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Black, Male, African Immigrants' Perceptions of Colorectal Cancer Screening in Baltimore, Maryland

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Abstract

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by

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MS, University of Johns Hopkins

MSc, University of Cologne

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy
Public Health

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November 2019

Abstract

Colorectal cancer (CRC) represents a public health issue that may be prevented using the screening strategy. Black people in Africa represent the population with the lowest risk for CRC. However, in Africa as well as the United States, Black people participate the least in CRC screening. Little is known about the perceptions of CRC and CRC screening in the Black, male, African immigrants residing in Baltimore, Maryland. The low participation in CRC screening in this population was the problem addressed by this dissertation. The purpose of this qualitative study was to explore and describe Black, male, African immigrants' experience with CRC screening in Baltimore. Two research questions focused on understanding the meaning of CRC and describing the experience with CRC screening in this population. The health belief model served as a conceptual framework. The descriptive phenomenological approach was used using semistructured interviews with 8 participants. Data collected from eligible participants in the population of interest were transcribed and analyzed thematically using Colaizzi's 7-step strategy. Three key findings from this study included the limited knowledge of CRC, the limited perceived barriers to CRC screening, and the high level of trust in health care providers of the participants. Fear of results and negative cultural beliefs about CRC screening were no barriers to the screening. The recommendations for future studies include the consideration of the female population and the inclusion of participants resident in Baltimore for fewer than 6 months. The implications for a positive social change include the improvement of CRC awareness and physician-patient conversations, as well as the development of policies that can facilitate access to health care.

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Dedication

All my lovely dedication to my wife, Fatoumata Niagado, for her supportive work, encouragements and for being a wonderful wife.

A special dedication to my 5-year-old son, Borel Kembou, who has made me a better person and never stop pushing me to go study with his famous phrase: “Daddy go study”, and to my late father, Kembou Louis, whose dream had always been to see me complete a doctorate degree, but had to answer god’s call few years ago.

I dedicate this work to my entire family, including my mother, Jacqueline Manto, and all my sisters and brothers who never stop making me feel like I can achieve even more with all their positive thinking.

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Chapter 1: Introduction to the Study

Introduction

The human body is made of cells that grow, divide, and die. This process occurs in a normal physiological condition where dead cells are replaced by new ones through cell division and proliferation (National Cancer Institute [NCI], 2015a). In an abnormal condition where the body starts making a new cell that is not needed, the cell division becomes uncontrolled, and the physiological functioning of the organ of a particular cell population is disrupted; this is called cancer comes (NCI, 2015a). Hippocrates (370-460 BCE) used the Greek word *karkinos* to describe “human carcinoma tumors.” The word *karkinos* gave rise to the word *cancer*, which is now used to describe the uncontrolled cell division and proliferation (Suhakar, 2009).

Cancer is a disease that is caused by changes to genes that control the way cells function, and it is marked by abnormal and uncontrolled cell proliferation (NCI, 2015a). The genetic changes that can cause cancer may come from the parents or from environmental exposures that cause damage to DNA (NCI, 2015a). The genes involved in the cancer process include proto-oncogenes, tumor suppressor genes, and DNA repair genes. Proto-oncogenes control the regular cell division, but can activate the cancer process if they are altered via a mutation that would prevent them from controlling the cell division. Proto-oncogenes induce the cancer process and are called oncogenes (NCI, 2015a). Not all changes in the normal cell will result in cancer, but all changes in the normal cell should be considered as a preindicator for possible cancer development (NCI, 2015a).

The main difference between a healthy cell and a cancer cell is that a normal cell will stop dividing once new cells are not needed, whereas a cancer cell will not stop dividing and form a mass of undesired cells called a tumor (NCI, 2015a). The undesired cells will then migrate to other body parts and organs via metastasis and interfere with the normal functioning of those organs (NCI, 2015a). The tumors can be solid or fluid depending on the type of organ at the origin. For example, cancer arising from an epithelial cell (cell of the external surface membrane of tissue), known as a carcinoma, forms a solid tumor, whereas cancer from the blood-forming tissue of the bone marrow, known as leukemia, does not form a solid tumor (NCI, 2015a). Because cancer can start anywhere in the human body, the name attributed to the type of cancer is associated with the organ or tissue from which it originated (NCI, 2015a). For example, lung cancer starts in the lung, and colon cancer starts in the colon.

During the process leading to cancer development, a normal cell undergoes two significant changes: hyperplasia, and dysplasia. Hyperplasia occurs when the number of cells in a tissue or organ increases more than the usual number needed, and dysplasia occurs when the normal cell changes shape. At this point in the process, the cell has not become cancerous, and the cancer development can still be interrupted (NCI, 2015a). After the dysplasia phase, cells become cancerous, and the body can no longer control their division and proliferation (NCI, 2015a).

Figures 1 and 2 show the process leading to the development of a cancer cell from a normal cell (A) and the uncontrolled cell proliferation of a cancer cell in comparison to the controlled proliferation of a normal cell (B).

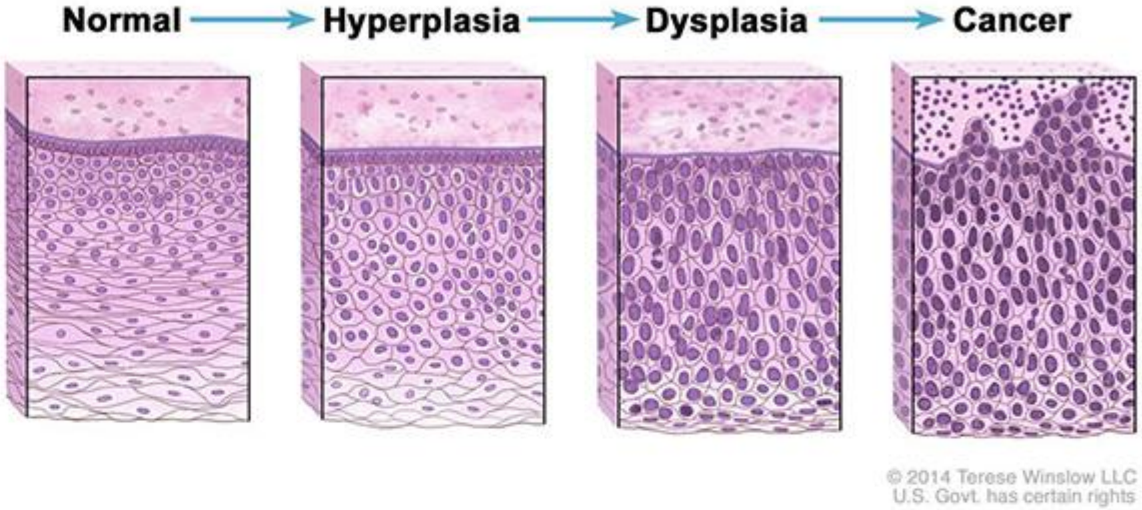


Figure 1. Process from normal to cancer cell. Adapted from the NCI, (2015b).

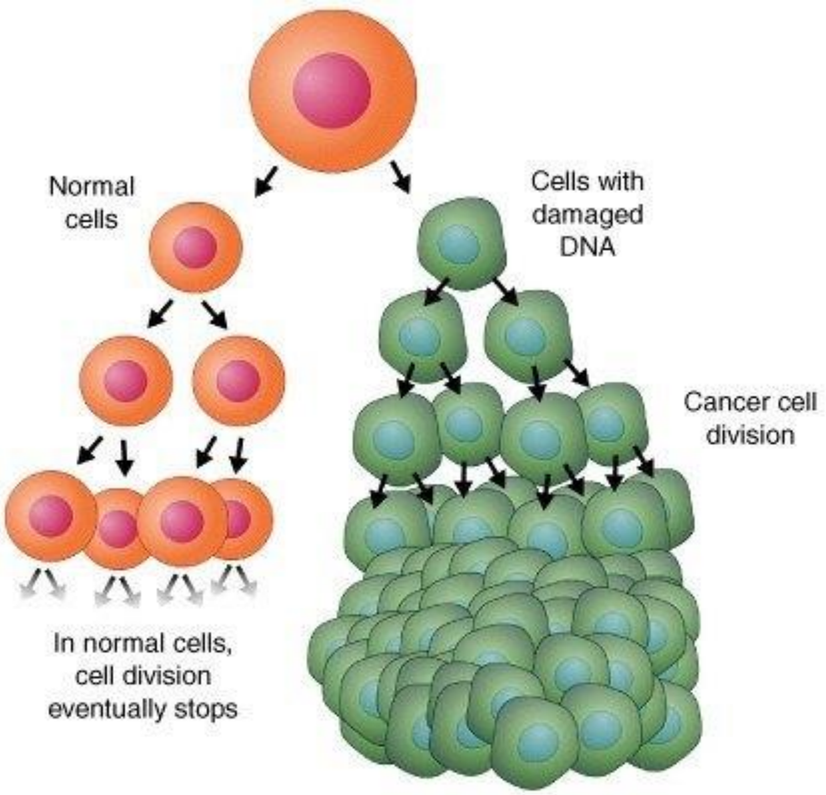


Figure 2. Uncontrolled cell division. Adapted from Quora (2019).

Background

Historical Background of Cancer

Some of the earliest evidence of human bone was identified in ancient Egyptian mummies and ancient manuscripts from about 1600 BCE (Suhakar, 2009). During the Middle Ages, the humoral theory, developed by Hippocrates, was used to explain the cause of cancer (Suhakar, 2009). According to the humoral theory, any imbalance in the body fluids (i.e., blood, phlegm, yellow bile, and black bile) was the cause of cancer. In the 17th century, the lymph theory, which stated that cancer was caused by a fluid called *lymph*, being constantly thrown out by the blood, was supported (Suhakar, 2009).

In 1838, Muller demonstrated with the blastemal theory that cancer is made up of cells, not with lymph, and Virchow later determined that cancer cells, such as all cells in the human body, are derived from other cells (Suhakar, 2009). Virchow later used the chronic irritation theory to explain that cancer is caused by chronic irritation. From the late 1800s till the 1920s, it was believed that cancer was caused by trauma (trauma theory). Until the 18th century, it was believed that cancer was contagious via parasites (parasite theory; Suhakar, 2009).

In 1962, Watson and Crick were awarded the Nobel Prize for discovering the DNA double helix structure, a discovery that changed the dynamic around cancer research. Researchers focused on the role that DNA could play in cell division and discovered that abnormal cells that became cancer cells had a mutation in their DNA and did not die like normal cells (Suhakar, 2009). The discovery of oncogenes and tumor suppressor genes in the 1970s marked the beginning of the modern era of cancer understanding, which posits that cancer is under the regulation of the two groups of genes: oncogenes and tumor suppressor genes (Suhakar, 2009).

The Colon and the Rectum

The human digestive system starts with the mouth and ends with the anus. The small and large intestines are a part of the digestive system. The colon and the rectum make up the large intestine, with the colon being the most extended section of approximately 6 feet and the rectum the shortest section of approximately 6 inches (Canadian Cancer Society [CCS], 2018). The colon is composed of four parts: the ascending colon, the transverse colon, the descending colon, and the sigmoid colon (CCS, 2018). The ascending colon is the starting point of the colon on the right side of the body. It bends at the first colonic flexure, the hepatic flexure, where the transverse colon starts. The transverse colon extends from the hepatic flexure until the second colonic flexure, the splenic flexure, which is on the left side of the body and forms the starting point of the descending colon that ends with the beginning of the sigmoid colon. The sigmoid colon serves as a connection between the rectum and the colon (CCS, 2018). Figure 3 below shows the sections of the colon.

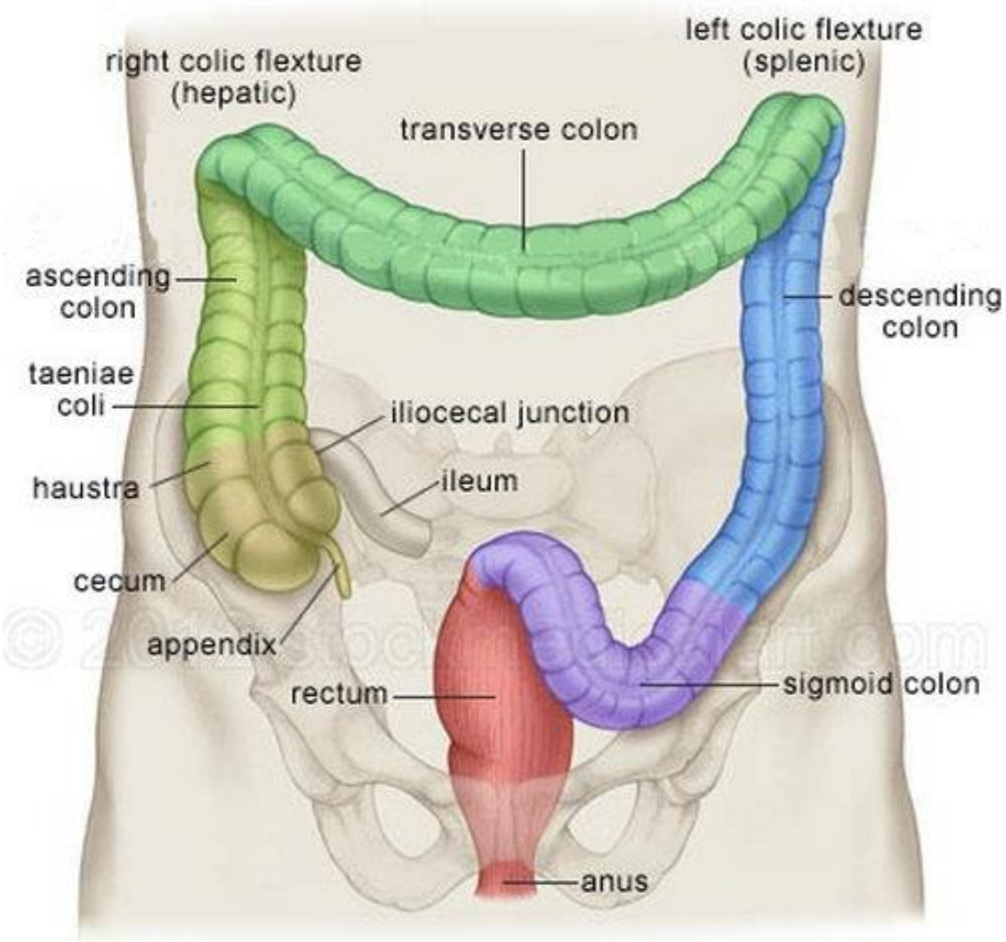
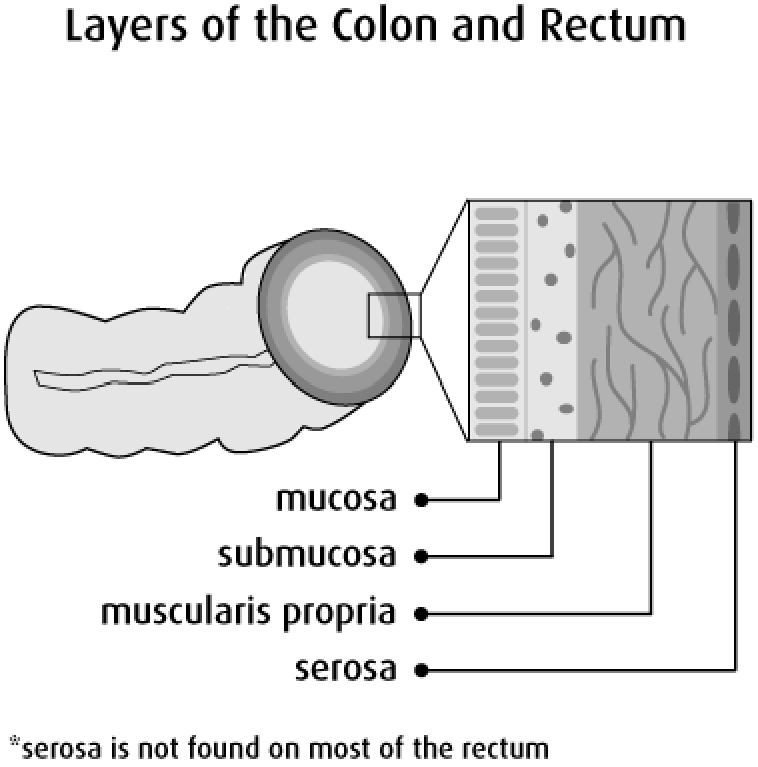


Figure 3. Sections of the colon. Adapted from the Medical Art Library (2019).

The primary layer of the colon and rectum is the mucosa, which contains the epithelial cells, and is surrounded by the submucosa, which contains the nerves, blood and lymph vessels, and mucous glands (CCS, 2018). The walls of the colon and rectum are covered by a muscle layer called muscularis propria. A layer called serosa makes up the outer membrane of the colon and is rarely present on the outer side of the rectum (CCS, 2018). Figure 4 shows the layers of the colon and rectum.



*serosa is not found on most of the rectum

Figure 4. Layers of the colon and rectum. Adapted from the Canadian Cancer Society (2018).

Functions of the colon and rectum. The colon and the rectum help with the alimentation of the human body by absorbing water and nutrients from consumed food as well as by serving as storage for food waste (CCS, 2018). The mucosa plays a role in maintaining the health of the colon by secreting mucus that facilitates the movement of the stool from the colon. The rectum serves as a storage location for the stool that will later be expelled from the body (CCS, 2018). Colorectal cancer limits the abilities of the colon and rectum to accomplish these functions.

Colorectal Cancer

CRC may be caused by environmental factors, genetic factors, or a combination of both (Recio-Boiles & Cagir, 2018). The process leading to colon or rectal cancer may be the result of a change from normal to abnormal mucosal epithelium, which may take up to 15 years, and which needs the presence of genetic mutations that are either acquired/somatic or inherited (Recio-Boiles & Cagir, 2018). According to the American Cancer Society ([ACS], 2018a), CRC risk factors include controllable and noncontrollable factors. The controllable factors pertain to lifestyle, such as limited physical activity, a diet rich in alcohol and red meat (Johnson et al., 2013), being obese or overweight, and cigarette smoking (ACS, 2018a). The noncontrollable factors include age, genetic predisposition, history of inflammatory bowel disease, and family history of CRC (ASC, 2018a). Vitamin D plays a role in colonic epithelial cell proliferation and differentiation, and the lack of it may be considered a risk factor for CRC (Klampfer, 2014).

The molecular pathways leading to the onset of CRC include the microsatellite instability (MSI), the chromosomal instability (CIN), and the epigenetic manifested by the aberrant DNA methylation (Nojadeh, Sharif, & Sakhinia, 2018). Although microsatellites are repeated DNA sequences that interfere with gene function and cause abnormal DNA repair process, CIN is marked by changes in chromosomal structure and number that would increase the DNA mutations and increase the risk for CRC (Nojadeh et al., 2018). The observed epigenetic is mostly hypermethylation that may block the activation of some tumor suppressor genes, thus promoting the activation of oncogenes involved in the molecular triggering of CRC pathway activation.

The cause and genetic basis lead to the distinction of CRC into three major types: sporadic, familial, and hereditary (Nojadeh et al., 2018). Sporadic CRC is the most common type, which may result from an interaction of environmental factors, lifestyle, and aging; therefore, it represents the CRC most diagnosed in older adults (Nojadeh et al., 2018). On the other hand, *familial CRC* may refer to a type common in a family that shares everyday lifestyle, environment, and/or health behavior without an identifiable genetic pattern, whereas the hereditary CRC type would present identifiable genetic inheritance (Recio-Boiles & Cagir, 2018). The sporadic form represents 70%, whereas the familial and hereditary forms represent 20% and 10%, respectively (Recio-Boiles & Cagir, 2018).

Two significant genetic aberrations can account for the genetic form of CRC: familial adenomatous polyposis (FAP) and the Lynch syndrome (LS; Nojadeh et al., 2018). FAP is known to be the most inherited form of CRC, and it is autosomal dominant, meaning that only one parent is required to pass the genetic defect to the offspring (Nojadeh et al., 2018). FAP is under the regulation of a gene called APC (adenomatous polyposis coli), which is a tumor suppressor gene located on chromosome 5q21 (Chromosome 5, Band 21) and is involved in the regulation of cell proliferation and tumor development (Nojadeh et al., 2018). Mutation in APC would cause a premature polyp formation that could develop into cancer if not detected early (Nojadeh et al., 2018).

The hereditary nonpolyposis CRC or LS is the most common inherited CRC form that can develop with only a few polyps, if any. Like FAP, it is an autosomal dominant genetic syndrome arising from a mutation of one of the genes involved in the DNA repair process, such as MLH1 and MSH2 (Nojadeh et al., 2018). The inability of the DNA to repair any damage caused during its synthesis process would increase the microsatellite instability and the possibility of developing CRC (Nojadeh et al., 2018). People 50 years and older, people with personal inflammatory bowel disease, and people with genetic predisposition represent the population with the highest risk of developing CRC (Centers for Disease Control and Prevention [CDC], 2018a). The diagnosis of CRC may be the result of an evaluation of a patient showing symptoms or from routine preventive care like screening (Kuipers et al., 2015). CRC symptoms may include abdominal pain, weight loss, constant fatigue and shortness of breath, the presence of blood in stools, and a change in the frequency of the bowel behavior (Kuipers et al., 2015). According to the CDC (2018b), screening and healthy lifestyle, such as diet with less fat and more fiber, may help reduce the risk of developing CRC, thus representing good preventive care for

CRC. Surgery is the primary treatment strategy for patients diagnosed with CRC (Kuipers et al., 2015). According to the ACS (2018b), CRC can develop over a sequence of four stages, I to IV, with each successive stage increasing in the severity of the disease as the tumor becomes larger as shown in Figure 5.

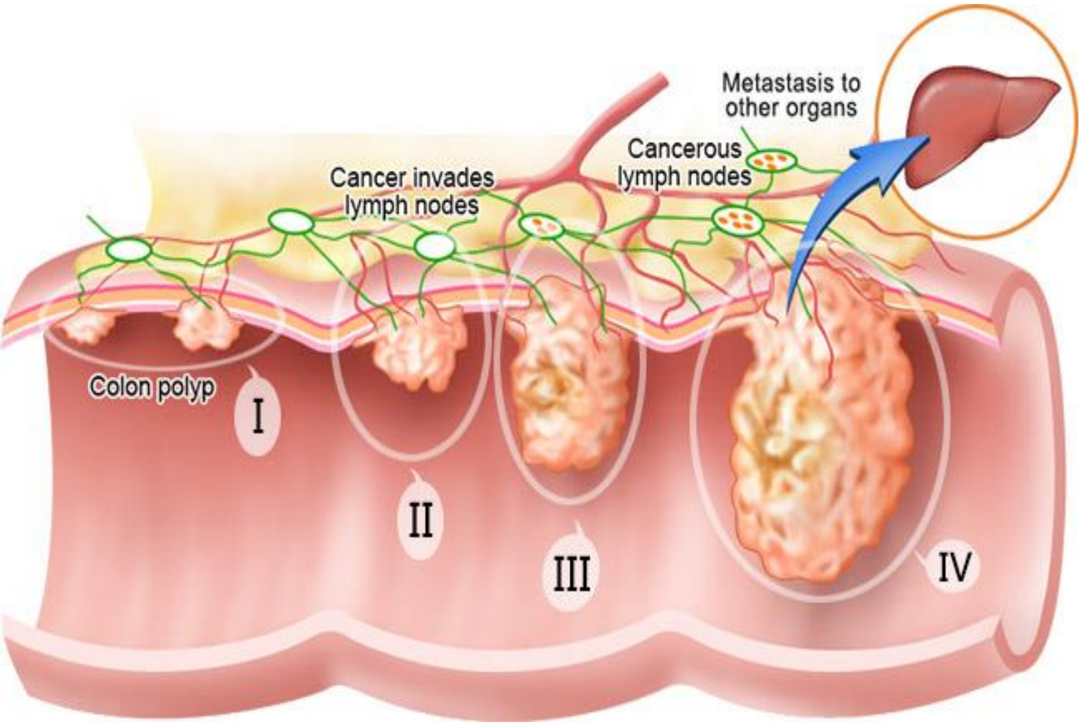


Figure 5. Stages of CRC development. Adapted from Voice of Freedom (2019).

Disparities in CRC development. CRC could originate from two different locations in the colon, and the starting location may play a role in determining the severity of the disease (Wong, 2010). Proximal or right-sided CRC is associated with worse outcomes than distal or left sided CRC (Wong, 2010). A difference exists in location of CRC between men and women (Wong, 2010). According to Wong (2010), men tend to develop the left-sided CRC, whereas women develop the right-sided CRC. The 5-year sex survival disparities are affected by age, because men tend to have a lower 5-year survival rate than women before the age of 64 years (Kim et al., 2015). Women 65 years and older have been shown to have a lower 5-year survival rate higher than that of men of the same age group (Kim et al., 2015). Although left-sided CRC is more associated with CIN and FAP, right-sided is more associated with MSI and LS (Kim et al., 2015). One possible explanation of the low 5-year survival rate observed in women 65 years old and older, as well as in other people developing the right-sided CRC, could be the nature of the tumor formation on either side. The distal or left-sided tumor is polypoid, whereas the right-sided is flat, making the polyps more identifiable in left-than right-sided CRC during a colonoscopy screening (Kim et al., 2015). In addition, Kim et al. (2015) and Amankwah et al. (2013) mentioned that the reproductive hormone estrogen may play a role in reducing the MSI, which could be another explanation for the high mortality rate in women older than 65 years who are no longer protected by the reproductive hormone due to menopause.

Black people have the highest CRC mortality rate of any racial/ethnic group and are prone to developing the proximal CRC (Wong, 2010). Globally, CRC disparities are observed based on the geographic location of the countries, which are classified as a high or low-risk region. Furthermore, developing countries classified as low-risk regions have lower risk than developed countries classified as high-risk regions (Bishehsari, Mahdavinia, Vacca, Malekzadeh, & Mariani-Costantini, 2014).

CRC screening. CRC screening started in 1927 with the work of Lockhart, Mummery, and Dukes, showing that CRC was linked to the glandular tissue of the colon or the rectum (Winawer, 2015). In the 1930s, Dukes developed the first staging system for CRC and showed that patients had better outcomes and survival rates when the surgery was performed at an early stage of the disease (Winawer, 2015). This work set the first stage for CRC screening and the discovery of different methods of screening that are used for the prevention of CRC (Winawer, 2015). According to CDC (2018b), screening strategies for CRC include invasive and noninvasive methods. Invasive methods require the insertion of a thin, flexible, lighted tube through the colon starting from the rectum, whereas noninvasive methods involve genetic and molecular testing of stool specimens collected from a patient (CDC, 2018b). Examples of invasive methods include the colonoscopy and the sigmoidoscopy, which differ merely by the length of the colon that can be scanned, with the colonoscopy scanning a longer part of the colon than the sigmoidoscopy (CDC, 2018b). Examples of noninvasive methods include the guaiac-based fecal occult blood test (gFOBT), which uses the chemical reagent guaiac for the detection of blood in the stool, and the fecal immunochemical test (FIT), which uses antibodies instead of guaiac to detect blood in the stool (CDC, 2018b). Colonoscopy has the highest accuracy; it can serve as a diagnostic and curative method by removal of the polyp, and it has provided the largest reduction of incidence and mortality of CRC (Kuipers et al., 2015).

The Population of Interest

The population of interest for this study was Black, male, natives of Africa who migrated to the United States and reside in Baltimore, Maryland. The African continent is populated with a mixed population of White people and Black people. The vast majority of the Black people reside in countries located in the sub-Saharan part of the continent, whereas the vast majority of the White people reside in northern Africa (World Atlas, 2016). Although some black males residing in Baltimore may come from the northern part of Africa, most Black Africans living in Baltimore are from the sub-Saharan origin.

The Importance of the Study

According to Arnold et al. (2016), cancer incidence and mortality rates may be on the rise worldwide with approximately 2.2 million and 1.1 million new cases and deaths expected by the end of 2030. CRC is one of the cancers with a high mortality rate in the United States in both genders (Rahman et al., 2015). CRC is known as a disease of rich and developed countries, which may be classified as high-risk regions for developing CRC and dying from it if not detected early, in contrast to developing countries known to be low-risk regions for developing CRC (Bishehsari et al., 2014). Africa has lower incidence and mortality rates for CRC than the United States, so the United States may represent an environment with high risk of developing CRC for African immigrants coming from a low-risk region (Bishehsari et al., 2014).

Black people in the United States have the highest incidence and mortality rates of any racial/ethnic group (Jackson, Oman, Patel, & Vega, 2016; Rahman et al., 2015). However, Black people in the United States are often considered as a homogenous population without consideration of cultural and lifestyle differences between Black immigrants to the United States and Black natives of the United States (Hurtado-de-Mendoza et al., 2014). Black people living in the United States are at an increased risk of developing CRC compared with Black people immigrant from Africa (O'Keefe et al., 2015). Immigration comes with a change of environmental conditions, which are known to influence the risk of developing CRC (Recio-Boiles & Cagir, 2018). Black immigrants from Africa and Black natives of the United States are reported to participate less in CRC screening programs for prevention than their White counterparts (Jackson et al., 2016). Screening can reduce the incidence of developing cancer (Meester et al., 2015). The migration of Black people from a low-risk region (Africa) to a high-risk region (United States), the high incidence and mortality rates of CRC in the Black communities in the United States, the limited CRC screening participation of the Black communities in the United States, and the limited culturally tailored programs for CRC prevention in the United States justified the need for conducting this study in the population of interest.

The Potential Social Implications of the Study

According to Rogers, Mitchell, Franta, Foster, and Shires (2017) and Jackson et al. (2015), fear of test results, lack of CRC and CRC screening knowledge, and limited access to health care are examples of barriers to screening for African Americans in the United States. The assumption of CRC being a disease of the rich, developed countries;

the belief that CRC is a mysterious disease that should be treated by traditional healers; and the lack of organized CRC screening programs are among the factors explaining the low participation in CRC screening of Black communities in Africa (Irabor, 2017; Laiyemo et al., 2016; Ogunbiyi, Stefan, & Rebbeck, 2016). The participation rate in CRC screening in the United States is lower in Black communities than in any other racial/ethnic group. Also, Black people in the United States have the highest CRC mortality among all the racial/ethnic groups, despite having many available opportunities for screening at no financial cost (Jackson et al., 2016).

By exploring and understanding the experience of Black male immigrants from Africa who have participated in CRC screening, in my study, I could provide information that may increase the knowledge of the target population about CRC and shorten the gap between the intention to participate in CRC screening and the participation in it. Furthermore, a reduction in the CRC incidence and mortality rates in the target population could be achieved by reducing the barriers to screening and encouraging the adoption of the recommended schedule of screening in this population.

This chapter will continue with the problem statement and the purpose of the study. Also, I will discuss the research questions, the conceptual framework, the nature of the study, and the limitations and significance.

Problem Statement

Many developed countries have seen an increase in life expectancy as a result of facilitating access to health care (Kuipers et al., 2015). However, the mortality rate from cancer-related health issues is still on the rise, with approximately 1.1 million deaths worldwide expected by the end of 2030 (Arnold et al., 2016). A disparity exists in CRC incidence worldwide with the highest rates being observed in developed countries and the lowest rate in developing countries (Kuipers et al., 2015). According to Meester et al. (2015), CRC represents a preventable public health issue. Although Black people represent the population most at risk of developing CRC and dying from it in the United States (Rahman et al., 2015), Black people in Africa represent the population with a much lower risk of developing CRC and dying from it (Katsidzira, Gangaidzo, Mapingure, & Matenga, 2015).

Screening can help reduce the incidence and mortality of CRC (Marley & Nan, 2016). However, in the United States, Black people participate the least in CRC screening (Jackson et al., 2016; Katsidzira et al., 2015). Therefore, Black people are the population with the highest mortality rate of CRC in the United States. In the United States, only lung cancer causes more deaths than CRC in both men and women (Rahman et al., 2015). Although genetic and environmental factors play a role in CRC (Recio-Boiles & Cagir, 2017), limited participation in CRC screening, which may be due to different perceptions of CRC and CRC screening, also plays a role. The risk of developing CRC increases in immigrant populations from Africa as they acculturate to their new surroundings in the United States (Bishehsari et al., 2014; Lopez et al., 2014). O’Keefe et al. (2015) showed that the incidence rate of CRC in Black people in the United States is much higher than that of Black people living in Africa (65/100,000 populations vs. 5/100,000). According to Zonderman, Ejiogu, Norbeck, and Evans (2014), the lack of cultural competence in White physicians in the United States may increase the mistrust in the health care system by the minority population and limit their motivation to seek preventive care for CRC. Abramson, Hashemi, and Sanchez-Jankowski (2015) showed that minority populations in the United States (ie., Native Americans, Hispanics, Asian Americans, and African Americans) believed that they would receive better health care from physicians of the same race, thus suggesting that perceived discrimination affects the views of minority populations on the health care system in the United States. Also, immigrants have limited access to health care services in the United States due to their legal status (Miranda et al., 2017).

Cancer prevention programs in minority populations in the United States are not designed with consideration of different perceptions and cultural beliefs. Cultural beliefs can influence the decision to participate in prevention programs (Aktison, Salz, Touza, Li, & Hay, 2015). The consideration of the Black populations in the United States as a single group has led to the limitation of culturally tailored programs, which leads to the reduction of the participation in CRC screening of the Black migrant population groups (Hurtado-de-Mendoza et al., 2014). The low participation in CRC screening by the population of Black immigrant males from Africa living in Baltimore was the problem addressed in this study.

Purpose of the Study

My purpose in this phenomenological study was to explore and describe the experiences with CRC and CRC screening in a population of Black, male, immigrants from Africa in Baltimore, Maryland. The understanding of how African-born, black male immigrants in Baltimore perceive CRC screening may facilitate the design of a strategy that could reduce their risk for CRC after they have migrated from the low-risk region of Africa to the high-risk region of the United States. Face-to-face interviews were conducted to collect data. The sample size was determined by the amount of data received from the participants and was defined by the saturation point. In a qualitative study, the saturation point signals the point at which new data do not provide new information, and it marks the end point of data collection, as well as the determination of sample size (Guest, Bunce, & Johnson, 2006). Mason (2010) suggested that a sample size of five to 25 participants for a qualitative study using the phenomenological approach may be enough to reach the saturation point. The phenomenological approach focuses on the description of people experience with a phenomenon, as well as the description of how the experience took place (Patton, 2015). The participants' selection was based on the principle of purposive sampling, which focuses on characteristics of the target population that converge with the needs and interests of the designed study (Burkholder, Cox, & Crawford, 2016).

Research Questions

Using the health belief model (HBM) to understand the factors increasing the CRC screening in the population of African-born, Black males living in Baltimore, I explored how CRC was perceived and how CRC screening was experienced by the participants from this population. According to Atkinson, Salz, Touza, Li, and Hay (2015), the decision to participate in CRC screening may be influenced by how CRC is perceived. I formulated two questions to explore the issue of CRC screening in the study population using the HBM as a framework to guide this study. The two research questions were the following:

1. What does CRC mean to African-born, Black, male immigrants living in Baltimore, Maryland?
2. How do African-born, Black, male immigrants living in Baltimore describe their experiences with CRC screening?

Conceptual Framework

The HBM served as the framework for exploring the behavior of the population of interest regarding CRC screening. The HBM was developed in the 1950s to explain the failure of people to take part in preventive and detection programs (Glanz, Rimer, & Viswanath, 2015). According to Glanz et al. (2015), the HBM is made up of different constructs that may help with the exploration of the relationship between health beliefs and health behaviors, thereby helping to explain people's decision making regarding the use of preventive services. The constructs of the HBM include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. The HBM could be used for a variety of health issues to understand the reasons motivating people to participate or not in preventive health care programs. The constructs of the HBM can be used in full or partially to address health behaviors.

I used a phenomenological approach to explore the target population's experience with CRC screening by exploring what CRC means to them and their motivation to get screened. The combination of the phenomenological approach and the HBM facilitated the understanding of the phenomenon of interest to the study. I will discuss the HBM as a conceptual framework and the reasons for its selection to guide this study in more detail in Chapter 2.

Nature of the Study

The study was qualitative. According to Patton (2015), the focus point of the qualitative method is how people construct their understanding of a phenomenon. The qualitative method enables the generation of a theory that could explain a contextual phenomenon of interest (Burkholder et al., 2016). The qualitative researcher determines the study design, including data collection strategies, sample size, and data analysis, as well as the saturation point. In this study, I focused on the low participation in CRC screening of a population of male, Black, native of Africa immigrant residing in Baltimore. My purpose was to understand the meaning of CRC screening in the same population.

I used the Husserlian, descriptive, phenomenological approach. The chosen approach of the qualitative method for a study should align with the research questions and the study design (Patton, 2015). Patton (2015) noted that the phenomenological approach uses the retrospective aspect of the phenomenology philosophy for the description of how people experienced a phenomenon, as well as the manner in which the experience took place. According to Patton, the focus point of the phenomenological approach is what people have in their memory (lived experience), instead of what they are experiencing or may experience (ongoing or future experience). The premise of the Husserlian, descriptive, phenomenological approach is that the motivation of people to take action is influenced by what they perceive to be real (Lopez & Willis, 2004). This approach may be used to explore the meaning of a phenomenon in a particular population using an in-depth interview for the collection of data (Burkholder et al., 2016).

The method that I used for collecting data in this qualitative study should align with the chosen approach that was selected to address the research question (Patton, 2015). An in-depth, face-to-face interview is a method recommended by Patton (2015) for a phenomenological approach. An interview in a face-to-face environment gives the researcher an opportunity to observe the body expression of the participants, thereby gaining additional information that could be used during the data analysis. A purposive sampling strategy allowed for the selection of participants who experienced CRC screening and who could provide information that is relevant to the dissertation topic. There are social activities in places such as churches, African restaurants, and African food stores where African immigrants could be reached. These social places were used as the target locations for participants' recruitment, with the authorization of the location leaders. Participants were encouraged to refer other potential participants using the principle of snowballing strategy (Palinkas et al., 2015).

Data were analyzed thematically following Colaizzi's seven-step strategy (1978). The thematic analysis in qualitative research allows the researcher to explore the views and perspectives of the participants from different angles looking for similarities and differences (Nowell, Norris, White, & Moules, 2017). Colaizzi's seven-step is a strategy that enables the researcher to identify, describe, organize, and analyze emerging themes from collected qualitative data (Nowell et al., 2017). The Colaizzi seven-step analysis provides a systematic data review and analysis that limits the possibilities for the researcher to deviate from the original information collected from the participants (Morrow, Rodriguez, & King, 2015). The seven steps include the familiarization with the data, identification of the relevant statements to the topic of interest, formulation of meaning, clustering the identified meaning into themes, description of the phenomenon in question using the emerged themes, production of the fundamental structure of the phenomenon, and the verification of the generated structure of the phenomenon in the context of the study. The thematic data analysis following Colaizzi's seven-step method may increase the validity and credibility of the study by providing a structured data analysis plan (Nowell et al., 2017).

Definitions

Acculturation: The process by which the values, attitudes, beliefs, and behaviors of one culture are adopted by an individual from another (Allen et al., 2014). It refers to a unidirectional process of assimilation in which immigrants adopt the culture of the host county (Allen et al., 2014).

Cancer: According to the NCI (n.d), *cancer* refers to a type of disease in which abnormal cell divide and proliferate out of control and can invade adjacent and distant tissue and organs.

Colorectal cancer: Cancer that starts either in the colon or the rectum (ACA, 2018)

Health disparities: Differences in the health status of different population groups, where some people have higher incidence and mortality rates of certain diseases compared to others (U.S National Library of Medicine, 2018).

Health screening: A test performed to look for a disease before the appearance of symptoms (U.S National Library of Medicine, 2018).

Immigration: Act of traveling to a country with the purpose of staying there permanently (Merriam-Webster, 2018).

Illness perception: Framework and beliefs that people construct to make sense of their health conditions (Petries & Weinman, 2012).

The incidence rate of CRC: Measure of the frequency with which a new case of CRC occurs in a population over a period (CDC, 2017). The numerator is represented by the number of new CRC cases, and the denominator by the total number of the population at risk of CRC during a given period (CDC, 2017).

The prevalence rate of CRC: The proportion of people in a population who have already been diagnosed with CRC in the course of a specified period (CDC, 2017).

Westernization: Adoption of Western culture (Merriam-Webster, 2018).

Assumptions

I assumed that all participants were male by birth and did not undergo any sex transformation. I also assumed that all participants were born in Africa from Black, African parents before migrating to the United States. Another critical assumption that I made was that all participants could read, write, and speak either English, French, or both. Another assumption was that the saturation point could be reached with about 10 participants. According to Mason (2010), a qualitative study using a phenomenological approach may reach the saturation point with a sample size between five and 25 participants. The last assumption was that participants were honest and provided truthful information willingly, without any constraints, to the best of their knowledge.

Scope and Delimitations

The study was intended for Black males born in Africa from Black parents and who had been living in Baltimore for at least 6 months before the interview for data collection. According to the Comptroller of Maryland (2018), a minimum of 6 months of physical presence is required to be considered a Maryland resident. The participants must have participated in CRC screening at least once before the interview day. The study design could be transferable to other population groups immigrating from different developing countries than Africa to other developed countries than the United States. Due to the increased risk of developing CRC when migrating from a low-risk region to a high-risk region and the use of HBM as a conceptual framework, this study could apply to any other minority group in any setting for the same purpose of understanding their perception of preventive health behaviors.

Limitations

The major limitation of the study was the representation of the Black communities of Africa. Black people from Africa have diverse cultures, religions, and beliefs that may influence their decision making regarding health-related issues. Therefore, not having participants from the vast majority of African communities residing in Baltimore may have led to results that do not reflect the entire perception of the Black, African communities in Baltimore. Another limitation was the potential for recall bias of information from the participants.

Also, I focused on the male population for a disease that affects both males and females. The female population may have a different perception of CRC and CRC screening than the male population. The male population was mostly chosen for its accessibility compared to women due to African cultural behavior. The motivation to participate in screening could differ by gender, thus making it difficult to generalize the findings of the study.

The third limitation was the participants' selection strategy. Although purposive sampling is a strategy for selecting participants who are relevant to the topic of interest (Burkholder et al., 2016), it limits the ability of the researcher to collect data that may provide information from different views. For example, a Black male who came from Africa fewer than 6 months ago or have been in the United States for more than 20 years but had only resided in Baltimore for fewer than 6 months may have had a different perception of CRC and CRC screening than someone who has been in the United States for less time and in Baltimore for more time. The study requirement of 6 months minimum residence in Maryland excluded them from being eligible.

The fourth limitation was potential researcher bias who was the interviewer and the person performing the data analyses. Because I am a Black male immigrant from Africa residing in Baltimore and am familiar with the Black African culture, there was a possibility that some answers from the participants could have been influenced by my understanding of the culture. Because my body language during the interview may orient the participants to choose an answer that may seem pleasant to me, one strategy to reduce the potential bias was for me to avoid body language or face language that could send a signal to the participants regarding their responses during the interview. Another strategy was bracketing, which refers to a process that puts aside any prior knowledge and experience related to the phenomenon of interest and uses the information collected from the participants as the data to be considered for the analysis (Nowell et al., 2017).

Significance

Black people born and living in the United States have the highest CRC morbidity and mortality and participate least in CRC screening of any racial/ethnic group (Jackson et al., 2016; Rahman et al., 2015). Despite the available free CRC screening programs in the United States, Black people still have numerous barriers preventing them from getting screened. In Africa, although Black people are reported to have the lowest incidence rate of CRC, they also have the highest mortality rate of CRC in comparison to other racial/ethnic groups present on the continent (Irabor, 2017; Katsidzira et al., 2015). Black people from Africa may have a different perception of CRC and CRC screening than Black natives of the United States, and that difference could be the result of cultural influences (Ogunbiyi et al., 2016). The Westernization of lifestyle in sub-Saharan African was shown to increase the risk of developing CRC in a region that provides limited opportunities for CRC screening due to the lack of organized CRC screening programs (Irabor, 2017; Laiyemo et al., 2016). There are no known CRC screening programs in Baltimore that address the particular needs of Black, male immigrants from Africa by having culturally competent health care providers. The findings of this study could provide information regarding the views and perceptions of CRC and CRC screening in the Black, male population from Africa regarding the promotion of a culturally tailored preventive program.

The implications for a positive social change may include the awareness by health care providers of the impact of the culture on the preventive health decision-making process of Black, male immigrants from Africa and living in Baltimore, on the awareness of these Black, male immigrants of the existence and necessity of CRC screening opportunities, as well as on the importance of adopting preventive health behaviors. The study could also provide information for the improvement of cultural competence among health care providers.

Summary

Cancer is a chronic disease caused by uncontrolled cell proliferation resulting from a loss of function of the tumor suppressor genes (NCI, 2015a). The process leading to cancer development starts with a normal cell entering the hyperplasia phase and then the dysplasia phase, during which time the cell can be stopped from entering the cancer development phase (NCI, 2015a). Although the colon plays a role in food and nutrient absorption by the body, the rectum is essential for storing the food waste. A cancer starting either in the colon or rectum would disrupt their normal functioning (CCS, 2018). Screening is known to be an effective method to reduce the incidence and mortality rates of CRC (CDC, 2018b).

In this study, I focused on Black, male, African immigrants living in Baltimore, Maryland, as the population of interest. Africa is a low-risk region for developing CRC in comparison to the United States (Bishehsari et al., 2014). Rahman et al. (2015) and

Jackson et al. (2016) noted that Black people native to and living in the United States were more at risk for developing CRC than any other racial/ethnic group in the United States, while O’Keefe et al. (2015) showed that Black people native to and living in Africa were the African population group with the lowest risk of developing CRC. A location change from Africa to the United States could increase the risk of developing CRC. In the United States and Africa, Black people represent the population that participates the least in CRC screening as a preventive measure (Jackson et al., 2016; Katsidzira et al., 2015; Rahman et al., 2015).

I used a qualitative, phenomenological approach to explore the experiences of participants from the target population who have participated in CRC screening. The HBM served as the conceptual framework to guide the study, and the data were collected using face-to-face interviews. The results may be used to impact positive social change by improving the cultural competency of health care providers and by improving the awareness by the target population of CRC and CRC screening. A culturally tailored educational program regarding CRC prevention could also result from the study findings.

In the next chapter, I review the literature and address the fundamental concepts regarding CRC and CRC screening and the perceptions, awareness, and attitudes of the Black, male, immigrant population from Africa residing in Baltimore, Maryland. I also discuss arguments supporting the importance of addressing the low participation in CRC screening in the population of interest in detail in Chapter 2.

Chapter 2: Literature Review

Introduction

Life expectancy in most developed countries has improved due to the technology and access to health care services leading to better management of diseases (Kuipers et al., 2015). However, although the mortality rate for infectious diseases may have decreased in the last decade, deaths from cancer-related problems have increased by about 40% in the same period and could continue to rise to 60% with 2.2 million new cases and 1.1 million deaths by 2030 (Arnold et al., 2016). In the 1950s, CRC was known as a rare disease and has since evolved to be one of the most common cancers in most developed countries in the world with a global burden of about 10% of all cancers (Kuipers et al., 2015). The rise of CRC may be due to population aging; increase in sedentary lifestyle; unhealthy diets; and unhealthy health behaviors such as cigarette smoking, limited physical activity, and poor weight management (Kuipers et al., 2015).

Globally, the incidence of CRC varies depending on the geographic location. The highest incidence is observed in New Zealand and Australia, and the lowest incidence is observed in Western Africa (Kuipers et al., 2015). Risk factors for CRC include increasing genetic predisposition, alcohol and red meat consumption, lack of physical activity, and age (Johnson et al., 2013). The lack of Vitamin D was also mentioned to be a risk factor for the development of CRC (Klampfer, 2014).

About 70% of all cases of CRC may be sporadic, 20% familial, and the remaining 10% can be caused by genetic inheritance (Recio-Boiles & Cagir, 2017). According to Tran and Koo (2014), birthplace does not influence the risk of developing CRC, which is mostly affected by the interaction of the environment and the genetic predisposition. The ACS (2018c) updated its CRC screening recommendations to begin at age 45 years instead of the previous recommendation of 50 years, as it was noted that the incidence and mortality rates were on the rise in the population under 50 years of age.

CRC is a chronic disease that represents a significant public health issue (Dube, 2012). CRC can be both prevented and diagnosed early using screening as a primary and secondary prevention strategy, which has reduced the mortality and incidence rates by about 3% annually (Meester et al., 2015). There are racial/ethnic disparities in CRC occurrence with Black people born and living in the United States having the highest morbidity and mortality rates of all races and ethnicities (Rahman et al., 2015). Although Black natives of Zimbabwe, Africa, had the lowest prevalence of adenomatous polyps detected and the highest prevalence of diagnosed CRC of all the racial/ethnic groups in Zimbabwe, their native White counterparts had the highest prevalence of adenomatous polyps detected and the lowest prevalence of diagnosed CRC (Katsidzira et al., 2015). However, the high incidence and mortality rates of CRC in Black people in the United States combined with the low incidence and mortality of CRC in Black people in Africa may suggest that not only environmental factors are influencing CRC development, but also that access to or participation in preventive care like screening in the Black population of the United States may be limited. Screening is a preventive strategy that could lower the risk of existing polyps progressing to CRC (Marley & Nan, 2016). According to Berry et al. (2010), when all racial/ethnic groups were provided with the same health care services, CRC disparities disappeared, suggesting that race/ethnicity itself may not be a determinant for developing CRC. Given that plus birthplace is not shown to be a determinant for CRC (Tran & Koo, 2014) and Black people born and living in the United States have a higher incidence of CRC than Black people born and living in Africa, the disparity in incidence and mortality rates between Black people in the United States and Africa, as well as the interracial/ethnic disparities observed in the United States, may be caused by environmental factors, access to health care, and other sociocultural factors.

Little is known about the perception of CRC and CRC screening in the Black, African immigrant communities living in Baltimore, Maryland, nor about the factors influencing their participation in CRC screening. This gap in the literature was the focus of the study.

The Purpose of the Study

My purpose in this qualitative study was to explore and describe the experience with CRC of a population of male immigrants from Africa in Baltimore, Maryland. The understanding of how African-born, male immigrants in Baltimore perceive CRC screening may facilitate the design of a strategy that could increase their CRC screening rates and reduce their risk for CRC.

Literature Search Strategies

I used the following databases and search engines for the literature search: Walden University Library, Google search, Google Scholar, PubMed, Medline, ProQuest, CDC and Prevention and ACS, and recommended books used during the coursework. The search was performed using keyword combinations or a single relevant word with *CRC and immigration, CRC in Africa, screening for CRC, factors influencing CRC screening, disparities in CRC screening, cancer,* and *immigration*. The search was limited to English articles, and I focused on the available articles with the most recent date on the relevant key variables. The majority of the articles came from PubMed and the Walden University library.

CRC in the United States and Africa

In the United States, CRC is the second leading cancer killer, second only to lung cancer in both males and females (Rahman et al., 2015). According to the ACS (2018c), 97,220 and 43,030 new cases of colon and rectal cancer, respectively, were expected to occur in the United States by the end of the year 2018, with men more at risk than women. During the same year, 50,630 estimated deaths were also expected from CRC (ACS, 2018c).

Since 2004, CRC incidence in the United States has been declining by a rate of about 3% yearly in people 50 years of age and older, while increasing by approximately 2% yearly in the population younger than 50 years (Recio-Boiles & Cagir, 2018). Due to the progressive improvement of early detection using screening, the CRC mortality rate decreased by 51% from 1975 to 2014 in the United States (Recio-Boiles & Cagir, 2018). The CDC (2018c) indicated that in 2015, Black people had the worst incidence rate for CRC among all racial/ethnic groups in the United States with 43.2 new cases per 100,000 people. Also, Black males had the highest incidence rate (51.1/10,0000) among males in the various racial/ethnic groups (CDC, 2018c). The 5-year relative survival rate for invasive CRC is about 65.6% in the United States, with Black people having the lowest at

60.2%, which is lower than the other racial/ethnic groups that have a minimum of 64.9% with White people having 65.9% (CDC, 2018c).

In Baltimore County, Maryland, between 2011 and 2015, 1,929 new CRC cancer cases and 757 deaths were reported (CDC, 2018c). In the same period, Black males had the highest incidence rate among males of all racial/ethnic groups at 51.0/10,0000 (CDC, 2018). In the entire state of Maryland, there was a total of 12,100 new cases and 4,621 deaths reported during the same period, with Black males showing the highest incidence at 48.6/100,000 (CDC, 2018c). Black males living in Baltimore may not participate sufficiently in preventive cancer programs. Jackson et al. (2016) noted that all minority racial/ethnic groups living in the United States are more at risk to die from CRC than White people. In the United States, failure to take into account racial/ ethnic minorities groups when developing preventive programs increases the CRC incidence disparities and limits the effectiveness of screening as a preventive solution for CRC, because factors such as sociocultural and immigration background are not considered (Jackson et al., 2016).

Despite the low CRC incidence observed in Africa and other developing countries in comparison with the United States and other developed countries, CRC may be viewed as an emerging health issue in Sub-Saharan Africa (Irabor, 2017).

Approximately 50 years ago, CRC was considered rare to almost a nonhealth issue in Western Africa, which is made up of countries with different colonial backgrounds, languages, and cultural diversities (Irabor, 2017). The incidence rate was less than 3/100,000 population, and the early CRC age of diagnosis was 43 years (Irabor, 2017). However, incidence rates have been rising; for example, in Mali, the incidence rate increased from 2.3/100,000 between 1987 and 1988 to 6.0/100,000 a few years later by 1992 (Irabor, 2017). The Westernization of Sub-Saharan Africa is believed to play a role in the observed CRC incidence increase in Western Africa (Irabor, 2017). The Westernization of Sub-Saharan Africa, which may refer to the adoption of the Western lifestyle by Black Africans, comes with a change in diet and an increase in sedentary lifestyle. In Africa, it is considered prestigious to be able to adjust to the Western lifestyle including the diet (Irabor, 2017). O'Keefe et al. (2015) showed that for Black people living in Africa and Black people living in the United States, diet could increase the risk of developing CRC. During the study, Black people in Africa were served the food rich in fat, red meat, and low in fiber consumed by Black people in the United States, who in turn were served the food rich in fiber and low in fat consumed by Black people in Africa (O'Keefe et al., 2015). The diet switch showed an increase in the colonic cell proliferation rate in Black people in Africa and a decrease in Black people based in the United States, suggesting that a change in the colonic mucosa may be caused by the type of diet (O'Keefe et al., 2015). The increase in colonic cell proliferation may be an indicator of an increased risk of developing CRC (Li et al., 2016). Even with the Westernization of Africa, African-born Black people living in Africa are still less at risk of developing CRC than Black people living in the United States with incidence rates of 65/100,000 and less than 5/100,000, respectively (O'Keefe et al., 2015). According to McDonald, Farnworth, and Liu (2017), the healthy migrant effect was stronger for the immigrant population from developing countries than for immigrant population from developed countries to Canada. McDonald et al. noted that immigrant people from developing countries were less likely to be diagnosed with cancer. According to the healthy migrant effect, immigrants have an overall better health status by the time they leave their countries of origin than other people who remain in these countries of origin (McDonald et al., 2017). McDonald et al. demonstrated that the health benefits explained by the healthy migrant effect declined with increasing duration of residency in Canada, and overall health tended to converge to the health level of the native-born Canadians.

Different populations immigrating to the United States from various low-risk regions had increased risks of developing CRC (Flood et al., 2000). Chinese, Filipino, and Japanese immigrants to the United States were reported to have increased risks of developing CRC after migration to the United States than people of the respective countries who did not migrate to the United States (Flood et al., 2000). Similar observations of increased risk of cancer following population movements from lower-risk regions to higher-risk regions were made in a population with different destinations than the United States (Hemminki, Forsti, Khyatti, Anwar, & Mousavi, 2014). According to Hemminki et al. (2014), immigrants from non-European Union countries (low-risk regions) to European Union countries (high-risk regions) had increased risks of developing most cancers than their counterparts in their countries of origin because they adapted to the risk exposures of the host country, while their descendants born in the host country may have the same risk exposure to develop cancer as people in the host countries with no immigration background. Hemminki et al. noted that environmental factors have an impact on the possibility of developing cancer depending on the current incidence of the local region.

Importance of CRC Screening in the United States

In the United States, there are existing disparities in CRC incidence and mortality rates among racial/ethnic groups, with Black people having the highest rates (Burnett-Hartman et al., 2016). These disparities have been observed for many years. May et al. (2017) showed disparities in incidence rate between Black and White population groups. Between 1975 and 1985, the CRC incidence rate in the White population increased by 0.79% annually before starting to decrease by 1.98% yearly from 1985 until 1998 (May et al., 2017). Between 1998 and 2008, an annual decrease of 2.54% was observed in the White population, and from 2008 to 2012, a further decline of 4.28% was observed in the same population (May et al., 2017). There was an annual increase in the CRC incidence in the Black population of about 3.32% from 1975 to 2004, finally declining by 3.63% per year between 2004 and 2012 (May et al., 2017).

Black people also have the worst survival for CRC (William et al., 2016). The reasons for these disparities in the United States may include patient obstacles like fear of results, limited knowledge about CRC screening, and limited access to health care services (William et al., 2016). Less physician recommendation for Black people to participate in CRC screening than for White people may also account for the disparities in CRC incidence observed between Black and White populations in the United States (Willliam et al., 2016). As per William et al. (2016), if equal access to CRC screening and health care services is provided to all population groups in the United States, there may be a low disparity of CRC between Black people and White people in the United States.

Zauber (2015) assessed the efficacy of CRC screening in the United States and Europe and focused on comparing the long-term effect of screening and usual care on CRC incidence and mortality rates using fecal occult blood testing (FOBT) as a screening method. Zauber showed a 20% annual reduction in the incidence over 18 years of follow-up and a 3 % annual reduction in mortality over 30 years of follow-up, to show a consistent and continuous decline in the death rate for an extended period when using the FOBT screening method as a prevention strategy. Zauber did not specify why the follow-up period of the incidence and mortality rate was different; however, Zauber mentioned that the extended follow-up period for the mortality rate was to observe the effect of the polypectomy associated with the FOBT screening.

Importance of CRC Screening in Africa

According to the World Atlas (2016), the vast majority of Africans with Black descendants are geographically located in the Sub-Saharan region of the continent. The other part of the continent, the Nord African part, is mostly populated by Africans with White descendants. In the Sub-Saharan region, some countries have a mixed population of Black people and White people, where CRC disparities can also be observed like in the United States. For example, South Africa is a Sub-Saharan African country with a mixed population and the highest CRC incidence, where disparities are observed in CRC incidence with Black people having the lowest incidence rate in comparison to White people and other racial/ethnic groups in the country (Bebington et al., 2018). According to Bebington et al. (2018), the low incidence observed in the Black population in South Africa is getting higher due to the progressive urbanization and the Westernization of lifestyle. Another country with a mixed population of Black people and White people is Zimbabwe. Katsidzira et al. (2015) found that Black natives of Zimbabwe had the lowest incidence of CRC and the highest prevalence of diagnosed CRC, while their native White counterparts had the highest incidence of CRC and the lowest prevalence of diagnosed CRC. Katsidzira et al. also found that Black people were less likely to participate in CRC preventive care than White people and that CRC could be diagnosed at an earlier age in the Black population than the White population. Black people tend to participate less in CRC screening for preventive care, and they are also progressively adopting the Western lifestyle, which may be responsible for the increased risk of CRC in their population. The few available cancer registries in Africa are an indication that CRC is a rare disease in rural African communities (Katsidzira et al., 2015), which may suggest an explanation for the low CRC screening recommendation in Africa

Using a microsimulation modeling test focusing on a population ranging from 50 to 100 years of age in the period of 1980 to 2030, Meester et al. (2015) showed that an increase of CRC screening to 80% by the end of 2018 could reduce the incidence rate by 22% and the mortality rate by 33% over a long-term follow-up period in the United States. This result would account for a decline of about 277,000 new CRC cases and 203,000 CRC deaths between 2013 and 2030 (Meester et al., 2015). The risk of developing CRC can be reduced by using available preventive services like screening programs (Marley & Nan, 2016).

Conceptual Framework

In the 1950s, a free public health program was developed and implemented in the United States with the goal of screening adults for tuberculosis (TB) in their neighborhood using the mobile clinic to accommodate people to increase their participation in the program (Tarkang & Zotor, 2015). Although the program was offered at no cost and with transportation accommodation, few adults took part in it, which prompted the question of what might have been the reasons for the failure. To answer this question, Hochbaum, Rosenstock, and Regels decided to examine the motivation of the few people who had participated to understand the factors that pushed them to take part in the campaign (Tarkang & Zotor, 2015). They learned from the participants that their risk perception of TB and the benefits provided by the free program had influenced their decision to take action for that preventive behavior (Tarkang & Zotor, 2015). Later in the 1950s, the HBM was developed to examine and explain the failure of people to take part in programs dealing with the prevention and/or detection of diseases (Glanz et al., 2015).

According to the HBM, people take action toward a health behavior after considering themselves at risk for the health issue in question, that the health issue might potentially hurt them or affect them negatively, and that the health behavior offered to them may minimize their risk and benefit them (Glanz et al., 2015). According to Glanz et al. (2015), the model includes different concepts or constructs to anticipate people’s actions, whether they will act to detect, prevent, or control potential disease or health issues. These constructs, as defined by Glanz et al. (2015), are the following:

- Perceived susceptibility: belief about the probability of contracting the health condition
- Perceived severity: belief about the level at which the disease might represent a serious issue
- Perceived benefits: belief of the necessity and importance of the recommended health behavior and how it might be advantageous to a person’s wellbeing
- Perceived barriers: belief about challenges to overcome in order to perform the recommended health behavior
- Cue to action: motivation factors, internal or external, that can instigate a person to adopt the recommended behavior
- Self-efficacy: degree or level of confidence that someone can perform and maintain the recommended health behavior

Application of Health Belief Model Concepts to CRC Screening

Perceived susceptibility and CRC screening. Glanz et al. (2015) noted that for a person to engage in protective action, he/she must believe that there is a real threat. For example, a man who decides to get screened for CRC must first believe that there is a chance that he could develop CRC.

Brenner, Ko, Janz, Gupta, and Inadomi (2015) examined the role of race/ethnicity and primary language on the perception of CRC screening for a CRC screening promotion program in San Francisco. Brenner et al. showed that the English-speaking Hispanic group had a lower CRC perceived susceptibility than the English-speaking White people. Even lower was the perceived susceptibility of the non-English speaking

Hispanic group in comparison to the English-speaking White people (Brenner et al., 2015). Non-English-speaking Asians had a lower perceived susceptibility to CRC than the White English-speaking group, which was more likely to participate in CRC screening than any other racial/ethnic group in the study (Brenner et al., 2015). Brenner et al. mentioned that language might play a role as part of the acculturation factors in limiting the perceived susceptibility of foreign language speakers.

Becker, Grapendorf, Greving, and Sassenberg (2018) showed that people using the Internet more often for health-related information had a higher level of perceived threat of potential bowel disease and were more likely to participate in colonoscopy than people using the Internet less often. The perceived threat is a combination of perceived susceptibility with perceived severity and may indicate the level of risk belief that a person has about a health issue (Glanz et al., 2015). Perceived susceptibility may be influenced by the type of cancer and the available health information. For example, a man may have a lower perceived susceptibility to breast cancer than a women, who in turn may have a lower perceived susceptibility for prostate cancer than a man. Regarding CRC, AL-Dubai et al. (2013) showed that Malaysian men saw themselves more susceptible to developing CRC than women, which was in line with the literature positing that men are more at risk of getting CRC than women. The level of susceptibility tends to converge with the chance to participate in preventive care (Glanz et al., 2015).

Perceived severity and CRC screening. The perceived severity construct addresses the level of seriousness of the CRC. It provides an understanding of the beliefs and perceptions of people regarding the potential consequences that could emerge from

CRC (Glanz et al., 2015). For example, whether people believe that CRC could kill them may influence their readiness to participate in CRC screening (Brenner et al., 2015).

Perceived barriers and CRC screening. Unlike common obstacles to CRC screening including limited knowledge about CRC; cultural beliefs; lack of transportation; limited physician recommendations; and race, sex/gender, and economic status, perceived barriers to CRC screening may refer to obstacles that hinder the participation in the screening when somebody is relatively aware of the existence of the screening as a preventive measure. Glanz et al. (2015) mentioned that perceived barriers to CRC screening comprise all possible tangible and intangible reasons that could prevent people from participating in CRC screening. According to Wang et al. (2017), scholars have shown existing disparities in the perceived barriers between rural and urban residents. Wang et al. reported that rural residents perceived the financial cost and their trust in screening efficacy as barriers to CRC screening more than urban residents. However, Williams, Wilkerson, and Holt (2018) found there was no difference between barriers and perceived barriers to CRC screening, but people with fewer barriers had the tendency to participate more in CRC screening than those with more barriers.

Perceived barriers might be influenced by factors or determinants that depend on the geographic location and social opportunities (Knight et al., 2015). According to Knight et al. (2015), people with a higher education level (high school diploma and up) have a lower negative or fear perception about CRC screening than those with a lower education level and tend to participate more in screening. Black people perceived the cost of the screening as a barrier more than the other racial/ethnic groups. Knight et al. noted that reducing the barriers to CRC screening may increase the participation in the screening.

Perceived benefits of CRC screening. Perceived benefits to CRC screening may refer to any advantage offered by the recommended or available screening programs that could lower the threat of developing CRC (Glanz et al., 2015). According to Knight et al. (2015), the benefits perception of CRC screening may be influenced by different factors, including health literacy level and external factors like physician recommendation. Knight et al. noted that physician recommendation increased the people's perceived benefit for CRC screening and the participation thereof.

Williams et al. (2018) showed that Black people in the Alabama region had lower perceived benefits for the FOBT than Black people in the region of Maryland. Williams et al. also noted that Black people participating in the study in Maryland had more health insurance than those in Alabama, which could suggest that the perceived benefit of CRC screening may depend on the financial availability to pay for a screening test and may have an inverse correlation with perceived barriers. The perceived benefit of CRC screening may increase with the decrease of the financial obstacles. However, this assumption still warrants further research in the Black community in the United States, whose participation in CRC screening remains the lowest among all racial/ethnic groups even with free available screening programs (Jackson et al., 2016; Rahman et al., 2015).

Cues to action and CRC screening. Any incentive that can lead to participating in CRC screening may be viewed as a cue to action (Glanz et al., 2015). Factors influencing people's readiness to take action for CRC screening can be internal such as symptoms, or external, such as a physician recommendation or the death of a family relative or friend from CRC (Glanz et al., 2015). Even with limited studies and literature about the construct of cues to action and its association with people’s behavior, Glanz et al. (2015) suggested that cues to action may act by triggering the perceived threat. For example, the death of a family member from CRC may raise the awareness of other family members about the possible CRC in their family and the fatal consequence that the disease may represent.

Self-efficacy and CRC screening. The construct self-efficacy of the HBM can be applied to CRC screening by evaluating the capability of people to participate in the screening and the follow-up. According to Glanz et al. (2015), self-efficacy may refer to the resolution and the confidence of a person to be successful in adopting a particular health behavior. Arnold, Rademaker, Liu, and Davis (2017) evaluated some of the factors affecting CRC including self-efficacy. Arnold et al. showed after a 15-month follow-up that the ability to follow postscreening recommendations increased with increased education level and health literacy. Arnold et al. concluded that health literacy level might improve people’s ability to follow the instructions given to them after a CRC screening.

The justification for the choice of HBM as the conceptual framework. The HBM is widely used as a conceptual or a theoretical framework to explore health behavior in a variety of health issues (Jones et al., 2014). According to HBM, health prevention campaign messages that are designed based on the constructs of HBM are prone to achieve maximal targeted behavior change (Jones et al., 2014). The examples of prevention measures that have been addressed with the HBM include cancer screening initiatives, vaccine uptake, HIV prevention, cigarette smoking cessation, diabetes control, and oral health promotion initiatives. HBM has been used with different research methods (qualitative and quantitative) as a conceptual framework, which may refer to a set of concepts deriving from one or more theories and used to explore a phenomenon of interest in a qualitative study, or as a theoretical framework, which may refer to the use of a theory to examine the relationship between variables in a quantitative study (Imenda, 2014).

Jeihooni, Jamshidi, Kashfi, Avand, and Khiyali (2017) used the HBM as the theoretical framework to assess the impact of an educational program on oral health in a population of 110 pregnant women in Iran. More than 90% of women in the experimental and control groups were health insured. No significant differences were observed between the two groups before the program implementation across all constructs of the HBM; whereas, there were significant differences between the control and the experimental groups after the program was implemented. The HBM could be used by the authors to target and reduce the barriers to oral hygiene by designing an appropriate educational intervention.

Shabibi et al. (2017) examined the impact of an educational intervention program to improve the self-care behavior of patients with Type-2 diabetes based on the concepts of the HBM. Shabibi et al. showed that the mean scores of perceived benefits increased significantly from 10.33 before the intervention to 28.29 after the intervention, $p= 0.032$. The self-efficacy also showed an increased mean from 28.36 to 36.31 before and after the intervention, respectively, with *p*=0.012. The self-care mean measurement went from 31.44 to 49.20, p=0.001 before and after the intervention. Shabibi et al. concluded that the educational intervention based on the HBM could help improve the behavior of self-care in patients with Type-2 diabetes in the studied population.

Renuka and Pushpanjali (2014) used the HBM as a framework to evaluate the effect of a tobacco cessation program on 88 participants. Renuka and Pushpanjali found that the mean scores at baseline for knowledge, attitude, and behavior had improved to the highest quartile at follow-up with a significant *p*-value of 0.000, thus showing that a designed intervention initiative for tobacco cessation could be improved with HBM.

Coe, Gatewood, Moczygemba, Goode, and Beckner (2012) assessed the readiness of the participants in Virginia to adhere to H1N1 influenza vaccine recommendations and found that although perceived susceptibility, perceived severity, and perceived benefits were not significant predictors for H1N1 influenza vaccine adherence among participants, those with low perceived barriers were more likely to get vaccinated than those with high perceived barriers (*OR*=0.54, *CI*: 0.35- 0.93), thus showing that the HBM may be used to target aspects of health behavior improvement.

Sohler, Jerant, and Franks (2015) examined whether knowledge about CRC screening, discussion with a health provider, stage of readiness, and two constructs of the HBM (i.e., self-efficacy and perceived barriers) were associated with the participation in CRC screening. After a 1-year follow-up period, participants with high levels of self-efficacy, which is the level of confidence for participants to follow health recommendations, were more likely to participate in CRC screening than those with low levels of self-efficacy (*OR* = 1.32, *p*=0.001), while perceived barriers had no significant impact on the participation in CRC screening over a relatively long period (Sohler et al., 2015). HBM constructs may also serve to explore people's health behavior at different time points, long term or short term, and may produce different outcomes that can be used for targeted initiatives.

Suwankhong and Liamputtong (2018) explored the barriers to breast cancer screening among women who migrated from Thailand to Australia. Suwankhong and Liamputtong focused on perceived susceptibility and perceived barriers of the HBM and reported that low susceptibility level, language limitation, low knowledge of breast cancer, procedure embarrassment, and lack of access to health care facilities were among the barriers to participating in breast cancer screening in the studied population.

The HBM can be used to evaluate, assess, explore, and examine different health behaviors and health issues in studies using different research methods and a variety of study designs. Examples of different health behaviors that can be explored using HBM as the conceptual framework include hygiene health behavior (oral health), addictive health behavior (tobacco cessation), self-care behavior (diabetes Type 2 control), preventive health behavior (vaccination), and detection behavior (screening). HBM can be used entirely with all six constructs or partially with one or more constructs depending on the study purposes and goals. HBM is one of the most common conceptual and theoretical frameworks for health promotion, education and disease prevention.

Literature Review Related to key Variables and Concepts

CRC is a cancer that can be prevented through early detection and removal of a polyp. According to Thompson, Lander, Xu, and Shyu (2014), detecting the polyp at an early stage using a screening method will help reduce the incidence and mortality rates. Regular screening of populations 50 years and older could reduce the mortality rate of CRC by about 60% (Thompson et al., 2014). Despite the improvement of the incidence and mortality rates observed in the general population due to improvement in an increased use of CRC screening modalities, there are still disparities in incidence and mortality rates between Black people and White people in the United States, with Black people having 20% higher incidence and 45% higher mortality (Thompson et al., 2014). The significant difference in incidence and mortality rates between Black people and White people may suggest that screening for CRC is underused in the Black population, and identifying some of the barriers to screening in this population could help reduce the existing disparities (Thompson et al., 2014).

May et al. (2015) evaluated the impact of physician recommendation on CRC screening adherence. Participants reported an up-to-date screening with different values, 58% for Black people, 66% for White people, 28% for Latinos, 45% for Asians, and 42% for others. The results for the evaluation of the participation in CRC screening without receiving a physician recommendation, which was represented by the nonphysician recommendation variable, were 17% in White participants, 25.1% in Black people, 21.2% in Latinos, and 22.1% in Asian, showing a difference in recommendation levels for CRC screening (May et al., 2015). May et al. also noted an association between language and physician recommendation with White, non-English speaking people twice as likely as White English-speaking people to report the lack of physician recommendation for participating in CRC screening. May et al. concluded that racial/ethnic minorities were less likely to receive a recommendation for CRC screening than White people. The lack of physician recommendation could be one factor influencing the observed CRC screening disparities in different population groups in the United States.

Rogers et al. (2017) addressed the impact of racism, social support, and masculinity on the participation in CRC screening in Black men. Although few scholars had focused on masculinity and CRC screening, Rogers et al. provided information explaining that most men, Black people and White people, view an invasive screening method as a violation of their masculinity, because the anal invasion was linked to homosexuality in men, and it could, therefore, be an embarrassment for them to undergo any medical practice like colonoscopy or sigmoidoscopy. This embarrassment from invasive CRC screening kept most Black men from adhering to the screening recommendations.

Racism in the literature was assessed using perceived discrimination as a variable defining how people see themselves treated with negative bias or prejudice in comparison to others. Rogers et al. (2017) showed that patients with lower perceived discrimination had higher levels of trust of their physicians. However, Rogers et al. noted that perceived discrimination was not significantly associated with race and that participation in screening was more associated with economic access to the screening programs than the racial factor. Rogers et al. mentioned that participants saw themselves discriminated against more because of their low economic class than their race. Rogers et al. also showed that Black men were more likely to attend social activities like in a church than White men and that Black men who discussed health issues with their family members or fellow church attendees reported the highest readiness for CRC screening. Rogers et al. concluded that although racism and masculinity may have a relatively moderate impact on CRC screening participation in Black people, social support may be a factor that could be used to target improvement in CRC screening participation in Black males.

There are two significant factors that could affect the participation of immigrants living in the United States in cancer screening programs: the length of residence and the legal status (Miranda et al., 2017). Miranda et al. (2017) compared cancer screening among women with different legal statuses: U.S.-born citizens (*n*= 58,484), immigrants who became U.S. citizens (*n*= 8,404), and immigrants who were not yet U.S. citizens (*n*=6,564). Miranda et al. aimed to investigate the association with and impact of the citizenship and length of residency on the participation of female immigrants living in the United States in colorectal, cervical, and breast cancer screening programs. Miranda et al. showed that non-U.S. citizen immigrants who resided fewer than 5 years in the United States were significantly less likely to receive guidance for cancer screening than U.S.-born citizens for all three cancers: breast (*OR* = 0.68, [0.53-0.88]), cervical (*OR* = 0.65, [0.54-0.78]), and colorectal (*OR* = 0.31, [0.19-0.50]). Immigrants, citizens or not, residing in the United States for at least 5 years were more likely to participate in cervical and breast cancer screening than those residing in the United States for fewer than 5 years, whereas non-U.S. citizens residing in the United States for at least 5 years were less likely than U.S.-born citizens to participate in CRC screening (*OR* =0.76, [0.65-0.90]). A provision of the Affordable Care Act (ACA, 2014) has allowed health insurance access for legal immigrants residing in the United States for at least 5 years while limiting the health insurance access for those with no legal status residing in the United States for the same length of time (Miranda et al., 2017). Miranda et al. highlighted the importance of the legal status and the duration of residence in the United States for immigrants participating in CRC and other cancer screening programs. The state of Maryland is one of the 23 states in the United States that has a CDC-funded colorectal cancer control program (CDC, 2018c). However, immigrants with no legal status (neither permanent residency, asylum, nor U.S. citizenship) are not eligible to participate in the program. The legal status for eligibility to access health care supports the previous study results of Miranda et al. (2017), which suggested that immigration legal status impacts the ability of immigrants to participate in CRC screening programs, with immigrants with nonlegal status being less likely to receive CRC screening than those residing in the United States legally.

The effect of acculturation on cancer screening was examined by Lee, Chen, Jung, Baezconde-Garbanati, and Juon (2014). Lee et al. showed that Asians who had been in the United States for at least 20 years were more willing than those who lived in the United States for about 10 years to participate in all three cancer screenings: colorectal (*OR* = 2.41, *CI*: 1.52-3.82), breast: (*OR*= 2.11, *CI*: 1.25-3.57), and cervical

(*OR*=1.79, *CI*:1.07-3.01). The length of residence could increase the tendency for immigrants to adjust to the host country behavior and to participate in cancer screening.

In another assessment of the effect of acculturation, Savas, Vermon, Atkinson, and Fernandez (2015) measured the level of acculturation with an emphasis on the level of knowledge of the English language. Indicators of acculturation included increased duration of residence, having health insurance coverage, receiving health care provider recommendations, and regular health check-ups, which were significantly associated with CRC screening. Acculturation, which includes indicators like increased English proficiency level, increased of the length of stay in the United States, having a primary health care provider, and health insurance may increase the likelihood of immigrant participating in CRC screening.

The participation in CRC screening also showed disparities in the Black population of immigrants from various places to countries other than the United States. Dharni, Armstrong, Chung-Faye, and Wright (2016) assessed the factors influencing the participation in CRC screening in a population with different backgrounds: Black people with African origin, Black people with Caribbean origin, Black people with other origin, British-born White people, and non-British White people. Dharni et al. found that the major obstacle to CRC screening participation across all population groups was the lack of awareness about CRC, not fear and embarrassment of the CRC screening procedure. Immigrant Black people from African and Caribbean backgrounds did not report these factors as barriers, but reported religious and civic responsibilities as motivation factors for their participation in CRC screening. Dharni et al. concluded that religious faith and

CRC awareness were the two major factors influencing the adherence to CRC screening recommendations in immigrant Black people of various backgrounds. Cultural beliefs may influence the perception of participating in CRC screening in Black people, regardless of their place of origin, who immigrated to places with different cultures.

Woudstra, Dekker, Essink-Bot, and Suurmond (2016) showed that low language proficiency and low level of literacy were barriers to accessing CRC screening information and programs in the Netherlands. These studies conducted outside the United States with populations including Black immigrants from different backgrounds and immigrants from places other than Africa (Caribbean, Turkey) showed that immigration has many factors (ie., culture, religion, language, legal status, and education level) that influence access to screening and other health care. Although acculturation in the long term may improve the participation in CRC screening in the United States for immigrant populations (Savas et al., 2015), an understanding of the perceptions of CRC and CRC screening in underserved immigrant populations might make it possible to design a culturally tailored intervention program that could address the cancer screening needs of these immigrant populations.

The Problem of CRC Screening in Africa

CRC is believed to be a disease of less concern in the African population of Africa (Irabor, 2017; Katsidzira et al., 2015). However, this belief might be more of an assumption than evidence-based (Irabor, 2017; Katsidzira et al., 2015). There are few data on CRC from Africa, and the data available come mostly from South Africa, which is believed to be the African country with the highest CRC incidence (Asombang et al., 2018). According to Asombang et al. (2018), about 57% of Black people in Africa are diagnosed with CRC around age 45, a percentage that is more than that of Black people in the United States. Ogunbiyi et al. (2016) noted that many environmental and cultural factors may play a role in the high incidence of CRC in young Africans, including the cultural belief that cancer is a cursed disease that should be treated by spiritual and traditional healers, the lack of available cancer data that limits the ability of the government to take proper preventive actions, the priority focus on communicable and infectious diseases that leads to neglect of chronic diseases as a serious public health issue, the limited access to health care, limited health care facilities, and limited trained health professionals. No African country has an established CRC screening program (Laiyemo et al., 2016). Factors like the belief that cancer may be a cursed disease, the high incidence of CRC in young Black people in Africa, the Westernization trend of lifestyle in African countries, and the lack of organized CRC preventive programs in Africa could make African-born immigrants at higher risk for developing CRC before they migrate to the United States, which is a country where it is believed to have a higher risk of developing CRC than in Africa. All this raises the importance of understanding the perceptions of these immigrants regarding CRC screening as a preventive program to reduce CRC incidence and prevalence in their population group in the United States.

Summary and Conclusion

CRC is a chronic disease with a long latency period of 10-15 years (Recio-Boiles & Cagir, 2018) and possibilities for prevention. Despite the proven prevention methods of screening for early detection, CRC still has higher mortality rates among minorities and immigrant populations (Jackson et al., 2016; Woudstra et al., 2016). The most severe disparities are observed between Black and White population groups living in the United States, where Black people are more at risk of developing CRC than White people (Jackson et al., 2016). Migrating from a region of low risk to a region of high risk for CRC increases a person’s chances of developing CRC (Lopez et al., 2014; McDonald et al., 2017). Screening has been proven to decrease the incidence and mortality rates of CRC (Meester et al., 2015). The high mortality rate observed in the Black population in the United States might corroborate with its low participation in CRC screening, in comparison to the high participation in CRC screening and the lower mortality rate in the White population (Jackson et al., 2016). In Africa, Black people tend to have the lowest incidence and the highest mortality rates of CRC (Katsidzira et al., 2015). African-born immigrants to the United States may be more at risk of developing CRC due to certain factors limiting their access to screening programs. Perceptions of CRC, cultural beliefs, language, access to health care, and legal status are among the factors that limit minority immigrant populations’ participation in CRC screening, while acculturation may show a positive effect on CRC screening in these same population groups (Miranda et al., 2017; Savas et al., 2015).

Exploring and understanding the views and perceptions regarding CRC screening in Black, immigrant populations from Africa to the United States could provide useful information for designing a culturally appropriate program that could promote and increase their participation in CRC screening, which would reduce their risk of developing CRC. Understanding people’s preventive health behaviors can be accomplished using the HBM, which has six constructs designed to explore people’s motivation to act for their protection against diseases, including chronic diseases, infectious diseases, and other health-related issues (Glanz et al., 2015). The HBM was used in this study to explore and understand the perceptions and attitudes of Black natives of Africa residing in Baltimore, MD toward their participation in CRC screening, of which little is known.

Despite a multitude of articles present in the literature on CRC and CRC screening in the minority population in the United States, few scholars have focused on the cultural diversities that exist in the Black population residing in the United States, which is composed of people who have different origins. The perception of CRC may influence the decision-making process to participate in CRC screening (Abramson et al., 2015; Atkinson et al., 2015). Populations from different cultures with different beliefs have different views on CRC and CRC screening. Therefore, it is necessary to take this into account when discussing CRC screening participation issues in Black people in the United States. In this study, I examined this population in Baltimore, Maryland, where there is a large population of Black immigrants from Africa.

The research design and rationale will be discussed in Chapter 3 as well as my role as a researcher. The methodology used, the ethical considerations, and the issues of trustworthiness are also discussed in Chapter 3.

Chapter 3: Research Method

Introduction

My purpose in this phenomenological study was to explore and describe the experiences with CRC and CRC screening of a population of males native to Africa and immigrants in Baltimore, Maryland. The understanding of how African-born, Black, male immigrants in Baltimore perceive CRC screening may facilitate the design of a strategy that could reduce their risk for CRC after they migrate from a low-risk region of Africa to a high-risk region in the United States. Face-to-face interviews were conducted and used to collect data. The sample size was determined by the amount of data received from the participants and was defined by the saturation point. In a qualitative study, the saturation point signals the point at which new data do not provide new information and marks the end point of data collection, as well as the determination of sample size (Guest et al., 2006). Mason (2010) suggested that a sample size of five to 25 participants for a qualitative study using the phenomenological approach may be enough to reach the saturation point. The participants' selection was based on the principle of purposive sampling, which focuses on characteristics of the target population and that converge with the needs and interest of the designed study (Burkholder et al., 2016).

The points discussed in this chapter include the research design and rationale, my role as the researcher, the research methodology, the issues of trustworthiness, and the ethical procedures. The chapter ends with a summary and the transition to the next chapter.

Research Design and Rationale

Using the HBM to understand the factors increasing the CRC screening in the population of African-born, Black males living in Baltimore, I explored how CRC is perceived and how CRC screening is experienced by the participants from this population. According to Atkinson et al. (2015), the decision to participate in CRC screening may be influenced by how CRC is perceived. Two questions were formulated to explore CRC screening in the population of African-born, Black males living in Baltimore using the HBM as a framework to guide this study. The two research questions were the following:

1. What does CRC mean to African-born, Black, male immigrants living in Baltimore, Maryland?
2. How do African-born, Black, male immigrants living in Baltimore describe their experiences with CRC screening?

Central Concept(s) / Phenomenon of the Study

CRC is known to be one of the cancers with a high mortality rate in the United States (Rahman et al., 2015). Black people in the United States represent the population group most at risk of developing CRC and dying from it (Jackson et al., 2016; Rahman et al., 2015). With an estimated 2.2 million new cases and 1.1 million deaths by 2030 (Arnold et al., 2016), increasing CRC screening could reduce the number of new cases of CRC and the number deaths from it. According to Meester et al. (2015), incidence and mortality rates of CRC may be reduced by about 3% annually using screening strategies.

Black people are believed to participate less in CRC screening for preventive care, which may explain the high incidence and mortality seen in them (Jackson et al., 2016).

Immigration may influence a person's participation in CRC screening because of his/her legal status (lawful resident permanent, U.S. citizenship), which determines his or her access to health care (Miranda et al., 2017). Cultural competency and a person's perception of the health care system also influence his/her participation in CRC screening by impacting the likelihood of a physician recommendation for CRC screening (May et al., 2015)

Research Tradition

A qualitative method with a phenomenological approach was chosen as the research tradition for this study. The choice of the qualitative tradition over quantitative or mixed method was made based on the research purpose and the questions defined to address the research problem. The qualitative method is designed to explore and understand the meaning of a phenomenon by an individual or a group of individuals (Creswell, 2014). The qualitative scholar addresses the question of experience and perspective without generating numeric data (Hammarberg, Kirkman, & de Lacey, 2016). It used to be perceived as biased philosophical research with inconsistent results (Pathak, Jena, & Kalra, 2013). However, it is now a method that has improved research in the health field by involving participants or patients in the process of improvement of their health conditions and providing an understanding of beliefs and perceptions regarding health issues when identifiable variables cannot be measured (Hammarberg et al., 2016; Pathak et al., 2013).

The quantitative method, on the other hand, is used to test the link between identifiable and defined variables based on a known theory (Creswell, 2014). Unlike the qualitative method that explores and describes a phenomenon to generate a theory, the quantitative researcher measures the variables associated with a phenomenon to test a theory (Creswell, 2014). The mixed method is a combination of the qualitative and quantitative methods in which the questions are designed to be quantitatively and qualitatively addressed (Creswell, 2014). Because the research questions for this study were designed to explore and understand the meaning of CRC to the target population and the experiences of the target population with CRC screening, the qualitative method was more appropriate than the quantitative and the mixed method.

There are five commonly used approaches in qualitative research, and the phenomenological approach was chosen for this study. The five common approaches include the grounded theory, ethnography, narrative, case studies, and phenomenological approach (Creswell, 2014). The phenomenological approach focuses on the description of an event or phenomenon as it was experienced by a participant (Creswell, 2014). It is an approach that provides an understanding of a phenomenon (Padilla-Diaz, 2015). By using the interview as the data collection strategy, the phenomenological research approach gathers the necessary information from participants to explain why an event of interest took place (Padilla-Diaz, 2015). The phenomenological approach was chosen to align with the conceptual framework (HBM) of this study. The HBM is used to explore the reasons influencing a person to decide to seek preventive health care (Glanz et al., 2015). By targeting the understanding of the motivation of Black, male immigrants from Africa and living in Baltimore, Maryland, for or against their participation in CRC screening, the HBM and a qualitative study with a phenomenological approach provided a research platform to answer the two defined research questions.

Role of the Researcher

In a qualitative study, the researcher serves as a human instrument for collecting data (Creswell, 2014). The human characteristic of the researcher as an instrument comes with many factors that could influence the objectivity of the data analysis and produce inaccurate results if the researcher does not describe social elements and interaction with the participants before data collection and analysis (Creswell, 2014)

As the primary data collection instrument, I interviewed selected participants in a face-to-face environment that enabled me to interact with the participants, thereby making me assume the role of observer-participant. My academic education and professional experience have provided me with background knowledge about cancer development, thus facilitating my understanding of CRC as a public health issue. This education and experience may have influenced my interpretation of the data collected from participants, thereby influencing my selection of themes evolving from the data. According to Ravitch and Carl (2016), the collection of data for a qualitative study represents a process that can be influenced by the personal views of the researcher regarding the health issue in question. Integrity and neutrality of the researcher are two characteristics necessary for keeping the research quality at the highest level (Rubin & Rubin, 2012). All interviews were audio recorded, and a personal journal was completed immediately after each interview to ensure the accuracy of the participant’s answers and avoid losing observations made during the interviews. I refrained from using any body language or gestures that might have been interpreted by the participants as a positive or negative reaction to their answer or statements and could have eventually influenced their ability to provide accurate responses.

I did not have any known contact or relationship, personal or professional, with the participants for the study, and those eligible to participate and who had any kind of a relationship with me were all excluded from selection consideration. For that reason, the power differential was not applicable to the recruitment of participants to this study. According to Gibson et al. (2014), power differential may refer to the influence existing in a relationship where at least one person feels constrained or has a limited ability not to follow or do what another person involved in the relationship wants or says. For example, a researcher asking somebody to participate in a study when that person receives any help from that researcher or from somebody that the researcher knows may limit the ability of that potential participant to freely express his or her willingness to participate because of the influence of the help received. One strategy to minimize the power differential was to exclude potential participants that have a relationship with the researcher. However, my social position concerning the population of interest may raise concerns of researcher bias about the race, ethnicity, and immigration influence on the participants. As a Black male, African-born immigrant resident of Baltimore, Maryland, I socially identify myself with the target population. I am familiar with the cultural perceptions of the target population, and this could have led to my anticipation of their answers or influence my interpretation of their answers. I decided to be neutral and act neutrally in all circumstances during data collection and analysis to reduce the possibility of data interpretation bias.

To gain access to the participants, my role as the researcher included creating a working relationship with the gatekeepers of the participants. For example, African restaurant owners, church leaders, and other cultural meeting leaders were all informed about the purpose of the study, how the study was not going to violate any of their location or business policies, and how the results of the study could be used to benefit the target population with a positive social change.

I did not conduct the study at my workplace, nor did it involve any of my coworkers, which ruled out conflicts of interest. The incentive of 10 U.S. dollars was offered to the participants. According to Kelly, Margolis, McCormack, Lebaron, and Chowdhury (2017), monetary incentives may increase the possibility of having high participation in a qualitative study, mostly in an underserved population group, but the amount should be small enough that the money will not be the reason for participation.

Methodology

Participant Selection Logic

Black people in the United States are prone to developing CRC more than any other racial group due to their low participation in CRC screening (Jackson et al., 2016; Rahman et al., 2015). In Africa, Black people participate less in CRC screening than any other racial group, but they are also the least likely to develop CRC (Irabor, 2017; Katsidzira et al., 2015). Immigration leads to environmental change, including lifestyle and diet, that could increase the risk of developing CRC. According to Irabor (2017), Westernization can lead to behavior change, which may increase the risk of developing CRC. According to O’Keefe et al. (2015), Black people from Africa are at increased risk of developing CRC when they adopt the diet of Black people in the United States. According to CDC (2018c), Black males have the highest incidence of CRC in the state of Maryland, where 757 fatalities from CRC were recorded between 2011 and 2015 in Baltimore County. These data supported the choice of Black, male immigrants from Africa living in Baltimore, Maryland, as the study population. The eligibility criteria included being an African immigrant of Black descent residing in Baltimore, Maryland for at least 6 months, being fluent in speaking and reading in English or French, and having participated in CRC screening at least once.

The purposeful sampling strategy was chosen to select participants for the study. Purposeful sampling, also called purposive sampling, is a strategy based on the nonprobabilistic principle and is mostly used in the qualitative method to choose participants who have particular characteristics of interest to the study (Etikan, Musa, & Alkassim, 2016). According to Patton (2015), purposeful sampling allows the researcher to locate and choose well-informed participants to study the phenomenon of interest in depth. The choice of purposeful sampling aligned with the purpose of the study, which was to understand and describe the experiences of people of the population of interest with CRC screening. The purposeful sampling, which enables the participants’ selection to be based on the purpose of the study, is a strategy that allows an in-depth understanding of a phenomenon rather than a generalization of it (Patton, 2015). Purposeful sampling has been used for a variety of qualitative studies. Barrera et al.

(2018) used the purposeful sampling strategy to select participants for a study aiming to explore the perceived benefits of and barriers to psychosocial risk by health care providers in childhood cancer. Also, Moghaddasi et al. (2018) used purposeful sampling to qualitatively describe the interaction of families with childhood leukemia in Isfahan, Iran. The selection of the participants in the purposive sampling strategy includes a homogeneity in the set of inclusion criteria. The researcher uses homogeneity to choose participants with a minimum variation in eligibility criteria (Palinkas et al., 2015).

According to Guest et al. (2006), the sample size for a qualitative study should be determined once the data collection has reached the saturation point where new data do not provide new information. The data saturation is considered the gold standard in qualitative research for defining the sample size during the data collection phase of the study (Saunders et al., 2017). Mason (2010) suggested that a sample size of five to 25 participants for a qualitative study using the phenomenological approach may be enough to reach the saturation point. The phenomenological approach focuses on the description of an event or phenomenon as it was experienced by a participant (Creswell, 2014). The participants were recruited using flyers that were distributed at selected social activity centers in Baltimore, which included locations like churches, African restaurants and stores, and weekly or monthly African meeting places. The snowballing strategy, which is a recruitment method based on the principle of referral whereby people who know potential participants meeting the eligibility criteria can refer them to the researcher (Palinkas et al., 2015), was also used to recruit participants.

Instrumentation

Data collection primarily consisted of a face-to-face interview using a semistructured interview protocol. In comparison to questionnaires, which are another data collection instrument in qualitative research, interviews are narrative tools that allow the researcher to explore people's views of a phenomenon and describe how these views may be linked to their actions (Alshenqeeti, 2014). The interview is a conversation in which participants express their feelings, thoughts, and experiences using their own words in a comfortable manner (Alshenqeeti, 2014). The use of a semistructured interview protocol allows the researcher not only to define the areas of the conversation with open-ended questions aligning with the research interest but also allows the researcher to probe the participants during the interview to ensure that the interview remains in line with the research purpose (Alshenqeeti, 2014).

The interview protocol was designed using modified questions from published articles. Murray, Mohamed, and Ndunduyenge (2013) developed an interview protocol for a focus group discussion on the topic of health and prevention in a population of women from East Africa living in the United States (San Diego). With the permission of the authors, some questions were used entirely or in a modified form for the current study. The context of the study that Murray et al. conducted was similar to that of the current study concerning the immigration status and African origin of the participants. Also, the issue in question was addressing health prevention, which aligns with the core problem of the current study, CRC prevention via screening.

The content validity was established by adjusting the questions to the current male population of interest. Murray et al. (2013) had developed the questions for a female population, but the topic of interest was not specific to a female population and could also apply to a male population. The possibility of adapting and applying the interview questions designed for a different study to the current study supports the external and internal validity of the interview protocol developed by Murray et al. With Murray et al.'s permission, some questions were adapted and used in this study. According to Alshenqeeti (2014), external and internal validity are essential for a data collection instrument. Reducing bias during the interview by avoiding judgment or interpreting participant answers desirably can improve the validity of data collection (Alshenqeeti, 2014).

I also used Brenner et al.'s (2015) study to develop interview questions. The study's purpose was the application of the HBM to explore the differences in CRC screening based on race/ethnicity and the primary language. The participants were mostly Asian and Hispanic and did not speak English. The study was conducted in the United States (San Francisco; Brenner et al., 2015). By using an immigrant population in which English is not the primary language, CRC screening as the phenomenon of interest, and HBM as the conceptual framework, that study had many characteristics similar to the current study. I focused on an immigrant population and used HBM as a framework to explore the experiences with CRC screening. Some of the questions from the protocol of the Brenner et al. study were used either in the original form or modified to adapt to the current study purpose.

Perceived Susceptibility to CRC

- “Please, could you describe to me how you view CRC and CRC screening?”
- “Compared to other people of your age, what do you think your chance is of getting CRC?”
- “How likely do you think it is that you will develop CRC sometime in the future?”

Perceived Severity of CRC

- “How serious would it be if you developed CRC?”

Perceived Barriers to CRC Screening

- “What are the challenges that make it difficult for you to access CRC screening in the United States? Please, describe your experience with CRC screening.”
- “Please, could you describe any concern that you might have about CRC screening as a preventive care measure?”

Perceived Benefits of CRC Screening: “How have your health concerns about CRC changed since coming to the United States?”

- “How would you describe the importance of getting screened for CRC?”

Cues to Action for CRC Screening

- “What do you see that motivated you to go for the screening?” Prompts if needed: “How important was the age factor?. . . . How did the immigration to the United States influence your decision?”

Self-Efficacy of CRC Screening

- "Is there anything that you think should be done differently for the screening process?"
- "How likely would you recommend CRC screening to others?"

Prompt if needed: "How important is it for you to go back to screening again?"

The aforementioned published instruments were culturally similar and appropriate to the current study. Some questions did not originate from any of the published instruments, but the inspiration came from them.

Procedures for Recruitment, Participation, and Data Collection

Data addressing the two research questions were collected in a convenient location to the participants. I personally collected all of the data. The frequency of the data collection depended on how fast participants could be recruited, and the data collection was completed in tandem with the analysis until the saturation point was reached. An interview session was expected to last between 30 and 60 minutes and was audio recorded. Also, notes were taken during the interview. At the end of each interview, a journal was generated and kept together with the audio tape. The redistribution of the advertisement flyers at selected locations and communication with selected participants and social activities leaders (church, restaurants, and African stores' owners) for possible referral was planned if recruitment resulted in too few participants. Participants were given the consent form and my contact information to ask questions about the study findings. I created a positive working environment during the interview to generate an interaction based on trust with the participants. According to Opdenakker

(2006), creating a positive social interaction with a participant may facilitate the arrangement for a potential referral or follow-up interview. Debriefing the participants took place before they exited the study and was completed either by e-mail, or face-to-face, depending on the participant’s choice. I used any communication means convenient to the participants.

Data Analysis Plan

I generated an interview protocol with open-ended questions following the HBM to address the two research questions. Questions 1 through 4 of the protocol focused on Research Question 1, and Questions 5 to 11, focused on Research Question 2. Colaizzi’s (1978) seven-step strategy was used to analyze the collected data thematically. The thematic analysis in a qualitative study enables the researcher to explore the thoughts and perspectives of the study participants from different angles and look for similarities and differences (Nowell et al., 2017). It is a data analysis technique that enables the identification, description, organization, and analysis of themes that emerge from the collected data (Nowell et al., 2017). The Colaizzi seven-step analysis strategy offers a systematic data review and analysis that may limit or reduce possible deviation from the original data collected from the participants by the researcher (Morrow et al., 2015). The seven steps of the Colaizzi’ analysis strategy (1978) include the following:

1. Familiarization with data content.

   At this step, all collected data were read through multiple times to gain a broad understanding of the content.

2. Identification of the significant statements.

Here, all statements or comments from the participants that were relevant to the CRC or CRC screening were identified and coded.

3. Formulation of the meanings.

   This step served to elaborate meanings from the relevant statements captured in the previous steps using the principle of coding. I had to put aside all my knowledge about CRC, CRC screening, and the cultural aspect of the population of study. This process, also known as bracketing, is one of the tenets of the Colaizzi method that aligns with the descriptive phenomenological approach aiming to capture the authentic experiences as described by the participants with a minimum of bias.

4. Creation of clustered themes/categories.

   With the consideration of the bracketing, I grouped the formulated meanings or codes into categories.

5. Developing an exhaustive description.

   The use of the clustered themes generated in Step 4 allowed the phenomena to be adequately described as experienced by the participants.

6. Production of the fundamental structure.

   The description developed in Step 5 were condensed to generate themes that explained the fundamental structure of how the phenomena were experienced.

7. Verification of the fundamental structure.

This step served to validate the results of the analysis. The results were shared with the participants who agreed at the end of their interview to be contacted to verify the accuracy of their descriptions. The participants were all satisfied with the results of their interviews' analyses. This step also served as a check for the credibility of the data collected and helped minimize any potential bias introduced by me during the data analysis process. The member check is one characteristic that increases the credibility and validity of the study (Creswell, 2014). According to Nowell et al. (2017), the thematic analysis of qualitative data using Colaizzi's seven-step strategy may increase the validity and credibility of the study by providing a structured data analysis plan. This data analysis technique involves the coding process.

Saldaña (2016) mentioned that coding might refer to a process in which the researcher interprets the meaning of each datum to generate concepts (codes) that symbolize the pattern arising from the data. Simultaneous coding processes was used to determine the codes that led to the formation of categories. According to Saldaña, simultaneous coding enables the generation of codes by looking for a pattern in collected data using criteria. These criteria may include the similarity, when behaviors or attitudes happen the same way; the difference, when things happen differently; frequency, when things happen following an order; correspondence, when things happen about other events; and causation when things happen as a result of an initial event. The simultaneous coding procedure was used as part of the data analysis process.

Coding may also be viewed as the process of labeling or marking patterns of behaviors that will serve for category and theme determination (Soriano, 2013). There is a risk of missing a new and essential pattern when analyzing data collected from a population with language barriers or unusual cultural behavior with an immigrant background (Soriano, 2013). For this reason, Soriano (2013) recommended the use of traditional coding instead of qualitative data analysis software (QDA software). Also, Bergin (2011) mentioned that QDA software is useful for large-scale data and that traditional or manual coding using Microsoft Word or Excel may be better for the small dataset. Because the population of interest has an immigration background and the sample size was not large, manual coding was used for this study. During the manual coding process, potential codes were generated following the steps of the Colaizzi analysis strategy. All formulated meanings (codes) from participants' answers were discussed with the chair and the committee member.

Issues of Trustworthiness

Credibility

According to Creswell (2014), the validity of a qualitative study is determined by the level of accuracy of its findings. The authenticity and the credibility of the data define their accuracy (Creswell, 2014). For this study, the data sources were interviews with participants and observations made by me during the interviews, thus providing at least two different data sources to serve as data triangulation. Triangulation, the use of different data sources, improves the credibility of a qualitative study (Creswell, 2014). Each participant was provided with the final analysis of the interview, as well as a copy of the transcript of his interview to check for accuracy of the information provided and to enable the participant to make corrections if needed. This process, known as member check, increases the accuracy of the study findings (Creswell, 2014). The codes defined during the data analysis were cross-checked by the members of the committee to ensure that they aligned with the collected data and the categories and themes that have emerged from the data. The self-reflection, which is a self-critique strategy of the researcher, defined the potential bias that may influence the interpretation of the data. Any conflicting information arising from the final data analysis was presented in the results. Code cross-checking, presentation of discrepant information, and researcher self-reflection are other methods to improve the credibility of a qualitative study (Creswell, 2014).

Transferability

In a qualitative study (and quantitative study as well), *transferability* may refer to the ability of research findings to be replicated in different context or setting (Shenton, 2004). The choice of the method used to address the research problem can be one possible strategy to enable transferability. I increased transferability by choosing a research method that aligned with the study design (aligning the problem statement, the purpose statement, and the research questions). The possibility to apply a study method to a different study defines the transferability (Shenton, 2004). Also, a complete description of the methodology used in this study provided for possible study replication in different settings or population groups.

Dependability

In a quantitative study, reliability is the degree to which a study can produce the same results if repeated in the same conditions. In a qualitative study, this criterion of the study trustworthiness is known as dependability (Shenton, 2004). The strategy used in this study to ensure dependability was the development of an in-depth description and detailed explanation of all chosen procedures used in the study. According to Burkholder et al. (2016), dependability in a qualitative study refers to the production of consistent results when analyzed data are collected at different time points using the same instrument. Also, all collected data were kept in their original form and could be used to trace back any step that had led to the study findings.

Confirmability

Shenton (2004) defined *confirmability* for a qualitative study as the quality control that ensures that research findings reflect the information collected from the participants. In researcher reflexivity, I addressed this criterion by providing information on how potential researcher bias could be avoided. The use of responses received from the participants without any modification also helped ensure the confirmability. Acknowledging personal bias by the researcher helps increase the quality of the data (Creswell, 2014).

Ethical Procedures

Before having any contact with the participants, the approval from the University Institutional Review Board (IRB) was obtained. The IRB approval number is 04-09-19-0607706. Walden University does not accept any responsibility for any data collected before the IRB approval, and contacting participants to get information from them without IRB approval would be a violation of the university policies and may have led to disciplinary action. Every person conducting research involving human subjects must abide by that rule. The informed consent form provided by the university was used to gain access to the participants and to ensure that they were all aware of their rights as participants in the study before they decided to participate. I was trained in the treatment of human subjects following the requirements set by the National Institute of Health (NIH). My certificate of completion of the training was a part of the IRB application package. Submission of the flyers used for recruiting participants was sent to the IRB for review, and no changes were made on any document approved by the IRB. The recruitment flyer’s inclusion in the IRB package allowed the IRB to determine if there were any ethical concerns related to the participant recruitment. These included whether the language used was appropriate, the writing level was understandable without extra effort, the culture and social norms were respected, and whether the flyer included any element that could be viewed as offensive or unethical.

All participants were informed about their right to withdraw from the study at any moment including during the interview. They were informed about the confidentiality of the data and their right to refuse to answer any question that made them feel uncomfortable. I ensured that the participants did not have any concerns about the disclosure of their personal information and that the anonymity of the data were maintained throughout the study and through the publication of its results. All collected data are securely stored and protected from any external access both electronically and physically (including the journal notes generated during and after the interview) for 5 years, after which they will all be destroyed. During the 5 years, no external access to the data will be provided without consultation with and approval of the IRB.

Summary

The topic and purpose of the study led to the choice of the qualitative method to answer the defined research questions. Participants were recruited using the purposeful sampling strategy. All ethical issues related to the study and all issues related to the feasibility of the study were considered and detailed in this chapter. Data analysis followed a thematic strategy to generate findings that aligned with the research design and produce a high level of trustworthiness of the study. The Colaizzi analysis method that aligns with the descriptive phenomenological approach was used for the mentioned thematic data analysis, during which the simultaneous coding process helped determine similarity and differences in collected data. Data were analyzed in tandem with the data collection until data saturation was reached. My bracketing helped with the reduction of bias during data collection and analysis, whereas member-check helped increase the data accuracy after the analyses were completed. The bracketing and member-check helped increase the credibility of the study.

In Chapter 4, I will describe the demographics of the study participants, present the study findings resulting from the analyses, and show the evidence of trustworthiness.

Chapter 4: Results

Introduction

My purpose in this phenomenological study was to understand how CRC is viewed and understood by Black, male, African immigrants residing in Baltimore, Maryland, as well as to describe their experiences with CRC screening. Two research questions were developed, one to address the meaning of CRC, and one to address the description of CRC screening in that population. A face-to-face, semistructured interview protocol was developed consisting of 11 questions, using the HBM as a framework, to capture information from eight participants from the population of Black, male, African immigrants residing in Baltimore, Maryland.

Setting

The study took place in Baltimore, Maryland. Because the interviews were completed with participants on an individual basis, participants were able to choose the location, time, and date convenient for them and were also offered the option to change or cancel any scheduled appointment if a conflict with their availability arose before the interview time. The participants did not report any issues that might have influenced their participation. Participants 1, 4, and 7 provided mostly short answers and did not go into much detail like the other participants, but their short answers were all relevant and sufficient to formulate appropriate meaning for the particular questions.

Demographics

A sample of eight participants was selected from the Black, African, male communities living in Baltimore, Maryland. All participants resided in Baltimore for at least 6 months before the interview, were Black males from Africa, and had participated at least once in CRC screening. The demographics pertaining to the inclusion criteria of the participants are shown in Table 1 and include the country of origin, race, and a proximal length of residency in Baltimore.

Table 1

Participant Demographics

Participant number	Country of origin	Race	Duration in Baltimore (years)
1	Mali	Black	15
2	Cameroon	Black	15
3	Nigeria	Black	35
4	Mali	Black	10
5	Nigeria	Black	29
6	Mali	Black	10
7	Nigeria	Black	15
8	Cameroon	Black	10

Data Collection

Primary data were collected from eight participants using a face-to-face interview with a set of 11 semistructured qualitative questions. The questions were designed to address the two research questions based on the constructs of the HBM. The interviews took place in the city of Baltimore and in Baltimore County. Each participant was offered the option to choose the location convenient to him and was informed about the possibility of using a public library or other locations that would respect his privacy. Four of the participants (1, 2, 3, and 5) chose to be interviewed in their offices, because they had their own business and could select the best time for them. Four participants (4, 6, 7, and 8) insisted on being interviewed at their homes and did not want to go to a public place. They mentioned having no problem being interviewed at their private homes. Data were collected from each participant in one interview. The first participant was interviewed on April 17, 2019, and the last on May 17, 2019. The duration of each interview varied from one participant to the other, depending on whether they provided short or long answers. The interviews ranged between 8 and 27 minutes.

Participants were given enough time to read and sign the consent form at least 48 hours prior to being interviewed, but all of them signed it immediately before the beginning of the interview. One participant wanted to be interviewed over the phone on the day he was given the consent form, but he was told by me that telephone interviews had not been approved by the IRB and, therefore, could not be considered. This participant was ultimately interviewed 1 week later.

I audio recorded the interviews using two separate devices in case something went wrong with one of the devices during the interview. The two devices included my personal phone and a commercially available professional audio recorder (Sony ICD-UX560 Stereo Digital Voice Recorder). Data recorded on the telephone were transferred to and saved on the iCloud account that can only be accessed with a password. The data from the commercial recorder were saved with other personal documents that could only be accessed by me. I manually transcribed and generated a transcript for each recorded interview using a Microsoft Word document. The transcripts were used for the data analysis. Participants were given a copy of the transcript and the results of the analysis of their interview for them to check for accuracy of their information. The plan for the data collection was carried out, as described in Chapter 3, with no variation. All interviews were conducted in relatively quiet places. The participants were all friendly. There were no unusual circumstances to be reported.

Data Analysis

The interview questions were organized to address each research question based on the six constructs of the HBM. Questions 1 through 4 addressed Research Question 1, and Questions 5 through 11 addressed Research Question 2. After reading a participant's transcript multiple times, I extracted the significant statements of that participant for each of the 11 questions. The significant statements were grouped according to the HBM constructs for each research question. Following that was the formulation of the meaning (codes) as related to the corresponding HBM construct. The formulated meanings were then used to look for differences and similarities and generate categories. According to Saldana (2016), a code may refer to a researcher-generated construct that symbolizes data and attributes interpreted meaning to each individual datum, whereas a category may refer to a word or phrase describing some segment of the data. A category represents a group of codes that are linked together by the similarity in the interpretation of their meaning.

Table 2 shows an example of a category resulting from the formulated meanings of the responses given by the first three participants for the question assessing the construct cues to action of the HBM.

Table 2
Sample Category

Statement for cues to action	Formulated meaning for cues to action	Category
"My doctor told me, if you are at my age you should do it, and I did it. That is my only motivation."	The participant was informed that age is an important factor for getting screened	Recommendation
"It is through the doctor; they said once you get at this age, it is recommended you should go for it."	The participant was informed about the age as a factor for CRC screening	
"It was only when I did turn 50 before I did turn 50, I was going to the doctor, but none of them ever came out with that, when they saw my age, they started to recommend that when you turn this age, it is recommended for you to do the screening."	The participant was encouraged to participate because of the age factor	

The same process was used to generate categories and emerging themes for all the six constructs of the HBM and the two research questions. An emerging theme may refer to a phrase or sentence describing the outcomes of a process reflecting one or more categories (Saldana, 2016). Tables 3 and 4 present the categories and the emerging themes for Research Questions 1 and 2, respectively, using the six constructs of the HBM.

Table 3

Generation of Emerging Themes for RQ1

HBM constructs	Categories	Emerging themes
Perceived susceptibility	Knowledge	Limited knowledge about CRC
	Perceived risk	
Perceived severity	Awareness of the severity of CRC	Increased awareness from the health care provider

Table 4

Generation of Emerging Themes for RQ2

HMB constructs	Categories	Emerging themes
Perceived barriers	Knowledge of the procedure Behavior	Limited awareness of the screening procedure
	Health insurance affordability	Access to health care
Perceived benefits	Knowledge Outcomes awareness	Increased awareness
Cues to action	Recommendation	Trust in health care Provider
Self-efficacy	Satisfaction Readiness	The willingness to follow up

The responses received from the participants for each construct of the HBM were similar and did not have noticeable discrepancies that needed particular attention.

Evidence of Trustworthiness

Credibility

During the interview, each participant was observed, and his attitude was noted in a journal reflection after the interview. The observation served to assess if the participants were trying to forge or to arrange their answers instead of providing honest answers. The member check strategy was used to validate the collected data. According to Creswell (2014), a member check strategy may refer to the sharing of the analysis results with the participants for accuracy verification, which increases the credibility of the data. The transcripts and data analysis document with formulated meanings, categories, and emerging themes were sent to the committee chair and committee member for verification of the consistency between the categories and emerging themes from the collected data. Another strategy that ensured the credibility of the data was my self-reflection and bracketing. Bracketing is a strategy used during the data analysis phase that allows the researcher to set aside all of his or her prior experience with the phenomenon of interest and to focus only on the data received from the participants, which increases the credibility of the data (Nowell et al., 2017). All of these strategies, as stated in Chapter 3, were implemented to ensure data credibility.

Transferability

The method used for data collection can be applied to studies with different designs. For example, a qualitative interview can be used to collect data for a study using grounded theory as a qualitative study approach. Interviews were all tape recorded and analyzed following the Colaizzi (1978) analysis strategy as described in Chapter 3.

Dependability

All recorded interviews were transcribed verbatim to keep the originality of the answers provided by the participants. I followed the bracketing strategy to avoid interfering with the collected information. The categories and emerging themes were all generated from the initially collected information. All recorded interviews and generated journals were kept saved and could be used to trace back any information that led to the emerged themes.

Confirmability

I identify myself with the Black, male, African communities residing in Baltimore, Maryland. Therefore, all potential biases that could influence the interpretations of the information collected from the participants were disclosed in advanced in Chapter 3. To reduce the likelihood of bias during the data analysis, I did not use my knowledge of the African culture to interpret the data. Such knowledge included that most Africans do not like to go to the doctor for a routine check-up, and that they do not usually have primary health care providers.

Results

The six constructs of the HBM were organized into two groups, with a total of 11 predefined interview questions to address the two research questions. The first research question was What does CRC mean to African-born, black, male immigrants living in Baltimore, Maryland? This research question was defined to elicit the views of the participants about CRC and CRC screening. The research question was also intended to assess the perceived threat of CRC (perceived susceptibility and perceived severity) in the target population.

Discussion of the Results for Research Question 1

Perceived susceptibility to CRC was assessed with Interview Questions 1-3

1- “Please, could you describe to me how you view CRC and CRC screening.”

This question was used to evaluate how much the participants were aware of CRC and CRC screening. All participants mentioned that they had no prior knowledge of CRC and did not know anything about CRC screening until their health care provider informed them. Some answers to this question were “if I did not come here, I would never ever know anything about colon cancer” (Participant # 2); “I do not know much about colon cancer anyway” (Participant # 3); and “People around me do not talk about it; nobody knows the disease” (Participant 4”). The answers to this question showed that participants had limited knowledge about the existence of CRC, thus suggesting that they could not assess their level of susceptibility for CRC.

2- “Compared to other people of your age, what do you think your chance is of getting CRC?”

This question aimed to understand how the participants assessed their risk of developing CRC before they participated in the screening. Examples of answers provided were “no idea” (Participant # 1); “These days a lot, because if you look at the food we eat, there is too much chemical” (Participant # 3); “I mean, it is possible in anybody life at our age” (Participant # 5); and “People around me do not talk about it, nobody knows the disease, so I do not see a possibility to develop CRC" (Participant # 4). The answers to this question showed that some participants could see a possible risk for themselves of developing the disease after they were made aware of it, while others could not envision a possible situation for them to develop CRC.

3- "How likely do you think it is that you will develop CRC sometime in the future?"

This question was asked to assess the risk perception of developing CRC after the participants completed the screening. Examples of answers were "Myself, I don't think so" (Participant # 1); "Well, so long as I keep following up with the doctors, what they tell me I just follow up, and I think it is avoidable" (Participant # 2);

For me right now, because of my awareness, and because of the fact that I follow this screening very, very meticulously, after every 4 to 5 years I know that I must go for my screening, I don't see myself having up to 50 % chance of developing colon cancer" (participant # 8); "I don't see a possibility in the future. (Participant # 4)

"Of course, they screened for ten years, after ten years I would have to go back again and do it again" (Participant #5); and "There is a possibility, since I am in this country eating the same food everybody is eating" (Participant # 3). Although some participants showed confidence that they did not see any risk of developing CRC after being screened, Participants # 2, 3, 5, and 8 noted the importance of getting screened again to minimize the risk of developing the disease.

Perceived severity of CRC was assessed with Interview Question 4:

4- "How serious would it be if you developed CRC?"

The use of this question was to assess the perception of the severity of CRC by the participants. Examples of answers were “I don’t even know what colon cancer is, believe me” (Participant # 1); “I think it is serious, very” (Participant # 1); “I don’t think it is something to take lightly or play with it, I think it is a serious, something serious” (Participant # 2); “Any form of cancer is serious” (Participant # 3); and “It is serious, you don’t mess with that” (Participant # 5). The participants saw CRC as a disease to be taken seriously. According to Glanz et al. (2015), perceived threat (perceived susceptibility and perceived severity) is how people evaluate the importance of a health issue and how they can see themselves at risk of developing the disease. Aktison et al. (2015) noted that the way people think about a health issue could influence the action they take to try and prevent it.

For Research Question 1, the two emerged themes: the limited knowledge about CRC and the increased awareness, summarized how much the participants knew about CRC before being informed and how they viewed the disease after gaining more information about it.

Discussion of the Results for Research Question 2

Research Question 2 was intended to describe the experiences of the participants with CRC screening. Interview Questions 5-11 were defined to assess the remaining four constructs of the HBM, including perceived barriers to CRC screening, perceived benefits of CRC screening, cues to action for CRC screening, and self-efficacy of CRC screening.

Perceived barriers to CRC Screening were evaluated with interview Questions 5 and 6:

5- “What are the challenges that make it difficult for you to access CRC screening in the US? Please, describe your experience with CRC screening.”

With this question, I tried to capture and describe the challenges to the screening perceived by the participants. The answers were divergent but tended to show overall satisfaction. For example, Participant # 1 stated that he does not see anything that could prevent someone from getting screened, “none.” Health insurance, lack of awareness, and financial limitation were mentioned as possible challenges to CRC screening, as illustrated by the following responses: “not many people have insurance, but if we could have free screening for those that do not have insurance” (Participant # 2); “if you don’t have insurance it is difficult because most people cannot pay off for this thing” (Participant # 3); “even if you have insurance your co-pay could be so high that some people cannot be able to afford it” (Participant #3); and “Lack of awareness, people are not informed” (Participant # 4). An overall satisfaction with the procedure was shown by the participants, despite the preparation phase being noted as stressing, as illustrated by the following responses: “I really did not encounter any difficulties” (Participant # 1); “No, no there is nothing to be challenged, the challenge is the preparation you have to undertake, because of that process of staying without food in your stomach, that it is.” (Participant # 5); “The preparation to the procedure is the most difficult part because during the procedure they give you anesthesia, and I did not even know what happened until when I woke up” (Participant # 3); “The screening was amazing to me because I had never experienced” (Participant # 2); and “I was absolutely satisfied; I felt some relief in me” (Participant # 8). The negative behavior characterized by a low interest in disease prevention was mentioned as an obstacle to the screening as illustrated by the following responses: “most of we Black people do not like to go and check- up. Even the ones that have good health insurance” (Participant # 3); and “the problem we have in Africa, we don’t do a checkup, we don’t do physical, we don’t know what is in our body. It is not just about colon cancer, many other things.” (Participant # 5).

6- “Please, could you describe any concern that you might have about CRC screening as a preventive care measure?”

The participants also provided answers showing an overall satisfaction with CRC screening as a preventive care measure given that they were not annoyed by the procedure.

Some response examples were “I don’t have any concern because I did not have to see anything” (Participant # 5); “I think it is ok, I have no problem with it” (Participant # 4); and “Since I have been screened and they did not find it, I don’t have any” (Participant # 7).

The themes that emerged from this construct and that reflected the description of the perceived barriers by the participants included the limited awareness of the screening procedure and the limited access to health care.

Perceived benefits of CRC screening were described using Interview Questions 7 and 8:

7- “How have your health concerns about CRC changed since coming to the US?”

This question aimed to assess the improvement that the participants may have seen in their health after they came to the United States and participated in CRC screening. This question was intended to provide information on the health benefit provided by immigration, as there is no known organized CRC screening program in Africa (Laiyemo et al., 2016). Most participants noted that they could not assess a specific change because they did not know much about CRC before coming to the United States, as illustrated in the following responses: “I did not know what colon cancer is all about before I came to the US” (Participant # 3); “To tell you the truth, I did not have any thoughts about colon cancer before” (Participant # 6); “No, you know what, I don’t even know somebody with this colon cancer” (Participant # 1);

> Well, I can’t say how it changed because I was not informed when I was home, since I was home, I was going to the hospitals, I had never been told about it, I had never known anything about it until when I got here. (Participant # 2).

When looking at the satisfaction with the screening shown by the participants in their responses to Question 6, coming to the United States provided satisfaction in health improvement for the participants.

8- “How would you describe the importance of getting screened for CRC?”

This question was meant to gain information from the participants about their feelings after they left the doctors’ offices with their screening results. The question was intended to describe how the participants viewed the overall necessity of CRC screening, which could reflect whether they felt that it benefitted them. The answers provided by the participants to this question were straightforward. Examples of responses included “I would say that it is more than very, very important for people to get screened” (Participant # 8); “Very Important. Very, very important” (Participant # 3); “the importance is very crucial" (Participant # 2); "very important" (Participant # 1); "It is very important for me, very, very important" (Participant # 4); and "it is very important for the fact that it tells you about what you have in your system, and the chance to get rid of it before it is late" (Participant # 5). After being made aware of CRC and the prevention possibility for it, most participants decided to participate in CRC screening, thus suggesting that they could see the screening as a prevention method that could benefit their health. The emerged theme for this construct of the HBM was increased awareness.

Cues to action for CRC screening were assessed with Interview Question 9.

9- "What do you see that motivated you to go for the screening?"

This question was used to describe the factors that led the participants to go for CRC screening for the first time. Because all participants had already been screened at least once, describing the reasons that drove their decision was an essential part of the study. The responses provided to this question showed that the participants had a high level of trust in their health care providers and were relying on their advice and instructions to go for the screening. The participants reported that immigration had little to no influence on their decision to participate in the screening. Examples of responses to this question were the following: " I told you, and I tell you again, my doctor is the one" (Participant # 1); "it is through the doctor, they said once you get at this age, it is recommended you should go for it" (Participant # 2); " My doctor" (Participant # 4), " It is my friend's death, when I went to the doctor, the doctor made mention of this screening for colon cancer, I said, Doctor I am very, very much interested because a friend of mine just passed away." (Participant # 5); "The immigration had no influence over that; it had no influence. No, it was just my staying here in the state" (Participant # 2); "No, because I had already been in the US for more than 15 years before I did the screening" (Participant # 3); and "It had no influence. I was not thinking of it when I came here, I have been in this country for almost 29 years. I did not have anything like that in my mind until my friend died" (Participant #5). The emerged theme reflecting the participants' descriptions for this construct (cues to action) of HBM was the trust in health care providers. Participant # 1 even mentioned that he did not see any problem with his health, but because his doctor recommended the screening: "No problem, I listen to my Doctor, my health is always good, when the doctor tells you at 50 years it is time for you to do this test, I obey".

Self-efficacy of CRC screening was assessed with Questions 10 and 11.

10- "Is there anything that you think should be done differently for the screening process?"

This question aimed at evaluating how much the answer to Question 6 ("Please, could you describe any concern that you might have about CRC screening as a preventive care measure?") had influenced the readiness of the participants to go back again for the screening. Most participants answered with satisfaction to this question, as seen in the following responses: "Mine went smoothly, just like I expected" (Participant # 1); "Whatever they tell me, I just tried to follow it" (Participant # 2); and "No. not really, there is nothing they could have done differently" (Participant # 3).

11- "How likely would you recommend CRC screening to others?"

This question, combined with Question 10, was used to assess the satisfaction with and readiness of the participants to go back again for the screening. The purpose of this question was to see if the participants were satisfied enough to recommend someone else to get screened, which could be an indicator that they might get themselves screened again, thus showing a high level of readiness to follow post-screening recommendations. Participants responded with high confidence for recommendation and readiness to go back. Some examples of responses to Question 11 regarding the recommendation were the following: “Highly, especially when you get to 50 years” (Participant # 3); “Very, very likely. Extremely likely” (Participant # 5); “Very likely” (Participant # 6); “Anyone in my age, 100%, let’s go screen, make sure you don’t have it” (Participant # 1); and “Anybody that is at my age, anybody that has access to it, or anybody I believe is from 50, I would recommend that” (Participant # 2). Examples of the responses indicating a readiness to go back were the following: “Of course, as a follow up every time, since I already started the procedure” (Participant # 2); “whaooo, I would go back again” (Participant # 3); and “I am ready to go again to avoid unexpected event” (participant # 7). The theme that emerged for this construct of the HBM was the willingness to follow-up.

Summary

The HBM was used to develop 11 interview questions for understanding the meaning and the description of the perception of CRC and CRC screening in the population of Black males from Africa living in Baltimore, Maryland. The first research question focused on the understanding of CRC using the HBM constructs perceived susceptibility and perceived severity. I found that participants were not aware enough about CRC and did not know much about the screening. However, after talking to their health care providers, most participants were interested in finding out more about CRC. The two emerged themes that summarized Research Question 1 included limited knowledge about CRC and increased awareness.

The second part of the interview focused on research question 2, using the HBM constructs perceived barriers, perceived benefits, cues to action, and self-efficacy. In the construct perceived barriers, I found that most participants viewed the limited information and accessibility to health care as barriers to CRC screening. The limited participation in disease prevention was also perceived as a barrier to CRC screening. In the construct perceived benefits, the participants considered the participation in CRC screening as a positive health behavior after being informed by their health care providers about a disease for which they were not aware. In the construct cues to action, I pointed out how much the participants believed in their health care providers and were following their recommendation for getting screened. For the construct self-efficacy, I found that the participants were not only satisfied with the procedure but were also ready to follow the advice of their health care provider for the follow-up instructions. The emerged themes that reflected the findings for Research Question 2 included limited awareness of the screening procedure, access to health care, increased awareness, trust in health care provider, and the willingness to follow-up.

The results and findings provided in this chapter will be interpreted in the next chapter, as related to the current literature about CRC screening in the Black population in the United States. Also, the limitations of the study, the recommendations coming from the study, and the study’s implication for positive social change will be discussed in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

My purpose in this phenomenological study was to understand how CRC is viewed and understood by Black males from Africa living in Baltimore, Maryland, as well as to describe their experiences with CRC screening. Black people tend to participate less in CRC screening than any other racial group and have the highest incidence and mortality rates for CRC in the United States (Jackson et al., 2016; Rahman et al., 2015). Black people from Africa had a lower incidence rate but a higher prevalence rate of CRC than their White counterparts in Africa (Katsidzira et al., 2015). When comparing Black people from Africa with Black people from the United States, Black people from Africa have lower incidence and prevalence of CRC. Black people from Africa and the United States participate less in CRC screening than White people from Africa and from the United States. CRC incidence and mortality rates are on the rise, with 2.2 million new cases and 1.1 deaths expected by 2030 (Arnold et al., 2016). Addressing the problem of low participation in CRC screening in the Black population from Africa could increase CRC screening in this population. The nature of this study was qualitative with a descriptive phenomenological approach.

Key Findings

The key findings from this study can be summarized in three major points:

1. The participants perceived CRC as a disease that can have fatal outcomes once they became aware of it. Participants had no prior knowledge of CRC before their health care providers informed them about the disease in

their age groups, and the participants all followed the instructions and recommendations of their health care providers about getting screened.

2. The participants did not reveal significant perceived barriers that could prevent them from participating in the screening. Instead, they demonstrated a level of satisfaction with the procedure after they underwent the screening, and this level of satisfaction was enough to make them ready to follow all of the postscreening instructions.
3. The participants demonstrated a high level of trust in their health care providers and perceived the recommendations for screening as benefiting their health.

Interpretation of the Findings

The three significant findings of the study resulted from the use of the six constructs of the HBM as a conceptual framework that guided the study. Black people in the United States have limited knowledge about CRC (Jackson et al., 2016; William et al., 2016). According to Glanz et al. (2015), perceived threat, which combines perceived susceptibility and perceived severity, may be used to interpret how people view themselves at risk of developing a disease and may serve as an indicator of a possible action to be screened. Therefore, limited awareness about a disease may lead to a low screening participation because of the limited assessment of the risk exposure for the disease. Scholars supported this suggestion as it was reported that the limited knowledge about CRC and the lack of awareness about CRC screening might be counted as part of the reasons for the low CRC screening participation in the Black population in the United

States (Jackson et al., 2016). The data collected from this study corroborated this assumption, as the participants reported not knowing anything about CRC and CRC screening before the doctor or health care providers’ advice.

Fear of the results of the screening, perceived discrimination, lack of health insurance, and economic reasons were among the obstacles reported in the literature for the construct perceived barriers to CRC screening in the Black population group in the United States (Abramson et al., 2015; Jackson et al., 2016; Rogers et al., 2017; Thompson et al., 2014). Also, the mistrust in the health care system, including in health care providers, was reported as a perceived barrier to CRC screening (May et al., 2015; Rogers et al., 2017) in the Black communities in the United States. Although the data collected from this study could support the lack of health insurance and economic reasons being perceived barriers, fear of the results and perceived discrimination mentioned in the literature as perceived barriers were not corroborated by the data gathered from the participants in this study. With respect to discrimination, the participants relied on their health care providers for making preventive care decisions, as they were ready to follow their providers’ instructions. The high level of trust in health care providers and the readiness to follow their recommendations and instructions suggest that the low CRC screening participation observed in the Black population in Africa (Katsidzira et al., 2015) could be the result of the lack of organized CRC screening programs in Africa (Laiyemo et al., 2016) and the limited awareness of the health care providers in Africa about the importance of age with respect to CRC screening. Some participants thought that a negative perception of the preventive health behavior could be perceived as a barrier to CRC screening. Although this negative perception could align with data from the literature that showed that Black people in Africa participate less in CRC screening, the availability of CRC screening programs in the United States may be viewed as a factor that could positively influence the decision of Black males from Africa to participate in CRC screening. Also, participants in this study did not perceive any barrier to the screening after being informed about CRC as a disease with age as a risk factor, and they showed a high level of readiness to participate after being made aware of the existence of the screening as a preventive measure. In contrast to Black Americans, whom the literature shows have a low level of trust in health care providers due to perceived discrimination (Rogers et al., 2017), Black men from Africa tended to rely more on their health care providers for decision making about participating in CRC screening.

The cues to action and the self-efficacy could be noted from the data of this study by the readiness of the participants to follow their doctors’ recommendations or seek advice from their doctors regarding the participation in CRC screening, as well as by their readiness to receive follow-up screening.

Some factors mentioned in the literature as barriers to CRC screening, including a cultural belief that cancer is a cursed disease (Ogunbiyi et al., 2016) and the belief that cancer is a disease for rich countries (Irabor, 2017), could not be corroborated by this study, given the readiness of the participants to be screened after they were made aware of CRC and CRC screening. Also, participants in this study regarded CRC screening as necessary for everyone 50 years of age and older, suggesting that a cultural belief may instead be a decisive positive factor for this population when it comes to being screened for CRC (Ogunbiyi et al., 2016). I found that Black males from Africa living in Baltimore, Maryland, could be ready to participate more in CRC screening if they are more informed about CRC, if their awareness of the existence of CRC screening programs increases, if the financial obstacles to the screening can be overcome, and if the health care providers make more recommendations for the screening.

Limitations of the Study

The limitations observed during the data analysis included the dependability and the transferability. According to Burkholder et al. (2016), dependability in a qualitative study refers to the production of consistent results when analyzed data are collected at different time points using the same instrument. Participants for this study were selected based on the scope and delimitation of the study, which included that participants resided in Baltimore, Maryland, for at least 6 months. Using the same instrument at a different time point may provide some variations in the results, because participants with residency length fewer than 6 months in Baltimore, Maryland, were not eligible for this study. These ineligible participants may have a different perception of CRC and CRC screening than those who were eligible at the time the study was conducted. The other limitation was the transferability. Transferability refers to the ability of research findings to be replicated in different contexts or setting (Shenton, 2004). CRC is a disease that affects males and females, but this study was limited to males. The mortality rate for CRC is lower in the female population before the age of 64 years but higher after that than in the male population (Amankwah et al., 2013; Kim et al., 2015), which may suggest that women have different views or perceptions about CRC and CRC screening than males. Conducting the study in females might, therefore, produce results that do not replicate the ones obtained in males, thus limiting the transferability criteria of the trustworthiness.

Recommendations

From the findings of this study, it is recommended that further qualitative studies be conducted with inclusion criteria that would not restrict the scope of the study based on the length of residency. Having a larger scope for recruitment may increase the probability of participants providing information that may represent a better reflection of the perception about CRC and CRC screening in the population of interest. Another recommendation would be to conduct a qualitative study that would include female immigrants from Africa. A third recommendation would be to focus on immigrants with illegal status, male or female, who have never participated in CRC screening to assess how much the legal status in the United States may influence their participation in CRC screening. The legal status was not considered in this study.

Implications for Social Change

A positive social change could be accomplished on different levels using the findings from this study. On the individual level, the results could be used to improve the awareness of CRC screening programs and the positive outcomes associated with them in Black, male, African immigrants living in Baltimore, Maryland. Participants in this study have shown that they were ready to get screened once they were informed about the screening possibilities.

On the organizational level, health care providers could be a target for a program to improve the physician-patient conversation. Participants in this study have shown a high level of trust in their health care providers and a readiness to follow their advice and instructions. Therefore, improving physician–patient conversation could increase the number of recommendations for CRC screening in the target population. One strategy to improve cultural competency of health care providers, including physicians, physician assistants, and nurses, is the organization of cultural educational workshops. Also, improving the cultural humility of health care providers may increase the cultural awareness. According to Yeager and Bauer-Wu (2013), cultural humility is a process allowing people to interpret, understand, and respect other people’s cultural identity after undergoing a process of self-reflection about their own cultural identity and beliefs. Health care providers who have been trained on cultural competency and cultural humility can then organize educational workshops for Black, males who are African born living in Baltimore to improve their awareness of CRC and CRC screening. Given the high level of trust in health care providers shown by the participants in this study, developing a cultural educational program for the health care providers would improve their understanding of the culture of the Black males who are African born in Baltimore as well as their recommendation for CRC screening.

On the policy level, regulations and policies could be enacted to facilitate access to health care in the target population that not only reduces the financial obstacles to the screening, but also allows people to be screened regardless of their immigration status in the United States. None of the participants mentioned immigration or immigration status as having influenced their decision to participate, but during informal conversations with the participants, either before or after the interview, it was noted that all of them had legal status in the United States. The legal status was not a part of the inclusion criteria. However, it was mentioned by Miranda et al. (2017) that legal status in the United States was a factor determining the eligibility for participation in free cancer screening programs. Addressing this condition could result in increased CRC screening participation in the target population.

Conclusion

Black people in the United States are viewed as a homogeneous population group, and programs designed to address cancer-related issues do not distinguish the varied cultural backgrounds existing in Black communities living in the United States (Hurtado-de-Mendoza, 2014). One of the findings of this study was the high level of trust that participants had toward their health care providers and their readiness to follow their instructions, including recommendations for follow-up after the first screening. This result of the study shows a noticeable difference between Black males from Africa living in Baltimore, Maryland, and Black people from the United States who tend to have lower trust in their health care providers based on perceived racism and discrimination, as reported by Rogers et al. (2017). Therefore, low participation rates in CRC screening in Black males in Africa could be increased by using the trust that they have in their health care providers.

References

Abramson, C. M., Hashemi, M., & Sanchez-Jankowski, M. (2015). Perceived discrimination in U.S. healthcare: Charting the effects of key social characteristics within and across racial groups. *Preventative Medicine Reports, 2*, 615–621. doi:10.1016/j.pmedr.2015.07.006

Aktison, T., Salz, T., Touza, K., Li, Y. & Hay, J. (2015). Does colorectal cancer risk perception predict screening behavior? A systematic review and meta-analysis. *Journal of Behavioral Medicine, 38*(6), 837-850. doi:10.1007/s10865-015-9668-8

Al-Dubai, S. A., Ganasegeran, K., Alabsi, A. M., Shah, S. A., Razali, F. M., & Arokiasamy, J. T. (2013). Exploration of risk taking behaviors and perceived susceptibility of colorectal cancer among Malaysian adults: A community based cross-sectional study. *BMC Public Health*, *13,* 930. doi:10.1186/1471-2458-13-930

Allen, J. D., Capsi, C., Yang, May., Leyva, B., Stoddard, A. M., Tamers, S., … Sorensen, G. C. (2014). Pathways between acculturation and health behaviors among residents of low-income housing: The mediating role of social and contextual factors. *Social Science Medicine, 123*, 26-36. doi:10.1016/j.socscimed.2014.10.034

Alshenqeeti, H. (2014). Interviewing as a data collection method: A critical review. Sciedu Press, *1*, doi:10.5430/elr.v3n1p39

Amankwah, E. K., Friedenreich, C. M., Magliocco, A. M., Brant, R., Speidel, T., Rahman, W., Cook, L. S (2013). Hormonal and reproductive risk factors for sporadic microsatellite stable and unstable endometrial tumors. *Cancer Epidemiol Biomarkers Prevention, 22*(7),1325–1331. doi:10.1158/1055-9965.EPI-13- 0105

American Cancer Society. (2018a). Colorectal Cancer Risk Factors. Retrieved from https://www.cancer.org/cancer/colon-rectal-cancer/causes-risks-prevention/risk-factors.html

American Cancer Society. (2018b). Colorectal cancer stages. Retrieved from https://www.cancer.org/cancer/colon-rectal-cancer/detection-diagnosis-staging/staged.html

American cancer Society. (2018c). Key statistics for colorectal cancer. Retrieved from https://www.cancer.org/cancer/colon-rectal-cancer/about/key- statistics.html

Arnold, C. L., Rademaker, A., Liu, D., & Davis, T. C. (2017). Changes in colorectal cancer screening knowledge, behavior, beliefs, self-efficacy, and barriers among community health clinic patients after a health literacy intervention. *Journal of Community Medical Health and Education*, *7*(1), 497. doi:10.4172/2161-0711.1000497

Arnold, M., Sierra, M. S., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2016). Global patterns and trends in colorectal cancer incidence and mortality. *BMJ Journals, 66*. doi:10.1136/gutjnl-2015-310912

Asombang, A. W., Madsen, R., Simuyandi, M., Phiri, G., Bechtold, M., Ibdah, J. A., Lishimpi., K., & Banda, L. 2018. Descriptive analysis of colorectal cancer in Zambia, Southern Africa using the National Cancer Disease Hospital Database. *The Pan African Medical Journal, 30*, 248. doi:10.11604/pamj.2018.30.248.12464

Barrera, M., Alexander, S., Shama, W., Mills, D., Desjardins, L., & Hancock, K. (2018). Perceived benefits of and barriers to psychosocial risk screening in pediatric oncology by health care providers. *Pediatric Blood Cancer, 65*(12), e27429. doi:10.1002/pbc.27429

Bebington, B., Singh, E., Fabian, J., Kruger, C. J., Prodehl, L., Surridge, D., … Ruff, P. (2018). Design and methodology of a study on colorectal cancer in Johannesburg, South Africa. *JGH Open*, *2*(4), 139-143. doi:10.1002/jgh3.12061

Becker, D., Grapendorf, J., Greving, H., & Sassenberg, K. (2018). Perceived threat and Internet use predict intentions to get bowel cancer screening (colonoscopy): Longitudinal Questionnaire study. *Journal of Medical Internet Research*, *20*(2), e46. doi:10.2196/jmir.9144

Bergin, M. (2011). NVivo 8 and consistency in data analysis: Reflecting on the use of a qualitative data analysis program. *Nurse Researcher, 18*(3), 6-12. https://doi.org/10.7748/nr2011.04.18.3.6.c8457

Berry, J., Caplan, L., Davis, S., Minor, P., Young, W. M., Bumpers, K., … Flowers, C. (2010). A Black-White comparison of the quality of stage-specific colon cancer treatment. *Cancer*, *116*(3), 713-22. doi:10.1002/cncr.24757

Bishehsari, F., Mahdavinia, M., Vacca, M., Malekzadeh, R., & Mariani-Costantini (2014). Epidemiological transition of colorectal cancer in developing countries: Environmental factors, molecular pathways, and opportunities for prevention. *World Journal of Gastroenterol, 20*(20), 6055-6072. doi:10.3748/wjg.v20.i20.6055

Brenner, A.T., Ko, L.K., Janz, N., Gupta, S., & Inadomi, J. (2015). Race/ethnicity and primary language: Health beliefs about colorectal cancer screening in a diverse, low-income population. *Journal of Health Care for the Poor and Underserved, 26*(3), 824-38. doi:10.1353/hpu.2015.0075

Burkholder, G. j, Cox, K. A, & Crawford, L. M. (2016). *The scholar-practitioner's guide to research design*. Minneapolis, MN: Laureate Publishing Inc.

Burnett-Hartman, A. N, Mehta, S. J., Zheng, Y., Ghai, N. R., McLerran, D., Chubak, J., Doubeni, C. A. (2016). Racial/ethnic disparities in colorectal cancer screening ccross healthcare systems. *American Journa of Preventative Medicine*, *51*(4), e107-115. doi:10.1016/j.amepre.2016.02.025

Canadian Cancer Society. (2018). The colon and rectum. Retrieved from http://www.cancer.ca/en/cancer-information/cancer-type/colorectal/colorectal-cancer/the-colon-and-rectum/?region=on

Center for Disease Control and Prevention. (2015). Cultural competence. Retrieved from https://npin.cdc.gov/pages/cultural-competence

Center for Disease Control and Prevention. (2017). Epidemiology glossary. Retrieved from https://www.cdc.gov/reproductivehealth/data_stats/glossary.html

Center for Disease control and Prevention. (2018c). Colorectal Cancer Control Program (CRCCP). Retrieved from https://www.cdc.gov/cancer/crccp/index.htm

Center for Disease control and Prevention. (2018b). Colorectal cancer screening tests. Retrieved from https://www.cdc.gov/cancer/colorectal/basic_info/screening/tests.htm

Center for Disease control and Prevention. (n.d). Leading cancer cases and deaths, male and female, 2015. Retrieved from https://gis.cdc.gov/Cancer/USCS/DataViz.html

Center for Disease Control and Prevention. (2018a). What are the risk factors for colorectal cancer? Retrieved from https://www.cdc.gov/cancer/colorectal/basic_info/risk_factors.htm

Comptroller of Maryland. (2018). What is my residency status? Retrieved from https://taxes.marylandtaxes.gov/Individual_Taxes/Individual_Tax_Types/Income_Tax/Filing_Information/Determine_Residency_Status/

Coe, A. B., Gatewood, S. B. S., Moczygemba, L. R., Goode, J. R., & Becker, J. O. (2012). The use of the health belief model to assess predictors of intent to receive the novel (2009) H1N1 influenza vaccine. *Innovations in Pharmacy, 3*(2), 1–11. https://doi.org/10.24926/iip.v3i2.257

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods* (4th ed.). Thousand Oaks, CA: Sage.

Dahrni, N., Armstrong, D., Chung-Faye, G., & Wright, A. (2017). Factors influencing Participation in colorectal cancer screening—a qualitative study in an ethnic and Socio-economically diverse inner city population. *Health Expect, 20*(4):608-617 doi:10.1111/hex.12489

Dube, C. (2012). Tackling colorectal cancer as a public health issue: What can the Gastroenterologist do? *Can J Gastroenterol,* 26(7), 417–418.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics, 5*(1), 1-4. doi:10.11648/j.ajtas.20160501.11

Flood, D. M., Weiss, N. S, Cook, L. S., Emerson, J. C., Schwarzt, S. M., & Potter, J. D. (2000). Colorectal cancer incidence in Asian migrants to the United States and their descendants. *Cancer Causes Control*, *11*(5), 403-11. doi:10.1023/A:1008955722425

Gibson, C., Medeiros, K. E., Giorgini, V., Mecca, J. T., Devenport, L. D., Connelly, S., & Mumford, M. D. (2014). A qualitative analysis of power differentials in ethical situations in academia. *Ethics and Behavior*, *24*(4), 311–325. doi:10.1080/10508422.2013.858605

Glanz, K., Rimer, B. K., & Viswanath, K. (Eds.). (2015). *Health behavior: Theory, research, and practice* (5th ed.). San Francisco, CA: Jossey-Bass.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, *18*(1), 59–82. doi:10.1177/1525822X05279903

Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). Qualitative research methods: When to use them and how to judge them. *Human Reproduction*, *31*(1), 498-501. doi:10.1093/humrep/dev334

Hemminki, K., Forsti, A., Khyatti, M., Anwar, W. A., & Mousavi, M. (2014). Cancer in immigrants as a pointer to the causes of cancer. *European Journal of Public Health*, *1*, 64-71. doi:10.1093/eurpub/cku102

Hurtado-de-Mendoza, A., Song, M., Kigen, O., Jennings, Y., Nwabukwu, I., & Seppard, V. (2014). Addressing cancer control needs of African-born immigrants in the US: A systematic literature review. *Preventative Medicine, 0*, 89–99. doi:10.1016/j.ypmed.2014.07.006

Imenda, S. (2014). Is there a conceptual difference between theoretical and conceptual frameworks? *Journal of Social Sciences*, *38*(2), 185-195. Retrieved from https://pdfs.semanticscholar.org/4b40/2748598965cf7618a6a7ba7f416782f27ca2.pdf

Irabor, D. O. (2017). Emergence of colorectal cancer in West Africa: Accepting the inevitable. *Nigerian Medical Journal, 58*(3), 87-91. doi:10.4103/0300-1652.234076

Jackson, C., Oman, M., Patel, A., & Vega, K. (2016). Health disparities in colorectal cancer among racial and ethnic minorities in the United States. Journal of Gastrointestinal Oncology, *1*, 32–43. doi:10.3978/j.issn.2078-6891.2015.039

Jeihooni, A.K., Jamshidi, H., Kashfi, S.M., Avand, A., & Khiyali, Z. (2017). The effect of health education program based on health belief model on oral health behaviors in pregnant women of Fasa City, Fars Province, South of Iran. *Journal of International Society of Preventative and Community Dentistry, 7*(6), 336–343. doi:10.4103/jispcd.JISPCD33917

Johnson, M., Wei, C., Ensor, J., Smolenski, D., Amos, C., Levin, B., & Berry, D. (2013). Meta-analyses of colorectal cancer risk factors. *Cancer Causes Control*, *24*(6), 1207-122. doi:10.1007/s10552-013-0201-5

Jones, C. L., Jensen, J. D., Scherr, C. L., Brown, N. R., Christy, K., & Weaver, J. (2015). The health belief model as an explanatory framework in communication research: Exploring parallel, serial, and moderated mediation. *Health Community, 30*(6), 566–576. doi:10.1080/10410236.2013.873363

Katsidzira, L., Gangaidzo, I.T., Mapingure M.P., & Matenga, J.A. (2015). Retrospective study of colorectal cancer in Zimbabwe: Colonoscopic and clinical correlates. *World Journal of Gastroenterol, 21*(8), 2374–2380. doi:10.3748/wjg.v21.i8.2374

Kelly, B., Margolis, M., McCormack, L., Lebaron, P., & Chowdhury, D. (2017). What affects people's willingness to participate in qualitative research? An experimental comparison of five incentives. *Field Methods*, *29*(4), 333-350. doi:10.1177/1525822X17698958

Kim, S., Paik, H. Y., Yoon, H., Lee, J.E., Kim, N., & Sung, M. (2015). Sex- and gender-specific disparities in colorectal cancer risk. *World Journal of Gastroenterology, 21*(17), 5167-51-75. doi:10.3748/wjg.v21.i17.5167

Klampfer, L. (2014). Vitamin D and colon cancer. *World Journal of Gastrointestinal Oncology, 6*(11), 430–437. doi:10.4251/wjgo.v6.i11.430

Knight, J. R., Kanotra, S., Siameh, S., Jones. J., Thompson, B., & Thomas-Cox, S. (2015). Understanding barriers to colorectal cancer screening in Kentucky. *Preventing Chronic Disease, 12*, 140-586. http://dx.doi.org/10.5888/pcd12.140586

Kuipers, E. J., Grady, W. M., Lieberman, D., Seufferlein, T., Sung, J. J., Boelens, P. G., Van de Velde, C. J. H., & Watanabe, T. (2015). Colorectal cancer. *National Reviews Disease Primers, 1*, 15065. doi:10.1038/nrdp.2015.65

Laiyemo, A.O., Brawley, O., Irabor, D., Boutall, A., Ramesar, R., S., & Madiba, T. E. (2015). Towards colorectal cancer control in Africa. *International Journal of Cancer*, *138*(4), 1033-1034. doi:10.1002/ijc.29843

Lee, S., Chen, L., Jung, M. Y., Baezconde-Garbanati, L., & Juon, H. (2014). Acculturation and cancer screening among Asian Americans: Role of health insurance and having a regular physician. *Journal of Community Health, 39*(2), 201–212. doi:10.1007/s10900-013-9763-0

Lopez, K. A., & Willis, D.G. (2004). Descriptive versus interpretive phenomenology: Their contributions to nursing knowledge. *Qualitative Health Researcher, 14*(5), 726-35. doi:10.1177/1049732304263638

Lopez, P. J. T., Alberto, J. S., & Rodrigez-Montes, J. A. (2014). Primary and secondary prevention of colorectal cancer. *Clinical Medical Insights to Gastroenterol*, *7,* 33–46. doi:10.4137/CGast.S14039

Marley, A. R., & Nan, H. (2016). Epidemiology of colorectal cancer. *International Journal of Molecular Epidemiology and Genetics*, *7*(3), 105–114.

Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. *Forum: Qualitative Social Research*, *11*(3), Art-8. Retrieved from http://www.qualitative-research.net/index.php/fqs/article/view/1428/3027

May, F. P., Almario, C. V., Ponce, N., & Spiegel, B. M. R. (2015). Racial minorities are more likely than White people to report lack of provider recommendation for colon cancer screening. *American Journal of Gastroenterol, 110*(10), 1388-94. doi:10.1038/ajg.2015.138

May, F. P., Glenn, B. A., Crespi, C. M., Ponce, N., Spiegel, B. M. R., & Bastani, R. (2017). Decreasing Black-White disparities in colorectal cancer incidence and stage at presentation in the United States. *Cancer Epidemiology Biomarkers Prevention, 26*(5), 762-768. doi:10.1158/1055-9965.EPI-16-0834

McDonald, J., Farnworth, M., & Liu, Z. (2017). Cancer and the healthy immigrant effect: A statistical analysis of cancer diagnosis using a linked Census-cancer registry administrative database. *BMC Public Health, 17,* 296. doi:10.1186/s12889-017-4190-2

Medical Art Library. (2019). Colon Anatomy. Retrieved from https://medicalartlibrary.com/colon-anatomy/

Merriam-Webster. (2018). Immigration. Retrieved from https://www.merriam-webster.com/dictionary/immigration

Merriam-Webster. (2018). Westernization. Retrieved from https://www.merriam-webster.com/dictionary/westernization

Meester, R., Doubeni, C., Zauber, A., Goede, S., Levin, T., Corley, D., …Lansdorp-Vogelarr. (2015). Public health impact of achieving 80% colorectal cancer screening rates in the United States by 2018. *Cancer, 121*(13), 2281– 2285. doi:10.1002/cncr.29336

Miranda, P. Y, Yao, N., Snipes, A., Belue, R., Lengerich, E., Hillemeier, M. M. (2017). Citizenship, length of stay, and screening for breast, cervical, and colorectal cancer in women, 2000–2010. *Cancer Causes Control*, *28*(6), 589–598. doi10.1007/s10552-017-0887-x

Moghaddasi, J., Taleghani, F., Moafi, A., Malekian, A., Keshvari, M., & Ilkhani, M. (2018). Family interactions in childhood leukemia: An exploratory descriptive study. *Support Care, 26*(12), 4161-4168. doi:10.1007/s00520-018-4289-8

Morrow, R., Rodriguez, A., & King, N. (2015). Colaizzi's descriptive phenomenological method. *The Psychologist*, *28*(8), 643-644. Retrieved from https://thepsychologist.bps.org.uk/

Murray, K. E., Mohamed, A. S., & Ndunduyenge, G. G. (2013). Health and prevention among East African Women in the U.S. *Journal of Health Care for the Poor and Underserved*, *20*(1), 233-246. doi:10.1353/hpu.2013.0029

National Cancer Institute. (2015a). NCI dictionary of cancer terms. Retrieved from https://www.cancer.gov/publications/dictionaries/cancer-terms/def/cancer

National Cancer Institute. (2015b). What is Cancer? Retrieved from https://www.cancer.gov/about-cancer/understanding/what-is-cancer

Nojadeh, J. N., Sharif, B. S., & Sakhinia, E. (2018). Microsatellite instability in colorectal cancer. *EXCLI Journal*, *17*, 159–168. doi:10.17179/excli2017-948

Nowell, L. S., Norris, J. M., White, D. E., & Moules N. J. (2017) Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, *16*, 1–13. doi:10.1177/1609406917733847

Ogunbiyi, J. O., Stefan, D. C., & Rebbek, T. R. (2016). African organization for research and training in cancer: Position and vision for cancer research on the African Continent. *Infectious Agents and Cancer, 11*, 63. doi:10.1186/s13027-016-0110-9

O'Keefe. S. J. D., Li, J. V., Lahti. L., Ou, J., Carbonero, F., Mohammed, K.,…Zoetendal, E. (2015). Fat, fiber and cancer risk in African Americans and rural Africans. *Nature Communications, 6*, 6342. doi:10.1038/ncomms7342

Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum Qualitative Sozial for schung/Forum: Qualitative Social Research*, *7*(4), article 11. Retrieved from http://www.qualitative-research.net/index.php/fqs

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood., K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration in Policy and Mental Health, 42*(5), 533–544. doi:10.1007/s10488-013-0528-y

Pathak, V., Jena, B., & Kalra, S. (2013). Qualitative research. *Perspectives in Clinical Research, 4*(3), 192. doi:10.4103/2229-3485.115389

Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Thousand Oaks, CA: SAGE.

Petrie, K. J. & Weinman, J. (2012). Patients' perceptions of their illness: The dynamo of volition in health care. *APS, 21*(1), 60-65. doi:10.1177/0963721411429456

Quora. (2019). Why are cancer cells dangerous? Retrieved from https://www.quora.com/Why-are-cancer-cells-dangerous

Rahman, R., Schmaltz, C., Jackson, C., Simoes, E., Jackson-Thompson, J., & Ibdah, J. (2015). Increased risk for colorectal cancer under age 50 in racial and ethnic minorities are living in the United States. *Cancer Medicine*, *4*(12), 1863–1870. doi:10.1002/cam4.560

Ravitch, S. M., & Carl, N. M. (2016). *Qualitative research: Bridging the conceptual, theoretical, and methodological*. Thousand Oaks, CA: Sage Publications.

Recio-Boiles, A., & Cagir, B. (2018). Cancer, colon. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK470380/

Renuka, P., & Pushpanjali, K. (2014). Effectiveness of health belief model in motivating for tobacco cessation and to improving knowledge, attitude and behavior of tobacco users. *Cancer and Oncology Research, 2*(4), 43-50. doi:10.13189/cor.2014.020401

Rogers, C. R., Mitchell, J. A., Franta, G. J., Foster, M. J., & Shires, D. (2015). Masculinity, racism, social support, and colorectal cancer screening uptake among African American men: A systematic review. *American Journal of Mens Health, 11*(5), 1486–1500. doi:10.1177/1557988315611227

Rubin, H. J., & Rubin, I. S. (2012). *Qualitative interviewing: The art of hearing data* (3rd ed.). Thousand Oaks, CA: SAGE.

Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B.,…Jinks, C. (2017). Saturation in qualitative research: Exploring its conceptualization and operationalization. *Quality and Quantity*, *52*(4), 1893–1907. doi:10.1007/s11135-017-0574-8

Savas, L. S., Vernon, S. W., Atkinson., & Fernandez, M. E. (2015). Effect of acculturation and access to care on colorectal cancer screening in low-income Latinos. *Journal of Immigration and Minority Health*, *17*(3), 696-703. doi:10.1007/s10903-014-0061-4

Shabibi, P., Zavareh, M. S. A., Sayehmiri, K., Qorbani, M., Safari, O., Rastegarimehr, B., & Mansourian, M. (2017). Effect of educational intervention based on the health belief model on promoting self-care behaviors of Type-2 diabetes patients. *Electronic Physician, 9*(12), 5960–5968. doi:10.19082/5960

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63–75. https://doi.org/10.3233/efi-2004-22201

Sohler, N. L., Jerant, A., & Franks, P. (2015). Socio-psychological factors in the expanded health belief model and subsequent colorectal cancer screening. *Patient Education and Counseling, 98*(7), 901-7. doi:10.1016/j.pec.2015.03.023

Suhakar, A. (2009). History of cancer, ancient and modern treatment methods. *Journal of Cancer and Scientific Theory, 1*(2), 1–4. doi:10.4172/1948-5956.100000e2

Suwankhon, D., & Liamputtong, P. (2018). Early detection of breast cancer and barrier to screening programmes amongst Thai migrant women in Australia: A qualitative study. *Asian Pacific Journal of Cancer Prevention, 19*(4), 1089-1097. doi:10.22034/APJCP.2018.19.4.1089

Soriano, F. I. (2013). *Conducting needs assessments. A multidisciplinary approach.* Kindle Edition.

Tarkang, E. E., & Zotor, F. B. (2015). Application of the health belief model (HBM) in HIV prevention: A literature review. *Central African Journal of Public Health, 1*(1), 1-8. doi:10.11648/j.cajph.20150101.11

Thompson, V. L., Lander, S., Xu, S., & Shyu, C. (2014). Identifying key variables in African American adherence to colorectal cancer screening: The application of data mining. *BMC Public Health, 14,* 1173. doi:10.1186/1471-2458-14-1173

Tran, F & Koo, J. (2014). Birthplace is not a determinant of colorectal adenomas *World J Gastroenterol*, 20(26): 8606-8611. Baishideng Publishing Group Inc. doi:10.3748/wjg.v20.i26.8606

Voice of Freedom. (2018). Advanced technology to detect colorectal cancer and gastrointestinal disorders. Retrieved from http://www.voiceoffreedom.in/health/advanced-technology-to-detect-colorectal-cancer-and-gastrointestinal-disorders

Wang, H., Gregg, A., Qiu, F., Kim, j., Young, L., & Luo, J. (2017). Provider perceived colorectal cancer screening barriers: Results from a survey in accountable care organizations. *Juniper Online Journal of Public Health, 1*(2). doi:10.19080/JOJPH.2017.01.555557

Williams, R. M., Wilkerson, T., & Holt, C.L. (2018). The role of perceived benefits and barriers in colorectal cancer screening in intervention trials among African Americans. *Health Education Research, 33*(3). doi:10.1093/her/cyy013

Williams, R., White, P., Nieto, J., Vieira, D., Francois, F., & Hamilton, F. (2016). Colorectal cancer in African Americans: An update. Gastroenterology, *7*(7), e185. doi:10.1038/ctg.2016.36

Winawer, S. J (2015). The history of colorectal cancer screening: A personal perspective. Retrieved from https://link.springer.com/article/10.1007%2Fs10620-014-3466-y

Wong, R. (2010). Proximal tumors are associated with greater mortality in colon cancer. *Journal of General Internal Medicine, 25*(11), 1157–1163. doi:10.1007/s11606-010-1460-4

World Atlas. (2016). Africa. Retrieved from https://www.worldatlas.com/webimage/countrys/af.htm

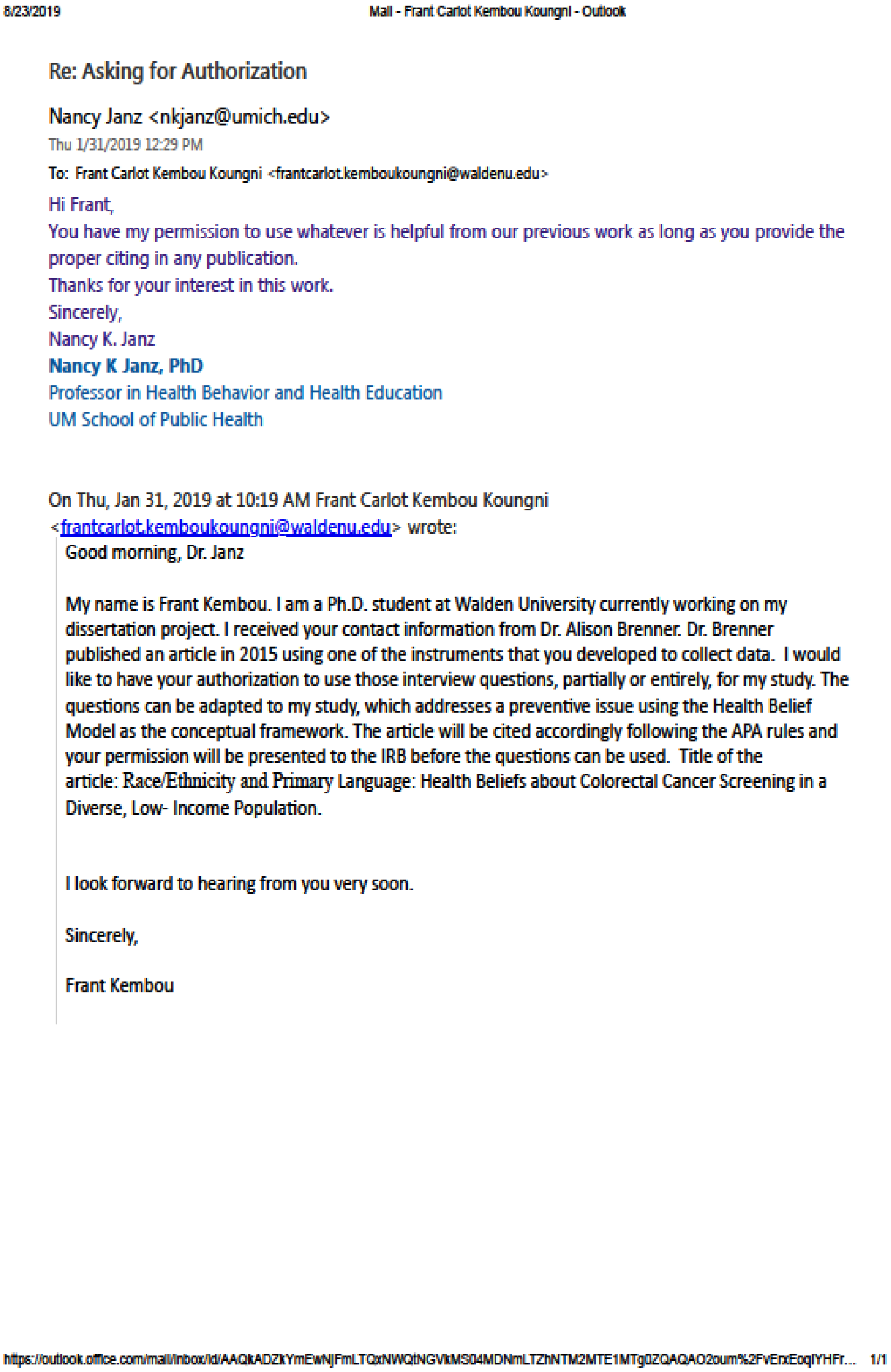
Woudstra, A. J., Dekker, E., Essink-Blot, M., & Suurmond, J. (2015). Knowledge, attitudes and beliefs regarding colorectal cancer screening among ethnic minority groups in the Netherlands – A qualitative study. *Health Expect*, *19*(6), 1312-1323. doi:10.1111/hex.12428.

Zauber, A. G. (2015). The impact of screening on colorectal cancer mortality and incidence–Has it really made a difference? *Digestive Diseases and Sciences, 60*(3), 681–691. doi:10.1007/s10620-015-3600-5

Yeager, K. A., & Bauer-Wu, S. (2013). Cultural humility: Essential foundation for clinical researchers. *Applied Nursing Research, 26*(4). doi:10.1016/j.apnr.2013.06.008

Zonderman, A. B., Ejiogu, N., Norbeck, J., & Evans, M. K. (2014). Opportunities for cancer prevention among adults Aged 45 to 64. *American Journal of Preventative Medicine*, *46*(301), S87-S97. doi:10.1016/j.amepre.2013.10.026

Appendix A: Authorization Letters



8/23/2019 Mail - Frant Carlot Kembou Koungni - Outlook

Re: Asking for Authorization

Nancy Janz <nkjanz@umich.edu>
Thu 1/31/2019 12:29 PM
To: Frant Carlot Kembou Koungni <frantcarlot.kemboukoungni@waldenu.edu>

Hi Frant,
You have my permission to use whatever is helpful from our previous work as long as you provide the proper citing in any publication.
Thanks for your interest in this work.
Sincerely,
Nancy K. Janz
Nancy K Janz, PhD
Professor in Health Behavior and Health Education
UM School of Public Health

On Thu, Jan 31, 2019 at 10:19 AM Frant Carlot Kembou Koungni <frantcarlot.kemboukoungni@waldenu.edu> wrote:

> Good morning, Dr. Janz
>
> My name is Frant Kembou. I am a Ph.D. student at Walden University currently working on my dissertation project. I received your contact information from Dr. Alison Brenner. Dr. Brenner published an article in 2015 using one of the instruments that you developed to collect data. I would like to have your authorization to use those interview questions, partially or entirely, for my study. The questions can be adapted to my study, which addresses a preventive issue using the Health Belief Model as the conceptual framework. The article will be cited accordingly following the APA rules and your permission will be presented to the IRB before the questions can be used. Title of the article: Race/Ethnicity and Primary Language: Health Beliefs about Colorectal Cancer Screening in a Diverse, Low- Income Population.
>
> I look forward to hearing from you very soon.
>
> Sincerely,
>
> Frant Kembou

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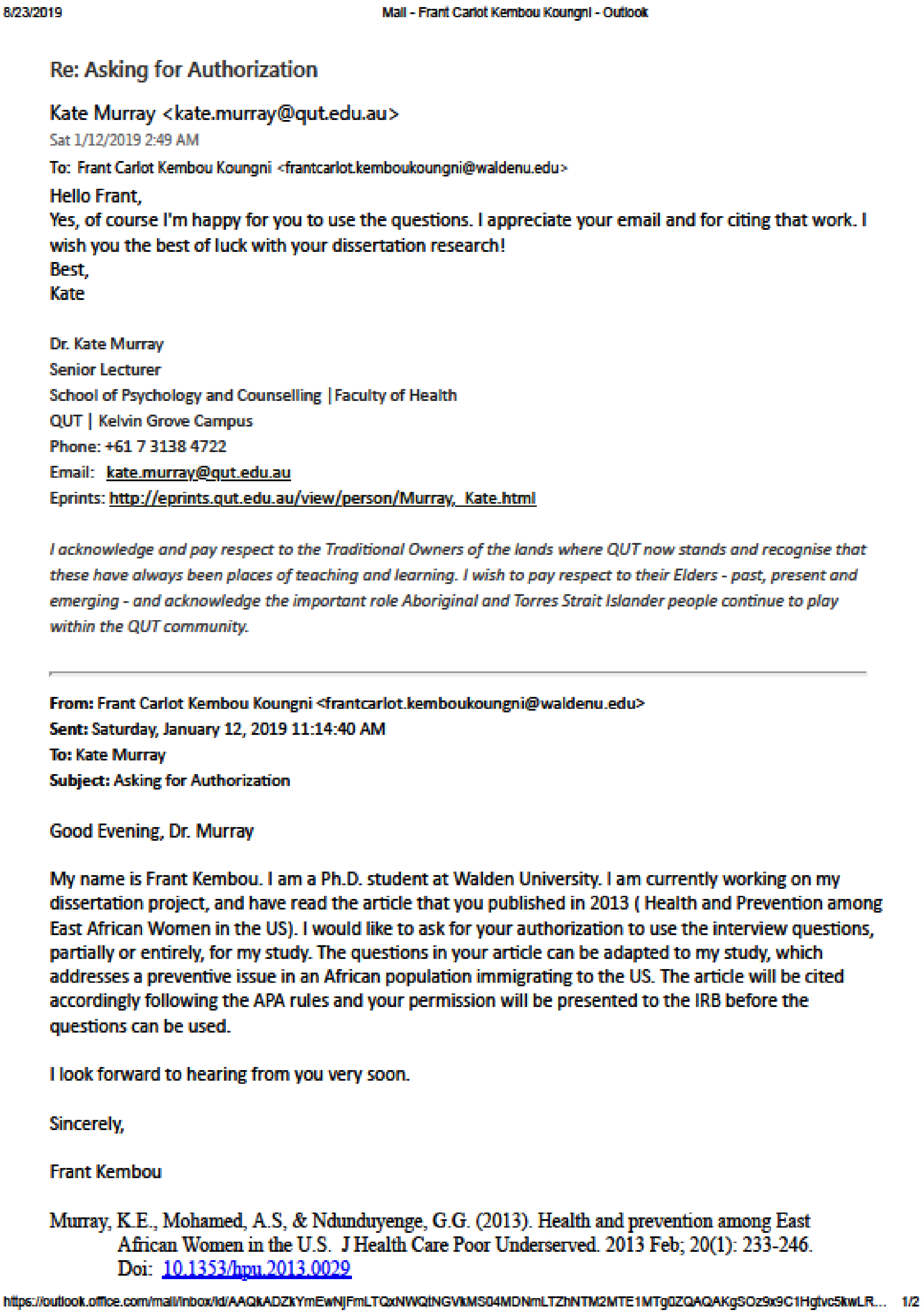

8/23/2019 Mail - Frant Carlot Kembou Koungni - Outlook

Re: Asking for Authorization

Kate Murray <kate.murray@qut.edu.au>
Sat 1/12/2019 2:49 AM
To: Frant Carlot Kembou Koungni <frantcarlot.kemboukoungni@waldenu.edu>

Hello Frant,
Yes, of course I'm happy for you to use the questions. I appreciate your email and for citing that work. I wish you the best of luck with your dissertation research!
Best,
Kate

Dr. Kate Murray
Senior Lecturer
School of Psychology and Counselling | Faculty of Health
QUT | Kelvin Grove Campus
Phone: +61 7 3138 4722
Email: kate.murray@qut.edu.au
Eprints: http://eprints.qut.edu.au/view/person/Murray,_Kate.html

I acknowledge and pay respect to the Traditional Owners of the lands where QUT now stands and recognise that these have always been places of teaching and learning. I wish to pay respect to their Elders - past, present and emerging - and acknowledge the important role Aboriginal and Torres Strait Islander people continue to play within the QUT community.

From: Frant Carlot Kembou Koungni <frantcarlot.kemboukoungni@waldenu.edu>
Sent: Saturday, January 12, 2019 11:14:40 AM
To: Kate Murray
Subject: Asking for Authorization

Good Evening, Dr. Murray

My name is Frant Kembou. I am a Ph.D. student at Walden University. I am currently working on my dissertation project, and have read the article that you published in 2013 (Health and Prevention among East African Women in the US). I would like to ask for your authorization to use the interview questions, partially or entirely, for my study. The questions in your article can be adapted to my study, which addresses a preventive issue in an African population immigrating to the US. The article will be cited accordingly following the APA rules and your permission will be presented to the IRB before the questions can be used.

I look forward to hearing from you very soon.

Sincerely,

Frant Kembou

Murray, K.E., Mohamed, A.S, & Ndunduyenge, G.G. (2013). Health and prevention among East African Women in the U.S. J Health Care Poor Underserved. 2013 Feb; 20(1): 233-246. Doi: 10.1353/hpu.2013.0029

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