some or all of the study or request that parts of the interactions be excluded from the analysis and write-up. At the conclusion of the focus group, the participants were thanked for their participation and asked if they had any questions or concerns about the study. A \$10 US gift of appreciation was given to

each member of the focus group. Participants were advised that if they wished to withdraw, the \$10 US was theirs to keep.

### **Interview Questions**

Interviews are done during research to collect rich descriptions of the topic of interest from the interviewee. During an interview, the interviewer listens purposely for key words or phrases and asks for clarification if needed. Munhall (2012) reported that interviews play a central role in the data collection in the grounded theory study. The interviewer helps to guide the interview by asking probing, follow-up, and guiding questions. Munhall (2012) stated that there are different ways to conduct an interview. It can be individual or focus group, structured or unstructured. There are different types of interviews (e-mail, face-to-face, focus group, online focus group, or telephone interviews). The interview may be audio-taped or written but has to be transcribed in the end.

This research study consisted of individual (Appendix E) and focus group (Appendix F) interviews in a semi-structured and unstructured setting. In a semi-structured setting, the interviewer used an open-ended question that allows room for some deviation based on the response of the participants. The unstructured setting permits the interviewer to ask questions not on the list but related to the problem (Wood & Ross-Kerr, 2011).

Participants in the study were audio-taped. Interviews began with the purpose of the study. Broad open-ended questions were used so that the participants could share their experience in detail and further probe in the matter so that a tentative theory could be formulated. In this study, guiding probing questions were asked to explore the attitudes



of medication adherence in the elderly in the Jamaica. In Appendix E, a list of the questions was presented to assess the adherence of these elderly Jamaicans.

### **Demographic Data**

Demographic data was collected on all participants (Appendix C). It contained the gender, age, marital status, highest level of education, income level, history of illnesses, and a list of medications currently being taken. The demographic data generated rich varying information on each participant as each individual was different. Educational level and income status could generate rich information as noted from the literature reviewed.

### **Data Analysis**

Data analysis followed the grounded theory techniques of Strauss and Corbin (see Figure 4). Strauss and Corbin (1990) outlined three basis steps of the data analysis for grounded theory. These were: a) opening coding, b) axial coding, and c) selective coding. An inductive method was used to answer the inquiry related to critical factors that influence beliefs and attitudes of the elderly Jamaican to medication adherence.

Figure 4 represents the process that was used to formulate the emergent theory.

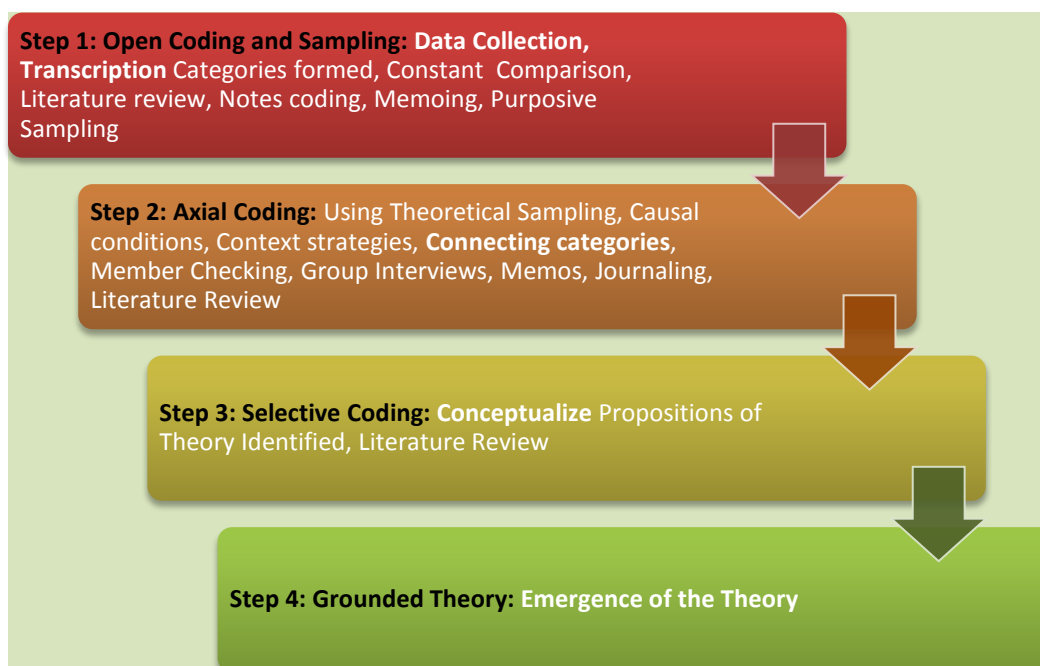


Figure 4. Smikle (2012). Data Analysis Process. Adapted from Strauss and Corbin (1990).

Data analysis was achieved through the art of reading, rereading using constant comparative of the data collected to build a substantive theory about the problem stated. The data analysis phase occurred after each transcription of the interviews by listening to the tapes repeatedly to determine meaning and began to develop a theme. Constant comparison of themes from interviews and data collected was conducted until saturation was reached. Following Strauss and Corbin's steps, the investigator examined data after the interviews. Then, she began to code, categorize, conceptualize, and write the first few thoughts concerning the research report almost from the beginning of the study (1990). Coding the data allowed the researcher to examine the information collection and break it down to themes, thus categorizing the information.

In Strauss and Corbin's first step (open coding), the researcher compared data to identify an emerging theory by finding the constant theme among the interviewees. The researcher had to immerse herself into the data, sorting and coding the data. Table 1 depicted the open coding from the current study.

Table 1

*Open Coding*

| October 31, 2012   | Open Coding |
|--|-------------|
| Eunice stated: I take my medicines for long life and health  | thoughts    |
| Sometimes I take them ... but <b>not all</b> the time  |             |
| It is important to take them ... but I will miss them for a day or two   | behavior    |
| Then I will take them the regular way ... Cost of the medication is my problem   | cost        |
| Notes: Calm and non-chalant during the interview.  |             |
| Memo: Need to explore meaning of 1) regular way, 2) long life, and 3) health. It was clear that she believed that medication was not a factor of health. |             |

The researcher compared the material and made connections by developing the main ideas and an observable fact (axial coding). In axial coding, the researcher took the initial categories and described the relationships between each. This was done by examining the data in minute sections made of individual words, phrases, and sentences (Creswell, 2007). It related categories to one another and gave categories dimension. Axial coding follows open coding and asks the questions of who, what, when, where, why, how, and of what consequence. With these questions, the researcher related structure with process. This was important to the researcher as structure or social

condition was the grounding where problems or issues related to the phenomenon arose or emerged (Strauss & Corbin, 1998). The themes that emerged were: believing, self-efficacy, supporting, and socio-economic factors. These categories were connected around the axis of the concept by supporting the subcategories that arose and were considered the bond that held the building blocks together for theory development as recorded by Strauss and Corbin. These themes were presented to the focus group for confirmation. Table 2 shows an example of axial coding.

Table 2

Axial Coding

| November 20, 2012   | Axial Coding              |
|---|---------------------------|
| Betty stated: I always take my pills. I don't want to get sick. | Self-Efficacy             |
| I take Insulin. My daughters monitor the sugar.                 | Supporting                |
| There are certain foods that I cannot eat too.                  | Believing                 |
| I don't want the sugar to go up.                                |                           |
| I have so much pain from the arthritis.                         |                           |
| I have to take my medications despite the cost                  | Socio-economic<br>Factors |
| Memo: Very sad face. Seems like she had lots of regrets.        |                           |

Selective coding took place after axial coding. The last step in coding in this tradition is selective coding. Strauss and Corbin (1998) referred to this phase as selective coding because the different categories selected are interrelated, and they make a perfect fit for a storyline to be produced that explains the medication adherence in the elderly Jamaican. Selective coding occurred as one central concept was chosen that was abstract

enough to capture the remaining categories. Memos were kept to track the theoretical development. The process was constant, and researcher reflection was important to relate concepts and identify other concepts that need further development (Corbin & Strauss, 2008). By merging the results of the axial coding, the researcher began to formulate a scheme to show the interrelation between the recognized categories. Selective coding was conducted until saturation was reached and no new information or categories arose. The language of the study was identified with short descriptors known as in vivo codes (for survival and coping strategies). The exact words of the participants were used to bring life to the study. The themes were analyzed and categorized through open coding, axial coding, and selective coding to answer the inquiry about the critical factors that influence the beliefs and attitudes of the Jamaican elderly to medication adherence.

A narrative format of this story will be presented in the following chapter, which includes the theme of Eudaimonia that emerged from the concepts, subcategories, and categories throughout this study.

### **Research Rigor**

With any research study, trustworthiness is a major factor. The aim of trustworthiness in a qualitative research is to support the reasoning that the research is worth reading (Lincoln & Guba, 1985). Therefore, the accuracy of a research method is based on its trustworthiness. Roberts (2008) reported that trustworthiness is ensuring that research findings follow the steps in a data analytical process to demonstrate that the findings are not based on personal opinions but on a rigorous analytical process. Different criteria have been developed to ensure this accuracy and assurance of quality.

In qualitative research, there are four criteria that have to be met for this to occur. These are credibility, dependability, confirmability, and transferability.

### **Credibility**

Credibility was noted when the researcher verified the transcription of the interview with the participant before analyzing the data for theory development. Member checking is one of the best ways to check for credibility. Credibility can be increased by conducting follow-up interviews. Lincoln and Guba (1985) reported that confidence is in the truth of the findings.

### **Dependability**

Dependability is the stability and consistency of the results. Lincoln and Guba (1985) noted that dependability shows that findings are consistent and could be repeated by any researcher that wants to do further study on the topic. Conducting the research by discussing the views of the Jamaican elderly through focus group, observations, and individual interviews provided an avenue for verification of the data and valid discussion of the concepts that ground the data.

### **Confirmability**

Confirmability is examining the data for the researcher's biases. It is a degree of neutrality or the extent to which the findings of a study are shaped by the respondents and not by researcher bias, motivation, or interest (Lincoln & Guba, 1985). Confirmability was achieved in the study as the researcher followed up with direct quotes from the participants after transcribing to ensure accuracy of the data.

**Transferability**

Transferability refers to the findings of the study being applicable to other situations or similar groups (Lincoln & Guba, 1985). The study can be predictive of a similar population at a different time in a different setting by another researcher. In other words, another researcher may continue this study in another population from the data collected.

**Chapter Summary**

This chapter revealed the purpose of the qualitative research, design study from grounded theory method, and how it would be used to understand the attitudes of medication adherence in the elderly Jamaican population. The chapter described the samples, ethical considerations, and the data collection and analysis using Strauss and Corbin's five steps of grounded theory to formulate the theory. The study used the four criteria (confirmability, transferability, dependability, and credibility) to ensure trustworthiness so that a generalize theory can be explored and reproduced in the future.

## **CHAPTER FOUR**

### **FINDINGS OF THE INQUIRY**

The purpose of this grounded theory study was to determine the critical factors that influenced medication adherence in elderly Jamaicans residing in Jamaica. The aim was to generate a theory about medication adherence in the increasing elderly Jamaican population and to develop a substantial theory that will promote effective interventional and educational strategies about medication adherence in the elderly Jamaican. A qualitative approach using grounded theory method was used to guide this study.

This chapter describes individual and focus group participants' interview information, categories, and emergent themes originating from the data. The data collection and analysis was conducted by the utilization of Grounded Theory research methods. The two overarching research questions that guided this inquiry were:

- 1) What are the critical factors that influence the beliefs and attitudes of the elderly Jamaican to medication adherence?
- 2) What are elderly Jamaicans' attitudes and behaviors regarding medication adherence?

To obtain answers to these questions, interview questions were framed to obtain the information (Appendix E).

#### **Overview**

Twelve elderly participants were interviewed individually in Phase 1 of the study. In a focus group setting (Phase II), five participants communicated their perceptions, attitudes, and behaviors regarding medication adherence. Theoretical sampling was achieved by conducting the focus group interviews. The data from the interviews were analyzed, and the emergence of the core basic social process became evident. From the



data, patterns, and relationships were evident, and this led to a group of concepts that congregated into themes. The themes that emerged from the study findings: believing, self-efficacy, supporting, and socio-economic factors. The core basic process that emerged from the findings of this study was *Eudaimonia*.

Data collection began after approval of the Barry University Institutional Review Board and from the Ministry of Health in Jamaica. Access to the dialysis center was obtained from administrator of the dialysis center. Flyers were placed in the dialysis facility to recruit participants once access was granted. Snowballing was also used to collect the sample also. The researcher flew to Jamaica to begin data collection. Open sampling was initiated by interviewing participants who fit the criteria and were purposively selected. The sample selected represented elderly Jamaicans that fit the criteria for the study and therefore could provide insight regarding the phenomena being studied. Semi-structured interviews were used, as they are an appropriate method and provided a means by which individuals could relate their perceptions of their medication use in their own words. An advantage of using semi-structured interviews was that it allowed the interviewer to tailor the questions and to probe into innovative lines of inquiry prompted by what the participants disclose.

Emergent categories and themes were ascertained from data gathered from individual interviews, focus group interviews, and researcher's memos. The coding processes highlighted the ability of how the participants respond to or shape the happenings in which they were involved. These happenings also revealed how individuals adapt to or misalign their actions or interactions in response to the social problem or issue (Strauss & Corbin, 1998). Memos were written, cataloging codes, and

differentiating possible relationship with the other codes. Dominant categories, subcategories, and the core basic social process emerged as the data were analyzed. The emerging codes and categories were constantly checked against the data that had been analyzed, and the new data was analyzed allowing the researcher interpretively to analyze the information and develop a theory closely linked, i.e., grounded in the data (Denscombe, 1998). The following was a description of those participants whose data contributed to the emerging theory.

### **Characteristics of the Participants**

Two groups of participants were interviewed for this study. Participants voluntarily agreed to participate in the study. The first group (composing of 12 elderly Jamaicans who did not adhere to medication regime) was interviewed. The focus group was conducted after the interviews with the first group. The focus group could confirm the theoretical categories that materialized from the researcher's analysis of the individual participants' data. Participants' characteristics were documented using a demographic questionnaire. The researcher could monitor the characteristics' variables, and this in turn enhanced the understanding of the participants' similarities and differences in their perception, behaviors, and attitudes. Confidentiality was maintained by asking the participants to choose pseudonyms throughout the study. The next section of this paper reveals an aggregate of the participants' characteristics.

### **Demographics of the Participants**

The study was explained to each individual participant in detail. Each individual voluntarily agreed to participate in the study. The first group of 12 individual participants who did not adhere to his or her physician's order was interviewed. The

focus group was conducted after the individual interviews were conducted. The focus group's characteristics were presented in detail later in this chapter.

The individual participants interviewed lived in rural Montego Bay, Jamaica. All the participants were retired and living at home either by themselves or with adult children or spouses. The age of the 10 female participants (83.33%), and two male participants (16.67%) ranged from 65 to 85 years with a mean of 74.75 years. Educational level varied with two (16.67%) possessing some college education and other 10 (83.33%) highest level of education were primary school. Primary school in Jamaica is equivalent to elementary education in the United States. All individual participants' annual household income was less than U.S. \$10,000. All participants were diagnosed with three or more chronic illnesses that included hypertension, diabetes, renal failure, high cholesterol, arthritis, gout, chronic obstructive pulmonary disease, asthma, glaucoma, and thyroidectomy. Eight (66.67%) participants somewhat disagreed that they received sufficient education and consultation about their medications from their healthcare provider whereas three (25%) participants strongly agree to receiving sufficient knowledge from health care provider, and one (8.33%) participant was neutral and had no comment. This section discussed the group characteristics in aggregate form collected from the participants' individual demographic questionnaire. The next section presents the individual characteristics of the participants.

### **Individual Characteristics**

This section presents the authentic data collected during the interview and from the demographic questionnaire that outlined the lives of each participant. The anonymity

and confidentiality of each participant was ensured by each person choosing a pseudonym before the interview began.

### **Eva**

Eva was an 80-year-old retired widow who lived with her children. Her highest level of education was primary school. She was reliant on her grown children for financial support and healthcare needs. Her current illnesses were high blood pressure, arthritis, high cholesterol, and gastritis. Her medications included Zerodol one tablet daily, Vasotec 10mg twice daily, Zocor 20 mg daily, and Prilosec 20 mg daily. Eva claimed that she takes her medications most of the time yet she stated “when I fast I don’t take the medication that day ... I can skip a day then take it the next day.” Eva also stated “most times the children would ask me if I remember to take my medication at breakfast.” Regarding home and “bush” remedies, Eva replied “when I was in the country I use to take bush remedies, but I don’t know because I’m on these medications, and I don’t know if they agree with each other.” Eva agreed that she got sufficient information about her illnesses from her primary care physician.

### **Mrs. Dawes**

Mrs. Dawes was a 75-year-old retired widow who lived alone. Her highest level of education was primary school. She relied on her grown children and the government plan for her healthcare needs. She stated that she had a little pension that helped her with her medication cost. Her illnesses included diabetes, high cholesterol, hypertension, arthritis, and cataracts. She disagreed that she gets sufficient information from her medical doctor about her illnesses. Pertaining to medication adherence, Mrs. Dawes stated “sometimes in the morning I forget to take them, but I take them in the evening

when I remember.” When asked about cost, and if she ever ran out of medication, Mrs. Dawes responded “yes but not for very long ... if I don’t have the money this week, next week I will find the money and buy them. When it came to home and “bush” remedies, Mrs. Dawes stated “I boil my little bush sometimes ... I boil chicken weed and one called meringue to help me sleep at nights.”

### **Lucinda**

Lucinda was an 80-year-old retired widow who lived with her adult children. Her highest level of education was primary school. Her income was from a pension, and her children covered the cost of her medical expense. Her current illnesses included hypertension, coronary artery disease (tachycardia/pulsations), asthma, and arthritis. Her medications were: Vasotec 2.5 mg daily, Symbicort inhaler, and Lasix 40 mg daily. Lucinda somewhat disagreed that her physician gave her sufficient information about her medications. On medication adherence, Lucinda stated “I forget them sometimes but when I remember I take them ... sometimes I feel like I need them, I get dizzy and my heart starts to beat faster.” When asked if she ever ran out of her medications, Lucinda responded “yes but I have to hurry and get them back ... I have son that I call and he always helps.” Pertaining to home and “bush” remedies, Lucinda stated:

Yes ... I heard about this bush called guinea hen ... you boil it ... someone told me it was good for asthma. And it really helped me when I drink it but my heart started beating faster. Then I stopped. I’m afraid to take anything else especially with a heart medication.

**Annie**

Annie was a 68-year-old married retired woman whose highest level of education was primary school. Her source of income was from her 81-year-old husband, who still worked as a musician, and allowances from her adult children. She received a small pension from her previous work but annual household income remained less than \$10,000 U.S. Annie's current illnesses included diabetes, high cholesterol, hypertension, congestive heart failure, chronic end-stage renal failure, dialysis, arthritis, glaucoma, cataracts, and depression. Annie was on multiple medications, which she stated, "Pressure, diabetes pill ... don't even remember ... they are so much I can't even remember them all." Annie went to dialysis twice a week. Pertaining to use of home and "bush" remedies, Annie stated "no, but my husband want me to try some bush remedy or things like that but no." With regarding medication adherence, Annie stated:

Sometimes I miss them to be truthful. Sometimes I don't remember. I never miss for more than a day. I take insulin too and if I don't take it I might conk out ... I am not sure. I have to take it as best as possible. Well I try not to skip them for more than a day. If I don't have money, I try to get it from some source.

**Dorothy**

Dorothy was a 65-year-old retired single female with failing eyesight and lived with a mentally challenged daughter. Her highest level of education was primary school. She relied on her second adult daughter completely for help with healthcare and financial needs. Her current illnesses included diabetes, high cholesterol, hypertension, arthritis, glaucoma, and circulatory problems. Her list of medications included Metformin, Daflan, Diamcron, Simvastatin, Procardia, Vasotec, Atenolol, Hydro, and Aspirin.

Dorothy somewhat disagreed that her primary care physician gives her sufficient information about her medications. When asked her opinion regarding home and “bush” remedy, Dorothy adamantly stated “Never, never, never, never! I don’t know the bush. I don’t want to poison myself.” Concerning medication adherence, Dorothy stated:

No, but let me tell you the honest truth. I always buy a month supply of medications but sometimes how I take them, they last a month and a week (laughing). I stretch them out. Sometimes I have to stretch them to keep me. If I miss a day, I double up the next day.

### **Gertie**

Gertie was an 84-year-old retired widow who lived her unemployed son. Her highest level of education was primary school. Her two adult married daughters supplied her financial and health needs. Her illnesses included hypertension, arthritis, and spondiolosis. Her medications were Resilo, Tramacet, Nise, Aspirin, and vitamin supplements. She disagreed that her medical doctor gave her information about her medications. Pertaining to medication adherence, Gertie stated “Right I have four pills I am taking, I am supposed to be taking nine. I don’t know where the rest of them are. I just have to wait until my daughter comes and buy more.” When asked about home and “bush” remedies, Gertie responded “I take it sometimes to relieve the pain ... I try everything to relieve the pain.”

### **Eunice**

Eunice was a 68-year-old retired widow whose highest level of education was primary school. Her illnesses included diabetes, high cholesterol, hypertension, and coronary artery disease. She strongly agreed that her physician gave her sufficient

information on her medication regime. Her medication lists included Insulin subcutaneously, Hydralazine, Coreg, One-Alpha, and Tums. When asked about her medication adherence, Eunice stated “It is important to take them but sometimes I miss it for maybe a day. It is ok to miss for a day every once in a while.” Pertaining to home and bush remedies, she responded “I don’t take any home remedies because I don’t know what makes them. They might counteract the medications I am taking. I take one bush at night to help me to sleep.”

### **Raywald**

Raywald was a 79-year-old retired married man whose wife was on dialysis. His highest level of education was college level. He did not graduate. Raywald was a returning immigrant to Jamaica and received a pension from the Canadian government. This was his only income. His illnesses included high cholesterol, gout, arthritis, circulatory problems, thyroid disease, and cataracts. His medications were Allopurinol, Avalox, Stemitil, Nice, and Alpha-One. Raywald adamantly stated that he disagreed that his doctors provided him with adequate information about his medication regime. When asked about home and “bush” remedies, Raywald stated “I like little aloe vera and little cerasse tea every now and then.” Pertaining to medication adherence, Raywald stated:

Yes, I forget, sometimes to take my medications, like the Stemitil. I remembers a couple a times here walking in Montego Bay and I felt funny (dizzy). I went into a drug store and I told the pharmacist what was happening, and I asked him for Stemitil and he said “are you feeling funny and having trouble with your head?” I said yes and he sold me two tablets.



**Georgia**

Georgia was an 85-year-old retired widow who lived alone. Her highest education level was primary school. Her illnesses included high cholesterol, hypertension, gastritis, sinusitis, and arthritis. Her medications lists comprised of Atenolol, Prevacid, Norvasc, and Amlocard. Georgia disagreed that she gets sufficient information from her physicians about her medications. Pertaining to medication adherence, Georgia stated “Sometimes I miss them, Miss, especially the blood pressure medication because the blood pressure up and sometimes it down...” When asked about home and bush remedies, Georgia responded “there is a bush called merengue that I take at nights to help me to sleep.”

**Carline**

Carline was a 67-year-old married retired Christian woman whose highest educational level was primary schooling. Her current illnesses included hypertension, gastritis, and arthritis. She strongly agreed that her physician provides sufficient knowledge about her medication regime. Her medication lists comprised of Norvasc, Prevacid, Tramacet, and Hydrothiazide. Carline stated that she takes garlic for her hypertension as a home remedy. Pertaining to her adherence to medication regime, Carline stated:

I miss them a lot of times. Sometimes I forget and other times when I am on fasting ... remember you have to eat before you take them and if I am on fasting I am not eating. Sometimes I don't take them for four or five days because sometimes we go on seven days fasting ... but if it is just natural I might forget it for a day or two ... then I will take them the next day. Sometimes if the money is

not in hand I have to wait. I am even supposed to go back to the doctor now but because the money is not in hand. So I wait.

### **Winnie**

Winnie was a 65-year-old retired single female with some college education. Her current illnesses included diabetes, hypertension, renal failure, and dialysis. She was on Orovite, Furosemide, Hydralazine, Lipitor, One-Alpha, and Insulin plus vitamin complex, and B-complex. Winnie strongly agreed that her primary care doctor provided her with sufficient information about her medications. Pertaining to medication adherence, Winnie stated: “I don’t know if my medication is helping. I am getting weaker and weaker. I am tired of taking pills. I take the important ones but sometimes I don’t bother with the others.”

### **Kenneth**

Kenneth was an 81-year-old married male who worked full-time as a musician. His highest level of education was primary school. Kenneth’s illnesses were hypertension, arthritis, chronic obstructive pulmonary disease, and glaucoma. His medication regime comprised of Plendil, Las-Salbutamol Beclometasone Inhaler, Hista DM, Timolol Maleate, and Tramacet. Kenneth somewhat disagreed that his doctor provided him with sufficient information about his medications. Pertaining to medication, Kenneth stated “I don’t like taking medications. It destroys my body. The doctor put me on them but as soon I feel better I stop taking them.” When asked about herbal and home remedies, Kenneth stated “That’s what I love ... I prefer to take them as the doctor mess up your body with all those pills. I take them for everything.”

The data from these interviews was collected, transcribed, and analyzed according to the grounded theory process discussed in Chapter Three. From the method of grounded theory according to Strauss and Corbin, four dominant categories emerged: believing, self-efficacy, supporting, and socio-economic factors. Integrated concepts also emerged that supported the dominant categories. A discussion relevant to these categories follows in the next section.

### **Emergent Categories**

Four dominant categories emerged from the data collected in Phase I individual interviews of the Jamaican elderly, aged 65-85 years. Data saturation was reached after 10 individuals were interviewed. Once data saturation was reached, two more interviews were done to verify that saturation was met. Every participant shared sole experience. Evidence was collected as an integrated activity, collecting data, and analyzing or coding in a constant comparative manner, an iterative process. Memos were written, and codes were cataloged while discerning potential relationships with other codes. From the data, patterns and relationships were ascertained, which led to generation of concepts that converged into emergent themes. Subcategories, dominant categories, and the core basic social process emerged.

The themes identified were: believing, self-efficacy, supporting, and socio-economic factors. These themes emerged from the continual process of open and axial coding. The core variable or process that emerged from the data collected and analyzed for this inquiry was the social process of *Eudaimonia*. The themes that emerged will be presented in the next section.

## **Believing**

Pardi (2011) stated that a person knows something if he or she is justified in believing it to be true. The concept of believing, whether it was cultural or inherent, was evident in all participants. The elderly described their perceptions and experiences with medication adherence. Strong beliefs can promote conceptual changes (Song, Hannafin, & Hill, 2007). Some beliefs of the elderly were in the efficacy of their own action to reduce the risk or seriousness of a health problem. The subcategories that emerged from believing were self-diagnosing, self-medicating, social thoughts, cultural beliefs, and religious beliefs during data analysis. Some participants in this study believed that their medical doctor's instructions, including prescribed medications, were not effective in reducing their illnesses. These beliefs sprang from self-diagnosing practices, which was noted also in some of the individual participants' practices. Herbal and home remedies were used as forms of self-medicated and diagnosing. The following participants' statement revealed how radical these elderly Jamaicans were in their beliefs.

Kenneth stated: I take home remedies ... the doctors do not know me. I know my body and I boil up my own remedy. I use leaf of life and cerassie. Those help me. I am 81 years and I have lived a long time.

Eva commented: "Sometimes I fast at church...then I don't take the medications for that day. You can skip a day then take it the next."

Carline stated: Sometimes I forget my medications, and sometimes when I am on fasting ... remember you have to eat before you take them and if I am on fasting I am not eating so I don't take my medications. Fasting is sometimes for a week.

Mrs. Dawes laughingly stated: "I boil my little bush sometimes. It helps me."

Most of the participants in Phase I of the data collection believed that they were competent in providing their own care. They were living even if it was one day at a time. These beliefs were present whether it was justifiable or unjustifiable in the elderly Jamaican.

### **Self-Efficacy**

A concept that emerged was self-efficacy. Smith and Liehr (2008) commented that self-efficacy was an individual's judgment of his or her capabilities to organize and execute courses of action. Subcategories that emerged were self-care, control, judgment, attitude, self-influence, and behavior (action). This concept described several participants' actions and behaviors in this study. When asked about how well they could take their medications, all 12 participants agreed that they were independent in making their own decisions and choices.

The researcher explored the concept of self-efficacy by asking the participants about the way they take their medications and if they knew what each of their medications were for. It is an assumption that people can influence whatever they do in life and will decide how to behave as in the case of Dorothy who doubled up on her medications when she missed or stretched out her pills at the end of the month to keep her supply going. In this case, the elderly continued to manipulate their health status that and created survival techniques. The concept of self-efficacy was evident in the following elderly statements.

Mrs. Dawes commented: "I believe that home remedies help with my blood pressure. I take garlic with the pills."

Dorothy stated: “Well listen to me now ... the blood pressure pills are easy to go down but the sugar tablet give a warm time to go down and that’s why sometimes I miss it.”

Most of the participants described their actions regarding why they do or do not take their medications. A few of the statements are presented.

Annie commented: “No, I never go too long without the medications. I take insulin too and if I don’t take it I might conk out ... I am not sure ... I have to take it as best as possible.”

Raywald stated: I take it for pain like the Allopurinol ... to lower the uric acid ... It has to do with uric acid and Avalox is one of them. I was taking some of them to inhale ... I was taking more than one so it was a mixture. I stopped taking them without doctor’s order, and I got better anyway.

Kenneth commented: When I get giddy, I will take the medications but as soon as I feel better, I don’t bother with any medication. I know when my blood pressure is high. I agree that when you feel sick you should take them but when you feel you should stop. That’s why I live so long.

It was concerning to the researcher that Gertie did not know where most of her medications were. She mentioned that she was taking nine but at the moment she had six only. At this stage in life, many elderly need to feel this sense of control in their lives as they get older and chronic illnesses increase. A positive self-concept and independence need to be promoted.

## **Supporting**

The concept of supporting emerged, and Farlex (2013) stated it is “furnishing support or assistance” (p. 1). In nursing, the concept of support means emotional or social assistance (Rodgers & Knafl, 2000). Support refers to the availability of resources or assistance, according to Nahum-Shani, Bamberger, and Bacharach (2011). The concept of supporting emerged from the detailed accounts of six of the 12 participants interviewed. The participants discussed support from their children, friends, or local church. Social structure emerged as one of the subcategory of supporting. The subcategories that emerged are supporting people, such as family or friends, or visits from local church. The concept of family support surfaced. Family may serve as motivator for healthy living and provide emotional support for other members of the family. The concept of support was corroborated and reflected by the following participants’ statements:

Kenneth stated: “The children help sometimes. They paid for the medication and buy insurance for my wife and I, but they are spending too much money. I try not to bother them when we run out of medication.”

Eva stated: “Most of the times the children would ask if I remember to take my medication. They make sure that I have enough medication.”

Lucinda: “When I ran out of medications, I have a son that I call and he always helps.”

Annie states: “The children help me to buy medicine.”

Dorothy commented: “My daughter helps me to buy medicines. I don’t work at all, and I don’t get any help from the government.”

Gertie also stated: "... I don't know where the rest of my pills are. I am waiting for my daughter to come and buy more medicine."

At least 50% of the individual interviewees relied on the support of his or her children for financial support. The support from family showed the family structure an important source of socio-economic reality. It is clearly seen from the voices of these participants that if the children were not providing the financial support, the participants would be possibly be in a critical financial state. Even with this means of support, Dorothy stated: "Sometimes I stretch the medication for it to keep me." Family support was not physically present in the homes of all the individual interviewees. Ten participants in the individual interview lived alone. The children were living outside the home with their own responsibilities. The researcher could see that the elderly loved their children and relied on their support whenever it could be given.

### **Socio-Economic Factors**

Another dominant category that emerged was socio-economic factor. The American Psychological Association (2007) describes socioeconomic factors as education, occupation, and income, and these determine the social standing or class of an individual or group. Many of the elderly communicated that financial hardships, that included no flowing income and lack of insurance, played a major role in their poor medication adherence. The subcategories of no government support and limited education, insurance, and income were supported by the voices of the following participants:

Dorothy commented: I pay for the medications out of the money my daughter send me. But let me tell you the honest truth ... I always buy a month supply but



sometimes the way how I take them, they last a month and a week (laughing). I stretch it. Sometimes I have to stretch the pills to keep me.

Mrs. Dawes stated: If I don't have the money this week to buy the medications, I will be sure to get it next week. In the meanwhile I have to do without the medications for a while. I pay for my medicines through a little that I get.

Raywald commented: I am paying \$9,500 for my wife's dialysis and injection is different ... that's another \$5,000 ... we must have gone about a million dollars. I am depending on is the little pension I get from Canada ... that's it. Everything I have to pay for these (taking some prescriptions out of bag). I always make sure I have enough medication... to tell you the truth especially with my wife I always make sure. ...When I run out of my medications, I always make sure my wife does not run out. I would not want my wife not to go on the machine because only of a few dollars ... couple nights ago she could not sleep ... the poor thing was just miserable ... We have only each other.

Raywald commented: "I make sure my wife gets her medication all the time ... she is sick. I will go without mine ... we only have each other."

Carline mentioned: "Sometimes the money is not in hand, I have to wait. I am even supposed to go back to the doctor now but because the money is not in hand, I wait."

Lucinda commented: "I pay for my medications from a little pension I received from my previous job, and my sons help me every now and then."

Annie stated on paying for her medicines: "We have a little insurance where we get something back or if my children or husband buy them for me."

Socio-economic factors play an important role in the adherence of the elderly Jamaican to medication.

### **Characteristics of the Focus Group**

The five elderly that participated in the focus group; the ages of three (60%) women and two (40%) men ranged from 65-85 years, with a mean age of 76.6 years. Three of the group participants lived with grown children. One lived with a spouse and the other resided alone. Their educational backgrounds were primary school level (100%). All were retired and lived in the rural area of Montego Bay. Each was on three or more medications with chronic illnesses and claimed adherence to medication.

An explanation of their role was given by the researcher, and after verbalizing understanding of the study, they completed the demographic questionnaire and consent form before the interview began. The following is a summary of their characteristics.

#### **Betty**

Betty was a 70-year-old retired woman who lived with her two daughters. Her highest level of education was primary school. Her current illnesses included hypertension, diabetes, peripheral vascular disease, and arthritis. She strongly agreed that her physician provides sufficient knowledge about her medication regime. Her medication lists comprised of Norvasc, Pepcid, Tramacet, and Hydrothiazide, Novolog Insulin, and Persantine. Pertaining to her adherence to medication regime, Betty commented "I always take my pills. I believe it is important."

#### **Richie**

Richie was an 80-year-old male who lived with his daughter. His highest level of education was primary school. He has diabetes, hypertension, and chronic renal

insufficiency. His medication regime included Glyburide, Glucotrol, Norvasc, and One-Alpha. He was blind so his caregivers were his daughter and an aide when his daughter was at work. His daughter provided financial support and made sure that all his prescriptions were filled monthly. Richie stated: “I have lots of years ahead of me (laughing). I have to go home one way or another. I don’t want lots of pain. I just follow the doctor’s orders.”

### **Mister Sam**

Mister Sam was a 77-year-old male who lived alone. His highest level of education was primary school. He had chronic obstructive pulmonary disease, pacemaker, hypertension, congestive heart failure, and atrial fibrillation. He was on multiple medications. His children were all living in the United States. He visited them often. They provide all financial assistance for him. They paid for an insurance policy that paid for his medications, and all healthcare needs. The children also paid for an aide during the nights for him. Mister Sam stated “I take the pills because the children work hard. I have good children. Sometimes I cannot breath, I don’t like the way that feels. I feel better when I take them.”

### **Sista**

Sista was an 81-year-old widow who lived with her daughter and son. She was retired. Educational level was that of primary school. Her illnesses included: hypertension, diabetes, end stage renal disease, dialysis, arthritis, and mini-stroke 10 years ago. She did not always live with her children. In fact, Sista lived by herself up to 10 years ago when she had the stroke. Her medications list included: Hydralazine, One-alpha, Norvasc, Novolog 70/30, multivitamins, ferrous sulfate, and Tramacet. Sista

insisted being on dialysis made her compliant with her medications. Sista stated: “The nurse knows if I am good from my laboratory tests. I don’t want to die so I take them.”

### **Miss Lottie**

Miss Lottie was a 75-year-old woman who lived with her husband. Her children were all out of the house, but they called often and reminded her to take her pills. Her illnesses included: hypertension, peptic ulcer, arthritis, and cataracts. Her highest level of education was primary schooling. Miss Lottie stated “Miss, my doctor takes care of me. I am still young so I do the best to take them.”

All focus group participants denied herbal or home remedies. The heterogeneous sample represented the elderly population in Jamaica. Each willingly and generously shared their thoughts, feelings, and perception of their medication adherence, and they confirmed the categories that emerged from the individual interviewees. The purpose of the focus group was to confirm the themes and concepts that emerged from the individual interviews. The five focus group members validated the four emergent categories.

### **Confirmation of the Categories by the Focus Groups**

The purpose of the focus group interviews was to confirm valuable information based on the individual interviews as well as to confirm the themes and concepts that emerged from the individual interviews data collection and analysis. The role of the focus group was to provide confirmability and credibility to the four emergent themes. There was a united voice throughout the focus group regarding the dominant categories that had emerged from the individual participant interview sessions. The following is a synopsis of the comments made by the focus group participants.

**Believing**

The focus group confirmed the concept of believing in this category. Believing in medication adherence was undisputed in this group as it was seen as a means of healthy life and longer living. They perceived that taking their medications in the way their medical doctors prescribed was crucial in maintaining health, and this was crucial thinking in their children also.

Richie commented: Not taking my medications caused me to be blind. My doctors tell me my kidneys are going now. I see my friend David on dialysis, and I don't want to live like that. If the doctor says to take it that way, I am going to do it.

Sista stated: The doctor says that I am to take my medication and I follow his advice. I never stop taking them so I don't know what it feels like to stop. As we get older, we need medication to keep us alive. It's a part of life.

Miss Lottie commented: It is important for us to take our medications as it is a part of getting older. I would never take home remedies as I don't know if it will agree with my medications. I try my best to take them on time.

**Self-Efficacy**

The group confirmed the theme of self-efficacy in regard to meaning a person's thoughts and feelings about his or her ability to accomplish a task. The focus group commented that adhering to medication influenced their lifespan and that they will continue to adhere to their medications as long they continue to live. Bandura (1994) stated: "The stronger the self-efficacy is perceived, the more active and persistent are the individual's effort to finish a task" (p. 71). The group confirmed the theme by providing

feedback that they are responsible for their behaviors. They believed that their action and participation in adhering to their medication will give them healthy and longer lives. All group participants stated that they would never double up on medication but will follow the physicians as they trust them.

Miss Lottie stated: I follow my doctor's advice. I take my pills (pulling a bag of medicine out of her bag). The blood pressure pill makes me go to the bathroom a lot. Once I stopped taking it but my feet became swollen and the doctor told me that was why. So I started it back. My feet were so heavy and big. I make sure I take it now.

Sista states: "Doctor says I am supposed to take my pills so I take them. I have no problem in taking them. I always take my medication. I don't want to die."

Betty stated: I always take my pills. I don't want to get sick. I take insulin. My daughters monitor the sugar. There are certain foods that I cannot eat too ... I don't want the sugar to go up ... I have so much pain from the arthritis ... I have to take my medications despite the cost.

### **Supporting**

One subcategory that arose from the concept of supportiveness is social structure. The researcher was surprised about the influence the children had on the participants in the focus group and their adherence to medication. One daughter informed the researcher that the monitored elderly is the sole ones that adhere to his or her medications. Monitored elderly are the elders whose children (especially the daughters) play an active role in their lives. They are basically the caregivers, and the elderly patients live with them. The children pay for their parents' medications, and sometimes

they cover the cost for health insurance. Eliopoulos (2010) stated “More than half of the caregivers are wives; the next largest group of caregivers is daughters and daughters-in-law” (p. 479).

Richie stated that he was not always adherent to his medications and stated, “That’s why I am blind from the diabetes. I did not take my medication when I was younger. I always forgot...but my daughter has it all under control.”

Betty commented: “I have no choice but to take them on time as my daughters make sure that I follow the doctor’s advice. They check my sugar and blood pressure every day. I am lucky to have them.”

Miss Lottie stated: “The children quarrel with me if I don’t take them by a certain time.”

It was obvious that the support of the children was significant in the lives of these elderly. The concepts of family structure and social structure were interwoven in the theme of supporting. The focus group stated how hard it was to take medications each day. The feelings and side effects of the pills sometimes were unbearable, but they continue as they wanted long life and health to the fullest extent. The focus group discussed the family help in their lives even when they were tired sometimes of taking their medications, they persist and take them.

Richie stated: It is hard to get up every day and continuously take pills. It is not easy and I can understand some people do not want to them. The cost of the pills is too much. No government help. They promise but no help. The children are the only ones who help. If it were not for them I would be in the ground already.

The participants commented that a caring, interesting family structure is one of the most valuable resources that an elderly person can possess at this stage of time. The focus group associated the theme of “support” with wonderful children, the number of children they had, and good luck. They considered themselves fortunate.

### **Socio-Economic Factors**

The concept of socio-economic factors was confirmed by the group as they shared their thoughts on medication adherence. The focus group had comments about cost-related factors in regards to their medication adherence, and they agreed that if they did not have the support of their children they would be able to afford them. They conferred that they had children who cared, and they were thankful for this. They stated that they did not receive any governmental support in finances. They stated that they were programs available but the cost of medications and treatments were far more than what the government would pay. Those who received pension from previous jobs discussed that it was not even enough to buy their medications and maintain a significant lifestyle. The voices of few of the participants reflected how they dealt with socio-economic factors in their lives.

Richie commented: “I give my prescriptions to my daughter and she buys them for me. Everything I have is gone. But I always take my pills. They are very expensive.”

Sista (laughingly) said: “Good thing I have six children. I can call on any one of them to help me. They always help so I don’t run out of my medications.”

Based on the confirmation of the categories by the focus group regarding the core basic process, the theoretical framework for the critical factors influencing the beliefs and



attitudes of the elderly Jamaican to medication adherence is Eudaimonia. This core basic social process will be discussed in the following section.

### **The Basic Social Process: Eudaimonia**

Once the categories emerged, it was inductively depicted that the ultimate goal of the elderly interviewed was Eudaimonia (well-being). Eudaimonia influenced the participants' actions whether it was the correct action or not. Eudaimonia was conceptualized as the core category that covered and described the social processes that influenced the elderly Jamaicans regarding medication adherence. Younkins (2003) stated:

Eudaimonia is a fundamental fact of human nature and the existence of individual human beings each with his own rational mind and free will. It is a person's normative reason for choosing particular actions stemming from the idea that he must pursue his own good or flourishing. (p. 5)

Younkins (2003) further stated that Eudaimonia occurs when a person is concurrently doing what he ought to do and doing what he wants to do. The core category of theory, Eudaimonia, emerged from rigorous open and axial coding and answered the research questions: 1) what are the critical factors that influence the beliefs and attitudes of the elderly Jamaican to medication adherence, and 2) what are elderly Jamaicans' attitudes and behaviors regarding medication adherence?

Figure 5 represents the interactions of the four prominent categories that occur in the elderly Jamaican and how they relate. The diagram showed how the elderly Jamaicans strive to achieve Eudaimonia through the emergent categories of believing, self-efficacy, supporting, and socio-economic factors. It showed a field of health and

well-being (Eudaimonia) and the emergent dominant categories relationship to the field by emphasizing the field of health and well-being (inner circle) and how the outer ring of circles (emergent dominant categories) contributed to the central idea of Eudaimonia. It showed that each category is interrelated, and these phenomena occurred daily in the elderly Jamaican's life. It was a matter of coping and survival to achieve ultimate well-being. All of these categories led to the central phenomenon of well-being or making life as good as it could be.

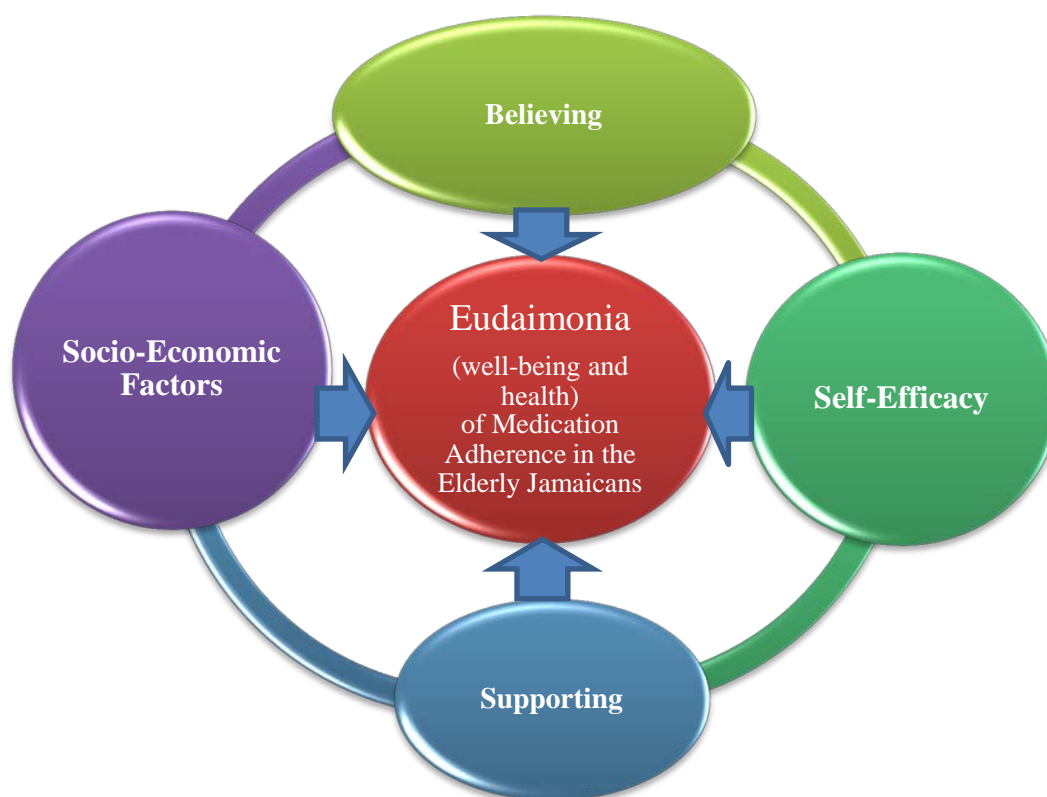


Figure 5. Smikle (2012). Conceptual Model of Eudaimonia of Medication Adherence in the Elderly Jamaicans.

### **Making the Connections**

The four categories—believing, self-efficacy, supporting, and socio-economic factors—were fundamental to the elderly Jamaicans' practices in this inquiry. The

categories served as critical influences that affect their adherence to medication. This led to the emergence of Eudaimonia as the core category. The two attributes that emerged from Eudaimonia were well-being and health. This concept became apparent from data collected from the individual interviews and was confirmed by the focus group. The rich, descriptive information was analyzed by using Corbin and Strauss' grounded theory approach.

This was the central voice of the participants regarding why they take medications "I want to be healthy. I want to live longer. I don't want to be ill anymore. I want health and long life." Careful examination of the meanings of these themes and their interwoven concepts disclosed groundwork significant to the categories. Eudaimonia emerged as the theoretical framework that was used to understand the critical factors influencing the elderly in Jamaica to medication adherence that will be helpful in nursing education and improve care for elderly Jamaicans across the globe.

### **Chapter Summary**

This chapter presented the data from the two groups of participants; data were collected from individual interviews (Phase I), and confirmation of the categories was accomplished with data obtained from a focus group (Phase II). There were 12 individual participants and five participants in the focus group. The data revealed four emergent categories: believing, self-efficacy, supporting, and socio-economic factors. These categories can be viewed as the foundation of the theoretical model of Eudaimonia with attributes of well-being and health.

## CHAPTER FIVE

### DISCUSSION AND CONCLUSION OF THE INQUIRY

The purpose of this grounded theory study was to determine the critical factors that affect medication adherence in elderly Jamaicans residing in Jamaica. The aim was to generate a theory about medication adherence in the growing elderly Jamaican population and to develop a substantial theory that would promote effective interventional and educational strategies about medication adherence in the elderly Jamaican. Using a qualitative, grounded theory methodology, the basic core process of Eudaimonia emerged from the individual and focus group interviews.

The philosophical foundation of pragmatism guided this inquiry. Pragmatism stated that truth exists with experience and not necessarily with facts, and it is the attribute of accepting the facts of life, favoring practicality and truth (Creswell, 2007). Rescher (1995) stated that the characteristic idea is that efficacy in practical condition (the issue of “what works out most effectively”) provides a standard for the determination of truth in the case of statements, rightness in the case of actions, and value in the case of appraisals (p. 710). As in pragmatism, the elderly Jamaican created their own reality and truth in adhering to their medication regime that led to the emergence of grounded implications. Dewey (1929) stated “The test of ideas, thinking generally, is found in the consequences of the acts to which the ideas lead, that is in the new arrangement of things which are brought into existence” (p. 136). Truthful statements shockingly revealed the critical reasons attributing to the medication adherence of the elderly in Jamaica. The foundation used to collect data and data analysis were that of Strauss and Corbin’s (1998) methods for grounded theory. This analysis explored pragmatism in the accumulation of

collective knowledge in the elderly Jamaican and medication adherence, which helped in leading to the four dominant categories that became the building blocks for the theoretical framework of Eudaimonia.

This chapter presents the connections and disparities of current studies with the findings from this study by exploring the meaning of the study. It gives an interpretative analysis of the inquiry, significance of the study, and the implications for nursing education, nursing practice, nursing research, and public policy will be discussed. In conclusion, the strengths, and limitations are reported, followed by recommendations for future research studies. This chapter commences with the discussion of exploration into the meaning of the study.

### **Exploration of the Meaning of the Study**

This research problem was elucidated by the expounding core basis theory of Eudaimonia. This chapter explores data collected from 12 individual interviews and analyzes it using grounded theory methods. The findings were confirmed by focus group interviews, which included five elderly Jamaicans who claimed adherence to their medication regime. The social behaviors of the participants were determined from interviews and focus group analysis during the interviews. This led to the groundwork confirmation for the core category of Eudaimonia, with its attributes of well-being and health. These categories provided the foundation for the emergence of the grounded assumption of the critical factors that influence the elderly Jamaicans to medication adherence. In grounded theory, May (1986) commented, "In strict terms, the findings are the theory itself, i.e., a set of concepts and propositions which link them" (p. 148). The

four categories that emerged were: believing, self-efficacy, supporting, and socio-economic factors.

In his *Human Good and the Function Argument*, Aristotle agreed on the term “Eudaimonia” (happiness) and “eu zen” (living well) (Stanford Encyclopedia of Philosophy, 2010). He broke down this Greek term “eudaimon” to compose of two parts: “eu” means “well” and “daimon” means “divinity” or “spirit.” Therefore, to be eudaimon is to be living in a way well-favored. It is the highest end of life with the subordinate goals of health and wealth, which are sought because they promote well-being (Stanford Encyclopedia, 2010). Aristotle made reference in this argument that in order for an individual to be happy and have well-being, he or she must possess goods such as friends, family, wealth, and power. One’s well-being is lacking if one is lacking in loss of any of these (Stanford Encyclopedia, 2010). Aristotle argued also that realizing human potential is the ultimate human goal, and man should choose actions proper to man’s well-being (Stanford Encyclopedia, 2010).

Boniwell (2011) discussed Eudaimonia as the potentialities of each person’s realistic goals, which leads to the greatest fulfillment, the efforts to live in accordance to one’s well-being through one’s life activities, which will lead to Eudaimonia. Boniwell (2011) commented on Eudaimonia as being influenced by personal growth, self-acceptance, autonomy, environmental mastery, positive relationships, and purpose in life. Eudaimonia became evident in the elderly Jamaican’s living in Jamaica as their ultimate goal to well-being and health. Their united spoken voices made this clear when they all stated that well-being and longevity of life were their ultimate goals in adhering to their

medications. This enthusiasm for life and well-being was heard in both the individual and the group interviews.

### **Interpretive Analysis of the Findings**

In the first two chapters, the background of this inquiry was presented. The literature that was presented in Chapter Two focused on effects of cost-related factors, literacy, culture, and beliefs/attitude to medication adherence. There might not be any conclusive, grand theory that might explain poor medication adherence in the elderly Jamaican, as there were many variables that might affect the elderly Jamaicans' logic, cognition, and behavior as well as demographic differences (socioeconomic status, race or ethnicity, education level, etc.). These variables mentioned might be influencing factors in the elderly participants' behavior to medication adherence. The data presented was from the supporting emergent categories elucidated from the interviews.

Supporting the emerging categories (believing, self-efficacy, supporting, and socio-economic factors) are subcategories—raw data—from the participants. These categories made it possible for the emergence of the grounded theory proposition of eudaimonia in the elderly Jamaican. The researcher was astounded regarding the categories that emerged from the data, especially how the social structure (supporting) of the elderly played a significant role in their adherence to medication. The lack of perception about the importance of medication and adherence in elderly Jamaicans was surprising to this researcher, despite wellness being a goal in each of their critical reason for taking medications. It was clearly noted that interventions were needed to promote this wellness that each participant perceived. These categories will be compared with researched literature in the next section.

## **Believing**

In this study, many of the participants believed that they were following the right method for medication adherence. One of their inherent beliefs was that their self-efficacy behavior was right for them, and it was safe practice and benefitting them than doing harm. Taking their medication today and missing the next was the right action. They believed that their health care choice was personal, and it was their right as a person to make decisions about their medication choices.

Dyess (2011) commented that to believe is to have faith and believe in something that influences one's future as a construct of hope and trust, and consequently, something to rely on. This category was supported by subcategories of commitment to medication, thoughts about their medication, cultural beliefs, and religious beliefs. The beliefs about the concept "believing" are supported in the following literature. Participants' belief in ability to control health and self-care was very important in their medication adherence. This was reflected in few of participants' statements. Dorothy stated:

Sometimes my mind really does not make me want to take the pills ... sometimes the stomach again ... sometimes the pill just won't go down. Sometimes I have to use lots of juice ... sometimes I even have to cut them. Some small but the bigger ones can hardly go down. It is hard...

From the statements, it is noted that the elderly wanted self-control in their efficacy regarding medication adherence. An important issue that could not be ignored in this study finding was that of religious beliefs. A range of factors was noted to influence participants' belief such as praying, fasting, and use of herbal and home remedies. The participants in the individual interview had strong religious beliefs that they could skip



their medications when fasting for days or weeks. Fasting was used as a way of cleansing and spiritual growth in relation to belief in a higher Supreme Power.

Eva stated: “When I fast and pray, I don’t take the medications that day ... I can skip a day or two.”

Carline commented: Sometimes I fast for four to five days when the church go on a seven-day fast ... then I will not take my blood pressure pills ... but if it is just natural I might forget my pills for a day or two ... then I will take them the next day.

The focus group did not have anyone who practiced fasting. The following studies revealed that personal beliefs play a significant role in medication adherence and the elderly in Jamaica. The similarities were astounding regarding the elderly Jamaican, and they were not different in beliefs than other elderly in other parts of the world.

In a quantitative study, Brown and Segal (1996) reported the relationship between health beliefs and the use of prescribed medication and home remedies among African American and White older adults with hypertension. The analysis showed that African Americans perceived significantly greater benefits of home remedies and were approximately three times more likely to use home remedies than Whites. Several of the elderly Jamaicans expressed their use of herbal and home remedies to help with their illnesses. This is consistent with the beliefs of Carline, Georgia, and Kenneth. Carline stated that she used garlic to help with her blood pressure, Georgia takes home remedies to help her sleep at nights, and Kenneth prefers home remedies over his physicians’ orders. Each participant believed that they were doing what was right in their own eyes.

There was no immediate illness that followed after taking these home remedies; therefore, they believed that these remedies are helpful for healthy living.

A few of the elderly Jamaican participants adamantly refused to use any remedies except for what their physician prescribed as they were afraid of adverse reactions to their current prescriptive medications. This was reflected in the voices of the participants.

Eunice stated: “I don’t take any home remedies because I don’t know what make them ... they might counteract the medications I am taking. I take one at night to help me to sleep.”

Annie commented: “My husband wants me to try some bush remedy or things like that ... he says it might cure my kidneys ... but no, I am on dialysis and it may damage my kidneys even more.”

Dorothy stated: “Never... I don’t know the bush ... I don’t want to poison myself...”

In a quantitative study, Horne and Weinman (1999) explored older adults’ personal beliefs about the necessity of their prescribed medication and their concerns about taking it and evaluated the relationship between beliefs and self-reported medication adherence among those with chronic illnesses. Approximately 89% of the subjects believed their prescribed medicines were essential for maintaining optimal health. Conversely, over 36% reported strong concerns about the possible adverse effects of using the drugs. Comparisons of the mean scores for the necessity of medication therapy across different illness groups found that the older adults who were adherent to their medication regimen perceived significantly greater benefits of their medications

than potential adverse effects. Older adults' beliefs about their medication efficacy were the strongest predictor, explaining 19% of the variance in self-reported adherence.

The elderly Jamaicans on an average agreed that their medications helped them and will ensure longevity. A common voice among the participants was that they thought it was all right to miss their medication at least for a day or two. Each articulated that they could skip without any negative consequences and would have no adverse effects if they did.

In a qualitative study, De la Cruz and Galang (2008) discussed the illness beliefs, perceptions, and practices of 27 Filipino Americans (FA), with hypertension, to reveal the explanatory model of the illness. From interviews and discussions, it was revealed that FA had problems with adhering to their medications regime to control their illness despite biomedical information. Findings revealed that it was important for nurse practitioners to evaluate the explanatory models of FA with hypertension including their use of folk remedies and practitioners of folk remedies. It becomes a challenge to provide cardiovascular health promotion and education in culturally sensitive FA to control their hypertension.

In addressing beliefs in the elderly and medication adherence, Lichun, Schlenk, and Dunbar-Jacob (2006) in a literature review, there is a significant relationship between personal and cultural beliefs and medication adherence in older adults. The findings were parallel to those of this current study. Healthcare providers need to be sensitive to the personal and cultural beliefs of the elderly as these may sway adherence negatively or positively. The researcher further found that the elders' personal beliefs about necessity

and benefits of the medications along with their concerns about the drugs' adverse effects may influence how they perceive and report their medication adherence.

These findings were congruent with this researcher's findings as some of the individual participants believed that their medication was doing more harm to their bodies and would stop taking them without a physician's order or counsel, as in the case of participants Kenneth and Raywald. Another participant (Dorothy) thought that the medications were not helping her anyway, as she was feeling weaker each day. Dorothy stated (sighing):

I feel alright you know... I am feeling weak and weaker ... the body feel weak more time ... I don't know if it is the medication is making me weak. Right now, the doctor me that I must go on insulin. But I don't have anybody to give me the insulin and because of the eye ... I can't see and I cannot move from place to place...

Georgia stated: "I don't know if the medications are helping me. I feel like I am fine with or without them. Apart from a little dizziness sometimes, I am fine."

Mrs. Dawes (unhappy look): "I don't know if the pills are helping, I feel weaker and weaker. I wonder sometimes if I stop taking them what would happen."

Annie questioned (frustration could be seen in her face): "I want to know if I stop taking them all together, what would happen to me?"

In a qualitative study, Bane, Hughes, Cupples, and McElnay (2007) explored the journey to concordance in hypertensive elderly patients with issues in prescribing of medications. The purposive sample consisted of 25 patients from Northern Ireland invited to participate in five focused groups. Participants indicated a willingness to be

involved in concordance in prescribed antihypertensive medication but needed health professionals to address their concerns and confusion about the nature of hypertension. These findings suggest that there is a need for doctors and other healthcare professionals with responsibility for prescribing to develop skills specifically to explore the beliefs and views underlying an individual's medication use. Such skills may need to be developed through specific training programs at both undergraduate and postgraduate levels.

### **Self-Efficacy**

Self-efficacy was another theme that emerged as the elderly Jamaicans described their experiences with medication. Lichun et al. (2006) reported that self-efficacy is the belief that an individual can do a particular action under differing conditions. Each participant shared how his or her actions and how his or her medications habits affected his or her lives. Bandura (1994) asserted that general self-efficacy "is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (p. 71). Bandura (1994) argued that with regard to health behaviors, the stronger the self-efficacy, the more successful people's reduction of unhealthy choices and habits will be, and the more they will substitute health-promoting behaviors. The finding is supported in other studies that examined how self-efficacy affects and predicted how the elderly reacts to medication adherence.

In a quantitative exploratory study, Clark and Douglas (1999) investigated the role of self-efficacy as a predictor for disease-management behavior such as medication taking, diet, and exercise in women over the age of 60 years. Questionnaires that contained items relating to the constructs of self-efficacy and outcome expectations were administered through telephone interviews at three points in the year study. The findings

revealed that older adults' baseline self-efficacy to take medicine as directed (significantly predicted self-reported medication adherence at four and 12 months).

In congruent to the previous study, the elderly in the individual interviews in this current study did not take his or her medications as directed. All had different reasons for not adhering to medication. This was reflected in the following participants.

Annie (depressingly) commented: "the thoughts, ahh ... well down to the very thoughts of taking medications make me feel weak. I sometimes missed them for a day. But only for a day."

Raywald stated: I just cut out which ever pills I don't want to take ... I think I have that right to do that ... that's how I look at it. The doctor over there is pretty decent. I can tell him what is happening to me. I have a right to make my own decisions though.

Dorothy stated: "The blood pressure is easy to go down but the sugar tablet give me a warm time ... that's why sometimes I miss it."

Georgia commented: "The circulation tablet does not make my stomach feel good..."

Kenneth stated: I only go to the doctor when I am really sick. As soon as I feel better I stop taking the pills. The doctor tells me that I have blood pressure problems but he does not know anything. I feel dizzy sometimes but then I will take the pill but afterwards I feel better and I stop.

In a randomized, controlled clinical trial of the effect of patient education on rheumatoid arthritis, Brus et al. (1999) explored self-efficacy and outcome expectations regarding disease-modifying anti-rheumatic drugs and medication adherence in the older

adults with rheumatoid arthritis. Medication adherence was measured by pill count between zero and three months and again between three and six months. A significant positive correlation between self-efficacy and adherence was found, and self-efficacy was the only factor that differentiated between adherent and non-adherent subjects using a cut-off point of 80%.

In a quantitative study, Siegel, Karus, and Schrimshaw (2000) examined ethnic differences in self-efficacy beliefs and how these might affect medication adherence. Beliefs about the use of protease inhibitors were evaluated via semi-structured interviews in persons with a mean age of 54.3 years (SD 3.7) infected with HIV. Comparisons were made between White and African American men with respect to self-efficacy for taking medications, medication efficacy, adverse effect concerns, and physician competence. Although the average medication adherence rate was not reported, White participants showed a significantly higher mean self-efficacy score regarding their ability to adhere to their prescribed regimen than African Americans.

The previous studies show a connection to this current study in the category of self-efficacy. Adherence required sustained effort on the path of the elderly Jamaican. Thus, if the elderly is faced with circumstantial situation such as financial factors, beliefs, and knowledge, self-efficacy to the importance of medication regimen may be foregone for other perceived interests. The elderly may give up easily or postpone medication for a later time.

### **Supporting**

Social structure did not only play an important role in the individual interviewees but also was of significant importance to the group participants as well. The majority of

the participants revealed that their children played a significant role in their medication adherence. The individual and group participants voiced if his or her children were not supportive, he or she would not be alive.

Social support is defined for this study as the “social resources that persons perceive to be available or that are actually provided to them by nonprofessionals in the context of both formal support groups and informal helping relationships” (Cohen et al., 2000, p. 4). Social resources include primary partner, family, and friends who encourage positive behavior and actions. Social support also includes emotional support (e.g., availability, empathic listening, and positive verbal reinforcement) and instrumental support (e.g., goods, services, monetary assistance) (Finfgeld-Connett, 2005).

Support has been found to affect adherence and is an important part of the phenomenon of chronic illness (Olsen & Sutton, 1998; Toljamo & Hentinen, 2001). Support can be informal or formal, but family and friends play an important role, as do healthcare professionals. Structured and formal peer-support has been found to be helpful (MacPherson et al., 2004). An interesting study on compliance and support was conducted by Kyngäs et al. (1998). In a combined, descriptive study, they explored adolescents’ perception of physicians, nurses, parents, and friends as a help or hindrance in compliance. Their findings reveal how accepting, responsive, and person-centered relationships provide optimal conditions for good adherence.

In an article about medication concordance among mentally ill patients in public clinics in Kingston and St. Andrew, Jamaica, researchers Pusey-Murray et al. (2010) reported that the majority (65.3%) of participants did not adhere to medication regimen. Medication concordance was significantly related to gender ( $p < 0.05$ ) where males were



more likely to take medication, family support ( $p < 0.05$ ) where participants who received family support (the majority being male) were more likely to take the prescribed medications, and insightfulness ( $p < 0.05$ ) where the majority of participants with insightfulness were females. The authors concluded that an important non-tested factor is locus of control, so there needs to be more research to understand the range of factors that can inform and improve patient education about medication adherence.

This finding supported the findings in this study by revealing that an increase in knowledge and family structure could help to decrease the poor medication attitudes and perceptions that surround medication adherence in the elderly Jamaican. Lack of knowledge and family structure can hinder the way the elderly adhere to medications, according to the individual and focus group interviews. Eva commented that her daughters helped in purchasing her medications, Dorothy's daughter purchased her medications, Annie waited for her children to send money to buy her medications and pay for her dialysis, Gertie's daughter purchased her medications, and Lucinda waited on her sons to supply her refills. The focus group interviewees stated that their children played an important role in the purchasing of their medications also.

The conclusion was that support played an important role in the elderly living in Jamaica. The supporting role of the family was essential in maintaining good adherence to medication and providing healthy functioning in the elderly Jamaican and ultimately leading to the core basic theory of Eudaimonia. The final dominant category of socio-economic factor will be discussed in the next section.

### **Socio-Economic Factor**

The American Psychological Association (2007) discussed that socioeconomic factors are fundamental determinant of human functioning across the lifespan, including: development, well-being, and physical and mental health. It was beyond the scope of this study to explore how socioeconomic factor was related to the different variables—employment, education, and race or ethnicity; however, the connections to these variables could have an undeniable, potentially confounding influence on elderly Jamaicans. These variables would have to be discussed in later research, but the cost of the medications for the elderly became the dominant category that emerged as an important socio-economic factor. The relationship of socio-economic factors incongruent to well-being of the elderly Jamaicans was discussed in the literature. Despite the government assistance that was available in Jamaica for low-income families, none of the participants interviewed asked for government assistance. In Jamaica, there was a culturally inherent belief that families pay for medications and take care of their own.

As mentioned in Chapter One, there were medical plans that were available for the elderly in Jamaica. According to McKenzie (n.d.), few people in Jamaica ask for medical support. In his study, McKenzie reported that none of those individuals prescribed medication asked for assistance, despite the fact that none of them were working. Caregivers considered the lack of money and the need to pay for prescriptions as a deterrent for attending the clinic and receiving help needed. This finding was reflected in the proud voices of the following elderly participants.

Annie stated: I have five children and they are all doing well. They will send money to help. I do not bother them for everything. They have their lives to live

too. I don't want to be a burden to my children. So sometimes when I run out of medication, I wait. I don't call them.

Dorothy commented: "My daughter buys my medication. I stretch them so I don't have to bother her all the time. She has it hard too."

Gertie stated: "My daughters pay for my pills. I wait for my daughters to come and refill them. "

Sista stated: "My daughter is blessing. The boys are good too, but Susan is the one who does everything for me. (Laughing) She has me on a schedule. She knows if I am running out of something."

According to Muszbek, Brixner, Benedict, Keskinaslan, and Khan (2007), in a qualitative study assessed that drug costs only increased compliance-persistence leading to increased drug costs. Their finding raises the larger question of how structural factors affect medication adherence as well as the relationship between structural and personal influences on individual behavior. Although education was not a variable in this study, educational level did not appear to affect understanding. What did seem consequential was inappropriate self-diagnosis. Communication between patient and provider is an important barometer of trust. The most unsettling results of this study is that some respondents, regardless of their access to healthcare information and their apparent knowledge of the adverse effects of not taking prescribed medication, were simply unwilling to make the necessary lifestyle changes to remain adherent with healthcare directives. Some respondents acknowledged that taking their medications improved their health, but once they felt better, they decided there was no need to take them anymore. Having experienced negative sequel resulting from medication adherence, they might

have resumed adherence, but adverse health effects had already occurred, creating a cycle of poor medication adherence.

This study correlated to the participants Kenneth and Raywald in the current study. Both participants decided that once they felt better, the medications were not important, so they discontinued the medications on their own. Kenneth seemed to self-diagnose by stating “whenever I feel dizzy, I take the blood pressure pills, and when I feel better, I stop.”

In a quantitative study, Piette, Heisler, Krein, and Kerr (2005) reported the role of patient-physician trust in moderating medication nonadherence because of cost pressures. A total of 912 participants were recruited in a cross-sectional survey. A multivariate logistic regression model, characterizing physician trust and patients’ out-of-pocket medication costs and patients’ income for cost-related underuse, was also used. The findings revealed that patients with higher out-of-pocket costs were more likely to forego medications because of cost pressure when physicians trust levels were low. The findings also suggested that a trusting physician relationship may moderate the impact of cost pressures on patients’ medication adherence.

This finding was congruent with this research study as 58.33% of the elderly in Jamaica reported on the demographic sheet that they disagreed that their physician kept them well informed, 25% strongly agreed about their physician’s information, and 8.33% did not comment. The disparity of the previous study was that it is a quantitative study while this study was a qualitative study describing the verbatim comments of the elderly participants living in Jamaicans. This study provided rich data describing the elderly. From the study, many Jamaicans had the problem of cost-related factors. Income was

low for the individual participants, and this along with forgetfulness became a high factor for poor medication adherence.

In a quantitative study, Park, Kim, Kam, Kim, Ha, and Hyun (2010) reported factors that affected medication adherence in the 265 elderly participants with diabetes mellitus (comparing hospital patients and private clinic patients) over the age of 65 years. The medication adherence based on Morisky's self-report was significantly higher in tertiary hospital patients (61.1%) compared to private clinic patients (43.2%) ( $p < 0.05$ ). The results reflected that drug storage and self-efficacy were factors affecting adherence to medication in tertiary hospital patients ( $p < 0.05$ ). The findings revealed that different strategies should be used to increase medication adherence in geriatric diabetic patients, depending on institutions if they are treated.

This above studies correlated to the elderly Jamaican that if income was not consistently coming into the elderly's home, the adherence to medication was lowered. The male participants seemed more concerned with cost-related factors. Frustration was noted in the female participants regarding amounts of pills taken, and severity of illness. Carline, one of the individual participants, commented:

I have to buy my medications now because I don't have any health card ... before I usually have a health card. They use to pay 80% and I pay 20% for my pills. I have retirement from the company I used to work. I am supposed to get another card one. So now I buy my pills. I am waiting for the card to come. I have a card also from the government that I get a little change from. Sometimes the money is not in hand. I am supposed to go back to the doctor now, and I don't have it so I have to wait.

In the focus group, the children of the participants bore the cost of the medications. The findings of this current research revealed that strategic interventions were needed to decrease poor medication adherence in the elderly Jamaica. This researcher found that the complexity and challenges that the elderly in Jamaica faced could be avoided if they sought help in prescriptions refills instead of completely relying on family structure and cultural beliefs. It is almost like there is a stigma that if medication help is sought, it would be a shameful issue.

The four dominant categories that emerged from this study's findings have similarities to the current literature. The major dissimilarity is the missing theoretical framework that explored the critical influences that guide elderly Jamaicans to medication adherence. Eudaimonia, the basic social process that emerged from this study, added that component. These four dominant categories were interrelated and emerged from the effluent framework that captures how Eudaimonia support elderly Jamaican attitudes and behaviors in Jamaica.

### **Eudaimonia**

The four dominant categories that emerged from the data in this study all diverged toward and supported the core category of Eudaimonia. This theoretical framework was the logical conclusion of conceptual relationships that formed from the themes of believing, self-efficacy, supporting, and socio-economic factors. In this study, the four dominant categories were the analyzed interview product of the elderly Jamaicans and their medication adherence within the framework of Eudaimonia. In addition, the two attributes of the core process of Eudaimonia (well-being and health) further outlined and aid in understanding the elderly Jamaicans and medication adherence.

Hannah Arendt (1978), the United States philosopher and theorist, wrote that the ultimate end of human acts is Eudaimonia which is happiness in the sense of ‘living well, ‘and which all men desire; and all acts are but different means chosen to arrive at it. The core category of Eudaimonia has close ties to the philosophical theories of wellness and healthy living. Another philosophical tie is “do whatever makes you happy.” This is the Aristotelian view. Happiness is the outcome. In view of the elderly interviews, they were cheerful people going to do what they thought was right for themselves.

Kenneth stated: “When I feel better I stop taking the pills. I know my body. The doctors do not know it. If I feel dizzy, I know my blood pressure is high, and then I take them again.”

On medication adherence, Raywald stated: “I stopped taking them without doctor’s order, and I got better anyway.”

Straume and Vitterso (2012) investigated the idea that feeling good and functioning well-being are regulated by two different mechanisms: Hedonic and Eudaimonic. At the state level, it is assumed that happiness is a hedonic feeling typically experienced when life is easy or a goal is reached. Inspiration is a eudaimonic feeling typically experienced when facing challenges in the process of goal attainment. At the trait level, the researchers assumed that personal growth is connected with eudaimonic rather than hedonic mechanisms. These assumptions were confirmed with data from 465 employees of the Occupational Health Services in Norway using day reconstruction method. Multilevel analyses showed that complex work situations increased inspiration and decreased happiness. Personal growth had a stronger effect on inspiration than on happiness. The results supported the idea that pleasant feelings (hedonia) and optimal

functioning (Eudaimonia) have different roles to play in the regulation of behavior and therefore need to be distinguished from one another.

The findings from this current study led to the conceptual framework of Eudaimonia. The core process clearly supports the interconnected dominant processes and leads to answers directed at understanding what the critical factors that influence the attitudes of the elderly Jamaican living in Jamaica to medication adherence.

Carline commented: “I take them to overcome illness. I don’t like to take pills but for the purpose of sickness I have to take it. I don’t want to be sick.”

Mrs. Dawes: “I feel good about my medications as I want to feel better and be well.”

Richie commented when asked the same question: “I want to be well. I want to live longer.”

From the articles reviewed, the themes (believing, self-efficacy, supporting and socio-economic factors) that emerged from the study according to grounded theory methods of Strauss and Corbin were proven to be interconnected to the basic core process (Eudaimonia). It was revealed in the literature that if a person believed in his or her actions, self-efficacy would improve. Bandura showed the interconnection between the themes of supporting and self-efficacy in his summarized statement. An individual’s self-efficacy can be increased through the positive influence and encouragement of others (Bandura, 1997). Bandura’s statement was proven to be connected through the literature reviewed along with the interviews with the elderly in Jamaica. The theme of socio-economics was described as a determinant of well-being as well. Thus, if the elderly in Jamaica had strong belief patterns in medication adherence, an excellent social structure



(supporting), and a good socio-economic factor, the basic core process of Eudaimonia (well-being) would exist.

Specific implications and significance for nursing knowledge are apparent from this work and will be discussed in the next section.

### **Significance of the Study for Nursing Knowledge**

Various quantitative and qualitative studies have addressed medication adherence in the elderly; however, a theory that identifies elderly Jamaican's beliefs and attitudes toward medication adherence in Jamaica was not evident, leaving a knowledge gap in the literature. Thus, this study has generated a theoretical framework supported by the concepts: believing, self-efficacy, supporting, and socio-economic factors leading to the overall theme of Eudaimonia. These concepts will be able to alert nurses and other healthcare professionals to the critical factors influencing the Jamaican elderly living in Jamaica to medication adherence. The concepts that emerged can be beneficial not only to nurses but also to other disciplines also and ultimately to the elderly themselves.

### **Implications for Education**

As the daughter of elderly parents whose poor medication adherence was noted along with cries of frustration about their medication, the researcher advocates educational programs for elderly Jamaicans. Information about medication adherence in the elderly constitutes successful outcomes and improves elderly care in Jamaica. This study is extremely imperative to nursing education as it will provide valuable cultural information about medication adherence in the elderly Jamaicans living in Jamaica to educators and institutions. As clinicians, we are duty-bounded to provide the best care (Hughes, 2008). Medication adherence is significant to nurse education, as this promotes

wellness in patients. At the beginning of this study, the researcher stated that education is the key to preventative and primary care interventions. Teaching the elderly about optimal well-being and health regarding their beliefs is significant. Education plays an integral part in the well-being of the elderly Jamaican.

Well-being is the ultimate goal of elderly Jamaicans; thus, educating them about adhering to medication regimen seems to be imperative. Understanding the impending influences and taking a course of action in accordance could have direct implication on nursing education in Jamaica and around the world, thus lowering the rate of poor medication adherence in this rapidly growing population. Schools of nursing may reform educational curricula to reflect the latest research on medication adherence in the elderly. Formal medical education and in-service training should include current research regarding patient perceptions, beliefs, and attitudes toward his or her health care as well as the elderly's cognitive and emotional influences.

Schools of nursing can meet the challenges of increased educational requirements and formulate a curriculum that includes medication adherence as well as addressing the crucial predicament of the elderly in Jamaica by developing interceptive strategies to address medication adherence in the elderly Jamaican. The information acquired from this study will provide research that will affect the learning in educational institutions and hospitals worldwide about the medication adherence of the elderly Jamaican.

### **Implications for Practice**

The knowledge gained from this study can be transferred to the clinical setting, which is extremely important as nurses attempt to provide higher quality of patient care. Nurses at the bedside, and in the public health centers in Jamaica, and worldwide may

use this study to understand and create a cultural diverse nursing plan of care based on the findings of this study. Nurse educators will be able formulate a plan of care for this culturally sensitive population based on the published literature. Nurses will be able to work together and help patients to be more independent with their medication plans throughout the community and hospital by developing strategic plans for medication implications.

### **Implications for Research**

The literature throughout this study has uncovered that medication adherence is an international problem for the elderly. Nurses conducting this research in Jamaica and worldwide will gain a better understanding about the culture, attitudes, and practices of the Jamaican elderly from this study. This study will orient the medical professionals to options available for positive goals and interventions that must be implemented to assist in the elderly Jamaicans. The findings of this research study will help to guide important decisions that may be made about the specific attitudes, practices, and beliefs of the elderly in Jamaica. It will also guide in filling the gap about the elderly and medication adherence in Jamaica and open an avenue for further research to be conducted about the elderly in Jamaica.

This study opens the gate for extensive research studies in the Caribbean. This study may be replicated in other areas of the Caribbean by using comparative studies in other English-speaking ethnic elderly groups—for example, the elderly Bahamians, Trinidadians, Haitian, and Guyanese. Comparative studies may also be conducted on different socio-economic groups of elderly and medication adherence. By conducting

research in these groups, rich, thick data may emerge that will increase knowledge regarding medication adherence in the increasing elderly population.

### **Implications for Public Policy**

This study will be able to give positive insights to nurses and influential individuals in Jamaica. Given the increasing rate of chronic illnesses in the elderly population in Jamaica, nurses should focus on working with influential individuals and private organizations in the Jamaican society as well as government officials. Nurses should be able to design and deliver more effective programs for developing and increasing the elderly Jamaicans' general self-efficacy and assertiveness in relation to medication adherence. The programs should be age appropriate and should reach every socioeconomic level of Jamaican society. Programs that will enhance general self-efficacy include lectures, community meetings, and workshops that educate elderly about the benefits of general medication adherence. Thus, a potential goal would be for nurses to work for implementation of such programs not only in healthcare facilities but also in churches, schools, community centers, clinics, and other areas that the elderly frequent.

### **Strengths and Limitations**

This study allowed the elderly Jamaicans living in Jamaica to voice their perceptions, attitudes, and behaviors related to the critical factors of medication adherence. Describing each participant's insight and manifestations gave life to the participants and allowed for the comprehension of their individual situations.

This study comprised several strengths, and concurrently, few limitations. Its strength was centrally focused on nursing education and public policy with indications of medication adherence with interventions that extended into nursing practice. The

purpose of this study was to explore the critical factors that influence the attitudes of elderly Jamaicans to medication adherence. This research study expanded the understanding of the elderly Jamaican and medication adherence, and the relevance it has to learn. These were some identifiable limitations of the study. This first limitation was that the population of elderly was from one area of Jamaica. The sample size was 12, limiting the generalizability of findings to the population at large. In a qualitative tradition studies, such as grounded theory, a small sample size (less than 30 participants) is needed to obtain rich data and is not intended to be generalized to the population. The results may be transmissible to a sample comparable to those researched in this research study.

Another limitation, the sample was limited as the participants' demographic was only of primary school education level, and they were basically similar in other areas of the demographic information. It would have been interesting to have the views of participants who had college and high school education. Another limitation was that the researcher was a novice. By being a novice, the researcher was in the process of learning throughout this study, and during the interviews, the researcher could have probed more. However, the researcher had the expertise of committee members for guidance, and the focus group interviews provided further validation for the research findings. The study used a purposeful sampling strategy.

### **Recommendations for Future Study**

In an effort to fully understand the elderly Jamaicans and the effects that medication adherence habits can have on them, more qualitative studies are essential. Qualitative grounded theory research seeks to reveal what is happening and explain the

elderly Jamaicans' behaviors to medication adherence. Given the lack of qualitative research on elderly Jamaicans residing in Jamaica and medication adherence, this study sought to explore and gave the "why" to this study. Findings from this investigation partially have bridged the gap in existing knowledge of this phenomenon of interest. Recognizing the effects of poor medication adherence will assist healthcare professionals in their nursing practice.

The first recommendation would be to reproduce this study using other samples and socio-economic groups in other areas of the island. Future studies should include a more diverse population with demographic variation. By doing this, the study may be further substantiated, or new results may emerge. Although this study's results have added to the nursing education and public policy knowledge based on the elderly Jamaican, much research still remains to be conducted. A quantitative study using survey method would be appropriate as this would test the model and give us numerical figures as to how many elderly do not adhere to medication regimen. Also, it would give an idea of how prevalent the problem is, and identify evidence of a consensus problem of medication adherence is in the elderly Jamaican. The study needs to be replicated with the elderly in other areas of the country (urban and rural), and compared results with the present findings. Studies should include how medication adherence impacts the elderly at all level of Jamaican society as one of the limitation was that elderly with college or university education level was not interviewed. In an effort to fully understand the elderly Jamaicans' medication adherence habits, more qualitative studies are essential.

The participants' education in this inquiry was of significant interest also. The elderly Jamaicans' education was of primary school level in Jamaica. This represents an

elementary school education in the United States. Therefore, a suggestion would be to conduct qualitative or quantitative study on literacy, as this was not addressed in this inquiry. These studies might be quantitative survey or convention research study. As the elderly Jamaicans were conveniently located in one setting, a convention research would allow a researcher to take advantage of using a number of qualitative and quantitative research methodologies simultaneously. Making use of a wide range of research capabilities, a convention research will be extremely cost-effective, and the turnaround time would be exceedingly fast.

Other recommendations are to provide in-service opportunities for physicians to improve their communication skills with the elderly by explaining the medication regime in full. Healthcare professionals need to anticipate the possibility of patient self-diagnosis and home and herbal remedies and take steps such as patient education to include the health risks of self-diagnosis to counteract it. Another recommendation is to educate patients about other healthcare options if they become unable to afford their current medication regime. Future research should also examine more age groups and medication adherence. Different age groups may also be investigated for similarities or differences with medication adherence. Additional qualitative studies or quantitative studies may also reveal extensive information that would also contribute to the research gap. The integration of new, innovative teaching strategies, such as community-based learning or information sessions will advance the knowledge and self-efficacy of the elderly Jamaicans living in Jamaica.

## Summary and Conclusion

Chapter Five discussed the association between the current literature and the findings of this study. Many parallels were noted as a few variations to the four categories that emerged from the study. The chapter presented the implications for nursing education, practice, research, and public policy. A discussion of the strengths and weaknesses of the study, and recommendations for future research were reviewed.

Adhering to medication for the elderly Jamaican involves a multifaceted set of perceptions, behaviors, and attitudes. Four dominant categories emerged from two groups of participants in this qualitative study. A grounded theory tradition was used to reveal the critical factors that affect medication adherence in the elderly Jamaicans residing in Jamaica. The first group of 12 elderly Jamaicans was individually interviewed. The second group was five elderly who served as the theoretical sample. The rich, thick data that emerged were analyzed manually using Strauss and Corbin's (1998) grounded theory framework. Four dominant categories materialized: believing, self-efficacy, supporting, and socio-economic factors. Further exploration of the meaning of these categories revealed how they fit into the basic core process of Eudaimonia. Thus, the categories became the groundwork of the theory that supported the aim of the study.

Review of the literature and the research provided little solution to the problem surrounding medication adherence. A strategy to improve medication adherence in the elderly Jamaican might be to have community informational classes, which would help the elderly to be more aware of their illness, provide knowledge about the disease, provide access to health care, and incorporate healthcare beliefs into the medication



egime. To conclude, this study fulfilled the missing gap and purpose and explored the critical factors that influenced the beliefs and attitudes and of the elderly Jamaicans residing in Jamaica.

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**APPENDICES**



**APPENDIX A****ACCESS LETTERS****Re: letter of request for access**

Curtis Yeates [REDACTED]

**Sent:** Tuesday, August 07, 2012 9:21 AM

**To:** Smikle, Caroline (Barry Student)

I am hereby giving permission for you to place a recruitment flyer and conduct research in my health care organization for the elderly (65-85 years) to participate in your study.

Kind Regards,

Yours Sincerely,

Dr. Curtis B. Yeates  
Consultant Physician & Nephrologist

## APPENDIX B

### INFORMED CONSENT

- | <u>N/A</u> | <u>YES</u> | <u>NO</u> |   |
|------------|------------|-----------|---|
| ___        | <u>X</u>   | ___       | 1. Is the consent form written in lay language? The consent form should avoid jargon and should be written simply for understanding the contents.   |
| ___        | <u>X</u>   | ___       | 2. Is coercive language avoided (e.g., if you participate in this research, we will be well on the road to finding a cure for AIDS)?  |
| ___        | <u>X</u>   | ___       | 3. Is the participant fully advised of his or her rights? Is the consent form free of any exculpatory language through which the participant is made to waive any legal rights, including any release of the investigator, the sponsor, the institution, or its agents from liability for negligence? |
| ___        | <u>X</u>   | ___       | 4. Is an introduction of the researchers, their affiliation, and the purpose of the study and the expected duration of participation included?  |
| ___        | <u>X</u>   | ___       | 5. Are descriptions of procedures included, including the expected duration of participation?   |
| ___        | <u>X</u>   | ___       | 6. Is there a disclosure of available alternative procedures or treatments, if any that might be advantageous to the subjects? Remember, choosing to refrain from participating is an alternative.  |
| ___        | <u>X</u>   | ___       | 7. Is there a description of any risks or discomforts to the participant?   |
| ___        | <u>X</u>   | ___       | 8. Is there a benefits statement?   |
| ___        | <u>X</u>   | ___       | 9. Is there a statement describing the extent to which confidentiality of records identifying the participant will be maintained?   |
| ___        | <u>X</u>   | ___       | 10. Is the principal investigator and faculty sponsor's name and contact number given for answers to questions about the research study?  |
| ___        | <u>X</u>   | ___       | 11. Is the anticipated number of participants given in the Consent Form as well as the protocol?  |
| ___        | <u>X</u>   | ___       | 12. Is it disclosed that participation of the participant is completely voluntary and that he or she has the right to withdraw at any time without penalty?   |
| ___        | <u>X</u>   | ___       | 13. Does the form provide for the signature of the consenting participant and the investigator?   |
| ___        | <u>X</u>   | ___       | 14. Does the form state "Barry University, (Parent) Consent Form" at the top of the first page?   |

**BARRY UNIVERSITY**  
**INDIVIDUAL INFORMED CONSENT**



OFFICE OF THE PROVOST  
INSTITUTIONAL REVIEW BOARD

Research with Human Subjects  
Protocol Review

Date: August 24, 2012

Protocol Number: 120817

Title: The Critical Factors that Influence Beliefs and Attitudes of the Elderly Jamaican to Medication Adherence

Date: August 15, 2012

Researcher Name: Caroline E. Smikle  
Address: [REDACTED]

Dear Ms. Smikle:

On behalf of the Barry University Institutional Review Board (IRB), I have verified that the specific changes requested by the convened IRB August 15, 2012 have been made.

It is the IRB's judgment that the rights and welfare of the individuals who may be asked to participate in this study will be respected; that the proposed research, including the process of obtaining informed consent, will be conducted in a manner consistent with requirements and that the potential benefits to participants and to others warrant the risks participants may choose to incur. You may therefore proceed with data collection.

As principal investigator of this protocol, it is your responsibility to make sure that this study is conducted as approved by the IRB. Any modifications to the protocol or consent form, initiated by you or by the sponsor, will require prior approval, which you may request by completing a protocol modification form.

It is a condition of this approval that you report promptly to the IRB any serious, unanticipated adverse events experienced by participants in the course of this research, whether or not they are directly related to the study protocol. These adverse events include, but may not be limited to, any experience that is fatal or immediately life-threatening, is permanently disabling, requires (or prolongs) inpatient hospitalization, or is a congenital anomaly cancer or overdose.

The approval granted expires on September 30, 2013. Should you wish to maintain this protocol in an active status beyond that date, you will need to provide the IRB with and IRB Application for Continuing Review (Progress Report) summarizing study results to date. The IRB will request a progress report from you approximately three months before the anniversary date of your current approval.

If you have questions about these procedures, or need any additional assistance from the IRB, please call the IRB point of contact, Mrs. Barbara Cook at [REDACTED] or send an e-mail to [REDACTED]. Finally, please review your professional liability insurance to make sure your coverage includes the activities in this study.

Sincerely,



Linda Bacheller, Psy.D., J.D.  
Chair, Institutional Review Board



Cc: Dr. Jessie Colin

\*\*\*\*\*  
Note: The investigator will be solely responsible and strictly accountable for any deviation from or failure to follow the research protocol as approved and will hold Barry University harmless from all claims against it arising from said deviation or failure.



Approved by Barry University IRB ■

Date :

AUG 24 2012

Signature ■

*Smikle, Barbara, PhD, JD*

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**Appendix B  
Barry University  
INDIVIDUAL INFORMED CONSENT**

You are asked to volunteer in a research study. The title of the study is "The Critical Factors That Influence Beliefs and Attitudes of the Elderly Jamaican to Medication Adherence." The research is being conducted by Caroline Smikle, RN, MSN, a doctoral student at Barry University; College of Health Sciences, Division of Nursing she is seeking information that will be useful in the field of nursing. The aim of this research is to determine the critical factors that affect medication adherence in the elderly Jamaicans residing in Jamaica. In accordance with these aims, the following procedures will be used: face to face interviews that will be audio-taped. The interviews will not take more than 1 hour. You will then be asked to meet again for ten minutes to verify previous responses (member check). This can be done by telephone also.

If you decide to participate in this research, you will be asked to meet with interviewer. It will be approximately 1 hour long, audio-taped face to face interview. Your consent is strictly voluntary and should you decline to participate or drop out during the study, there will be no adverse effects to you. There are no risks to you in participating in the study. As a participant, you have the right to refuse to answer a question, ask that the tape recording stop, or withdraw from the study. If you withdraw none of the information will be used in the study. Although there are no direct benefits to you, your participation will help in our understanding of the difficulties experience by elderly Jamaican in their adherence to taking their medications. At the end of the interview, a token of \$10 US dollars will be given to you as a token of appreciation.

As a research participant, information you provide will be held in confidence to the extent permitted by law. You will be asked to choose a pseudonym for the interview to maintain confidentiality. Any published results of the research will refer to group averages only and no names will be used in the study. Data will be kept in a locked file in the researcher's office. Audio-tapes of the interview will be destroyed once analyzed. Your signed consent form will be kept separate from the data. All data will be destroyed after five years.

If you have any questions or concerns regarding the study or your participation in the study, you may contact Caroline E. Smikle, at [redacted] in the US, or [redacted] in Jamaica, the Institutional Review Board point of contact, Barbara Cook, at [redacted] or Dissertation Chair, Dr. Jessie Colin, at [redacted]. If you are satisfied with the information provided and are willing to participate in this research, please signify your consent by signing this consent form.

**Voluntary Consent**

I acknowledge that I have been informed of the nature and purposes of this experiment by Caroline E. Smikle, and that I have read and understand the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this experiment.

\_\_\_\_\_  
*Signature of Participant*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Researcher*

\_\_\_\_\_  
*Date*

Approved by Barry University IRB

Date

AUG 24 2012

Signature

*Amelia Bachella, PsyD, JD*

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**Appendix B**  
**Barry University**  
**INFORMED CONSENT FORM: FOCUS GROUP**

You are asked to participate in a research study. The title of the study is "The Critical Factors that Influence Beliefs and Attitudes of the Elderly Jamaican to Medication Adherence." The research is being conducted by Caroline Smikle, RN, MSN, a doctoral student at Barry University; she is seeking information that will be useful in the field of nursing. The aim of this research is to determine the critical factors that affect medication adherence in the elderly Jamaicans residing in Jamaica. The researcher anticipates 5-8 participants in this Focus Group meeting.

If you decide to participate in this research, you will be asked to meet with 4-7 other participants in a meeting which will last approximately 1 hour, and it will be audio-taped. Your consent is strictly voluntary and should you decline to participate or drop out during the study, there will be no adverse effects to you. There are no risks to your participation; however, if you do experience any discomfort, the researcher will supply you with contact numbers of medical personnel if you choose to discuss your feelings with them. If you withdraw none of the information will be used in the study. Although there are no direct benefits to you, your participation will help in our understanding of the difficulties experience by the elderly Jamaican in their adherence to taking their medications. 10.00 US dollars will be given to you at the end of the focus meeting as a gift of gratitude for your participation. It will be yours even if you choose to withdraw from the study.

As a research participant, information you provide will be held in confidence by the researcher to the fullest extent permitted by the law. However, confidentiality by other group participants cannot be guaranteed. You will be asked to choose a pseudonym for the meeting to maintain confidentiality. Any published results of the research will refer to group averages only and no names will be used in the study. Data will be kept in a locked file in the researcher's office. Audio-tapes of the meeting will be destroyed once analyzed. Your signed consent form will be kept separate from the data. All data will be destroyed after five years.

If you have any questions or concerns regarding the study or your participation in the study, you may contact Caroline E. Smikle, at [REDACTED] (USA)/ [REDACTED] (Jamaica) the Institutional Review Board point of contact, Barbara Cook, at [REDACTED] or Dissertation Chair, Dr. Jessie M. Colin, at [REDACTED]. If you are satisfied with the information provided and are willing to participate in this research, please signify your consent by signing this consent form.

**Voluntary Consent**

I acknowledge that I have been informed of the nature and purposes of this experiment by Caroline E. Smikle, and that I have read and understand the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this experiment.

\_\_\_\_\_  
*Signature of Participant*\_\_\_\_\_  
*Date*\_\_\_\_\_  
*Researcher*\_\_\_\_\_  
*Date*



## APPENDX C

## DEMOGRAPHIC DATA SHEET

Pseudonym \_\_\_\_\_

Date of Birth \_\_\_\_\_

Age: \_\_\_\_\_ Gender: \_\_\_ Male/ Female \_\_\_\_\_

Marital Status: \_\_\_ Single \_\_\_ Married \_\_\_ Widowed \_\_\_ Divorced \_\_\_ Separated

Employment Status: \_\_\_ Fulltime \_\_\_ Part time \_\_\_ Retired \_\_\_ Unemployed  
\_\_\_ self-employed

List all the medications that you are currently taking including dosage/time

\_\_\_\_\_  
\_\_\_\_\_

Highest level of education that you have completed:

- Primary School  
 Elementary School  
 High School  
 Some College/Technical School  
 College  
 Professional/Graduate School

Annual household income level:

- \$10,000 and under  
 \$10,001 to \$20,000  
 \$20,001 to \$30,000  
 \$30,001 to \$40,000  
 \$40,001 and over

What illnesses are you currently diagnosed with? (Check all that apply)

- Diabetes  
 High cholesterol (Hyperlipidemia)  
 High blood pressure (Hypertension)  
 Coronary Artery Disease  
 other (please list): \_\_\_\_\_

How long ago were you told that you had the conditions listed above? \_\_\_\_\_

How much do you agree or disagree that you can get sufficient amounts of education and consultation about your medications from your healthcare provider (Circle your answer)?

Strongly Agree   Somewhat Agree   Neutral   Somewhat Disagree  
 Strongly Disagree

**APPENDIX D**  
**RECRUITMENT FLYER**



## Elderly Jamaicans Needed

### Age 65-85

To participate in a research study exploring the factors that influence beliefs and attitudes of the elderly Jamaicans to medication adherence. This is a nursing research study, and the result will be help to promote the care and health of the elderly Jamaicans.



- **Phase I:** Individual interview, one hour each with the English-speaking, elderly Jamaican on two or more medications who **is not** taking his or her medications as the doctor prescribed. A maximum of 20 participants are needed.
- **Phase II:** A one-hour focus group meeting with 5-8 English-speaking Jamaican elderly who **are taking their medication** and are on two or more medications for one or more illnesses.

**If you are interested in participating in this study or have any questions or concerns, please contact me.**

**\$10.00 US dollars will be given to each participant at the end of the interview up to a maximum of 28 participants.**

**Thank You!!**

**Caroline E. Smikle, RN, MSN, Principal Researcher**



**Contact Information:**

- *Researcher- Caroline Smikle Phone:* [REDACTED]

*Email:* [REDACTED]

- *Faculty Supervisor- Dr. Jessie Colin Phone:* [REDACTED]

*Email:* [REDACTED]

- *Barry University IRB Contact: Barbara Cook Phone:* [REDACTED]

*Email:* [REDACTED]

**APPENDIX E**  
**INDIVIDUAL INTERVIEW QUESTIONS**

The purpose of this interview and research is to identify the characteristics, attitudes and behaviors of medication non-adherence in the elderly population, and to help the medical personnel in understanding the skills needed to provide care for these patients at the most vulnerable period of their lives. Everything we discuss will be confidential.

Possible questions:

- 1) What are some of the critical factors that influence you taking your medication?
- 2) Can you tell me how you feel about taking your medications?
- 3) How many medications are you taking?
- 4) Do you know what the medications are for?
- 5) Do you believe that when you feel better, you should stop taking your pills?
- 6) How do you pay for your medications?
- 7) Do you have an insurance plan?
- 8) Tell me about your thoughts on taking your medication.
- 9) Have you ever thought about taking any home remedies?
- 10) What are your reasons for not adhering (taking) to your prescribed medications?
- 11) Is there anything else that you would like to tell me about your experiences with taking your medications?

**APPENDIX F**  
**FOCUS GROUP QUESTIONS**

Primary Questions:

- 1) What are some of the major critical factors that influence you taking your medication?
- 2) Can you tell me how you feel about medication adherence (taking your medications)?
- 3) Based on themes that came from the individual interviews after data is collected and analyzed.

**APPENDIX G****LETTERS OF REQUEST FOR ACCESS**

July 15, 2012

Mr. Everton Anderson

[REDACTED]

Dear Mr. Anderson:

My name is Caroline E. Smikle, RN, MSN. I am a doctoral student at Barry University in Miami, Florida in the dissertation phase of my study. I will be the principal investigator. My research project is entitled "*The Critical Factors that Influence the Beliefs and Attitudes of the Elderly Jamaican to Medication Adherence.*" The purpose of the study is to generate an awareness and understanding about the critical factors that influence beliefs and attitudes of the elderly Jamaican to medication adherence in Jamaica.

I am hereby requesting permission to place a recruitment flyer and conduct meeting in your health care organization for the elderly (65-85 years) to participate in this study. Participation is voluntary; time required will be one hour, participation will be in a face-to-face interview session. A group meeting of 5-8 participation will be conducted also. The interviews and meeting will take place at a quiet area in the faculty with only the participants and the interviewer present.

Your cooperation would greatly be appreciated. Should further information about the study be needed, please e-mail me at [REDACTED] or contact me at [REDACTED]; or Dr. Jessie Colin at [REDACTED], or the Institutional Review Board point of contact Barbara Cook, at [REDACTED]. Thank you very much in advance for your help and cooperation.

Caroline E. Smikle, RN, MSN

Principal Investigator  
Barry University

July 15, 2012

Dr. Curtis Yates



Dear Dr. Yates:

My name is Caroline E. Smikle, RN, MSN. I am a doctoral student at Barry University in Miami, Florida in the dissertation phase of my study. I will be the principal investigator. My research project is entitled "*The Critical Factors that Influence the Beliefs and Attitudes of the Elderly Jamaican to Medication Adherence.*" The purpose of the study is to generate an awareness and understanding about the critical factors that influence beliefs and attitudes of the elderly Jamaican to medication adherence in Jamaica.

I am hereby requesting permission to place a recruitment flyer in your health care organization for the elderly (65-85 years) to participate in this study. Participation is voluntary; time required will be one hour, participation will be in a face-to-face interview session. A group meeting of 5-8 participants will be required also. The interview and meeting will take place at a quiet area in the faculty with only the participants and the interviewer present.

Your cooperation would greatly be appreciated. Should further information about the study be needed, please e-mail me at [REDACTED] or contact me at [REDACTED]; or Dr. Jessie Colin at [REDACTED], or the Institutional Review Board point of contact Barbara Cook, at [REDACTED]. Thank you very much in advance for your help and cooperation.

Caroline E. Smikle, RN, MSN

Principal Investigator  
Barry University

**APPENDIX H**  
**INTERVIEW PROTOCOL**

Researcher: Caroline E. Smikle, RN, MSN

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Pseudonym Name: \_\_\_\_\_

Contact Number: \_\_\_\_\_

1. Introduction to research procedure and description of research project
  - Purpose of the study
  - Risks and benefits of the study
  - Time commitment
2. Establish initial interest and questions
3. Obtains informed consent
4. Chooses pseudonyms and assure confidentiality
5. Fills out demographic data questionnaire
6. Advises participants:
  - They withdraw from study at any time
  - They may choose not to answer any question
  - May ask that audio-taping be stopped at any time
  - They may choose to stop and break at any time
7. Interview and recording commences as elderly permits
8. Conclude interview
9. Ask elderly if any questions
10. Requests follow-up interviews
11. Confirms follow-up

12. Assures confidentiality, contact information of researcher if needed

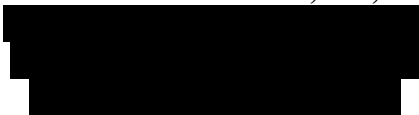
13. Token of Gratitude given

14. Post Interview:

- Label audio-tape with pseudonym
- Reflection and journaling
- Transcriptions of taped interview
- Data analysis

## CURRICULUM VITAE

**CAROLINE E.SMIKLE, RN, MSN**



### EDUCATION

Barry University, Miami Shores, FL-present  
 Doctor of Philosophy in Nursing  
 University of Phoenix, Phoenix, AZ- 2008  
 Master of Science, Nursing  
 University of Phoenix, Phoenix, AZ-2006  
 Bachelor of Science, Nursing  
 Queensborough Community College, Bayside, NY  
 Associate of Science, Nursing

### PROFESSIONAL LICENSURE

Registered Nurse, Florida 1999  
 Registered Nurse, New York 1997

### PROFESSIONAL EXPERIENCE

Registered Nurse, Boca Raton Regional Hospital, Boca Raton, FL  
 2006-present  
 Adjunct Clinical Instructor, Palm Beach State College, Lake Worth, FL  
 2009-present  
 Registered Nurse, Delray Medical Center, Delray Beach, FL  
 2002-2006  
 Registered Nurse, Preferred Healthcare, Fort Lauderdale, FL  
 1999-2002  
 Registered Nurse, Woodmere Rehabilitation/Care Center, Woodmere, NY  
 1997-1999

### HONORS AND AWARDS

|      |                 |                                 |
|------|-----------------|---------------------------------|
| 2006 | Honors Graduate | University of Phoenix           |
| 2008 | Honors Graduate | University of Phoenix           |
| 1997 | Deans List      | Queensborough Community College |

### SCHOLARLY ACTIVITIES

Present, Student Researcher, The Critical Factors that Influences the Beliefs and Attitudes of the Elderly Jamaican to Medication Adherence.



**INSTRUCTIONAL ACTIVITIES**

NUR 1033L, Nursing 1, Clinical

NUR 1213L, Nursing 11, Complex Client, Clinical

NUR 2712C, Nursing 1V, Complex Client/Critical Care, Clinical

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

Sigma Theta Tau International 2012

The Florida Nurses Association 2013

The American Nurses Association 2013

The Florida Nurses Foundation 2013

**MEMBERSHIP IN COMMUNITY ORGANIZATIONS**

The Worship Center International Ministries 2009