EXAMINING CONSTRUCTS OF THE HEALTH BELIEF MODEL AS PREDICTORS OF HAITIAN MEN'S INTENTION REGARDING PROSTATE CANCER SCREENING

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EXAMINING CONSTRUCTS OF THE HEALTH BELIEF MODEL AS PREDICTORS OF HAITIAN MEN'S INTENTION REGARDING PROSTATE CANCER SCREENING

by

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Abstract

Background: The most recent report of Global Burden of Cancer (GLOBOCAN) indicated the incidence rate of prostate cancer in Haiti as 38.6 and the mortality rate as 32.3 per 100,000. The literature supports a high correlation between early prostate cancer screening and low mortality rate from the disease. Yet, the participation of Haitian men in prostate cancer screening remains low (Kleier, 2010). The literature has a lack of research on this matter, which presented the gap to be examined.

Purpose: The purpose of this study was to determine which of these selected constructs of the Health Belief Model (perceived susceptibility, perceived benefits, and perceived barriers) are predictors to the intention of Haitian men regarding prostate cancer screening. Other modifying variables were also considered as predictors to the outcome variable.

Theoretical Framework: The Health Belief Model (HBM) was utilized as the primary guide for the study; the Purnell Model for Cultural Competence served a complementary lens to account for any cultural gap studying this population.

Method: A correlational, predictive cross-section design was used to obtain a convenience sample in Haiti *(N = 200)*. The Champion HBM scale was adapted and modified for prostate cancer; it was administered in Haitian Creole and French. Data were analyzed through descriptive, correlation, logistic regression, and the nonparametric Kruskal-Wallis (*H*) analysis of variance (ANOVA) to determine predictive correlation among the variables.

Results: Seven hypotheses were tested; all but one was supported. Perceived benefits were found to have a predictive relationship to Haitian men's intent to screen for prostate

cancer [χ^2 (3) = *14.47, p = .00*]. Further, the nonsignificant Hosmer and Lemeshow statistic, χ^2 (8) = 4.33, p = .83 supports that the data was a good fit for the model. No other variable was found to be significant.

Conclusion: The findings from this study can be utilized by nurses and other healthcare professionals to generate and implement culturally appropriate interventions; consequently, these interventions will decrease the morbidity and mortality rates of prostate cancer among Haitian men in Haiti and abroad.

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"*Béni soit l'Eternel!*" Blessed be the Almighty God for taking charge and bringing along a superb team to guide me throughout this process. Such a journey can be taxing and fearful. It can interject doubts into one's mind regarding one's own ability, for it is a long and strenuous journey. However, I have remembered: 2 Timothy 1:7 *"For God has not given us a spirit of fear but of power, of love and of a sound mind"* and Philippians 4:13 "*I can do all things through Him who strengthens me."* These quotes have become my dictum during this journey and will remain so for the rest of my life.

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"Being confident of this very thing, that He who began a good work in you will carry it unto completion…." Philippians 1:6

DEDICATION

"The lives of those who pass away remain in the memory of those who live and love them." This dissertation is first dedicated to my beautiful daughter, Khonii S. Louis, who left us too soon on 10/10/2010. You were and still are known to us as the love butterfly. Your philosophy of loving everyone was plain and simple. It only dictates that the world does not have to be so complicated because *"Love endures it all."* Thank you for loving me unconditionally. Regardless of my flaws, you just wanted me to be your papa. Thank you. With your spirit, I shall continue to soar high.

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Finally, this dissertation is dedicated to my entire family. As much as we are part of each other, my success is surely yours. In conclusion, this is dedicated to all Haitian men everywhere. This work was completed with you in mind. Special dedication goes out to all the participants of this study. Your input was key to the result of this work. Hence, this work would not be possible without you. THANK YOU!

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CHAPTER ONE

In the face of continuing progress that has taken place in the United States of America from the past few decades to present, African Americans continue to lag far behind their White counterparts. Such a gap does not only exist in economical, occupational, and political status; it also exists in relation to health status (Smedley, Stich, & Nelson, 2002). The data are even more apparent with regards to African American men, who continue to have the lowest life expectancy and the highest mortality rate as compared with men of other racial and ethnic groups in this country (World Life Expectancy, n.d.).

The Office of Disease Prevention and Health of the Centers for Disease Control and Prevention indicates that malignant neoplasm is second to heart disease at a rate of 172.3 per 100, 000 in the population on the top-ten list of causes of death among African American men (Centers for Disease Control and Prevention [CDC], 2011). However, early detection of cancer such as prostate cancer through the use of screening tools such as prostate specific antigen (PSA) test and digital rectal exam (DRE) is a key factor to increasing survival rate (American Cancer Society [ACS], 2007). This statement can also be applied to Haitian-American men in the United States because they are often categorized as part of the African-American community (U.S. Census Bureau, 2012). Moreover, this phenomenon does not apply only to Haitian-American men in the United States; it also applies to Haitian men in Haiti. Therefore, it is important to investigate the intention of Haitian men living in Haiti regarding prostate cancer screening considering the most recent world cancer report (GLOBOCAN, 2012).

Background of the Study

Historical Context

The prostate gland was first described in 1536 by Niccolo Massa, a Venetian anatomist, and illustrated by a Flemish anatomist, Andreas Vesalius in 1538. However, it was actually identified in 1853 (Adams, 1853). Prostate cancer was considered to be a very rare disease in the 19th century, partly because of short life expectancy and poorer methods of detecting it. Hence, the disease would usually be detected in its late phase explaining why surgeries were the very first treatment for prostate cancer (Lytton, 2001). Prostatectomy, the removal of the entire gland, was first performed in 1904 by Hugh H. Young at Johns Hopkins Hospital (Young, 1905). By the middle of the 20th century, Transurethral Resection of the Prostate (TURP) was developed and replaced radical prostatectomy for symptomatic relief of urinary obstruction. Another procedure developed in 1983 by Patrick Walsh was the radical retropubic prostatectomy (Denmeade & Isaacs, 2002). This surgical approach was very progressive given the level of its achievement. It made possible the removal of the prostate gland and lymph nodes while maintaining the penile function.

Beside the path of surgery, other forms of treatment were in progress. In 1941, Charles B. Higgins, a physician, published studies in which he used estrogen to oppose testosterone production in men with metastatic prostate cancer. The discovery of this treatment called chemical castration won him the 1966 Nobel Prize in physiology or medicine (Higgins & Hodges, 1941). In addition, the work of Andrzej W. Schally and Roger Guillemin on hormones was able to determine the role of the gonadotropin-releasing hormone (GnRH) in reproduction. In turn, GnRH receptor agonists such as

leuprolide and goserelin were developed and used to treat prostate cancer. They also won the Nobel Prize in Physiology or Medicine in 1977 (Schally, Kastin, & Arimura, 1971).

Other prostate cancer treatments that emerged in the 20th century were radiation therapy and chemotherapy. Cyclophosphamide and 5-fluoroucil were among the initial regimen but quickly joined by many systemic chemotherapy drugs (Scott et al., 1975). However, treatment effectiveness continues to have correlation with early detection.

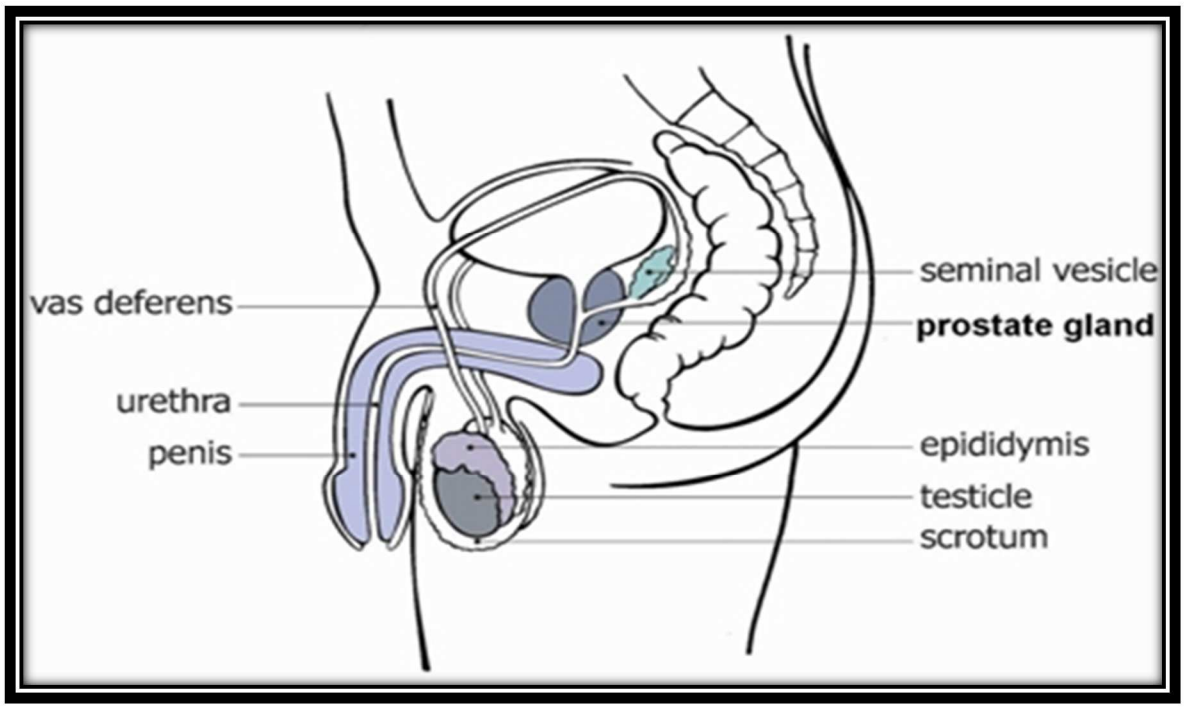

Figure 1. Prostate gland and surrounding organs (Knott, 2014).

Prostate Gland

The prostate gland is only found in the male reproductive system. The prostate is a walnut-sized gland located between the bladder and the penis. The prostate is just in front of the rectum. The urethra runs through the center of the prostate, from the bladder to the penis, letting urine flow out of the body. The prostate secretes fluid that nourishes and protects sperm. During ejaculation, the prostate squeezes this fluid into the urethra to

be expelled with sperm as semen (National Cancer Institute at The National Institutes of Health, n.d.).

The size of the prostate gland changes overtime with age. A growth spurt occurs during puberty, driven by the rise in male hormones (called androgens) in the body, such as testosterone and dihydrotestosterone (DHT). The prostate gland is responsible for producing some of the fluid that protects and nourishes sperm cells in semen, making the semen more liquid (American Cancer Society, n.d.). The prostate gland usually grows very slowly in adult men. It remains approximately about the size of a walnut. However, it can become much larger in older men, which can become problematic.

Prostate Cancer

According to the National Cancer Institute (n.d.), prostate cancer is defined as a cancer that forms in tissues of the prostate gland. The prostate gland is composed of different types of cell, but almost all prostate cancers develop from the gland cells. They are the cells that produce the prostate fluid that is added to the semen (American Cancer Society, n.d.). The cancer that starts in gland cells is medically known as adenocarcinoma. The exact cause of prostate cancer is unclear. However, it is usually derived from an abnormality in which a cell consequently gives birth to a malignant cancerous tumor in the prostate gland. Some abnormal genes within the cell may cause the cell to multiply. Unlike many other cancers, prostate cancer can be constrained in a small region and never expand to cause any harm (Kenny, Tidy, & Cox, 2014). Prostate cancer usually occurs in older men, making aging the primary risk factor for prostate cancer. Other risk factors include family history, diet, and ethnicity. A diet that is high in fat and low in fruits and vegetables may pose a risk. Regarding ethnicity, Afro-

Caribbean men rank at the top for having prostate cancer, whereas Asian men rank at the very bottom (GLOBOCAN, 2012; Kenny et al., 2014).

The symptoms of prostate cancer usually occur at a late stage due to the slow growth of this type of cancer. The symptoms may manifest as: *poor stream*, which increases the time of urination; *hesitancy*, which delays the start of urine flow; *dribbling*, which may cause a trickle effect after finishing up at the toilet; *frequency*, which causes the passing of urine more frequently; *urgency*, which may cause the need to go quickly; and *poor emptying*, which causes the feeling of a bladder not quite empty (Kenny et al., 2014). All of these symptoms usually occur with the enlargement of the prostate consequently in older in men. Moreover, they may also occur with a non-cancerous benign enlargement of the prostate. The medical term for this condition is *benign prostatic hyperplasia* (BPH).

Unlike other type of cancers, prostate cancer is known to have a very high survival rate. However, early screening for and detection of prostate cancer is highly attributed to the high survival rate. There are two common ways to screen for prostate cancer: the PSA test and the DRE. The PSA test measures the level of PSA in the blood. PSA is a substance made by the prostate. The levels of PSA in the blood tend to be higher in men who have prostate cancer. However, the PSA level may also be elevated in other conditions that affect the prostate (CDC, 2013). The DRE is the palpation of the prostate gland through digital manipulation via the rectum (Baker, 2009). It is performed by a health care practitioner inserting a gloved, lubricated finger into the rectum to examine the posterior surface of the prostate gland, estimate the size, shape, and consistency of the prostate and feel for lumps and nodules or other abnormalities (CDC,

2013). When either of these two screening tools is positive for prostate cancer, a biopsy is usually ordered for further confirmation. A biopsy is a procedure where a small sample of tissue is removed from a part of the body, then studied under the microscope to look for abnormality (Kenny et al., 2014).

Currently, a wide variety of treatments for prostate cancer exist. These treatments are being mentioned irrespective of their effectiveness and are not limited to all other treatments that may be available. The treatments include active surveillance, hormone treatment, surgery, radiotherapy, and chemotherapy. In general, the prognosis is usually good, especially for men with early stage of prostate cancer.

Global Concerns of Prostate Cancer

Many forms of cancer affect the lives of men gravely around the world. Among them, prostate cancer is one of the top five cancers posing a threat to the lives of men worldwide. Prostate cancer is currently classified as the fourth most common type of cancer and the second most common cancer in men, yielding only to lung cancer (GLOBOCAN, 2012). The division for global cancer research of the World Health Organization (WHO) reported that an estimated 1.1 million men were diagnosed with prostate cancer in 2012. That estimate accounted for 15% of all the cancers diagnosed in men, with almost 70% of the cases arising from the more developed countries (GLOBOCAN, 2012). The high percentage of occurrence in the more developed countries may be due to a variety of factors. One factor may be their access to tools and science for detecting prostate cancer. Another factor may be the fact that men in those countries have better access to health care. Consequently, that argument can expand further with many other factors such culture, wealth, education, religion, etc.

The incidence rates of prostate cancer around the world vary in many folds. The highest rates are reported from Australia, New Zealand, and North America. The rates range between 111.6 and 97.2 per 100,000 persons of the population, respectively(GLOBOCAN, 2012). The high occurrence is also reported from Western and Northern Europe due to their widespread practice of performing the PSA test and subsequent biopsy. Other regions with high occurrences that are considered to be less developed are the Caribbean (79.8), Southern Africa (61.8), and South America (60.1). The regions with the low occurrences are concentrated within the parameter of Asia, Northern, Eastern, and Western Africa. Asian men have the lowest rate of prostate cancer. However, geographic location seems to affect the statistics. The rate of prostate cancer among Chinese men living in the United States is reported to be 15 times higher than their counterparts in China (Lee et al., 2003).

The mortality rates of prostate cancer around the world also vary in many folds. The proportion of incidences that occur does not seem to have a parallel correlation with the proportion of mortality. For example, in 2012, the United States had 233 cases and 30 deaths as compared to India, which had 19 cases and 12 deaths. In other words, 63% of India's cases resulted into mortality as compared to 12.8% of the cases in the United States. Despite the high incidence rates in the more developed countries, their mortality rates are extremely lower as compared to the less developed countries. Prostate cancer is the fifth leading cause of death from cancer in men. An estimated 307,000 deaths occurred in 2012 (GLOBOCAN, 2012). The mortality rates are predominantly high in Black populations, with the Caribbean at 29 and sub-Saharan Africa at 19-24 per 100,000 persons of the population. The lowest mortality rates are found within the continent of

Asia at 2.9 per 100,000 persons of the population. The high mortality rates in the less developed countries are certainly influenced by many factors. One obvious factor could be the lack of healthcare access for men living in these countries (GLOBOCAN, 2012); and the list can be expanded continuously. Prostate cancer is a major threat to men's health around the world, especially in those less developed countries.

Education for early screening seems to be the trend in most countries with a decrease of mortality for prostate cancer. Although there has been an increase in incidence rate in Europe in general, the mortality rate seems to have decreased significantly. The highest prostate cancer mortality rates can be found in the Baltic region (Estonia, Latvia and Lithuania) and in Denmark, Norway, and Sweden (Bray, Lortet-Tieulent, Ferlay, Forman, & Auvinen, 2010). In contrast, there has been a uniform decrease in prostate cancer mortality in 13 of 37 European countries considered predominantly to be high-resource countries; some examples of those countries are England, Wales, Hungary, France and the Czech Republic (Bray et al., 2010). The decreasing prostate cancer mortality rates may be attributable to improvements in treatment and to an effect of prostate specific antigen (PSA) testing (Bray et al., 2010). However, the increasing mortality rate in the Baltic region indicates the need for further monitoring.

In Canada, early screening is encouraged for men who fit the more at-risk category. The primary risk factor is age, older than 44. In addition to age, family history and ethnicity play a major role regarding who should be screened for prostate cancer. The treatments seem to follow the general recommendations, which include active

surveillance, hormone therapy, surgery, radiotherapy, and chemotherapy (Canadian Cancer Society, n.d.).

The Africa Cancer Foundation is a non-profit organization with a vision of "cancer-free Africa." This organization posts on its website that it champions and believes in early detection to reduce cancer mortality rates. For that matter, they collaborate with many health institutions to provide free cancer screening and consultations. In general, they believe that a more empowered people will seek screening early and make informed decisions as they remain actively engaged with their healthcare professional (Africa Cancer Foundation, n.d.).

In the Pan-American region, prostate cancer is being handled mainly through the recommendations of the Pan American Health Organization (PAHO), an international health agency that serves as the World Health Organization's regional office for the Americas (Pan American Health Organization [PAHO], n.d.). The region also benefits from many health authority agencies in the United States, such as the Centers for Disease Control and Prevention, the National Institutes of Health (NIH), and the American Cancer Society (ACS). Screening for early detection is paramount in the battle against any type of cancer. Therefore, education addressing early screening has been one of the primary methods to fight against cancer. As for prostate cancer, treatments vary based on the diagnosed cases and available resources of each country.

Prostate Cancer in the United States

Prostate cancer is the most common type of cancer and the second leading cause of cancer death in men in the Americas (GLOBOCAN, 2012). The statistics reported in the 2012 global research on cancer are increasingly overwhelming. More than 412,000

new cases and 85,000 deaths are reported annually in the Americas (Pan American Health Organization, n.d.). The United States is one of the countries with the highest incidence in the Americas but maintains the lowest mortality rate along with Canada. Annually, there is an estimate of 233,000 new cases and 29,480 deaths from prostate cancer in the United States (National Cancer Institute at The National Institutes of Health, n.d.). Prostate cancer is the seventh leading cause of death among men aged 65 and older as compared to coronary heart disease and lung cancer as number one and two, respectively. The survival rate of American men is exceptionally high. A 15-year survival rate is at 94% (American Cancer Society, n.d.).

Such a success with prostate cancer health is undoubtedly due to the access of high quality of healthcare in collaboration with the progressive health science that the United States possesses. Moreover, the success may also be explained with the associations of the many opportunities (i.e., ranging from education to wealth) that men living in the United States may have (GLOBOCAN, 2012). The CDC maintains the DRE and the PSA tests as the two main screening tools for prostate cancer. However, after a new report from the United States Preventive Services Task Force (USPSTF) endorsed a grade "D" to the PSA test, the CDC warns healthcare practitioners to take a more comprehensive approach (CDC, 2013). The USPSTF found that the test carries very little benefit versus the potential harm that comes along with it. Essentially, the CDC recommends that practitioners fully inform patients of their screening options, considering age, family history, and ethnicity (CDC, 2013).

Treatments for prostate cancer vary in the United States. They are similar with the recommendations from around the world in addition to a few more approaches such

as *cryotherapy*, which entails the introduction of a special probe inside or near the prostate cancer to freeze and kill the cancer cells; *biological therapy,* which utilizes the body's immune system to help it fight cancer or to control side effects from other cancer treatments; and *high-intensity focused ultrasound,* which involves directing high-energy sound waves (ultrasound) at the cancer to kill cancer cells (CDC, 2013). In addition, *proton therapy*, a fairly new treatment, was found to be highly effective. Proton therapy treats prostate cancer with high doses of protons that are more accurate, and potentially more effective, than traditional radiation (UF Health, 2015). The University of Florida Health Proton Institute conducted a recent study with men 60 and younger treated with proton therapy for prostate cancer. The findings reported high satisfaction for quality of life indicators such as sexual and urinary function (UF Health, 2015).

Prostate Cancer in the Caribbean

The Caribbean is one of the regions in the Americas with both the highest incidence and mortality rates for prostate cancer. This fact is well correlated with the high incidence and high mortality reported in the Black population. In the world ranking of cause of death from prostate cancer, the top ten primarily consists of countries of the Caribbean, with the exception of Seychelles (a country located in the southeastern coast of Africa, which consists of a group of 115 small islands). The mortality rates from prostate cancer for the world ranking are calculated per 100,000 persons of the population. The top ten countries are ranked respectively with their rates as follows: Dominica at 46.8, Saint Kitts at 31.4, Barbados at 27.8, Seychelles at 27.4, Antigua/Barbuda at 24.8, Grenada at 24.3, Saint Lucia at 23.7, Saint Vincent at 23.2, Trinidad/Tobago at 22.6, and Haiti at 21.0 (World Life Expectancy, n.d.). Other

Caribbean countries not in the top ten are Dominican Republic ranked 11th at a rate of 18.9; Bahamas ranked 13th at a rate of 17.7; Cuba ranked 16th at a rate of 15.8; and Jamaica ranked 28th at a rate of 11.3.

The World Health Organization envisages that the number of new cases and deaths from prostate cancer will double by 2030 if the current trend continues (GLOBOCAN, 2012). It is estimated that new cases may reach more than 250,000 with 100,000 deaths by 2030. Prostate cancer is unquestionably a burden for the Caribbean, given the fact that most of the countries in the Caribbean are underdeveloped. The statistics support that countries with the highest Gross Domestic Product per capita (GDP) have the highest incidence/mortality ratios for prostate cancer (GLOBOCAN, 2012). For example, the United States may have one death for every nine new cases as compared to Haiti with one death for every two new cases of prostate cancer. Evidently, this speaks to the extreme lack of resources experienced by Haiti.

Figure 2. Location of Haiti in the Caribbean (World Atlas, n.d.).

Prostate Cancer in Haiti

Haiti is a nation located in the Western Caribbean occupying the smallest part of the island of Hispaniola whereas, the Dominican Republic occupies the rest. The country has an estimated population of 10,000,000 with a mortality rate of 8.1 per 100,000 persons of the population. Life expectancy is at 62.51 years for the total population with health expenditure at 6.9% of GDP as reported in 2010 (Central Intelligence Agency: The World FactBook, n.d.). Compounding Haiti's long known status as the poorest country in the Western hemisphere is the 2010 massive earthquake measuring 7.0 on the Richter scale that left the country in its worst shape. It was reported in 1998 that Haiti's physician density was at 0.25 per 1,000 persons and hospital beds at 1.3 per 1,000 persons in 2007. The Haitian health care system became nearly non-existent after the earthquake, leaving first response care to Doctors without Borders and other non-governmental organizations such as the Cuban Brigade (Ekine, 2013).

The Haitian government has formed a health partnership with the United States Agency for International Development (US AID) aiming to advance Haiti's ownership and oversight of an adaptable and self-correcting public health system and reduce its dependence on donor support over time (US AID, 2014). Moreover, the challenges that Haiti faces remain enormous. From economic adversity to natural disasters including the cholera epidemic, the increasing incidence of prostate cancer in Haitian men of which 80% of diagnosed cases succumbed is certainly a noteworthy added burden to Haiti. Any advancement of research that can play a role in aiding the Haitian government in addressing the mortality rate in Haitian men is significant.

The literature supports a high correlation between early prostate cancer screenings with low mortality rate from the disease. It was reported in 2007 that Haiti had 767 cases of prostate cancer per 100,000 individuals, with a mortality rate of 403 (International Agency for Research on Cancer, 2005). Prostate cancer mortality rate remains high in Haiti. In fact, the incidence and mortality rates have increased. The most recent report of the global burden of cancer reported 1,228 diagnosed cases and 979 deaths from prostate cancer in Haiti (GLOBOCAN, 2012). Considering the data, the mortality rate is about 80% of the incidence rate. Therefore, the survival rate is only about 20% as compared to American men (5 years' survival rate at 100%, 10 years at 99%, and 15 years at 94%) (American Cancer Society, n.d.). Currently, Haiti is ranked 10th in the world in prostate cancer mortality rate, and prostate cancer holds the 12th position in the top-20 leading causes of death in Haiti (World Life Expectancy, n.d.).

Figure 3. Haiti's states and capital (University of Texas, 1999).

There is no systematic screening for cervical, breast, or prostate cancer in Haiti (Pan American Health Organization, 2007). Generally, health guidelines and recommendations from PAHO are adopted and followed. The Minister of Health in Haiti recognizes that the country is in great need and confers that a partnership with PAHO is essential for future advancement (Guillaume, 2013). There is a new initiative taken by the Minister of Health of Haiti (La Ministere de la Santé Publique et de la Population [MSPP]) to fight against cancer. This initiative is being led with the assistance of cancer experts from the University of Florida and the University of Miami. It is sponsored by Living Hope Haiti, a non-governmental organization (MSPP, 2015).

PAHO's general recommendations for prostate cancer screening align consistently with the CDC, the NIH, the ACS, and the WHO. Given the lack of resources of Haiti, the DRE is practically more achievable because it is basically costless or cost-effective. However, the Haitian's culture may pose a barrier for men with regard to the DRE. As previously defined, the DRE is the palpation of the prostate gland through digital manipulation via the rectum (Baker, 2009). It is performed by a healthcare practitioner inserting a gloved, lubricated finger into the rectum to examine the posterior surface of the prostate gland; estimate the size, shape, and consistency of the prostate; and feel for lumps and nodules or other abnormalities (CDC, 2013). Homosexuality is tabooed in the Haitian culture (Colin & Paperwalla, 2013); hence, such a procedure may be perceived as unacceptable. Limited research has attempted to investigate the perceived factors contributing to the low participation rate of Haitian men in prostate cancer screening. Moreover, very little is known regarding the possible causes for the high mortality rate in Haitian men. These significantly high levels of mortality require

investigation to determine what strategies could be developed to achieve a decrease in the mortality rate of Haitian men.

Problem Statement

Prostate cancer is one of the top five cancers posing a threat to the lives of men worldwide (GLOBOCAN, 2012). Nonetheless, early detection of prostate cancer through the use of screening tools including prostate specific antigen (PSA) test and digital rectal exam (DRE) are key factors to increasing survival rates (American Cancer Society [ACS], 2007). Haitian men suffer high and increasing morbidity and mortality rates of prostate cancer; yet, their participation in prostate cancer screening remains low (Kleier, 2010). The most recent report of the global burden of cancer reported 1,228 diagnosed cases of prostate cancer and 979 deaths per 100,000 persons of the population of Haiti (GLOBOCAN, 2012). Few studies have explored the predictive relationship of Haitian men's perception of their risk of developing prostate cancer and their benefits of and barriers to prostate cancer screening to the intention of participating in prostate cancer screening. Therefore, a study that focuses on Haitian men's intention regarding prostate cancer screening should provide nurses with the insight on how to better care for, address, and educate Haitian men with regard to prostate cancer.

Purpose Statement

The purpose of this study was to determine which of these selected constructs of the Health Belief Model (perceived susceptibility, perceived benefits, and perceived barriers) are predictors of the intent of Haitian men to participate in prostate cancer screening. The study also explored the relative contributions of these selected

demographic variables (age, level of education, marital status, religion, and family history) to Haitian men's intention regarding prostate cancer screening.

Theoretical and Operational Definitions of Key Terms

The following terms are being defined in both theoretical and operational manners as they are discussed throughout the study.

Perceived Susceptibility

Theoretical definition. Perceived susceptibility refers to an individual's belief of the likelihood of getting a disease or condition. Thus, the HBM predicts that individuals who perceive that they are susceptible to a disease will engage in behaviors that would help reduce the risk of developing the disease (Champion & Skinner, 2008).

Operational definition. Perceived susceptibility was measured by items one through five of the Champion Health Belief Model Scale (CHBMS). The responses are rated on a 4-point Likert scale, ranging from *strongly disagree* to *strongly agree*. The response to the items pertaining to "perceived susceptibility" were added to attain a composite score reflecting the level of perceived susceptibility. A high score represents a high level of perceived susceptibility, whereas a low score represents a low level of perceived susceptibility.

Perceived Benefits

Theoretical definition. Perceived benefits refer to an individual's assessment of the value or efficacy of engaging in a health-promoting behavior to decrease the risk of a disease. The HBM proposes that the more benefits that individuals perceive that a particular action will have regarding a perceived threat, then the more likely they will

engage in that behavior regardless of objective facts concerning the effectiveness of the action (Champion & Skinner, 2008, University of Twente, n.d).

Operational definition. Perceived benefits were measured by the participant's response to item six through 11 from the CHBMS. The responses are rated on a 4-point Likert scale, ranging from *strongly disagree* to *strongly agree*. The responses to the items concerning "perceived benefits" were summed up to reach a composite score indicative of the level of perceived benefits. A high score signifies a high level of perceived benefits, whereas a low score signifies a low level of perceived benefits.

Perceived Barriers

Theoretical definition. Perceived barriers refer to potential complications involved with a particular health action. They are factors that act as impediments to undertaking recommended behaviors. The HBM suggests that the perceived benefits must outweigh the perceived barriers in order for behavior change or action to occur (Champion & Skinner, 2008, University of Twente, n.d).

Operational definition. Perceived barriers were measured by the participant's response to item 12-15 of the CHBMS. The responses were rated on a 4-point Likert scale, ranging from *strongly disagree* to *strongly agree*. The response to the items pertaining to "perceived barriers" were added to attain a composite score reflecting the level of perceived barrier. A high score denotes a high level of perceived barriers, whereas a low score denotes a low level of perceived barriers.

Intention

Theoretical definition. Behavioral intention is defined as a person's perceived likelihood or subjective probability that he or she will engage in a given behavior (Ajzen, 1991).

Operational definition. Intention was measured by the participant's response to items 10 through 13 in the researcher's developed demographic survey. The responses are rated on a 4-point Likert scale ranging from no to yes to determine the strength of intention. The response to the items addressing "behavioral intention" were summed to attain a composite score reflecting the strength of the intention. A high score represents a strong intention, whereas a low score represents a weaker intention.

Research Questions and Hypotheses

This study examined a total of seven questions with their corresponding hypotheses. The first question focused on the predictive relationship between some selected Health Belief Model constructs and the intention of Haitian men regarding prostate cancer screening. The second question sought to reveal the most significant predictor of the select constructs. The third question sought to determine if there is a relationship between Haitian men of different ages and their intent to screen for prostate cancer. The other four questions focused on the relative contribution of four select demographic variables (levels of education, marital status, religion, and family history) by examining the differences of Haitian men's intent to screen for prostate cancer as influenced by these variables.

Research Question and Hypothesis One

RQ1: What is the relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and the intention of Haitian men in Haiti to screen for prostate cancer?

RH1: There will be a statistically significant positive predictive relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and Haitian men's intent to screen for prostate cancer.

Research Question and Hypothesis Two

RQ2: Which of these select health belief model constructs (perceived susceptibility, perceived benefits, and perceived barriers) is the most significant positive predictor to the intention of Haitian men in Haiti to screen for prostate cancer?

RH2: Perceived susceptibility will be statistically the most significant positive predictor to intention of Haitian men in Haiti to screen for prostate cancer.

Research Question and Hypothesis Three

RQ3: What is the relationship between Haitian men of different ages and their intent to screen for prostate cancer?

RH3: There will be a statistically significant positive relationship between Haitian men of different ages and their intent to screen for prostate cancer.

Research Question and Hypothesis Four

RQ4: What is the difference of intent to screen for prostate cancer among Haitian men of different levels of education?

RH4: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men of different level of education.

Research Question and Hypothesis Five

RQ5: What is the difference of intent to screen for prostate cancer among Haitian men of different marital status?

RH5: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men of different marital status.

Research Question and Hypothesis Six

RQ6: What is the difference of intent to screen for prostate cancer among Haitian men with different religions?

RH6: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men with different religions.

Research Question and Hypothesis Seven

RQ7: What is the difference of intent to screen for prostate cancer between Haitian men with or without family history of prostate cancer?

RH7: There will be a statistically significant difference of intent to screen for prostate cancer between Haitian men with or without family history

Theoretical Framework

The low participation rate of Haitian men in prostate cancer screening may be influenced or caused by many factors. The intriguing question is: What is a plausible explanation for their low participation rate? What can be established with certainty regarding this issue? What is the truth? These questions fit well in the realm of positivism (Welford, Murphy, & Casey, 2012, p. 31). Hence, the paradigm that frames this problem area of interest is positivism. Consequently, positivism will be briefly explored and discussed in the next section.

Positivism

Positivism is the philosophy of science that holds that knowledge originated from logical and mathematical developments and reports of sensory experience—that is, the exclusive source of all authoritative knowledge (Macionis, 2012). The term "positivism" was coined by the philosopher and sociologist Auguste Comte in the early 19th century (Rogers, 2005). Some other philosophers who contributed to positivism in the 19th century were Mills, Newton, and Locke (Polit & Beck, 2012). According to Comte, positivism accounted for how people explained the world around them. Comte presented in his work that societies pass through three different essential stages: theological stage – relating explanation to the supernatural forces, metaphysical stage – relating explanation to abstracts such as energies and ideas, and positive stage – relating explanation to scientific principles (Rogers, 2005). Positivism holds that society, like the physical world, operates according to general laws. Contemplative and instinctive knowledge are rejected (Macionis, 2012).

The major assumptions of positivism lie within their strong belief of facts, empirical data, and experiments as the basis of real science (Glanz and Rimer, 2005; Rogers, 2005). These assumptions can be discussed through these four views: ontological, epistemological, axiological, and methodological. From an ontological view, it is believed that reality exists, and there is a real world energized by causes and effects. From an epistemological view, the researcher is totally independent from those being researched. Therefore, the results or findings should be free from the researcher's bias. From the axiological view, personal values and biases are to be controlled and contained. Objectivity is the goal. Finally, from the methodological, knowledge is acquired through

deductive processes, fixed and pre-specified designs, focused on objective and quantifiable, based on large samples, and seeks generalization (Polit & Beck, 2012, p. 13).

The philosophy of logical positivism has derived from positivism. The word "logical" was added to reflect the intention of incorporating logic into positivism (Rogers, 2005). The main group responsible for this movement was the "Vienna Circle." The work of Gottlob Frege, Bertrand Russell, and Alfred North Whitehead provided the infrastructure for the Vienna Circle discussion on logic. The work of the Vienna Circle generated a great influence on the structure of the path for knowledge advancement (Crotty, 2012).

In summary, the major goal of positivism is objectivism. This philosophy holds that there is an orderly reality that can be objectively studied; the research method is usually associated with quantitative research (Polit & Beck, 2012). In Comte's perspective, prediction comes from science and actions come from prediction. Therefore, positivism is a philosophy of human intellectual development that culminated in science (Macionis, 2012). According to logical positivism, the primary purpose of science is to predict, explain, and control occurrences (Rogers, 2005). Hence, this study utilized the Health Belief Model as theoretical framework which is well aligned with this paradigm. In addition, the Purnell Model for Cultural Competence was applied as a supportive framework but was not tested in this study.

The Health Belief Model

The Health Belief Model (HBM) is a psychological model that attempts to explain and predict health behaviors. The major focus is on the attitudes and beliefs of

individuals. The model grew from two major learning theories: stimulus response (S-R) theory and cognitive theory (C-T). In S-R theory, reasoning and thinking is not required; learning results from events (reinforcements) that reduce physiological drives that activate behavior. In cognitive theory, the thought process is essential; reinforcements operate by influencing expectations about the situation rather than by influencing behavior directly (Champion & Skinner, 2008). The Health Belief Model was developed in the 1950s by social psychologists Irwin M. Rosenstock, Godfrey M. Hochbaum, S. Stephen Kegels, and Howard Leventhal at the U.S. Public Health Service to better understand the widespread failure of screening programs to prevent and detect disease. The model was developed in response to the failure of a free tuberculosis (TB) health screening program. Since then, the HBM has been adapted to explore a variety of long-term and short-term health behaviors, including sexual risk behaviors and the transmission of HIV/AIDS (Babbie, 2010; Champion & Skinner, 2008). The HBM is one of the most widely used conceptual frameworks in health behavior research, both to explain change and maintenance of health-related behavior and as a guiding framework for health behavior interventions.

The HBM has several constructs that explain or predict why people will take action to prevent, to control, or to screen for a disease. These constructs include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Champion & Skinner, 2008; University of Twente, n.d). Along with these constructs, the notion of perceived threat is also mentioned but not defined individually. It is rather a combination of two of these constructs.

Perceived Susceptibility

Perceived susceptibility refers to the likelihood of getting a disease or condition. Thus, the HBM predicts that individuals who perceive that they are susceptible to a disease will engage in behaviors that would help reduce the risk of developing the disease (Champion & Skinner, 2008; University of Twente, n.d). For example, if a man belongs to a family of which several male members were diagnosed with prostate cancer, he might feel more susceptible to prostate cancer thereby agreeing to screen for prostate cancer.

Perceived Severity

Perceived severity refers to the feeling of seriousness of contracting the disease or leaving it untreated. The HBM suggests that the more serious that individuals perceive a health problem is, the more likely they will engage in behaviors to prevent it from occurring or reduce its severity (Champion & Skinner, 2008). Similarly, if a man is aware of the horrific consequence of prostate cancer if left untreated, he might be prompted to be screened for early detection. In contrast, the lack of knowledge regarding the severity of prostate cancer might cause a man not to seek to be screened for prostate cancer.

Perceived Benefits

Perceived benefits refer to an individual's assessment of the value or efficacy of engaging in a health-promoting behavior to decrease the risk of a disease. The HBM proposes that the more benefits that individuals perceive that a particular action will have regarding a perceived threat, then the more likely they will engage in that behavior

regardless of objective facts regarding the effectiveness of the action (Champion & Skinner, 2008; University of Twente, n.d). If a man believes that getting screened for prostate cancer can help increase early detection and consequently reduce morbidity, he will more likely have the intent to screen for prostate cancer. However, if the man believes that screening for prostate cancer is not so beneficial, he is less likely to utilize the screening tools.

Perceived Barriers

Perceived barriers refer to potential complications involved with a particular health action. They are factors that act as impediments to undertaking recommended behaviors. The HBM suggests that the perceived benefits must outweigh the perceived barriers in order for behavior change to occur (Champion & Skinner, 2008). The man must believe that it is worthwhile for him to go through any hurdle in order to seek to be screened for prostate cancer. If the man believes otherwise, the intent to screen for prostate cancer will simply disappear.

Cues to Action

Cues to action refer to the internal or external cues that prompt the action. The HBM theorizes that a cue, or trigger, is necessary for prompting engagement in health-promoting behaviors. Internal cues can be physiological such as pain, whereas external cues can be an event or a billboard sign (Champion & Skinner, 2008; University of Twente, n.d). For example, if a man's close relative recently was diagnosed with prostate cancer, this man is more likely to have the intent to screen soon for prostate cancer. Likewise, if there is no close occurrence, he is less likely to have the intent to screen for prostate cancer.

Self-Efficacy

Self-efficacy refers to an individual's perception of his or her competence to successfully perform a behavior. The HBM recognizes that confidence in the individual's ability to effect change in outcomes is crucial to health behavior change (Champion & Skinner, 2008; University of Twente, n.d). Equally, if a man feels confident that he can go through the process of getting screened for prostate cancer, then he is more likely to go through with it.

The Notion of Perceived Threat

To address the phenomenon of interest of this study, three of the original four constructs (perceived susceptibility, perceived benefits, and perceived barriers) were selected. Perceived severity was omitted because it has been found to have very little variance with perceived susceptibility (Champion, 1999). It is also important to point out that the combination of perceived susceptibility and perceived severity is also referred to as perceived threat (Becker, 1974; Becker & Janz, 1985). Perceived threat is considered the most predictive construct with regard to health related behavior (Champion & Skinner, 2008). Due to the slight variance found with perceived severity, perceived threat can be measured by perceived susceptibility alone without perceived severity (Champion, 1999; Champion et. al., 2004). For this study, perceived threat was evaluated by utilizing the construct of perceived susceptibility alone. The HBM maintains that the greater the perceived threat, the greater the likelihood of engaging in behaviors to decrease the threat. In addition, the perceived benefits speak directly to the merit of the new behavior. People incline to implement healthier behaviors when they

believe the new behavior will decrease their likelihoods of developing a disease. However, the perceived benefits may be influenced by the perceived barriers. The barriers may be so overwhelming, thereby overshadowing the benefits of the healthier behavior. Hence, the benefits must always outweigh the barriers.

The Health Belief Model

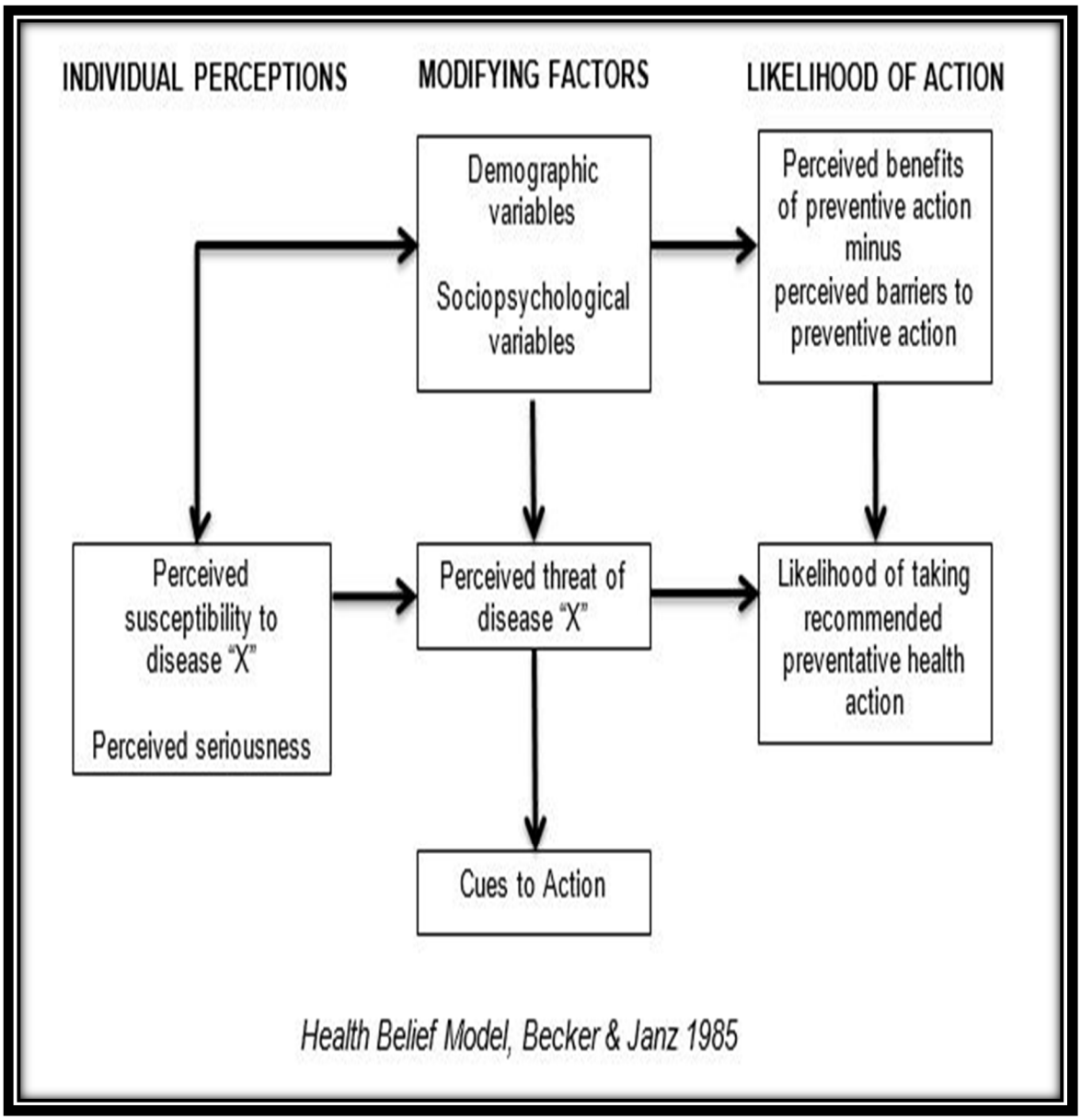

Figure 4. The standard schema of the health belief model.

These three constructs, perceived susceptibility, perceived benefits, and perceived barriers, were selected because they were better aligned with the purpose of the study, and they correlated well with the assumptions of the model. Some of the HBM constructs have been found to have cultural differences. For example, although *self-efficacy* was found to be a strong predictor regarding increased condom use, it was found to be significantly lower among Asian-American than in White, Hispanic, and African-Americans (Hounton, Carabin, & Henderson, 2005; Lin, Simoni, & Zemon, 2005). Such differences may present among genders or varies among ethnicity. However, for perceived susceptibility, perceived benefits, and perceived barriers, the literature supports their consistency in construct validity when translated into other cultures—Arabic, Turkish, Korean, and Chinese (Champion & Skinner, 2008). For this study, these three constructs were utilized to determine the intent of Haitian men in Haiti regarding prostate cancer screening.

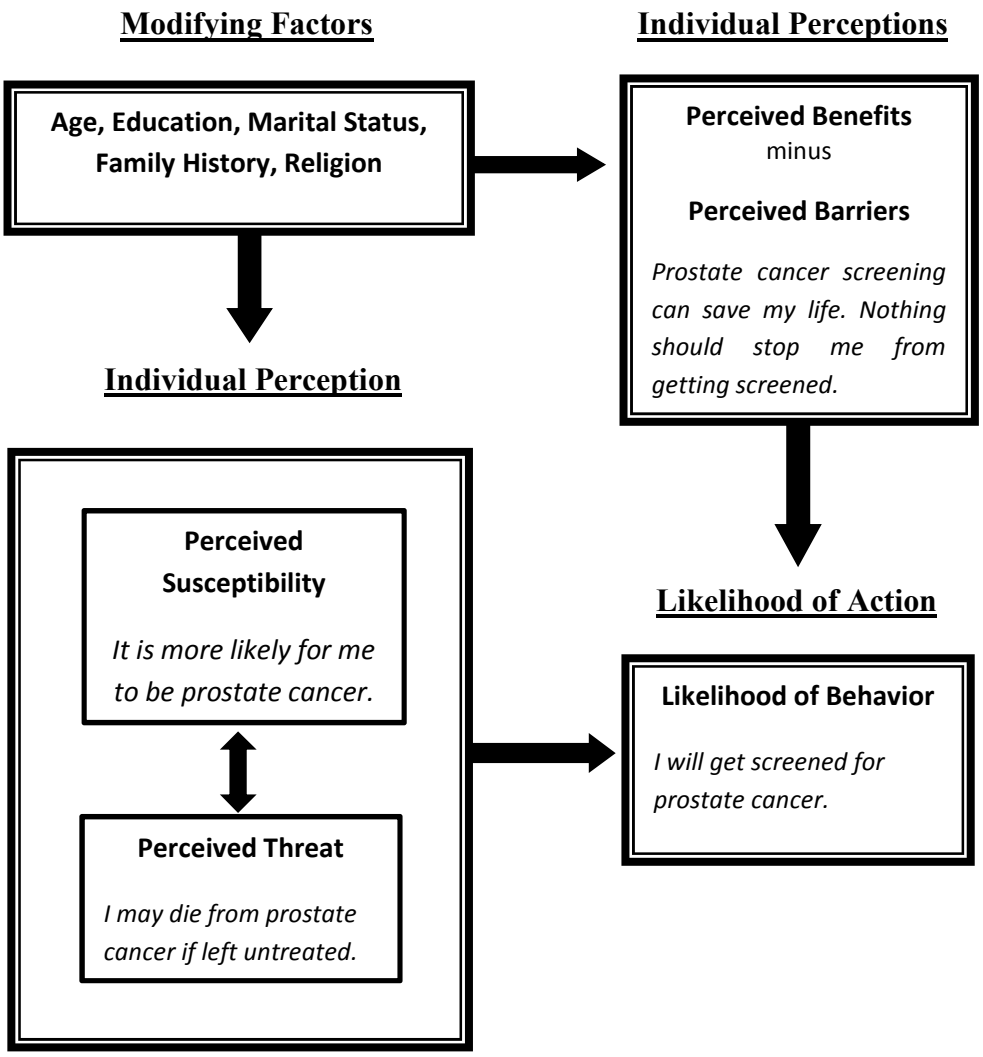

Figure 5. Louis' (2016) adaptation of the health belief model for application to prostate cancer screening.

Relationship of HBM to the Study

The study aims to identify any predictors of Haitian men's intention with regard to prostate cancer screening using these HBM constructs: perceived susceptibility, perceived benefits, and perceived barriers. Perceived susceptibility comes first. The man identifies if he is at risk or not of contracting prostate cancer; then, he acquires

information and understanding on how serious is prostate cancer. These perceptions combined will determine the level of threat he is facing. As Champion (1999) noted, there is very little variance with perceived severity; hence, perceived threat becomes eminent with perceived susceptibility alone. Therefore, in this study, the terms perceived susceptibility and perceived threat were used interchangeably. As depicted in the schema, perceived threat may be influenced by several or a combination of modifying factors. A person's perception of a disease may differ based on that person's age, gender, ethnicity, socioeconomic, education, or knowledge. These modifying factors may influence the man's perceived threat of prostate cancer, which in turn may influence the action he will take with regard to prostate cancer screening. In addition, cues to action—which is considered as a strategic reminder—may potentiate the level of threat and encourage the man to take action. However, if the perceived threat is intense enough, a cue to action may not be necessary. In summary, the man's perceived threat of prostate cancer may determine his intention of getting screened for prostate cancer.

In addition, the schema noted that the HBM constructs are interconnected. Nonetheless, a man's perceived threat alone can predict his likelihood of taking action. A similar characteristic is also noted for perceived benefits and perceived barriers. For example, if a man's perceived benefits of prostate cancer screening are great and his perceived barriers to actually get screened are minimal, he is most likely to be screened for prostate cancer even if he does not feel threatened by prostate cancer. Hence, perceived barriers must not in any way supersede perceived benefits. Similarly, to perceived threat, perceived benefits and perceived barriers can also be influenced by

modifying factors. Nevertheless, all of these three select constructs have a direct impact on the likelihood of behavior.

Although the health belief model has been used in diverse populations, it lacks the presence of cultural elements to explain or predict health behaviors. Haiti is a country that is unique in many aspects. Despite its vast cultural similarities with its neighboring countries in the Caribbean, the Haitian culture in itself is more complex than it seems (Girard, 2010). The culture is deeply rooted within the history of the country. In the colonial years, Haiti was known as the pearl of the Caribbean, and over time, it has borne many names including the magic island, land of danger, land of mystery, and land of the supernatural (Dash, 2001). Although Haiti defines itself as a black nation, the complexity of its social stratification lies within many shades of differences (Colin & Paperwalla, 2013). Hence, it is imperative to apply an additional lens that is a culturally focused framework to conduct this study. To bridge this gap, the Purnell model for cultural competence was utilized as the additional lens through which this study was conducted.

The Purnell Model for Cultural Competence

Larry Purnell, a nursing professor, developed the Purnell model for cultural competence in 1995. The model sprang forth from Purnell's observations while taking nursing students to a community hospital for clinical instruction. (Culture Competence Project, 2014). The model provides a framework to help create a culture competent atmosphere within the health care field. It provides a path for better exchanges between the health care provider and the patient (Purnell & Paulanka, 2003). Furthermore, the model can serve as a tool for health care providers to better understand their own cultural beliefs, attitudes, values, practices, and behaviors. The schema of the Purnell model for

cultural competence is a circle (Figure 6). The outlying rim of the circle represents the global society, the second rim of the circle represents the community, the third rim of the circle represents the family, and the innermost rim represents the individual (Culture Competence Project, 2014).

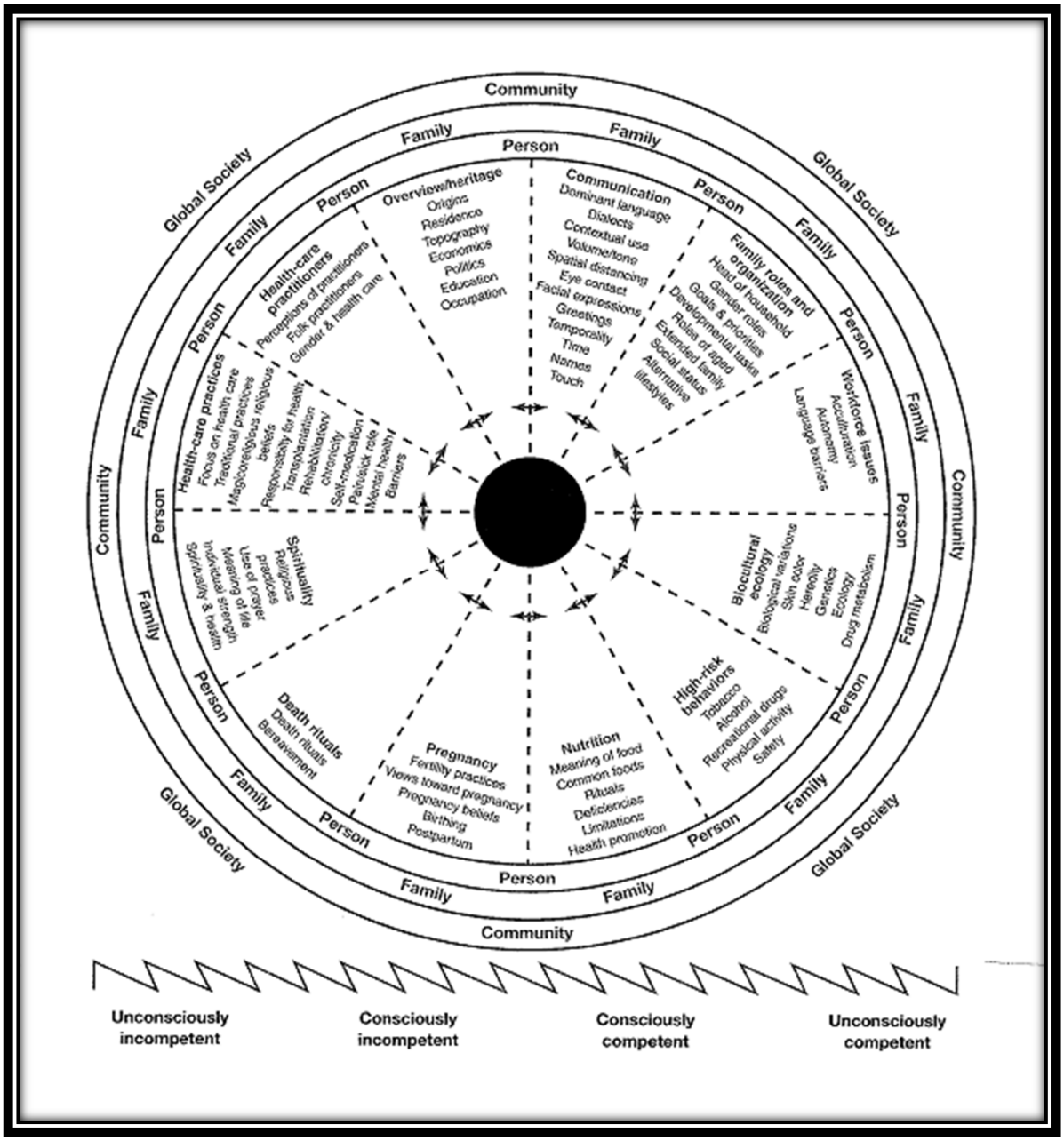

Figure 6. The Purnell (2013) model for cultural competence.

The circle is divided into 12 pie-shaped wedges portraying cultural constructs and their associated concept. The dark center of the circle denotes unknown phenomena. These 12 cultural constructs are communication, family roles and organization, workforce issues, biocultural ecology, high-risk behaviors, nutrition, pregnancy, death rituals, spirituality, health care practices, health care practitioners, and overview/heritage (Purnell, 2013). These 12 cultural constructs yield the organizing framework for this model. It must also be noted that no single construct stands alone; they are all interrelated. This model has been applied as a supplemental lens in many studies when dealing with culturally diverse populations (Dunn, 2002; Mebrouk, 2008). Fortunately for this research, Colin and Paperwalla (2013) have addressed all the 12 cultural constructs of the model with regard to the people of Haitian heritage. Their work served as the balancing platform, which helped shape the findings of this research as culturally competent to Haitian men.

Assumptions

Theoretical Assumptions

The assumptions of the study are parallel to the ones of the HBM. The HBM is based on the assumptions that a person will take a health-related action (i.e., participate in prostate cancer screening) if that person: (a) feels that a negative health condition (i.e., prostate cancer) can be avoided; (b) has a positive expectation that by taking a recommended action (i.e., getting screened will be effective at detecting prostate cancer); and (c) believes that recommended health action can be achieved successfully (i.e., able to schedule for prostate cancer screening comfortably and with confidence) (University of Twente, n.d). In summary, the assumption was Haitian men's intention to screen for

prostate cancer will be determined by their perceived susceptibility (perceived threat), perceived benefits, and perceived barriers with respect to prostate cancer.

One of the assumptions of this study is that the health belief model is suitable to guide this particular study. Because the HBM has been utilized by many studies as a framework, it is assumed that it is supported empirically. Furthermore, the Champion Health Belief Model Scale (CHBMS) is valid and reliable as referenced in many studies. Therefore, the CHBMS will be effective in measuring the variables of the study. Additionally, it is the assumption the Purnell model for cultural competence is empirically supported and suitable to address the cultural aspect of the research. The model is based on the general assumption that no one culture is better than another; they are simply different from each other. The model embraces that fundamental similarities are shared by all cultures. Hence, prejudices and biases can be lessened with cultural understanding (Purnell, 2013). In addition, the model assumes that every patient's contact is a cultural encounter. Therefore, since cultural competence is a process, every patient's encounter counts toward the process of competency.

Researcher Assumptions

With regard to the sample population, it is assumed that participants will complete the self-reported questionnaires honestly. The married men will more likely be willing to be screened for prostate cancer. The assumption is that they will be more likely influenced by their wives to follow up with health professionals' recommendations. The younger Haitian man will be more inclined to be screened for prostate cancer than the older Haitian man. Moreover, the higher the level of education of the Haitian man, the more positive his intention for prostate cancer screening. Similarly, for the family history

of prostate cancer, if the Haitian man has a family history of prostate cancer, the more positive his intention will be to be screened for prostate cancer.

Significance of the Study

Essentially, this particular study may help bridge a wide gap that currently exists in the literature regarding prostate cancer screening. Part of the gap is the perception of men belonging to a more reserved culture or less familiar with the Western healthcare system of prostate cancer screening. Can perceived susceptibility overcome perceived barriers, especially cultural barriers, to allow for positive health behavior? Cultural competence is based on the assumption that culture plays a powerful role on how an individual interprets and responds to health care (Purnell, 2013). This study may bring forth understanding about Haitian men's intention regarding prostate cancer screening; it may also identify predictors of their intention. Furthermore, this study may serve as a path towards future research regarding Haitian men's health and other similar populations.

Significance of the Study to Nursing

Haitian men face a high risk of prostate cancer incidence with a high mortality rate. The incidence and mortality rate continue to increase. Very little is known regarding the reasons for the high mortality rate of prostate cancer in Haiti. Moreover, there is a limited amount of research addressing prostate cancer concerning the Haitian men population. This study aims to explain the phenomenon of why Haitian men's participation rate in prostate cancer screening is so low and to predict Haitian men's intention regarding prostate cancer screening using the health belief model (HBM) constructs. The findings of this study may have implications for nursing professionals in

multiple areas such as nursing education, nursing practice, nursing research, and health/public policy. Thus, it could play a positive role in decreasing the mortality rate in Haitian men by bringing forth understanding on how to help increase their participation.

Implications for Nursing Education

The limited studies that address prostate cancer among Haitian men significantly highlight the correlation between the lack of knowledge and the low participation rate in prostate cancer screening. Thus, Haitian men's knowledge regarding prostate cancer and prostate cancer screening must be addressed. Nurses are the beacons of preventive health education. More information from these findings could help nurses understand the importance of being competent in Haitian men's perception of prostate cancer and their intention to participate in prostate cancer screening. Furthermore, the findings should serve as a guide to help reshape or improve the nursing curriculum of prospective nurses, especially nursing students in Haiti. Their understanding of how Haitian men perceive their susceptibility to prostate cancer, their perception of the benefits of prostate cancer screening, and the actual barriers that exist in preventing them from getting screened will lead toward progressive prevention. They may be able to address the perceptions and the myth surrounding prostate cancer screening.

Implications for Nursing Practice

As clinicians, nurses are at the forefront of patient care. Thus, nurse practitioners will come across many Haitian male patients who will need to be examined, educated, and perhaps treated for prostate cancer. Advance knowledge specifically focused on Haitian men is essential for these clinicians in order to ten to them more efficiently. The findings of this study may help nurse practitioners' approaches to be more in line with the

health care ideologies and values of this population. Hence, nurse practitioners may be better equipped to understand Haitian men's perceived barriers to participate in prostate screening. Thereby, they may be able to engage, educate, and encourage Haitian men to take appropriate action with regard to prostate cancer screening. Once Haitian men are being educated accordingly, an increase in prostate cancer screening participation may be noted.

Implications for Nursing Research

A great deal of research on prostate cancer exists in the literature. Much of this research addresses prostate cancer concerning African-American men, and the conclusion is usually the well-established fact of their high risk status. However, there is a paucity of published research focused on Haitian men about this issue. It is a common mistake to equate race with ethnicity. The U.S. Census Bureau categorizes Haitian men as African-American in the United States. A clear gap in the literature exists regarding prostate cancer in Haitian men. This gap needs to be addressed to advance nurses' knowledge with regard to Haitian men and prostate cancer. Furthermore, none of the published studies exploring this issue among Haitian men examined the relationship of the HBM constructs and Haitian men's intention to participate in prostate cancer screening. In addition, none of the studies considered to investigate the meaning attached to Haitian men's perceived barriers and the critical factors that may have influenced Haitian men's behavior of low participation in prostate cancer screening. Understanding the meaning of the perceived barriers and discovering the influential factors of their attitude and perception, might impact their participation in prostate cancer screening. It may indicate the need for more research, including a qualitative perspective.

Implications for Health/Public Policy

Any development in health science and the delivery of care would be beneficial to a governmental community, particularly because health care policies have always been cost-driven. The common goal of any health care policy is to reduce diseases and the high cost of treatment delivery, whereas public policy focuses on the safety and the well-being of the public as a whole. The findings of this study may help in guiding the Haitian government and any other country with a prominent Haitian population in developing their public and health care policies accordingly, especially with respect to fund allocation. In health care, primary prevention has proven for a long time to be more cost-effective than secondary and tertiary prevention. The results of this study may provide directions as to how to address primary prevention with Haitian population concerning prostate cancer.

Scope and Limitations of the Study

The scope of this study focused within the parameters of the HBM select constructs (perceived susceptibility, perceived benefits, and perceived barriers). The study investigated whether these constructs are predictive indicators of the intent of Haitian men regarding participation in prostate cancer screening. This study also examined if there is a relationship between select demographic variables (age, level of education, marital status, religion, and family history) and the intent of Haitian men regarding participation in prostate cancer screening. Moreover, the study focused specifically on a purposeful and convenient sample of Haitian men of a specific age range living in Haiti. Their participation was voluntary. All participants received the same demographic questionnaire developed by the researcher. They were also surveyed via a

modified Champion Health Belief Model Scale (CHBMS). For the consideration of cultural competence in the studied population, the Purnell model for cultural competence was employed, and the study was conducted within the parameter of its 12 constructs. No other related association beyond the scope of the study was heeded in the findings of this study.

As Creswell (2003) indicated, the intricacy of human nature and the inability to control for all probable variables are inherent limitations in this and all social science studies. Evidently in addition to the scope of the study, the limitations include the factors that pose a threat to the external and internal validity of this study. In addition, the sample for this study was recruited through convenience purposeful sampling, which defied the opportunity for randomization. The sample was drawn from Haitian men living in Haiti who may have had limited exposure to similar activity. The findings were partial to the use of self-reported surveys, the use of translated tools, and the inconvenience of time allotted to complete the survey, inquiring about information that may not be fully understood. The findings of this study depended on responses expected to be honest from volunteers who agree to take the modified CHBMS survey. Another limitation of the study was the possibility of having surveys completed twice by the same participant. Given that collection of surveys occurred over a period of 2 weeks, the likelihood of such occurrences was probable. Moreover, the presence of the researcher may have induced more socially desirable answers from the participants, which could affect the results of the study. Finally, the study was conducted by a novice researcher. The limited experience of such a researcher may have influenced the outcome of the study.

Threats to External and Internal Validity

Validity is defined as a quality criterion referring to the degree to which inferences made in a study are accurate and well-founded (Polit & Beck, 2012). Essentially, validity represents the verity of the findings as indicated by the authenticity of the design (Wood & Ross-Kerr, 2011). It is the certainty of the relationship between the independent variable and the dependent variable. Consequently, it is important to account for and attempt to eliminate or reduce threats to validity in order to substantiate the relevance of the effect of the independent variable on the dependent variable. Hence, any threat to the validity of a study poses the risk of nullifying its purpose.

Threats to External Validity

External validity refers to how well a study from one setting can be applied to another. It is the ability to generalize across categories or classes of individuals and across settings within the same target population (Rovai, Baker, & Ponton, 2013). The sample was recruited from various places where there was a high concentration of Haitian men. All the participants volunteered to take part in this study. In other words, the sample was basically self-selected. This bias of self-selection—due to the absence of randomization—may have lessened the probability for generalization, which in turn may have posed a threat to external validity. In addition, the sample being drawn from limited geographic areas in Haiti may not be fully representative. Despite the fact that the similarity of being Haitian men living in Haiti takes precedence, regional culture may be a factor causing inconsistency.

Threats to Internal Validity

Internal validity is the extent to which one can accurately state that an intervention produced the observed effect (Rovai et al., 2013). In other words, the study accomplished its goal. The results of this study consist of information collected via a self-report process. This method is the most common approach used to collect data, measuring opinion, interest, values and feelings. It is possible that participants may answer according to what is expected of them or what is more socially acceptable. However, only the participants are deemed qualified to express their own perception regarding their susceptibility to prostate cancer, the benefits of being screened for prostate cancer, the barriers of getting screened for prostate cancer, and their intention to be screened for prostate cancer. To enhance the internal validity and lessen the threat, great emphasis was placed on the anonymity of the answers to the survey. Therefore, the behavioral conformity or normality was not at all necessary. This notion was consistently expressed and explored with the participants.

Chapter Summary

This chapter discussed the general purpose of the study. It included the background of the high prevalence of prostate cancer among Haitian men and their low participation rate in prostate cancer screening. The problem statement was presented along with the specific purpose of the study. The key terms discussed in this study were defined both theoretically and operationally. The study posed a total of seven questions along with their corresponding hypotheses to address the problem. The theoretical frameworks that guided the study were both discussed separately. The main theoretical framework is the health belief model. It was discussed thoroughly along with its

relationship to the study. In addition, an overview of the complementary framework, the Purnell model for cultural competence, was presented. Assumptions of the study were explored, including the theoretical assumptions and researcher assumptions. The significance of the study and to nursing was conferred. The scope and limitations of the study were explored, including the threats to external and internal validity. In summary, the study focused on the predictive relationship between some select HBM constructs and the intention of Haitian men in participating in prostate cancer screening.

CHAPTER TWO

LITERATURE REVIEW

The purpose of this study was to determine which of these selected constructs of the health belief Model (perceived susceptibility, perceived benefits, and perceived barriers) are predictors of the intent of Haitian men to participate in prostate cancer screening. The study also explored the relative contributions of these selected demographic variables (age, level of education, marital status, religion, and family history) to Haitian men's intention regarding prostate cancer screening. In order to address the purpose of this study, a substantial review of the literature regarding the phenomenon of interest was conducted. The literature review is the amalgamation of the literature on a specific topic. Polit and Beck (2012) defined literature review as the critical summary of research on a topic of interest, often prepared to put a research problem in context. It is generally used to justify the significance of the study, place the study in historical perspective (how past studies have contributed to present studies), help refine the research questions, and identify an appropriate theory of methodology to guide the study (Cottrell & McKenzie, 2011).

A relevant literature search was conducted across disciplines to explore the phenomenon of screening for prostate cancers. Using First Search, Lilinet Online, and ProQuest Direct search engines, the following computerized databases were used for this search: ABI Inform (index of Business and Management), ArticleFirst., the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Dissertation Abstracts, Educational Resource Information Center (ERIC), Health Reference Center - Academic, Medicine, Modern Language Association (MLA), and Periodical Abstracts (PerAbs:

Covering business, economics, literature, religion, psychology, and women studies). The key words used in the search were **prostate cancer, prostate cancer screening, screening, Haitian men,** and **African-American men.** Citations were limited by language to English and by subject to exploration of the concepts. A restriction was imposed to find literature published from 2004 to present. For this particular search, the timeframe was extended due to the scarcity of research found addressing prostate cancer with regards to Haitian men. The literature references that were found about this phenomenon of interest were delineated through a random selection method, reviewed for the perspectives and rationale for the significance of prostate cancers screening.

The literature review was divided into context with respect to the perspectives taken by the studies addressing prostate cancer screening. For this study, the review will evaluate studies as they fit under the following headings: *Studies Using the Health Belief Model as a Framework, Factors Influencing Health Care Seeking Behaviors, Factors Influencing Prostate Cancer Screening,* and *Prostate Cancer Research Focusing on Caribbean-born Black Men*. Synthesis of the literature revealed what is known and not known about prostate cancer screening. A general recommendation from all the stakeholders is a call for more study to be generated to bring forth further knowledge on this matter.

Studies Using the Health Belief Model as a Framework

Coe, Gatewood, Moczygemba, Goode, and Beckner (2012) conducted a cross-sectional descriptive study to assess participants' perceptions and attitudes about the severity, susceptibility, and risk of the novel H1N1 influenza virus and the novel H1N1 influenza vaccine. Other objectives of the researchers were to evaluate participants'

perceived benefits of and barriers to novel H1N1 influenza vaccination, identify participants' cues to action, and determine the relationship between demographic and attitudinal variables and participants' intention to receive novel H1N1 influenza vaccination. The health belief model (HBM) was used as the theoretical framework guiding this study. In general, the HBM has been used to explore patient motivations for adapting a health-related behavior and in assessing health-behavior interventions. The HBM includes six key constructs that influence health behaviors: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy. All six constructs were utilized in this study. Since its development, the health belief model has been used in many populations to explore many different health-related topics. It has been found to be a reliable and valid tool to use as a framework while conducting research pertaining to health behaviors and health educational programs. In this section, the collation of these studies may serve as a well-represented variation of its use and reinforce the justification for its role in this study.

This study was conducted in the Central Virginia area at Virginia Commonwealth University (VCU). The major criterion for participants was to be 18 years old or older. A convenience sample was utilized to gather a total of 664 participants. Many college students were targeted due to their risk factors to H1N1 and the convenience of the recruiting process. Every participant was subjected to answer a 36-item questionnaire that was developed to assess the study objectives. The HBM constructs were addressed through 27 questions out of the 36; three questions were about participants' intention to receive the vaccine and intention to vaccinate their child, if applicable, and the other six questions were about the demographic of the participants. Magenta for Office Forms

Designer, Data Blocks (Version 5.05, Gainesville, GA), Remark Office OMR Data Center, Gravic, Inc. (Version 6.0.4, Malvern, PA) was the software used for data entry.

The data analysis was conducted through descriptive statistics (mean, standard deviation, frequency) for all variables. The HBM-based statements were grouped according to domains (perceived susceptibility to the virus, perceived severity of the virus, perceived clinical barriers to vaccination, perceived access barriers to vaccination, perceived specific vaccine benefits, and perceived general vaccine benefits statements). For the domains with three or more items, their calculation was through Cronbach's alpha. As for the domains with two items, a Pearson's correlation was used to assess reliability. A scale mean was calculated for domains with an alpha coefficient or Pearson correlation > 0.5. There were three groups with the domain of cues to action: virus information sources, vaccine information sources, and health care professionals' recommendations. The number of cues to action for virus and vaccine information sources was summed to create an overall number of exposures to information for the two groups. The health care professionals' recommendations (physician, pharmacist, and nurse) were kept as separate variables. To assess the relationship between demographic variables, health belief model domains, and number of cues to action or recommendations with participants' intention to receive the novel H1N1 vaccine, a logistic regression analysis was utilized. For the logistic regression analysis, the variable intention to receive the novel H1N1 vaccine was dichotomized into a likely to vaccinate group (very likely and likely) or an unlikely to vaccinate group (very unlikely and unlikely).

Regarding demographics and vaccination history as predictors of intention to receive the novel vaccination, the results indicated that the receipt of a seasonal influenza

vaccine last year was a significant predictor of intention to receive the novel H1N1 influenza vaccine. However, the participants who did not receive a seasonal influenza vaccine in the previous year were less likely to intend to receive a novel H1N1 influenza vaccine. As for the HBM constructs as predictors of intention to receive the novel H1N1 vaccine, the scale means for the perceived severity and perceived susceptibility of the novel H1N1 virus domains were 3.02 (*SD* ± 0.76) and 3.72 (*SD* ± 0.76), respectively. The scale mean for the perceived clinical barriers domain was 2.38 (*SD* ± 0.68). In summary, participants with lower perceived clinical barriers were more likely to intend to receive the novel H1N1 vaccine whereas there were no significant predictors of intention to vaccinate from the other HBM domains. Concerning cues to action as predictors of intention to receive the novel H1N1 vaccine, the study found that physicians' recommendations to receive the novel H1N1 influenza vaccine were a significant predictor of intent to receive the vaccine. The participants who did not receive a recommendation from their physician were less likely to intend to receive the H1N1 vaccine.

D'Souza, Zyngier, Robinson, Schlotterlein, and Sullivan-Mort (2011) conducted a qualitative study using the health belief model to evaluate marketing promotion in a public vaccination program. The article did not indicate the specific type of qualitative design that was used for this study. Instead, the authors pointed out that the research was conceptual by nature using the health belief model as a framework. The objective of the research was to examine not just the development and delivery of a message targeting individual voluntary behavior change, but the intention of changes in social structures that will facilitate individuals reaching their potential. The underlined purpose of this

article is to explain the uptake process of the human papillomavirus (HPV) immunization using the health belief model (HBM).

The study was conducted in the Northern Metropolitan region of Melbourne, Australia. The authors did not fully discuss the methodology of the research. They simply mentioned that their data were gathered from numerous focus groups categorized as follows: rural and metropolitan; English and non-English speaking background; Australian-born and recent arrivals to Australia; and those of a high, middle, and low socioeconomic status. They spent a great amount of effort discussing their rationale for choosing focus groups rather than interviews. They believe the interaction among school-age children would be more effective in groups than in in-depth interviews and would provide adequate understanding of this sensitive topic. They also cited that focus groups are particularly useful for investigating people's knowledge and their experiences. They also proposed that focus group discussions can produce a far greater critical analysis on a topic than interviews. The number of the sample was not specified. However, demographic information indicates that the participants ages ranged from 16 to 25, and those who were still in school were in 10th to 12th grade. They also reported that 80% of the participants were Australian-born.

The article did not mention any particular themes. However, the findings were discussed in relation to each construct of the health belief model utilized in the study. With regard to perceived susceptibility, the researchers wanted to identify the level of awareness and belief of women of the HPV vaccine. They found that the majority of participants knew nothing or had only superficial knowledge about HPV prior to taking the vaccine. With regard to perceived severity, the researchers were to identify the

severity of the problem among women. They found that it was almost universally accepted amongst participants that to be vaccinated is for health prevention. The common comment was that they grew up with vaccination. Regarding perceived benefits, the researchers were to identify what perceived benefits would be received. They found that there was a difference between the focus groups in the relative importance of the vaccine being provided free of charge. Having the vaccine free of charge influenced many parents to have their children take the vaccine. Regarding perceived barriers, the researchers were to identify what personal barriers women have with this concept of immunization. Although there were some concerns regarding side effects of the vaccine, they were not considered as barriers. The women's ambivalence about how well protected they would be after being vaccinated was not considered as a barrier either. However, the primary barrier across the focus groups was the fear of needle. Along with the fear of needle, setting was also barrier. It was easier for people to follow through if the vaccination was taking place at a convenient location. Cues to action were achieved through word of mouth. For self-efficacy, all of the participants had been vaccinated before. Therefore, their previous experience helped to build up their confidence of going through this vaccination process.

Aghamolaei, Hasani, Tavafian, and Zare (2011) conducted a quasi-experimental study to assess the effect of an educational program on breast self-examination (BSE) among women living in Bandar Abbas, Iran. The study was guided by the health belief model as a framework. The sample (N = 240) was drawn from eight health centers of Bandar Abbas. The sample was randomly divided into intervention *(*n = 120) or control *(*n = 120) groups. Champion's Health Belief Model Scale (CHBMS) was utilized to

collect data regarding belief on breast self-examination. The CHBMS was translated into Persian and adapted for Iranian culture. Cronbach alpha coefficients of CHBMS calculated for this study for susceptibility, seriousness, BSE benefits, BSE barriers and BSE self-efficacy were 0.68, 0.77, 0.78, 0.77, and 0.87 respectively.

The researchers used independent *t*-tests to compare age and health belief model constructs between two groups before and after intervention. They also used chi-square to compare education, marital status, and breast health problems between two groups before intervention, and then it was used to compare breast self-examination behavior between two groups before and after intervention. The results found that there were no statistical differences between the two groups in terms of baseline data (all $p > 0.05$). In terms of the frequency of BSE behavior of control and intervention groups, there were statistically significant differences between two groups after intervention ($p < 0.001$) whereas the two groups were the same at the beginning of the study ($p = 0.4$). The findings of this study reinforced the need for health education programs based on HBM. They recommend that health education programs such as breast self-examination should be based on HBM constructs. Consequently, such programs will be effective by augmenting perceived susceptibility, perceived seriousness, perceived barriers, and self-efficacy regarding BSE in women living in Bandar Abbas, Iran.

McNaughton-Collins and Barry (2011) conducted a qualitative study with a sample of 12 African-American men via the framework of the health belief model. The study aimed to examine the knowledge of, attitudes toward, and behaviors pertaining to prostate-cancer screening. The article did not mention any specific qualitative design. From the sample, the age of seven of the men were from 38 to 49, and the other five were

ages 51 to 80. Data were collected through two focus groups with an open-ended questionnaire regarding prostate-cancer screening behaviors. No specific themes were reported in the article. The results showed that older men were more knowledgeable about prostate cancer and expressed less fear about the digital rectal exam than younger men. None of the participants were aware of the increased risk of prostate cancer among African American men. They recommended that more education regarding prostate cancer screening is accessible to younger men in order to increase their awareness regarding this condition.

Oliver, Grindel, DeCoster, Ford, and Martin (2011) conducted a non-experimental exploratory study using a sample of 94 rural-dwelling male participants aged 40 and older. The objective of the study was to explore these three research questions: (a) What are the perceived benefits of screening for prostate cancer? (b) What are the perceived barriers to screening for prostate cancer? and (c) Is there an association with perceived benefits or perceived barriers and participants' reported source of influence related to prostate cancer screening decisions? The instruments used included an adapted version of Champion's (1999) revised Health Belief Model scale and a researcher-developed demographic and prostate cancer screening patterns form. To examine the association between cancer screening history and health beliefs, the researchers used chi squares with an alpha (α) of .05 as a determinant of statistical significance.

The demographic statistics found that the average age of the participants was 53.6 (*SD* = 59.3), with a range from 40 to 72 years. The majority of the participants were African American (87.2%), and the rest were Caucasian. Over two-thirds were married

(75.5%); a little less than half (47.2%) reported to have a high school diploma or less, and the remainder had at least some postsecondary education. Regarding perceived benefits of screening, there was a high level of agreement with the statement "When I participate in prostate cancer screening, I feel good about myself'," which was associated with self-report of having had a DRE ($X^2 = 4.7$, $p = .03$). Agreement with this statement was nearly significantly associated with self-report of having had a PSA test ($X^2 = 3.1$, $p = .08$). Agreement with the statement "If I participate in prostate cancer screening yearly, it will decrease my chance of dying from prostate cancer" was associated with self-report of having had a DRE ($X^2 = 6.7$, $p = .01$). Regarding perceived barriers to screening, agreement with the statement "I am afraid to have a prostate cancer screening because I don't understand what will be done" was correlated with not having had a DRE ($X^2 = 6.1$, $p = .01$) and not having a PSA ($X^2 = 16.13$, $p < .0001$). Agreement with the statement "Prostate cancer screening will take too much time" was associated with not having had a DRE ($X^2 = 7.9$, p =.007) and not having a PSA ($X^2 = 11.6$, $p = .001$). Agreement with the statement "Participating in prostate cancer screening will be too painful" was associated with not having a PSA ($X^2 = 4.7$, $p = .03$).

The results indicated both benefits and barriers were significantly associated with prostate cancer screening and sources of influence. Health care providers and family were highly reported, at 81.8% and 59.5%, respectively, as sources of influence regarding prostate cancer screening decisions. In conclusion, significant barriers to prostate cancer screening among rural African-American men were identified. Prostate cancer health education may need to include family, whom study participants highly reported as a source of influence regarding their prostate cancer screening decisions.

Kleier (2010) conducted a correlational, cross-sectional study with a convenience sample of 143 Haitian-American men. The purpose of the study was to (a) examine if perceived susceptibility to prostate cancer was congruent with the objectively measured disease risk, (b) test the relationships of components of an integrated model consisting of perceived susceptibility and fear, and (c) examine these constructs for their predictive relationships to prostate cancer screening behaviors among Haitian-American men. An integrated model consisting of a construct from the health belief model and the extended parallel process model was utilized as the framework of the study. The author used bivariate correlational analysis using Pearson to assess her hypotheses. Regression analysis was also carried out to identify any predictive relationship between the variables. The findings partially supported the integrated model in that perceived susceptibility was highly correlated ($p < 0.05$) to fear and screening behavior. Perception of risk was much lower than actual risk. Fear was not predictive of screening ($p = 0.81$). Kleier found that the health belief model was an appropriate framework to conduct this research on Haitian men with regard to prostate cancer screening. The results of the study indicated that Haitian-American men do not recognize their increased risk for prostate cancer, so they are less likely to seek screening. Recommendations from the study include that Haitian-American men must be educated on their true risk so they are adequately equipped to make an informed decision regarding screening.

Atulomah, Olanrewaju, Amosu, and Adedeji (2010) conducted a correlational cross-sectional survey utilizing a pre-tested 36-item questionnaire (Cronbach's *α of 0.62*) to collect information about awareness, perception of susceptibility to prostate cancer, perceived seriousness of the disease, and perception of benefits of screening and

screening activities of men in a rural community of the Ikenne local government area of south-western Nigeria. A sample of 398 randomly selected males aged between 30 and 72 years responded to the questionnaire. Descriptive statistics such as frequency distributions and means were utilized to assess personal characteristics, ages, perception variables, and screening behavior. The statistical significance level was set at the same level for all calculation ($p \leq 0.05$).

In their result, they found (a) on a 12-point scale pertaining to knowledge about prostate cancer, the respondents recorded a mean score of 4.97 (*SEM 0.15*), a well below average score; (b) for aggregate perception variables measured on a 30-point scale, the mean score was 17.65 (*SEM 0.18*); and (c) for perception sub-variables such as perceived susceptibility and seriousness of prostate cancer, measured on a 15-point and 12-point scale, respectively, the mean scores were 8.85 (*SEM 0.14*) and 6.218 (*SEM 0.09*), respectively. However, perception of the benefits of screening, measured on a three-point scale, recorded a mean score of 2.59 (*SEM 0.03*), and screening behavior variables, measured on an aggregated 11-point scale, recorded a mean score of 2.40 (*SEM 0.071*). The researchers concluded that in order to stimulate regular screening among men, there should be an aggressive health promotion intervention designed to increase awareness and to correct impressions about prostate cancer in the community. Importantly, the outcome of such screening would guide management of conditions throughout life, including the decision-making process, in which the individual would be an important part. The study recommends more awareness program in the community.

Karayurt and Dramali (2007) conducted a quantitative study to adapt the Champion's Revised Health Belief Model Scale (CRHBMS) for Turkish women and to

examine select socio-demographic variables associated with breast self-examination (BSE). The study utilized a purposive sample of 430 women living in a health facility in West Turkey. Of the sample ($N = 430$), the age ranged from 20 to 60 years, with a mean of 39.7 years ($SD = 11.3$). Seventy-nine percent ($n = 338$) of the women were married and 21% ($n = 92$) were single.

The CRHBMS went through the vigorous process of translation to Turkish, validated by professional judges, and then tested for reliability. Internal consistent reliability, construct validity, and predictive validity were tested among Turkish women. The Cronbach's alpha for each subscale ranged from .58 to .89, establishing internal consistency reliability. The obtained reliability coefficients of this study were similar to those of the original scale. However, the obtained coefficients were lower but acceptable for susceptibility and barrier subscales (.58 and .68, respectively).

The demographic results indicated that 49.5% ($n = 213$) of the women performed BSE at least once, but 50.5% ($n = 217$) of the women never performed BSE in the last year. Of all women who performed BSE, 88% were married, 12% single, 58% high school and university graduates, 42% primary and secondary school graduates, 39% employed, and 61% unemployed. However, 94% of the women practicing BSE did not have a family history of breast cancer, but 6% had a family history of breast cancer and 2% had a history of breast cancer themselves. The results of the chi-square analyses revealed a significant relation between the frequency of BSE practice and education level ($X^2 = 38.50, P < 0 .05$), family history of breast cancer ($X^2 = 7.65, P < 0 .05$), and former training about breast cancer and BSE ($X^2 = 56.01, P < .001$). In conclusion, the authors believed that understanding women's beliefs about breast cancer and BSE can enable

nurses and other health care providers to design and offer appropriate health education programs for early detection of breast cancer. They also found the CRHBMS can be effective when used to test the effectiveness of intervention strategies. They recommend that health care providers be more familiar with the health belief of the patients in order to provide care accordingly.

Kleier (2004) conducted a qualitative ethnographic study guided by the Health Belief Model (HBM). The purpose of that study was to investigate the knowledge and perceptions of Jamaican and Haitian men about prostate cancer. A total of 10 men between the ages of 45-74 were selected from each ethnicity for in-depth interviews. Ethnographic accounts were collected for the purpose of discovering concepts and relationships in raw data and reorganizing them into themes.

The themes were organized by cohorts of the studied population and constructs of HBM. For perceived susceptibility, over sexually active as a factor was a common theme from the Jamaican cohort. As for the Haitian cohort, greasy diet as a factor was the common theme. As perceived barriers, both cohorts indicated embarrassment and discomfort of the DRE as a factor. The results indicated that Haitian men were less knowledgeable on the issue than Jamaican men; thus, they were less likely to participate in prostate cancer screening. Most importantly, the results also captured the difference in culture and how it was a major contributing factor to the results. The researcher also suggested that language might have been a barrier. Therefore, educational materials must also be in Haitian Creole in order to address this issue.

The studies in this section mostly indicate the lack of knowledge as a major barrier to prostate cancer screening. It is only logical to refrain from taking part in an

unknown activity regardless of its benefits. Knowledge plays a major role in determining how a person will behave regarding seeking health care assistance. Let it be noted that every population is different, and culture plays a major role in how knowledge is received (Purnell & Paulanka, 2003). Hence, knowledge must be disseminated accordingly. Lack of knowledge of prostate cancer is found to be greater among African-American men and African-Caribbean men. Given that educational materials are usually in written form, Haitian men might be affected even more due to the high illiteracy rate in the Haitian population. The studies in this section focused on knowledge as a barrier to prostate cancer screening, but none of them actually examined the intention of Haitian men with regards to prostate cancer screening.

The health belief model (HBM) was originally created to help explain and predict health behavior. It originated in response to widespread failure of tuberculosis screening program. The authors of the model wanted to better understand what would make people behave a certain way regarding their health. Since the HBM's creation, it has been modified and adapted for several health promotion and educational studies. Multiple studies using the HBM as a framework were reviewed, but only Kleier's study addressed prostate cancer screening with regards to Haitian-American men. However, none of these studies addressed the perception of Haitian men living in Haiti and their intent to screen for prostate cancer. This particular study aimed to identify any predictive relationship between the select HBM constructs (perceived susceptibility, perceived benefits, and perceived barriers) and the intent of Haitian men to participate in prostate cancer screening. Additionally, it evaluated differences between select demographic

variables (age, level of education, marital status, religion, and family history) with Haitian men's intention regarding prostate cancer screening.

Factors Influencing Healthcare Seeking Behaviors

Influencing factors play a major role in people's everyday behaviors. Such factors may be an individual's educational level, economic status, ethnicity, marital status, or religion. Hence, it must be noted that health-seeking behaviors are bound to be influenced by many factors including these above-mentioned modifying factors. Furthermore, the influencing process is not limited to just one originating factor, perhaps a combination or a grouping of many factors. In this section, the collection of these studies identified some of the factors influencing health care seeking behaviors.

Allen et al. (2013) conducted a qualitative study addressing the health beliefs, attitudes and service utilization among Haitians in the Boston metropolitan area. They believed that understanding the factors that influence health beliefs, attitudes, and service use among Haitians in the United States is increasingly important for this growing population. The focus of this exploratory study was to examine the factors related to cancer screening and utilization of health services among Haitians in Boston. The data were collected from interviews with 42 key informants and 9 focus groups (n = 78). They described a key informant as someone who is very knowledgeable about the research topic and is able to verbalize the perception of the community with regard to the research topic. The initial key informants were health care providers, religious/faith leaders, business owners, media representatives, and civic organization leaders. The recruitment of the participants was done through a snowball sampling whereas a

participant would recommend another participant. The study was approved by the Institutional Review Board at the Harvard School of Public Health.

The data analysis was conducted in line with grounded theory through constant comparative methods. The researchers sought to identify salient constructs as they transpired organically from discussions with and among community members. The themes from the data were organized into three categories: (a) community priorities, (b) barriers to service access and utilization, and (c) suggested solutions to impediments. The results revealed that Haitians experience unique barriers to health services. These include language barriers, unfamiliarity with preventive care, confidentiality concerns, mistrust and stigma concerning Western medicine, and a preference for natural remedies. Therefore, it is suggested that the Haitian population could benefit from health system navigation assistance, especially to help curve the avoidance of seeking treatment due to health care costs. The study also suggested the need for a comprehensive program to be highlighted, rather than disease-focused programs, to decrease stigma and increase outreach. The study indicated that the best route to disseminate health information to this population was through faith-based organizations, social service agencies, and the Haitian media. The authors recommended that health care providers consider these suggestions when working with the Haitian population.

DeRigne, Choi, Barsky, and Albertini (2012) conducted a qualitative exploratory study addressing the met and unmet healthcare needs of Haitian-Americans living with HIV/AIDS. The motivation that triggered this study was due to the authors' observation of the Haitian-American community being overrepresented among groups affected by HIV/AIDS and yet remaining underserved in health care and social services. Data were

collected from a sample of 150 individual participants who were infected with or affected by HIV/AIDS from the Haitian community in Broward County, Florida. In addition, two focus groups of 8-10 health and human services professionals servicing the Haitian community were ascertained. The researchers recruited participants through a participatory action approach and snowball sampling. The interviews were conducted through open-ended and semi-structured protocols developed by the researchers. The interviews covered the following topic areas: (a) general experiences with health care in Broward; (b) experiences (personally, within family, or among friends) with HIV/AIDS; (c) experiences with health care services for people with HIV/AIDS; and (d) suggestions for improving health care services for people in the Haitian community with HIV/AIDS.

After the interviews, the researchers started data analysis by reviewing each interview in detail and by categorizing themes related to the goals of this research. The themes were categorized into "met and unmet needs." A second-level analysis of themes across different interviews was conducted. After the second-level analysis, the researchers identified common themes and flagged key quotations. Participants conveyed a range of experiences with the health care systems, including both met and unmet health care needs. Among the central themes arising from the study were bureaucracy of the health care system, lack of resources among participants, misinformation and distrust, lack of privacy, and lack of culturally appropriate services. One of the most persistent themes to occur from this study was the effect of stigma about having HIV/AIDS on the help-seeking behaviors of Haitians.

The findings suggested that it is imperative that culturally sensitive health care services are provided in order to reach out to the Haitian community living with

HIV/AIDS. There must be a comprehensive view among clinicians of the traditional and spiritual healing methods of the Haitian American community. Health care providers must show respect and provide confidentiality and privacy. Accessibility issues such as language barriers, difficulty navigating bureaucratic systems, transportation, housing, and family needs must be considered regarding this population. Hence, whenever possible, Creole-speaking providers should be utilized to avoid any language barriers and misunderstandings. The researchers maintained that rendering culturally sensitive services will translate into greater access and more effective health care for the Haitian-American population.

Khoury, Kaiser, Keys, Brewster, and Kohrt (2012) conducted a qualitative study to investigate whether explanatory models of mental illness invoking supernatural causation result in care-seeking from folk practitioners and resistance to biomedical treatment. The study was part of the compounding attention given to Haiti's broken health care system from the national and international humanitarian response to Haiti's devastating earthquake in January,2010. The broader focus of this study was to examine one key question through which mental health promotion can be informed: Are Vodou (voodoo) understandings of mental illness an obstacle to seeking biomedical treatment in rural Haiti? In the study's literature review, there is a general consensus that there are two Vodou illness representations in Haiti consisting of the natural and the supernatural. According to this classification, it is generally thought by most that natural illnesses are more manageable through biomedical treatment whereas the supernatural requires the assistance of Vodou practitioners.

The study took place in Haiti's Central Plateau, a rural mountainous zone located in central Haiti. It is the country's most impoverished region, which is also an indication of little or no access to health or human services in the country. The participants were selected through purposive sampling to represent a range of community leaders, traditional healers, religious leaders, and biomedical providers who worked in a variety of settings. Data collection was drawn from 31 semi-structured interviews, 10 focus group discussions, and four case studies. The focus groups varied in size, from seven to 14 people, and they were separated by gender. The participants' composition was of 32 males and 23 females. Data analysis was conducted using a mixed-method ethnographic approach to examine treatment-seeking pathways for mental illness caused by supernatural possession. The data collection centered on knowledge, attitudes and beliefs, etiology, experiences, and resources available for mental illness in rural Haiti.

Despite the general belief of Haitian and non-Haitian health professionals that belief in Vodou is an obstacle to biomedical mental health treatment, the findings of the study indicate otherwise. The authors found that folk practitioners expressed a desire to collaborate with biomedical providers and often referred patients to hospitals. However, they also believe that the biomedical system is largely ineffective for treating mental health problems. The findings indicate that explanatory models rooted in Vodou ethnopsychology were not primary barriers to seeking psychiatric treatment. Instead, there were structural factors such as the insufficiency of treatment resources and deficiency of psychiatric training among health practitioners, which generated the utmost impediments to biomedical care for mental health concerns in rural Haiti. Hence, it is recommended that health practitioners in Haiti have access to better training concerning

mental health. Furthermore, the population needs to be aware of and educated on mental health to help promote treatment seeking behavior.

Vornarx (2011) conducted a qualitative anthropological research to examine Vodou as a healthcare system. The study was grounded in a 16-month residency in the most rural area of Haiti gathering data from a variety of sources and sites. The researcher's rationale for this study was drawn from the gap that exists in the literature and the misconception about the subject. The author maintains that although much has been written about Vodou, very little is known about how *oungan* (voodoo priests) care for the sick, the knowledge they use to cure and treat illnesses, and their practices for dealing with illness. Hence, the researcher's objectives were to analyze (a) Vodou's role within a medico-religious social landscape made up of different caregivers and therapeutic traditions, (b) the supervision and treatment provided by practitioners to those seeking care, and (c) how the knowledge, practices, and discourses of Vodou practitioners are mobilized in illness episodes.

The researcher conducted the study through an ethnographical approach gathering data through interviews and observation. He completed the study by being in the field with Vodou practitioners and living daily in the world of small farmers in rural Haiti. He visited various places where the ill go to be treated so that he could meet care-seekers and weave a web of relations that would enable him to follow them along their therapeutic itineraries. The researcher noted the stigmatization involving the subjects being studied. Since it was magico-religious, the practices that interested the researcher were private and covert.

Data collection was carried out through individual and group interviews focusing on identifying different stages in people's health-seeking process, gaining an in-depth knowledge of the practices used by Vodou practitioners, ascertaining their discourse on illness, grasping the dynamics and relationships between different therapists and obtaining information on the Haitian medico-religious landscape and the features of each treatment sector. The sample was purposive. A total of 39 individual interviews were conducted with 21 Vodou practitioners and the researcher met regularly with six of them. To incorporate a broader view of the Haitian medico-religious landscape, over 20 interviews were conducted with other therapists from Creole medicine, biomedicine, and healing churches. Lastly, 20 other interviews were carried out with individuals well acquainted with Vodou (a drummer, a person who washes the dead, elders, assistants to Vodou practitioners, graveyard keepers, and participants in Vodou rituals) helped to fill any gaps in the researcher's understanding. All the data gathered during the research were analyzed using NVivo software.

The findings make a clear indication that Vodou's connections to illness go beyond a care-giving dimension identified for most religions. On the contrary, it shows that illness management is at the heart of the form of Vodou practiced in the Haitian countryside where it is represented as a health care system grounded in a unique ontology. The researcher discussed how the religious and magical dimensions have drawn attention to the many extraordinary skills possessed by the Vodou practitioners who, in the end, focus on the various dimensions of existence, ways of living, and the sick person's physical and social environment. Furthermore, this analysis of the interconnection of medicine and religion within Vodouism can help to inform healthcare

practices in the West. The researcher noted the importance of such consideration in treating Haitian immigrants but not limited to Haitian immigrants only. The results will serve as a guide for healthcare practitioners to help them identify (a) how illness is understood and what dimensions of life that meaning reveals and is tied to; (b) what sources of suffering an understanding of illness brings to light, what dimensions of life are affected by illness, and which ones need to be attended to in taking care of the person who is ill; (c) which caregivers are best able to offer assistance that is coherent with the person's understanding of their problem and with what they consider meaningful (both in the causes and the manifestations of that problem).

When working with a specific population, it is clearly logical to acquire a certain understanding about the general culture of the population in question and then an understanding regarding the population's perception of the problem at hand. A population's culture is believed to shape the general health status of that population (Purnell & Paulanka, 2003). Hence, missing such an important piece working with a specific culture only sets the work on an unsuccessful path. The articles reviewed in this section focused on factors that may have influenced the health seeking behavior of Haitians. They all mentioned the importance of taking the Haitian culture into consideration. They pointed out the lack of access as a major contributing factor, which could be the result of poverty, lack of means to access health care, and also lack of resources in the community. Consequently, in areas where health care is readily accessible, the lack of resources in the community limits the exposure to existing health treatments that are available. They also pointed out that health education should not be disease focused, especially in the Haitian community due to stigmatization. HIV/AIDS

and cancer are greatly stigmatized in the Haitian community. Health care professionals should instead focus on the person, promoting respect, confidentiality, and trust in the healthcare system. In addition to the economic situation of the Haitian community, religious belief, whether it is in conventional religion or non-conventional religion, must be considered. The literature indicates that most of the time, the biomedical treatment may be working in conjunction with the spiritual belief. In contrast, research has found that lack of education, familiarity, and resources are usually the major barriers rather than the spiritual belief.

The studies in this section clearly discussed numerous factors that may be influential to Haitian health care seeking behavior. These factors continue to have a major contribution to the perception of Haitians regarding the biomedical health care system and their own integration with the system. Furthermore, these studies suggest that health care professionals be familiar with the variety of cultural factors that may impact their patients' perception of the care being delivered. Health care professionals need to focus more on the patients themselves rather than the disease (Rahill and Rice 2010). Nonetheless, these studies focused on factors influencing Haitian health-seeking behavior, but none of the studies address the intention of Haitian men with regard to prostate cancer screening . None of the studies attempt to explain why there is such a high mortality rate of prostate cancer in Haiti. This study investigated predictive relationships between the select HBM constructs (perceived susceptibility, perceived benefits, and perceived barriers) and the intent of Haitian men to participate in prostate cancer screening. Moreover, the study assessed for differences between select demographic variables (age, level of education, marital status, religion, and family

history) with Haitian men's intention regarding prostate cancer screening. Subsequently, it might provide some clarification or further understanding about Haitian men regarding prostate cancer and prostate cancer screening.

Factors Influencing Prostate Cancer Screening Behavior

As mentioned in the previous section, behaviors are conditioned to influential factors. Prostate cancer screening affects men exclusively. However, the factors influencing men's behavior regarding prostate cancer screening do not necessarily pertain to men only. For example, a spouse may be the key influential factor in a husband's behavior, but this spouse may have been conditioned by other factors that would not have been a major concern to the husband. In this section, this group of studies focused on factors that may be influential in men's behavior regarding prostate cancer screening.

Costa and Moura (2013) conducted a qualitative study by interviewing a sample of men over 40 years of age in Brazil seeking to find out the meaning that men attributed to prostate touch examination. The sample size was not mentioned nor was the specific qualitative design. However, the men interviewed were all part of a public institution of higher education situated in the southern part of the metropolis of Rio de Janeiro. Their data analysis was completed through a descriptive qualitative approach with field research. Participants were faced with semi-structured questions consistent with themes for later analysis. Nonetheless, no specific theme was listed in the article. They maintained the relevance of their research due to the high incidence of prostate cancer and male resistance to clinical examination for prostate cancer prevention. The underpinning idea is that early detection of prostate cancer will provide a greater chance for less aggressive treatment. These researchers also argued that early detection of

prostate cancer could reduce the high costs arising from the treatment of advanced-stage cancer or metastatic disease.

In their recommendation, Costa and Moura (2013) strongly support screening because prostate cancer is the second leading cause of death in the male population in Brazil. They believe that it is essential that health policy is improved to aim at increasing early detection of prostate cancer. Consequently, mortality rates will be reduced. They recommended that nurses must be competent to understand the sociocultural factors that are involved in order to minimize the embarrassment and stigmatization related to the prostate digital rectal exam (DRE). Nurses must emphasize the importance of DRE's health benefits and that the patient's masculinity will not be affected.

Ferrante, Shaw, and Scott (2011) conducted a qualitative study by having in-depth interviews with 64 white men aged 50 years and over. The sample was purposively taken from men who were never screened for prostate cancer or who were screened with abnormal prostate specific antigen (PSA) in northern New Jersey. They used a grounded theory approach to analyze their data. No identified themes were reported in the article. However, the study found that men who actively sought out screening did so because of family history or they had previous abnormal PSA tests. On the other hand, men who had never been screened before tended to avoid testing due to their low-risk perception due to lack of family history. These men also believed that healthy behavior could prevent prostate cancer.

Some other contributing factors that lead to low participation rates were fear of cancer, embarrassment over digital rectal exam, misunderstanding over the screening procedure, and suspicion over the benefits of screening. The study also discussed a lack

of communication between the men and their doctors regarding pros and cons of testing. Hence, most men reported to have received their health information through lay media, friends, or family members. As recommended, more education is needed to counteract the myths regarding prostate cancer and prostate cancer screening. Health care providers need to initiate the educational process and take their patients' culture into consideration.

Lehto, Song, Stein, and Coleman-Burns (2010) conducted a descriptive, cross-sectional study to identify social ecological factors that affect screening behaviors for prostate cancer in African American men and knowledge that could be integral to the design of culturally appropriate interventions. The study was guided by the social ecological perspective. The authors explained that the social ecological framework of health promotion and education emphasizes the roles of social, cultural, and institutional contexts and the dynamic interaction among person-environment factors within these contexts as important for understanding African American men's behavioral outcomes. This study was conducted using a convenience sample of 60 African American adult men. Participants were recruited from the large metropolitan Detroit area, primarily from churches. They completed a socio-demographic survey that elicited information about age, educational background, marital and family status, health and medication history, employment status, presence of insurance, and history of prostate cancer screening via PSA; questions related to health values and health behaviors; a trust in providers' survey; and a stress-coping survey.

All variables were examined through descriptive statistics. Variables such as age, marital status, education level, insurance status, and screening status were dichotomized to obtain proper values. Chi-square tests and one-way ANOVA were conducted to screen

the potential variables that were significantly related to the prostate cancer–screening behaviors. Lastly, logistic regression analyses were used to achieve the research aim using SPSS version 16.0. An alpha level of .05 was used for all statistical tests, and *r* was calculated as the effect size.

The results found that most of the men were 50 years old or older *(M* = 54.8 ± 10.13, range 38 to 79). About 63% were married, and the majority had at least some post-high school education. It was also indicated that 70% of the men were employed, and the majority (92%) had health insurance. Half of the participants reported health problems such as hypertension or arthritis. Compared to those who did not have prostate cancer screening, men who obtained screening were more likely to be married *($\chi 2$* = 3.95*, df* = 1, $p < .05$*),* 50 years or older *($\chi 2$* = 21.93, *df* = 1, $p < .00$*)*, and to have health insurance *($\chi 2$* = 6.49, *df* = 1*, p* < .05*)*. Education and employment status were not related to screening behaviors. Moreover, one-way ANOVA results showed that participants who had prostate cancer screening tended to report higher scores on both positive health values and behaviors questions, *F* = 3.18*, df* = 1, $p < .05$, and *F* = 6.87, *df* = 1, $p < .01$, respectively. Trust in Physician and the John Henryism scales were not related to African American men's prostate cancer screening behaviors *(F* = 0.08, *df* = 1, $p > .05$, and *F* = 0.58, *df* = 1*, p* > .05, respectively*)*.

Logistic regression analyses found that men who were 50 years and older and who had higher scores on the health values survey were more likely to have prostate cancer screening in the past year (age and health values, *$\chi 2$ = 22.71, p* < .000*)*. Specifically, the odds of men 50 years and older having obtained PSA screening were about 16 times higher than those younger than 50 years of age *(odds ratio [OR]* = 15.72,

95% confidence interval [CI] = 3.45 to 71.64*)*. The odds of men having had PSA testing also increased by about 26% for those who had 1-unit increase in their health behaviors and values measure *(OR* = 1.26*, CI* = 1.02 to 1.54*)*. Although being married and having health insurance and higher scores on the Health Behaviors Questionnaire also seemed to increase the likelihood of African American men obtaining PSA screening in the previous year, such findings were statistically insignificant.

As hypothesized, the authors found that African American men were most likely to report having obtained the PSA screening if they were older than 50 years of age. Moreover, older men with higher positive health value scores were more likely to have received prostate cancer screening. However, differing to the study expectations, screening behaviors were not influenced by marital status, education level, health insurance, stress coping, and provider trust. The study recommends that programs that promote prostate cancer awareness among African Americans not only must target younger adults but also could devote efforts to improve general health behaviors (e.g., smoking, alcohol use, balanced diet, and exercise).

Carter, Tippett, Anderson, and Tameru (2010) conducted a quantitative study to evaluate the impact of prostate cancer education on screening rates among African American men in rural Black Belt counties in Alabama. The goal of the study was to promote screening behavior in African American men. The study followed a quasi-experimental three-phase design: (a) focus group, (b) education intervention, and (c) follow-up. The authors sought permission for the study from the Internal Review Board (IRB) at the Tuskegee University. Convenience sampling was utilized to target African American men 40 years of age and older and their spouses/significant others from two

Black Belt counties in Alabama. The intervention program is an education-based approach and was delivered in three phases: focus groups, education, and follow-up. Each phase provided information on prostate cancer, prostate cancer screening, and the importance of early detection to participants.

A total of six focus groups were held in both Bullock County and Macon County—three in each county. The groups were separated by gender and also led by a facilitator of the same gender. The six focus groups included a total of 74 participants. Three months after the education session, a follow-up phone survey was conducted with each participant. The phone survey focused on (a) knowledge of prostate cancer, (b) increase in dialogue about prostate cancer, (c) actual screening behavior, (d) level of spousal support, and (e) importance of women having knowledge of prostate cancer.

All statistics were analyzed using SPSS. The demographic survey indicated that the majority of focus group participants were married couples (88%) with a high school diploma or less (53%). The majority of participants had some type of insurance (97%) with only 3% indicating they had no insurance coverage. While most participants indicated they did not know the symptoms associated with prostate cancer (61%), county comparisons indicated Bullock County (80%) participants had the greatest lack of knowledge of symptoms. However, Bullock County (62%) had higher rates of annual screening than Macon County (52%) participants. The majority of male participants indicated they have annual screening from their physicians; however, when asked to indicate which test they were given, 77% responded both, 3% had only the DRE, and 20% had only the PSA. Of the male focus group participants, 5% had been diagnosed with prostate cancer.

The researchers generated data from the education intervention from two instruments: the demographic survey and pre- and posttests. A sample of 467 men and women participated in the education sessions; more than 85% of participants *(N* = 405) successfully completed the demographic survey and the pre- and posttests. The majority of the participants were males *(n* = 239), and 63% of the total population completed high school and at least some college. Despite the similarity of the two counties, there were significant differences in screening for prostate cancer (ever). Bullock County residents (39%) were less likely to have been screened than Macon County residents (61%). In addition, the majority (61%) of participants knew what prostate cancer was, but only few knew the symptoms associated with prostate cancer (39%). Of the participants, 51% had been screened for prostate cancer at some point in their lives; 33% specified that they had been screened within the previous 12 months. Of those respondents, neither identified PSA or DRE as the test used to be screened. This correlates with a lack of knowledge regarding the type of test given to screen for prostate cancer. It also supports focus group discussions where participants confused prostate and colon cancer screening procedures.

As expected, there was a correlation between age and prostate cancer screening. The chi-squared test shows there is a significant association between age and screening status *(p* = .009*)*. About 64% of the age group 40–49 reported that they have never been screened, and the age group 70–78 was the most screened for prostate cancer. Pearson correlation analyses indicated a strong relationship between marital status, screening within the last 12 months, education, socio-economic status, and insurance status.

With regard to pre- and posttest comparisons, there was a significant change in knowledge in all but four areas: (a) incidence between Whites and Blacks, (b) symptoms

associated with prostate cancer, (c) tests used to screen for prostate cancer, and (d) Medicare coverage of prostate cancer screening. Based upon the analysis of pre and posttests, the researchers found that the project successfully increased the knowledge and awareness level of participants concerning prostate cancer.

Table 1

Parameters of Pre- and Posttest, Paired t-Test (Carter et al., 2010, p. 102)

Hypothesized Difference = 0	Mean Diff.	*DF*	*t*-Value	*p*-Value
Prostate cancer is the number one cause of cancer deaths in African American men.	-0.04	390	-0.99	0.3229
A man's chances of getting prostate cancer increase, as you get older.	0.09	398	3.12	0.0019
Prostate cancer incidence is higher in whites compared to blacks.	0.13	394	4.27	<.0001
Prostate cancer always shows symptoms	0.12	392	3.38	0.0008
African American men should get a health exam, which includes a digital rectal examination, starting at the age of 40	0.07	399	2.53	0.0117
The Prostate Specific Antigen (PSA) is one of the blood test for prostate cancer.	0.48	397	10.99	<.0001
The Digital Rectal Exam (DRE) is the finger test for prostate cancer.	0.44	396	10.41	<.0001
If prostate cancer is found early, the chances of survival are greater	0.06	403	3.15	0.0017
Prostate cancer affects sexual performance	0.39	401	8.97	<.0001
One out of six African American men have a chance of dying from prostate cancer.	-0.02	396	-0.47	0.6414
There are two stages of prostate cancer, benign and malignant.	0.15	370	3.18	0.0016
Prostate cancer is an old man's disease.	0.08	378	2.84	0.0048

More men die with prostate cancer than from prostate cancer.	0.54	376	10.86	<.0001
Prostate cancer treatment may cause impotence and incontinence.	0.51	363	10.39	<.0001
Medicare covers prostate cancer screening costs	0.68	374	13.50	<.0001

Kleier (2010) conducted a correlational, cross-sectional study, first, to examine if perceived susceptibility to prostate cancer was congruent with the objectively measured disease risk; second, to test the relationships of components of an integrated model consisting of perceived susceptibility and fear; and third, to examine these constructs for their predictive relationships to prostate cancer screening behaviors among Haitian-American men. A convenience sample of 143 Haitian-American men was selected throughout Broward County, Florida. The author used an integrated model consisting of a construct from the health belief model and the extended parallel process model as the framework for the study. Bivariate correlational analysis using Pearson was carried out to assess her hypotheses. The author also utilized regression analysis to identify any predictive relationship between the variables.

The results exposed some compelling correlations that were not corresponding to some other findings. Essentially, the results partially sustained the integrated model in that perceived susceptibility was highly correlated to fear and screening behavior ($p < 0.05$). Unexpectedly, fear was found not to be predictive indicator of screening. Moreover, perception of risk was found to be much lower than actual risk. No significant correlation between the subjective perception of susceptibility and the objectively measured estimate of susceptibility based on recognized risk factors was found *($r = 0.04$).* Nevertheless, there was a significant and positive correlation between perceived

susceptibility to prostate cancer and fear of prostate cancer *(r* = 0.82, $p < 0.01$). The author concluded that Haitian-American men do not recognize their increased risk for prostate cancer, so they are less likely to seek screening for prostate cancer. The study recommends Haitian-American men to be educated on their risk in order for them to make an adequately informed decision regarding prostate cancer screening.

Talcott et al. (2007) conducted a descriptive cross-sectional study investigating attitudes of African American men toward diagnosis and treatment among newly diagnosed patients with prostate cancer (PC). They recruited the participants through the North Carolina tumor registry. A sample of 207 African American and 348 White men was obtained. The survey contained questions related to "demographic and socioeconomic characteristics, access to care, health attitudes and beliefs, PC screening history, PC diagnosis, its treatment, comorbidity, current PC-related symptoms, sexual function, daily living activities, and relationship with physicians, support system, and family history. Bivariate chi-square (X^2) analyses were conducted to assess differences between Caucasian and African American for all variables examined. They considered $p \leq .01$ statistically significant. The study found that African American men were significantly less likely than Caucasian men to have had regular checkups (89% versus 96%), digital rectal exams (DREs) (86% versus 93%), and prostate-specific antigen (PSA) tests (69% versus 91%) (All $p < .01$). For Caucasian men, the elevated PSA was more often ordered by the doctor as a routine screen (80.4% versus 70.7%, $p < .01$), whereas African American men more often reported they had requested the PSA (13.7% versus 6.7%, $p < .01$). African-American men were more often uninsured (8% versus 3%) and without private Medicare supplementary insurance (17% versus 32%) (Both $p < .01$).

The majority of men in both groups reported an abnormal PSA test as the first evidence of prostate cancer. African-American men more often reported urinary symptoms or benign prostate hypertrophy (BPH) than Caucasian men as the first indication (17.4% versus 9.8%, $p < .01$) and reported PSA less often (87.9% versus 81.2%, $p < .05$).

The results showed that African-American men had less access and utilization of the health care system. They were less educated but aware of their high risk for prostate cancer. The findings also included mistrust in general in their providers and the health care, and lack of opportunity to utilize and access care. Fear was also more of a factor among African-American men than their White counterparts. It was recommended that healthcare providers discuss prostate cancer screening more often with African American men and be familiar with hidden barriers that may cause a hindrance in their health seeking behavior.

Forrester-Anderson (2005) explored attitudes regarding prostate cancer screenings through grounded theory. Twelve focus groups ($n = 104$) were conducted among African American men 40 years of age or older, residing in three counties in the metropolitan area of Baltimore, Maryland. Prior to the discussions, a short demographic questionnaire related to age, marital status, education, insurance status, and prostate cancer screening information was given to each participant after completing their informed consent. The demographic characteristics of the sample were examined via descriptive statistics, and the focus group data were analyzed according to grounded theory methods of analysis. The results concluded that the associated barriers to screening among African American men are limited knowledge pertaining to prostate cancer, lack of access to screening services, fear of a positive diagnosis, and embarrassment. Among attitudes that served as

barriers, mistrust or lack of overall confidence was duly noted, especially in the government. Those attitudes also included lack of confidence in the health care system/medical professionals, the possibility of having the disease, unwillingness to talk about sex-related health problems, and a belief that prostate cancer is related to sexual behavior.

In this section, studies were reviewed because their focus was on multiple factors that affect prostate cancer screening behavior. Among the many, attitude was seen as a major factor as well as fear. Costa and Moura (2013) advised about the stigmatization relating to the DRE in certain cultures. Ferrante and his colleagues (2011) found that older men were more disposed to prostate cancer screening, and family history of prostate cancer was a contributing factor. Some of the studies concluded that some of the barriers to prostate cancer screening were lack of health care access and mistrust in the health care system, especially among African-American (Forrester-Anderson, 2005; Talcott et al., 2007). A few of the studies found fear of cancer itself was a barrier to screening. Although fear was highly correlated with susceptibility of prostate cancer, Kleier (2010) found that fear alone was not predictive of either ever been screened or planning to be screened. This section covered the many factors that could be attributed to Haitian men with regard to prostate cancer screening. However, none of the studies specifically focused on Haitian men in Haiti regarding their intention to screen for prostate cancer. This specific study explored the predictive relationships between select HBM constructs (perceived susceptibility, perceived benefits, and perceived barriers) with the intent of Haitian men to participate in prostate cancer screening. The differences between select demographic variables (age, level of education, marital status, religion, and family

history) were also probed with regards to Haitian men's intention regarding prostate cancer screening.

Prostate Cancer Research Focused on Caribbean-Born Men

The Caribbean ranks number one in the world regarding prostate cancer mortality rate (World Life Expectancy, n.d.). Yet, there is a substantial gap in the literature regarding research focus on the Caribbean as it relates to prostate cancer. This particular research focused on a sample of men from a Caribbean country; thus, a review of the literature focusing on Caribbean-born men was warranted. In this section, these studies explore issues of prostate cancer pertaining to Caribbean-born men.

Cobran et al. (2014) conducted a quantitative study to examine the perceptions of prostate cancer (CaP) fatalism and screening behavior between United States-born and Caribbean-born Black males. The authors expressed that few studies have examined the differences between U.S.-born and Caribbean-born Black males relative to CaP. Furthermore, limited studies have explored the association between CaP fatalism and screening behavior. Hence, the purpose of this study was to compare perceptions of CaP fatalism and predictors of CaP screening with Prostate Specific Antigen (PSA) testing between U.S.-born and Caribbean-born African-American males. In this study, the researchers posed two main questions: (a) What are the associations between nativity, perceptions of CaP fatalism, and CaP screening with PSA testing within the last year? and (b) What are the strongest predictors of PSA testing within the last year, and do these predictors vary by perceptions of CaP fatalism and nativity?

This study was guided by the Powe Fatalism Model (PFM). According to the PFM, an individual will partake in cancer screening contingently on the likelihood of

intervening variables, such as knowledge of cancer, perceptions of cancer fatalism, and general demographic influences such as race, age, gender, education, and income. The study was approved by the Institutional Review Board at Howard University. Data were collected primarily in Miami-Dade, Broward, and Palm Beach counties in South Florida. A sample of 211 Black men was recruited from senior centers, community/faith organizations, and health fairs. The Personal Integrative Model of Prostate Cancer Disparity (PIPCaD) Survey and the Powe Fatalism Inventory were utilized as measures for the study.

The researchers conducted a thorough analysis of all the data involved in the study. All data were analyzed using the statistical package SPSS 19 (International Business Machine Corp., Armonk, New York). The demographic characteristics were abridged in proportion and means. Cronbach's alpha coefficient was used to calculate the reliability of the modified Powe Fatalism Inventory and the modified PIPCaD Survey. CaP knowledge, acculturation, CaP fatalism, spirituality, and perceptions of CaP treatments scores were summed from the modified Powe Fatalism Inventory, and the modified PIPCaD Survey for each participant. In addition, independent sample *t*-tests were carried out to compare CaP knowledge scores, perception of CaP treatment and fatalism scores of U.S.-born and Caribbean-born African-American males. To further examine the statistically significant predictors of CaP screening with PSA testing within the last year between U.S.-born and Caribbean-born Black males, multivariate logistic regression models were constructed.

Of the 211 participants, 117 (56 %) were U.S.-born Black males and 94 (44 %) were Caribbean-born Black males. Caribbean-born Black males reported higher CaP

fatalism scores compared to U.S.-born Black males, 35.78 (*SD* = 10.43) versus 32.30 (*SD* = 11.10), respectively, $p < 0.05$. Nonetheless, U.S.-born Black males reported higher spirituality, perception of CaP treatment, and knowledge scores (e.g. 13.38 (*SD* = 2.65); 7.37 (*SD* = 1.86); and 5.51 (*SD* = 1.86), respectively, $p < 0.05$), compared to Caribbean-born Black males (e.g. 13.06 (*SD* = 2.63); 7.11 (*SD* = 1.50); 5.27 (*SD* = 2.01), respectively, $p < 0.05$).

The authors conducted a multivariate logistic regression to evaluate the adjusted predictors of CaP screening with PSA testing. The results found that age, education, spirituality, access to public or private health insurance, and doctors' recommendation of CaP screening with PSA testing were statistical significant predictors of CaP screening with PSA within the last year. Regarding significant predictors, U.S.-born and Caribbean-born Black males with low spirituality scores were less likely to screen for CaP with PSA testing within the last year (OR = 0.17, 95 % CI = 0.06, 0.54, $p<0.05$) compared to males with high spirituality scores. Furthermore, when compared to U.S.-born and Caribbean-born Black males without a doctors' recommendation of CaP screening with PSA testing, males with a doctors' recommendation were more likely to screen for CaP with PSA testing within the last year (*OR* = 14.76, 95 % *CI* = 4.59, 47.41, $p < 0.05$). However, nativity, acculturation, CaP fatalism, and CaP knowledge were not statistically significant in predicting of CaP screening with PSA testing within the last year (*OR* = 0.80, 95 % *CI* = 0.26, 2.48, $p = 0.70$; OR = 1.27, 95 % *CI* = 0.46, 3.49; OR = 1.37, 95 % CI = 0.48, 3.91; OR = 0.59, 95 % CI = 0.20, 1.79, $p < 0.05$ respectively).

Finally, the authors discussed possible limitations to the study. They pointed out that using a cross-sectional research design to investigate the main outcome may limit the

research results to reflect causation. In addition, the sample may not be representative of U.S.-born and Caribbean-born Black males in South Florida due to the use of a non-probability sampling process. The study recommends that health care providers increase their education of prostate cancer screening to their patient and make proper recommendation when needed.

Ng et al. (2013) conducted a qualitative study to investigate the factors that influence prostate cancer healthcare practices in Barbados, West Indies. The purpose of the study was (a) to identify individual, socio-cultural, and system-level variables that promote or impede pathways to prostate cancer screening and care among the country's residents; and (b) to assess the knowledge, attitudes and practices of African-Barbadian men regarding prostate cancer. The researchers sought and obtained approval for this study from the Barbados Ministry of Health and Stony Brook University Institutional Review Boards (IRBs). This study utilized a community-based participatory research (CBPR) model. The authors reported that CBPR is known as a scientific inquiry conducted in communities in which all members within the community may take full part in participation in each phase of the work (conception - design - conduct analysis - interpretation - conclusions - communication of results).

Data were collected through in-depth interviews of 30 community members. All interviews were carried out by one interviewer, and each interview lasted approximately 30-45 minutes. The interviews took place at the Winston Scott Polyclinic in Barbados or at the business office of the community member. The interviews were then transcribed and coded to categorize common topics and then themes. Factors of interest included: (a) knowledge about prostate cancer and early detection, (b) perspectives about access to

health care and health education, (c) fears about prostate cancer, (d) beliefs about disease, and (e) personal experience with prostate cancer.

The study found that many of the themes observed as barriers to prostate care in Barbados were similar to those described for African-American men. These themes included fear of cancer, fear and discomfort with the DRE, perceived threats to their manhood, concerns about privacy, embarrassment, distrust of the medical community, discontinuity of care, competing concerns (e.g., work, family), and inadequate or ineffective dissemination of information. One interesting and unexpected finding is that knowledge was more of an issue for African-American men. Another interesting factor was the lack of access to health care; it was not the case for African-Barbadian men likely due to the national health care system in Barbados that provides standard care to all residents. Overall, the results of this study indicated that gender-specific perspectives and cultural beliefs were the dominant factors in determining whether African-Barbadian men seek care.

McCree-Hale, Hale, Rutley, Aung, and Jolly (2012) conducted a quantitative study to evaluate the impact of a theory-based health education intervention on awareness of prostate cancer and intention to screen among men in Western Jamaica. This was a cross-sectional study with a pretest/posttest design. The study was conducted at the Cornwall Regional Hospital and select, non-randomized health centers in the parish of St James, Jamaica. The sample was drawn conveniently from patients who came to the hospital and the centers. Men ages 40 years and older were eligible to take part in the study. They were approached in the waiting area as they awaited to be seen by a practitioner. The protocol for this study was approved by the Institutional Review Board

of the University of Alabama at Birmingham, the Advisory Panel of Ethics and Medico-Legal Affairs in the Ministry of Health, Jamaica and the Western Regional Health Authority. This study was guided by the transtheoretical model [TTM] and the health belief model.

All participants completed a 25-item interviewer-administered pretest questionnaire. The questionnaire was evaluated and considered culturally appropriate and easy to understand. The topics of the questionnaire were related to socio-demographic information, which included age, marital status, educational attainment, income, religious affiliation, and race. Some specific questions were about attitude, knowledge, perceptions, and behaviors regarding prostate cancer risk factors, symptoms, and screenings. The posttest was given to participants immediately following the computer-based educational intervention. Questions on the posttest assessed participants' knowledge of prostate cancer, screening tests, risk factors, and intention to screen. The original sample consisted of 207 participants, of which 13 completed the pretest but failed to complete the posttest. Furthermore, six participants completed the posttest but did not complete the pretest. These 19 participants were excluded from the data analysis. The final sample was modified to exclude these 19 participants (n = 188).

The descriptive statistics of the sample showed that the participants' age ranged from 40 to 89 years with a mean age of 58.7 years. The majority of the men were aged 50–59 years (35.6%), married (48.4%), with a primary level education (46.0%), and working as manual laborers (56.2%). Furthermore, the majority of the men (98%) self-identified as Black; 17% reported having a father, brother, or son with prostate cancer. In addition, about a third of the men (36.3%) reported to have been screened for prostate

cancer. Regarding the pretest and posttest results, the *p*-values of the McNemar's test indicate statistically significant differences in the percentage of correct responses between the pre-test and post-test ($p < 0.05$). In the pretest analysis, the knowledge of risk factors was relatively high as compared to knowledge of prostate cancer screening. Fifty-one percent of the sample knew about the recommendation for prostate cancer screening for men over age 40. Of the most common used screening tests, 24.5% indicated to have had knowledge of DRE, 9.8% knew of PSA, and 2.7% knew of the ultrasound.

Regarding symptoms, the majority (68.4%) identified correctly that a weak urine flow, blood in the urine, pain or burning urination, and lower back pain as symptoms of prostate cancer. About three-fourths of the sample correctly identified a family history of prostate cancer, being 40 years old (76.6%), and a high fat diet (74.0%) as risk factors. Approximately, half (54.7%) of the sample identified correctly that men of African descent were also at a greater risk than their counterparts. In general, there were statistically significant increases in the percentage of correct responses between the pretest and posttest. The improvement that stood out was related to the knowledge of prostate cancer screening tests. The percentage of knowledge of the recommendation increased from 51.0 to 93.3% ($p < 0.0001$). Knowledge of DRE, ultrasound, and PSA increased by 57.6, 60.3 and 73.4 percentage points, respectively ($p < 0.0001$). Knowledge of prostate cancer symptoms increased by about 21 and 26 percentage points and knowledge of risk factors increased between 9 and 28 percentage points. The researchers found that the theory-based patient education program was significant in educating and improving knowledge regarding screening behaviors. Therefore, they

maintain that it can be replicated to promote awareness of prostate cancer and inform screening methods including potential risks associated with screening behaviors.

Kleier (2010) conducted a correlational, cross-sectional study using an integrated model comprising of a construct from the health belief model and the extended parallel process model as the framework. This author wanted to explore if perceived susceptibility to prostate cancer was consistent with the objectively measured disease risk. In addition, she also wanted to test the relationships of components of an integrated model consisting of perceived susceptibility and fear. Furthermore, her other objective for this study was to investigate these constructs for their predictive relationships to prostate cancer screening behaviors among Haitian-American men. The author gathered 143 Haitian-American men in Broward County, Florida via convenience sampling.

Besides the demographic questionnaire, the author utilized three previously developed instruments to measure the variables being studied. These instruments had been tested for psychometric properties when used with Haitian-American men regarding prostate cancer. They were also modified to account for language and content with regards to Haitian-American men. These instruments were: (a) Kleier prostate cancer fear scale, an 8-item scale with responses scored on a 4-point Likert scale where 1 indicated *strongly disagree* and 4 indicated *strongly agree*; (b) Kleier perceived susceptibility to prostate cancer scale, a 3-item scale with responses scored on a 4-point Likert scale where 1 indicated *strongly disagree* and 4 indicated *strongly agree*; and (c) Your Disease Risk for Prostate Cancer index, an online questionnaire scored on a 7-point scale where a 7 score would be considered above average in risk for developing prostate cancer, a score of 4 was considered to be an average risk, and a score of 1 indicated the

risk was below the average. Bivariate correlational analysis using Pearson was carried out to assess the studies hypotheses. The author also utilized regression analysis to identify any predictive relationship between the variables.

From the sample, the majority of the participants ($n = 80$, 55.93%) reported never having a prostate examination, while 63 (44.1%) indicated they had undergone a prostate examination at some time. Of these 63 participants, 50 (79.4%) reported the length of time since their last examination; 43 (86%) conveyed having been examined within the past five years; however, seven participants exceeded the 5-year mark and 3 reported that it had been at least 10 years since their last examination ($M = 2.78$, $SD = 2.57$). Furthermore, 82 participants (57.3%) reported that they had no plan for prostate screening in the future.

In the results, the measurement of disease risk based on identified risk factors provides clear evidence that the majority of the participants' responses reflect an above average to a very much above average risk ($n = 127$, 92.7%) to prostate cancer. The study also found that there was no significant correlation between the subjective perception of susceptibility to prostate cancer and the objectively measured estimate of susceptibility based on recognized risk factors ($r = 0.04$). However, there was a significant and positive correlation between perceived susceptibility to prostate cancer and fear of prostate cancer ($r = 0.82$, $p < 0.01$). In the regression analysis, only perceived susceptibility to prostate cancer was significantly related to participation in prostate screening behavior ($p < 0.05$).

The findings partially supported the integrated model in that perceived susceptibility was highly correlated to fear and screening behavior. Perception of risk

was much lower than actual risk. Fear was not predictive of screening. Kleier concluded that Haitian-American men do not recognize their increased risk for prostate cancer, so they are less likely to seek screening. Haitian-American men must be educated on their true risk so they are adequately equipped to make an informed decision regarding screening.

Consedine et al. (2007) conducted a quantitative study to examine the relevance of emotional and cognitive characteristics to digital rectal exam (DRE) and prostate specific antigen (PSA) screening among 180 U.S.-born African American, U.S.-born European American, and immigrant Jamaican men. The study was approved by the Long Island University Institutional Review Board. A convenience sample of 180 men was recruited from various places through local newspapers, community postings, and contacts, as well as at health fairs and senior centers. Of the 180 participants, 60 of them were self-identified as belonging to each of these three ethnic groups: U.S.-born European American, U.S.-born African American, and Jamaican immigrant. The researchers clarified that because prostate cancer risk is greater at younger ages among minority men, they recruited African American and Jamaican participants in the 40- to 70-year age bracket and European American participants in the 50- to 70-year age bracket.

The survey consisted of a few measures to gather up the data needed for the study. The first measure was a background questionnaire to elicit information regarding self-reported ethnic group membership, age, household income, and education. The second measure was *prostate cancer screening behavior*. This questionnaire comprised of questions pertaining to prostate cancer screening behaviors, specifically the number of

DREs and PSA tests in the past 10 years. The third measure was *prostate cancer knowledge*. This questionnaire was developed based on prior work and expanded in consultation with expert oncologists and urologists. It is a 50-item scale that assessed knowledge in six domains of prostate cancer knowledge—anatomy, screening, risk, warning signs, treatment, and general. The last measure of the survey is *prostate cancer attitudes*. This questionnaire is a 30-item measure that assessed attitudes toward prostate cancer and prostate cancer screening. The survey took a total of 90 minutes to complete.

The demographics data was calculated through MANOVA. An Ethnicity × Age MANOVA on income and education revealed a significant effect for ethnicity (Wilks's $\lambda = 9.25$, $p < .01$, $\eta^2p = .10$), on both income, F (2, 174) = 11.98, $p <. 01$, $\eta^2p = .12$, and education, F (2,174) = 9.01, $p < .01$, $\eta^2p = .09$. Games-Howell post hoc tests showed that U.S.-born African Americans reported lower income than did either U.S.-born European Americans or Jamaicans, and both U.S.-born African Americans and Jamaicans reported fewer years of education than did U.S.-born European Americans. However, an Ethnicity × Age MANOVA on PSA and DRE frequency revealed no ethnic effects and, instead, a significant age effect (Wilks's $\lambda = 11.36$, $p < .01$, $\eta^2p = .12$), for both PSA, F (1, 174) = 22.58, $p < .01$, $\eta^2p = .12$, and DRE frequency, F (1, 174) =10.08, $p < .01$, $\eta^2p = .06$. Consistent with prior work, older men reported more PSA tests and DREs irrespective of ethnicity.

The next result that the researchers discussed was between ethnic and age differences in the six knowledge subscales. A MANOVA with age and ethnicity as between-subject factors and income and education as covariates was conducted; education was dichotomized and added to a MANOVA with ethnicity, age, and education

as grouping factors and the six knowledge measures as dependent variables. Ethnicity was found to be significant again (Wilks's $\lambda = 3.21$, $p < .01$, $\eta^2p = .11$), as was education (Wilks's $\lambda = 2.16$, $p < .05$, $\eta^2p = .07$), and the interaction between ethnicity and education (Wilks's $\lambda = 2.54$, $p < .01$, $\eta^2p = .09$). There were no significant differences in knowledge as a function of age. Follow-up univariate tests showed that ethnicity had significant effects for anatomy, $F\ (2, 168) = 5.22$, $p < .01$, $\eta^2p = .06$; risk, $F\ (2, 168) = 6.77$, $\eta^2p = .08$; screening, $F\ (2,168) = 3.32$, $p < .05$, $\eta^2p = .04$; and warning signs. Education was significant for risk, $F\ (1, 168) = 9.64$, $p < .01$, $\eta^2p = .05$; screening, $F\ (1, 168) = 3.98$, $p < .05$, $\eta^2p = .02$; and general cancer knowledge subscale scores, $F\ (1, 168) = 5.80$, $p < .01$, $\eta^2p = .03$. As is typical, individuals that are more educated had superior knowledge. In addition, ethnicity interacted with education such that although more educated individuals generally had better knowledge, specific knowledge regarding anatomy, $F\ (2, 168) = 5.64$, $p < .01$, $\eta^2p = .06$, and treatment, $F\ (2, 168) = 4.77$, $p < .01$, $\eta^2p = .04$, was poorer among more educated Jamaicans.

With regard to attitude, ethnicity was again significant (Wilks's $\lambda = 3.28$, $p < .01$, $\eta^2p = .06$) as were education (Wilks's $\lambda = 4.73$, $p < .01$, $\eta^2p = .08$) and income (Wilks's $\lambda = 5.75$, $p < .01$, $\eta^2p = .10$); age was marginal (Wilks's $\lambda = 2.22$, $p = .09$, $\eta^2p = .04$), with older age being weakly associated with reduced fear. Inspection of the univariate effects showed that greater income was associated with less screening fear, $F(1, 165) = 16.93$, $p < .01$, $\eta^2p = .09$; greater education was associated with greater belief in the efficacy of treatment, $F(1, 165) = 11.96$, $p < .01$, $\eta^2p = .07$; and greater age was associated with less fear, $F(1, 165) = 4.32$, $p < .05$, $\eta^2p = .03$. U.S.-born European Americans reported less fear of screening than did U.S.-born African Americans and were marginally ($p = .08$)

less fearful than were Jamaican men. Interestingly, immigrant Jamaican men reported significantly greater emasculation concern than did both U.S.-born African American and U.S.-born European American men.

Finally, the authors surveyed whether aggregate knowledge variables and attitudinal variables predicted PSA and DRE screening, whether they did so above the impact of demographic variables, and whether they did so equally for the two different tests. It appeared that for PSA testing, fear and efficacy interacted such that fear was strongly related to lower screening but only when efficacy was low. Finally, there was a marginally significant three-way interaction between fear, knowledge, and type of test, Wilks's $\lambda = 3.01$, $p = .085$, $\eta^2 p = .02$. The interaction plot suggested that although greater knowledge made no difference to DRE rates, knowledge and fear interacted in the prediction of PSA such that being afraid did not affect the screening of individuals with high knowledge.

The study revealed as predicted that U.S.-born African American and Jamaican men had significantly poorer knowledge of prostate cancer in a number of domains and reported considerably more fear of prostate cancer screening processes than the U.S.-born European men. However, there were no ethnic differences in treatment efficacy beliefs. Furthermore, as expected, greater fear was negatively associated with screening frequency, and there were several interactions consistent with the study's expectations that fear would be differentially relevant to DRE frequency and that greater efficacy beliefs or greater knowledge might protect men from the effects of screening-related anxiety.

This section of the literature review was designated to review prostate cancer studies addressing Black men of the Caribbean and their cultural influence with regard to prostate cancer screening. Considering the beliefs, cultural influences, barriers, and other factors that might inspire the decisions made by other Caribbean Black men regarding their personal health may be beneficial in generating interventions for Haitian men in Haiti. Several of the studies suggested that knowledge was a major factor, and that educational information must be disseminated directly to groups or areas where men are often present. Some the locations mentioned were work, sport arenas, churches, and barbershops. Another suggestion is that the information be given, besides a healthcare provider, by champions—individuals who are familiar and respected in the community. A prostate cancer survivor is an ideal champion.

Furthermore, all of the studies in this section indicated the commonality that is found in barriers to prostate cancer screening between African-American and African-Caribbean men. Barriers included fear of cancer, the embarrassment involved the DRE, the threat to an individual's manhood, and mistrust of the medical system. These factors are all too familiar across the Caribbean and in the United States. Although these factors can be attributed to Haitian men, none of the studies specifically addressed the intention of Haitian men regarding prostate cancer screening.

Chapter Summary

The literature comprised of a vast amount of research covering multiple topics regarding prostate cancer. The topics ranged from low risk to high risk addressing prostate cancer via diverse methods concerning different races and ethnicities. In this chapter, the literature was subdivided to address the purpose of this study. The literature

was categorized under these heading: *Studies Using Health Belief Model as Framework, Factors Influencing Health Care Seeking Behaviors, Factors Influencing Prostate Cancer Screening,* and *Prostate Cancer Research Focusing on Caribbean-born Black Men.* The literature is immense regarding prostate cancer, but a minuscule amount of research focuses on Haitian men. The few research studies found concerning Haitian men clearly indicate that Haitian men's perception and lack of knowledge were the major contributing factors to their low participation rate in prostate cancer screening. However, none of the studies addresses the intention of Haitian men regarding prostate cancer screening. It is imperative that more research is conducted pertaining to Haitian men in order to fill in the gap that currently exists in the literature. This proposed study will address this gap in the literature.

CHAPTER THREE

METHODS

The purpose of this study was to determine which of these selected constructs of the Health Belief Model (perceived susceptibility, perceived benefits, and perceived barriers) are predictors to the intent of Haitian men regarding prostate cancer screening. The study also explored the relative contributions of these selected demographic variables (age, level of education, marital status, religion, and family history) to Haitian men's intention regarding prostate cancer screening. This study took the path of a correlational, predictive quantitative approach. Quantitative research methods may be defined as the systematic empirical investigation of phenomena through statistical or numerical data. The purpose of quantitative research is to develop and engage in mathematical models, theories, and hypotheses pertaining to phenomena (Polit & Beck, 2012).

The quantitative approach is influenced by the philosophy of positivism. In the positivist's view, the primary purpose of science is to predict, explain, and control occurrences. The Health Belief Model (HBM) is well aligned with such a view of science. Furthermore, it seeks to explain and predict health behavior. Hence, the HBM served as the framework for this study. In addition, the Purnell Model for Cultural Competence served as a secondary lens through which this study was conducted to account for the lack of cultural aspect of the HBM. However, its constructs were not tested in this study. This study investigated the predictive relationship of these three independent variables: perceived susceptibility (perceived threat), perceived benefits, and perceived barriers with the intent of Haitian men living in Haiti (the dependent variable)

regarding prostate cancer screening. Moreover, this study also considered select demographic variables (age, level of education, marital status, religion, and family history) that may inspire the intent of Haitian men regarding prostate cancer screening. Among these select demographic variables, age was examined as a predictor as well. Consequently, this study planned its data analysis to accommodate four predictors.

In terms of use of instruments, this study applied a modified version of the Champion Health Belief Model Scale for breast cancer in accommodation to prostate cancer to operationalize the relationship of the select HBM constructs to the intent of Haitian men. In addition, a demographic questionnaire including items addressing the intent to participate in prostate cancer screening was administered. The purpose of the demographic questionnaire was to, first, describe the characteristic of the sample population; second, help determine potential associated factors with the select HBM constructs; and third, help identify the relationship between the select HBM constructs and the intent to prostate cancer screening. This chapter will address every component necessary to present the methods of the study as a whole. The content of this chapter will be disseminated under these headings as follows: overview of the design; hypotheses studied; setting; sample; inclusion criteria; exclusion criteria; ethical considerations/protection of human subjects; recruitment procedure; data collection procedure; instruments/measures; data analysis plan; and chapter summary.

Overview of the Design

Quantitative Inquiry

The high incidence and mortality rate of prostate cancer in Haiti was the phenomenon of interest of this study. Determining predictors of Haitian men's intention

regarding prostate cancer screening was the underlying task of this study. Hence, to better determine such a relationship or correlation among the studied variables and make predictions accordingly, this study used a descriptive correlational, predictive cross-sectional design. Such a design is originated from the quantitative methodology.

The quantitative approach assumes knowledge comes from the physical world. The general goal is to describe associations or correlations, relationships, explain cause and effect, and make general inferences (Kerlinger & Lee, 2000). The quantitative approach is considered as a pure scientific method. The researcher uses deductive reasoning to generate predictions that are tested in the real world (Polit & Beck, 2012). Quantitative research is usually conducted systematically through a series of steps, using empirical data, striving for generalizability. There are four main types of designs in the quantitative approach: descriptive, correlational, causal-comparative/quasi-experimental, and experimental designs. The descriptive design simply seeks to describe the significance of identified variables; the correlational design seeks to delineate the relationship between two or more variables; the causal-comparative/quasi-experimental design seeks to determine cause and effect relationship among the variables; and the experimental design seeks to establish cause and effect among the variables (Creswell, 2003; Polit & Beck, 2012). For the purpose of this study, the descriptive correlational and cross-sectional designs were reviewed.

Descriptive Correlational and Cross-Sectional Design

Correlational research explores the interrelationship among variables of interest without the researcher's intervention. Hence, the determined correlation is the relationship or association between two variables with the tendency for variation in one

variable to be related to variation of another (Polit & Beck, 2012). Such relationship can be examined between more than two variables using multiple regression analysis. However, correlational studies have some limitations, among them is self-selection sample. In correlational studies, researchers work with pre-existing groups that were not formed at random. Furthermore, it is difficult to interpret the correlational findings that stem from behaviors, attitudes, and similar characteristics. In the real world, they are interrelated (Polit & Beck, 2012). The strength of correlational research is its efficiency in collecting a large amount of data about a phenomenon, the capability of making causal inferences, and is usually strong in realism (Polit & Beck, 2012).

A cross-sectional design involves the collection of data once the phenomenon under study is captured during a single period of data collection (Polit & Beck, 2012). It is appropriate for describing the status of a phenomenon or for describing relationships among phenomena at a fixed point in time. Cross-sectional design is often used to describe some feature of the population, such as prevalence of an illness, or it may support inferences of cause and effect (Levin, 2006). For example, a researcher may look at the correlation of a specific activity (alcohol consumption) with a specific disease (liver cirrhosis). If the findings show a strong correlation, then a causal inference can be made of the alcohol consumption to the cirrhosis.

Choosing a descriptive correlational and cross-sectional design fits well with the purpose of the study. Correlational research determines correlation and allows for causal inferences. Cross-sectional design allows for data to be collected in one single period and also supports causal inferences. Predictive design involves the foretelling of a likelihood of something happening. It is the projection of a likelihood occurrence from a

known baseline. This study is using the HBM as a framework due to its predictive constructs. Accordingly, this study aims to determine predictive correlation between the selected HBM constructs and Haitian men's intention regarding prostate cancer screening, and also seeks to discover possible causes for Haitian men's low participation rate in prostate cancer screening. Understanding predictors to Haitian men's intent regarding prostate cancer screening will help nurses and other health providers modifying their approach with Haitian men regarding prostate cancer screening.

Research Questions and Hypotheses

The following research questions and hypotheses were studied and tested to evaluate and establish the relationships that exist among the variables of the study:

RQ1: What is the relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and the intention of Haitian men in Haiti to screen for prostate cancer?

RH1: There will be a statistically significant positive predictive relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and Haitian men's intent to screen for prostate cancer.

RQ2: Which of these select health belief model constructs (perceived susceptibility, perceived benefits, and perceived barriers) is the most significant positive predictor to the intention of Haitian men in Haiti to screen for prostate cancer?

RH2: Perceived susceptibility will be statistically the most significant positive predictor to intention of Haitian men in Haiti to screen for prostate cancer.

RQ3: What is the relationship between Haitian men of different ages and their intent to screen for prostate cancer?

RH3: There will be a statistically significant positive relationship between Haitian men of different ages and their intent to screen for prostate cancer.

RQ4: What is the difference of intent to screen for prostate cancer among Haitian men of different levels of education?

RH4: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men of different level of education.

RQ5: What is the difference of intent to screen for prostate cancer among Haitian men of different marital status?

RH5: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men of different marital status.

RQ6: What is the difference of intent to screen for prostate cancer among Haitian men with different religions?

RH6: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men with different religions.

RQ7: What is the difference of intent to screen for prostate cancer between Haitian men with or without family history of prostate cancer?

RH7: There will be a statistically significant difference of intent to screen for prostate cancer between Haitian men with or without family history

Setting

The population of interest of this study is Haitian men living in Haiti. Hence, the principal setting of this study was in Haiti. The study was conducted in different cities in Haiti, at least in one of each of the following departments: The North, the North-West, the North-East, the West, the South, the South-East, the Artibonite, and the Grand Anse.

Data were collected in different parts of the country purposely in an attempt to capture a wider view from the country as a whole regarding the phenomenon of interest.

Considering this study's focus is on a specific population, the researcher utilized convenience and purposive sampling methods to recruit the participants for the study. Studies similar to this particular study are categorized as field studies; therefore, field settings can be anywhere other than the laboratory (Wood & Ross-Kerr, 2011). The researcher sought permission from the Université Polyvalente d'Haiti (UPH) as the main location where participants completed the survey. The university has several campuses throughout Haiti. These campuses served as anchor locations and recruitment was held in their surroundings. Via the process of convenience sampling, the researcher also sought permission from administrators of varied sites surrounding the university to obtain access to participants (Appendix D) from various community locations such as churches, barbershops, soccer fields, flea markets, and anywhere with a large congregation of men. These locations allowed for a high probability of procuring an adequate sample size for this study.

Sample

Studying a population actually involves studying a sample of the target population. A sample is defined as a subset of a population containing those selected to participate in a study (Polit & Beck, 2012). There are two general types of samples: probability sampling, which uses probability calculation and random selection methods to form the sample; and the non-probability sampling, which uses non-random methods to select the sample (Kerlinger & Lee, 2000). Probability sampling consists of simple random, systematic random, stratified random, random cluster, stratified cluster, and

complex multi-stage random. On the other hand, non-probability sampling comprises of convenience sampling, purposive sampling, consecutive sampling, quota sampling, and snowball sampling (Polit & Beck, 2012).

Given the fact that this study focused on a particular population, the sample for this study could not be randomized nor could it be obtained through a probability sampling method. Nonetheless, this study selected the participants using convenience and purposive sampling. Convenience sampling is simply just as it sounds. It is convenient and easy to achieve. Researchers use this technique because of the convenience of accessibility to participants. The sample was solicited from various community locations, which are known for large congregation of Haitian men. In addition, the sample was selected with a purpose (purposive sampling). The sample consisted of Haitian men who fit into the inclusion criteria of the study and limited to the exclusion criteria.

Projected Sample Size

Undoubtedly, a perfect study of a population would be that every member of that population was in fact a participant of that study. Realistically, such a study would be complicated, expensive, and time consuming—to say the least. However, such a dilemma has been addressed through the implementation of various sampling methods. It must be mentioned that regardless of how a sample is drawn, the statistics obtained from that sample might not accurately reflect the population's parameter. Nonetheless, although sampling methods also produce error, highly reliable results can be obtained with proper sampling (Pyrczak, 2010).

It is widely known throughout the literature that a large sample size minimizes the potential occurrence of standard error and vice versa (Kerlinger & Lee, 2000). Therefore, it is suggested that a sample size of a study is satisfactory according to the number of variables being studied. It is encouraged that researchers account for 15 participants per variables and a surplus of 50 more participants to account for attrition (Portney & Watkins, 2000). In addition, a correlational study must have a minimum of 30 participants per each group within the study in order to determine any relation (Gay, Mills, & Airasian, 2009). Consequently, the proposed sample size estimation for this study was 200 participants. According to these recommendations found in the literature, the proposed estimation is deemed suitable for the number of variables of this study.

Sample Size by Power Analysis

Sample size determination has always been an important factor in any study. Despite other recommendations found in the literature, power analysis has been the most commonly used method to determine the adequate sample size for a particular study. Power analysis uses the framework of classical hypothesis-testing to determine a suitable sample size based on a specified statistical power, level of significance, and effect size (Hayat, 2013). For this study, a priori analyses were carried out by means of G*POWER 3.1.9.2 (Faul, Erdfelder, Lang, & Buchner, 2007) to figure out adequate sample sizes for given effect sizes, alpha levels, and power analyses. To maintain a fair equilibrium between committing a Type I and Type II error, such analyses (a priori) are essential to a study (Kerlinger & Lee, 2000; Portney & Watkins, 2008).

To achieve appropriate sample size estimation for this study, the alpha level (α) was set at the acceptable level of 0.05 and beta (β) at 0.20. The preferred power was

calculated as 1-β= 0.80. The most commonly used and acceptable effect size in behavioral research is a medium effect side (Kerlinger & Lee, 2000). Therefore, a medium effect size was chosen for this study. A one-tailed bivariate correlation (*r*) was tested with the given parameters; it yielded a sample size of 67. The same analysis was tested for multiple regression using the same parameters with four predictors; a sample size of 85 was recommended. In addition, the same analysis was performed for one-way ANOVA using the same parameter with four groups; a sample size of 180 was recommended. As it is well established in the literature, attrition is a common factor in research, hence, must be accounted for (Polit & Beck, 2012; Portney & Watkins, 2008). The proposed sample size of 200 participants was well within the means to allow for attrition.

Inclusion Criteria

The sample for this study was obtained in Haiti. The sample included any man who (a) is self-identified as Haitian; (b) reported to have been born in Haiti; (c) has not lived outside of Haiti for the past 5 years; (d) is between 45 and 75 years old; (e) is fluent in speaking and reading at least one of the following three languages: Haitian Creole, French, and English; (f) has never been screened before for prostate cancer (considering the purpose of the study); (g) is able to provide informed consent; and (h) has at least completed primary school or the equivalent of middle school—Certificat or Setifika—(considering the high illiteracy rate in Haiti).

Exclusion Criteria

The sample excluded anyone who is (a) not self-identified as Haitian; (b) was not born in Haiti; (c) who lived outside of Haiti at any point of time during the past 5 years;

(d) below the age 45 and above 75; (e) not able to speak or read at least one of the following languages: Haitian Creole, French, and English.; (f) a previous screener of prostate cancer; (g) unable to give informed consent; or (h) not a graduate of the equivalent of a middle school education.

Ethical Considerations

Engrained in history are the nuances that exist in conducting human subject research. The many grave incidences that occurred in the past involving human suffering have brought forth several documents addressing ethical consideration and the protection of human subjects. The general codes in conducting research are guided by these documents: The Nuremburg Code (1949); the Declaration of Helsinki (1964); and the Belmont Report (1978) (Polit & Beck, 2012). Compounding evidences of human suffering led the federal government of the United States to create the process of the Institutional Review Board (IRB)—a board that regulates every aspect of research to ensure ethical considerations and the protection of human subjects. It is imperative for researchers to conduct their research ethically, honestly, and always with the protection of the participants in mind. This includes the rights and privacy of the participants (Creswell, 2007; Polit & Beck, 2012). This researcher followed all the procedures and protocols put in place with accordance to IRB. This was to ensure that this study would be conducted in an ethical manner with respect and protection for participants.

Prior to data collection, approval to conduct this study was sought from the Institutional Review Board (IRB) at Barry University (Appendix A). The researcher also sought permission from UPH including all their campuses as anchor locations where the surveys would be completed. Additionally, permission (Appendix C) was sought from

administrators of sites surrounding the campuses where Haitian men frequent to post flyers (Appendix E) advertising the study and to access and recruit participants for this study. The guidelines for conducting human research were followed closely. Once permission was granted, flyers were posted in areas as designated by the administrators of the varied sites. Once a potential participant agreed to participate, the researcher provided a cover letter (Appendix B) detailing the full information about the study.

The cover letter indicated that the study would be anonymous. Therefore, there were no identifiers to link the surveys to participants. The cover letter also specified that the participation was voluntary; therefore, participants were able to stop their participation at any point of time of the survey without any consequence (Gay, Mills, & Airasian, 2011). Additionally, the cover letter included the aims, data collection procedures, data security and data management strategies, data reporting, and dissemination of the study results. Although there were no related risks or direct benefits from this study, the findings of this study may provide the stimulus for the development of educational programs addressing prostate cancer screening in Haiti. Most importantly, the cover letter also included contact information for the researcher, the researcher's advisor, and the designated person for the Institutional Review Board at Barry University. This contact information is necessary in case any questions should arise during or post the conduction of the study.

All participants were made aware of their rights as a participant: (a) that they were first volunteers who were free to withdraw from the study at any time and (b) that they were consenting to participate in the study by completing the surveys. Participants were asked to complete the surveys, seal the surveys in the provided envelope, and drop

the sealed envelope in the locked and secured container. The container was personally carried and transported back to the United States by the researcher. An equivalent of $5 U.S. was given to each participant as a small token of appreciation for their participation. Furthermore, since the surveys were anonymous without any identifiers, the researcher will not be able to link the surveys to any participant. They were also ensured that the locked and secured container would only be accessible to the researcher. The researcher cleared surveys from the box at the end of each day. Completed surveys were stored in a locked cabinet in the researcher's home office. Data were entered into the Statistical Program for the Social Sciences (SPSS) for analysis, and the electronic data were stored securely in three different locations (i.e., flash drive, external hard drive, and the cloud) to reduce the risk of lost data. An equivalent of $5 U.S. were tendered to all participants as a token of appreciation for participating in the study. The completed surveys will be accessible only to the researcher and researcher's advisor. They will be preserved in locked cabinet for a maximum of 5 years upon completion of the study. Thereafter, the data will be destroyed by this researcher. Participants were also advised of the dissemination of the results through various outlets such as journal publications, poster/podium presentation, and other scholarly avenues.

Access and Recruitment Procedures

Upon approval of Barry University's IRB, participants were recruited through a variety of methods. First, the researcher sought for permission from UPH (Appendix D), then from administrator of various places surrounding UPH campuses where Haitian men are usually in attendance to access and recruit participants. These places included churches, barbershops, soccer fields, dance clubs, and flea markets. Upon approval of

their permission, flyers (Appendix E) advertising the study were displayed and handed out in those locations. The flyers contained the specifics of the study including aim, benefits, and inclusion and exclusion criteria for participants. In addition, the flyers had the contact information for the researcher, researcher's advisor, and contact person for the Institutional Review Board at Barry University. Whenever and wherever it is possible, the administrator of a location verbally read the content of the flyer to groups of their frequenters.

Participants were approached individually and in groups when possible. They were informed of the study in accordance with the flyer. If they agreed to participate, they were directed to go to the designated UPH campus where they completed the surveys. Upon their arrival, they were given verbal instructions regarding their participation along with a packet containing the cover letter, the two questionnaires, and a small token of appreciation equivalent to $5 U.S. They were informed that they were allowed to keep the token of appreciation regardless of whether they completed the questionnaires. The participants were placed in private and quiet area where they were able to complete the packet without interferences. Upon completion of the packet, they sealed the questionnaires in the provided envelope and placed the enveloped in a secured and locked container located in the front of the room.

Data Collection Procedure

Data collection was completed at each UPH campus one at a time. The researcher planned with campus administrators for proper accommodations. Once participants volunteered their consent for the study, they were given a survey packet by the researcher, which included the cover letter, and then, the researcher directed them toward

the selected area where they could complete the surveys. Prior to completing the surveys, the researcher gave participants verbal instructions regarding their rights as participant. They were informed that they are primarily volunteers who chose to complete the surveys, and the completion of the survey will serve as their consent to participate in the study. They had the right to refrain from answering any questions from the surveys, or withdraw completely at once from participating without facing any penalty. They were asked not to use any identifiers that can link them to the surveys. They were made aware that the surveys are anonymous, and no one will be able to connect them to the surveys including the researcher. Participants were also reminded with great emphasis that they must place their completed surveys in the provided envelope, seal the envelope, and then place it in the locked and secured container, which was located in the front of the room. They were made aware that such great emphasis is being reiterated to help maintain the anonymity of the surveys. Prior to completing the surveys, participants were presented with a small token of appreciation ($5 U.S. equivalent) for taking the time to participate in the study.

During the verbal instruction, participants were assured that the data collected will be securely maintained. They were made aware of the following details about how the data will be managed. The collected surveys were personally transported back to the United States by the researcher. Subsequently, all the data collected were first entered in SPSS for statistical analyses and then stored in three different electronic avenues (i.e. flash drive, external hard drive, and cloud) for lost data risk management. The hard copy data will be kept in a locked cabinet only accessible to the researcher. Upon completion of the study, the collected data will be kept and preserved by the researcher for a

maximum of 5 years and then be destroyed. Participants were also informed that the findings of the study will be circulated through journal publications, poster/podium presentation, and other appropriate scholarly avenues. Most importantly, they were reminded that important contact information is located in the cover letter, and they may keep it as their own record of participation if needed.

Instruments/Measures

The process of measurement is essential to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships (Kerlinger & Lee, 2000). The data for this study were collected through two questionnaires. Both questionnaires have been through rigorous translation process from English to Haitian Creole and French and then the reverse of this process. There were a total of 29 items for the two questionnaires. The entire process could be completed in approximately 30 minutes, including instruction and answering the questionnaires. The first questionnaire was the researcher-developed demographic questionnaire (Appendix G) to establish the homogeneity of the sample population and other potential facilitating variables. This questionnaire also included items concerning the dependent variable. The other questionnaire was a modified version of the Champion Health Belief Model Scale (Champion, 1999; Champion et al., 2004) (Appendix H) adapted for prostate cancer. This scale measured the relationship of the select HBM predictor variables with the dependent variable.

The combined questionnaires consisted of items that were clear, easy to understand, and had been translated into the languages of Haitian Creole and French. All items were intended to generate continuous data to help facilitate the statistical analyses.

The Champion Health Belief Model Scales (CHBMS) has been adopted by several studies, which have claimed it to be valid and reliable (Atulomah et al., 2010; Kleier, 2009; Kleier, 2010). The researcher received permission to utilize and modify the CHBMS for this study (Appendix H).

Demographic Questionnaire

The demographic questionnaire was a 13-item questionnaire developed by the researcher. It was used for descriptive statistics about the participants, to identify possible facilitating variables and to determine the direction of the dependent variable. Item 1, an interval level item, addressed age. It is used to describe the population and accounts for age inclusion. Since the literature supports that prostate cancer screening should start at age 45, it also served as the measurement for the independent variable, age. Item 2 to 4 addressed the theoretical definition of Haitian man. Item 2 is a nominal level item inquiring about location of birth of the participant; item 3, a nominal level item, inquires about the racial background of the participant; and item 4, another nominal level item, inquires about the participant's country of residence for the past 5 years. These three items served as descriptors of the population and also accounted for the inclusion criteria as a Haitian man. Item 5 is a nominal level item that addressed the independent variable, marital status, and served to describe the population. This item asks participants to identify themselves as single, married, divorced, widowed, and other.

The word "separated" was omitted as a choice due to the lack of legal recognition for such a term in Haiti. Item 6 addressed the independent variable, level of education. It is an ordinal level item that requests for participants to choose between these levels of education: primary school, secondary school, and university. This item also accounted

for the inclusion criteria. The next item, item 7, is a nominal level item served to describe the population and to address the independent variable, religion. Item 8 is a nominal item simply asking participants about their previous exposure to prostate cancer screening. This item specifically asks if the participant has never been screened before for prostate cancer. The choices are as follow: yes, no, or I don't know. This item also accounted for the inclusion criteria. Item 9 addressed the independent variable, family history. It is a nominal level item, which simply asks participants to choose yes, no, or I don't know about a family member who was diagnosed with prostate cancer.

The next four items, 10-13, are ordinal level items pertaining to the dependent variable, intent to screen. They were composites to measure the direction of the dependent variable. The answers for the next four items were measured on a four-point Likert-scale as follows: 1 indicating no, 2 indicating maybe not, 3 indicating maybe yes, and 4 indicating yes. Item 10 asks participants if they intend to speak with their health care provider about prostate cancer screening in the next 12 months. Item 11 asks participants if they would plan to screen for prostate cancer in the next 12 months if their health care provider recommended it. Item 12 describes what digital rectal exam (DRE) is,and then asks participants if they would be willing to have the DRE. Finally, item 13 describes the prostate specific-antigen test and then asks participants if they would have the PSA test. The higher the composite score of items 10-13, the higher is the intention to screen for prostate cancer.

The Champion Health Belief Model Scale

The CHBMS is a worldwide known scale utilized by many researchers from various cultures for various purposes. The original scale came from Champion's

adaptation of the theory—the health belief model—for her instrument development (Champion, 1984). Champion introduced it in 1984. Initially, the scales began by focusing on perceived susceptibility. A total of 24 items were written to measure perceived susceptibility. Through content validity, the scale was contracted into a scale with six items (Champion, 1984). The first revision of the scale took place approximately a year later (Champion, 1985). Nonetheless, the perceived susceptibility scale was revised once more along with the development of the scale for benefits and barriers (Champion, 1993). The scale was utilized in a fairly large sample of women (*N* = 581), a Cronbach-alpha of .93 was realized with a test-retest reliability of .70. It also established predictive validity when susceptibility was significantly correlated with breast cancer screening behavior (Champion, 1995). Regarding the benefits and barriers scales, eight items were written for each, but through content validity by expert panel and confirmatory factor analysis, a total of five benefits items and eight barriers items were retained. Cronbach's alphas of .61 and .76 were determined for both scales, respectively (Champion, 1995).

In 1999, all three scales were revised (Champion, 1999). This time, a larger sample of women (*N = 804*) was incorporated. Among the women, 68% were Caucasian, and 30% were African American. The remainder of the sample was of Asian, Native American, and Hispanic descent. Inclusion criteria included being age 50 or over and not having had a mammogram in the last 15 months (Champion, 1999). Finally, Champion (1999) reported that both reliability and validity were confirmed. The collected scales were reduced to a 16-item scale. All three items of susceptibility were inclusive to the scale with a standardized item alpha of .87. For benefits, only one item

was omitted. The other five items were found to have a final standardized item alpha of .75. For barriers, all items were retained. The removal of any item would not change the item alpha. A final standardized item alpha of .88 was attained for this scale.

The HBM comprises of six constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Champion & Skinner, 2008). However, the literature has shown that perceived susceptibility, perceived benefits, and perceived barriers were the strongest predictors regarding health care behaviors (Champion & Skinner, 2008). Champion (1999) found that the HBM construct perceived severity had too little variance in its measurement with regard to perceived susceptibility; therefore, Champion deemed it unnecessary. The logical explanation is that an individual who perceives that he or she is susceptible to a disease, is more likely to be influenced by the benefits of taking action, and lacks barriers to take action rather than the severity of letting the disease untreated. It was established that perceived threat could be measured by the combination of perceived susceptibility and perceived severity. However, Champion's findings indicate that perceived threat could be measured by perceived susceptibility alone (Champion, 1999; Champion et. al., 2004).

For this particular study, the 1999 revised version of CHBMS (Appendix H) was adapted. This scale is a 16-item scale subdivided into three to measure the specific three HBM theoretical predictors: perceived susceptibility with items 1-5; perceived benefits with items 6-11; and perceived barriers with items 12-16. The scale was modified to address prostate cancer instead of breast cancer. The word "breast" was replaced by the word "prostate." The word "mammography" was replaced by "prostate cancer

screening." In addition, there was a definition reference of prostate cancer screening defining both the DRE and the PSA test. Furthermore, the scale was translated into Haitian Creole and in French to account for the language barrier.

Reliability

Reliability is defined as the degree of consistency or dependability with which an instrument measures an attribute (Polit & Beck, 2012). It is an indicator that the instrument will maintain its performance regularly and produce similar results. The CHBMS was tested over time for reliability using test-retest correlation. The correlations of all test-retests were found to be significant at the .01 level: susceptibility (r = .62), benefits (r = .61), and barriers (r = .71). A final standardized alpha was generated for each construct: susceptibility (α = .87), benefits (α = .75), and barriers (α = .88) (Champion, 1999). The Cronbach's alpha (α) is a reliability index that estimates the internal consistency of an instrument (Polit & Beck, 2012). It ranges from 0.0 to 1.0; thus, an alpha of .7 is said to be adequate. Champion's results reflect reliability.

Huaman et al. (2011) conducted a correlational cross-sectional study to validate the Champion's scale in Peru. The scale was adapted to measure perceived susceptibility for breast cancer and perceived benefits and barriers for mammography with Peruvian women with age ranges from 40-65. A group of experts developed and pretested a Spanish version of the Champion's scale to assess its comprehensibility (N = 20). Factor analysis, internal consistency, and test-retest reliability analyses were performed with another sample (N = 285). In the statistical analyses, t-test and multiple regression were utilized to adjust for socio-demographic factors, mammography knowledge and other preventive behaviors. In addition, scores from participants who had a mammogram and

those who did not have it in the previous 15 months were compared to obtain concurrent validity. The results found that the construct validity and reliability were optimal. Cronbach-Alpha coefficients were 0.75 (susceptibility), 0.72 (benefits) and 0.86 (barriers).

Kharameh, Foroozanfar, and Zamanian (2014) conducted a study to determine the psychometric properties of the Persian version of Champion's Health Belief Model Scale of breast cancer screening in the measurement of beliefs toward colorectal cancer (CRC) screening. The CHBMS was translated into Persian through the 'forward-backward' procedure. A convenience sample of 200 individuals aged 50 years and older was recruited from the population at the outpatient clinics in the three teaching hospitals. Validity was assessed using content, face, and construct validity. Test-retest procedure was used to determine reliability by using Cronbach's alpha coefficient. The Cronbach's alpha of the subscales ranged from 0.57 to 0.89 and test-retest reliability ranged from 0.81 to 0.93 indicating a good range of reliability. The results indicate that the Persian version of Champion's Health Belief Model Scale of CRC screening has good psychometric properties and could be an appropriate measure for health beliefs related to CRC screening in national and international studies.

Validity

Validity is defined as the degree to which an instrument measures what it is intended to measure (Polit & Beck, 2012). The validity coefficient ranges from 0.0 to 1.0. There are several types of validity: face validity, content validity, criterion validity, and construct validity. For this instrument, face and content validity were achieved through expect panels. The original instrument was validated by an eight-judge panel

(Champion, 1984). As the instrument went through the many revisions, content validity was established by a panel of experts who were familiar with the health belief model.

Champion (1999) reported that the construct validity of the revised 16 items was examined using two types of factor analysis: an exploratory factor analysis using principal components extraction with a varimax rotation and a confirmatory factor analysis using LISREL. Champion (1999) expressed that confirmatory factor analysis has the advantages over an exploratory approach. Since relationships are hypothesized between the observed variables and latent variables, confirmatory factor analysis is able to test how well items fit with theoretical concepts. It is suggested that any value close to .9 is a good fit. The Goodness of Fit ratio for these data from this instrument was .87 and *t*-values for each item were tested for fit with each latent construct. All *t*-values were found to be significant for each item and for the identified latent variable. Lambda values, which are interpreted like factor loadings, ranged from .68 to .90 for the susceptibility scale, .40 to .83 for the benefit scale, and .44 to .69 for the barrier scale. The instrument was deemed to be a good fit.

The instrument was adapted by several researchers used with a variety of ailments within various cultures (Atulomah et al., 2010; Champion & Scott, 1997; D'Souza et al., 2011; Huaman et al., 2011; Kharameh et al., 2014; Kleier, 2009) and referred to the instrument as construct valid. There may have been some limitation with regard to emotional feeling that may influence health behavior (Huaman et al., 2011). However, the literature supports the instrument's construct validity.

Scoring of the Instrument

The instrument is a composite of three subscales: perceived susceptibility with items 1-5; perceived benefits with items 6-11; and perceived barriers with items 12-16. The responses of each subscale are based on a Likert scale format ranging from 1 (strongly disagree) to 4 (strongly agree). The scores of each response were summed to convey a score for each construct. The score for perceived susceptibility (perceived threat) may range from 5 to 20. A high score indicates a high perception of susceptibility, whereas a low score indicates a low perception of susceptibility. The score for perceived benefits may range from 6 to 24. A low score indicates a low perception of benefits and a high score indicates a high perception of benefits. Finally, the score of perceived barriers may range from 5 to 20. The higher the score, the greater are the barriers, and the lower the score, the less are the barriers.

Data Analysis Plan

Data Cleaning and Storage

The researcher attended to and monitored the locked box to prevent any overflow of the box. The box was emptied intermittently and content (sealed envelopes) was moved into a larger locked container waiting to be transported back to the United States. Prior to entering the data for analysis, the researcher examined each questionnaire for incomplete data. Any questionnaire with more than 30% missing data would be excluded from data entry and analyses (Berg and Lune, 2012; Creswell, 2007). All data were entered into the software, Statistical Package for the Social Sciences (SPSS) version 22 for analyses and interpretation. Data were also rechecked visually and scores were summed manually for computation accuracy. To check for flawed data and outliers,

frequency distributions were conducted. Finally, all digital files were stored in at least three different locations (flash drive, external drive, and the cloud). All paper data were stored away in a locked cabinet only accessible to the researcher. Data will be kept for a maximum of 5 years upon completion of the study and then will be destroyed by this researcher in accordance with Barry University protocol.

Analysis of Data

Data were analyzed using descriptive statistical techniques and inferential analysis including correlation statistics (logistic regression). First, frequency distributions were used to detect any flaws or outliers. Descriptive statistics were utilized to describe the characteristics of the sample through frequencies, percentages, measure of central tendency (means) and measure of variability (standard deviation and variance) (Polit & Beck, 2012; Pyrczak, 2010). Regression statistical analysis was used to examine the relationships among the variables. Logistic regressions were used in lieu of multiple regression to explore the predictive relationships (Starkweather and Moske, n.d.). Other statistical techniques such as the Kruskal-Wallis test, a non-parametric ANOVA was applied to determine any differences between the variables. Further details for the use of these specific analyses are discussed in Chapter Four.

Chapter Summary

The chapter discussed the plan or the research strategy through which the study was conducted, including an overview of the research design, the description of the setting, and the sample. The discussion of the sample also included the inclusion and exclusion criteria for participants. One of the key subheadings of the chapter is the ethical considerations/protection for human subjects. Under this subtitle, the discussion

explicated the history behind the creation of the Institutional Review Board, a board that is now essential to research regulations. Furthermore, it laid out the details regarding access and recruitment of participants. The chapter also discussed the procedure for data collection including the instruments, which were applied to conduct the study. In addition, it presented the plan for data analysis, which consists of data cleaning/storage and analysis of data. All subheadings include the detailed systematic of how the study was conducted.

CHAPTER FOUR

FINDINGS OF THE STUDY

The purpose of this study was to examine the predictive nature of specific variables of the health belief model, perceived susceptibility to prostate cancer, perceived benefits of being screened for prostate cancer and perceived barriers to being screened for prostate cancer, to one outcome variable, the intent to be screened for prostate cancer among age appropriate Haitian men living in Haiti. In addition, variables (levels of education, marital status, religion, and family history) that have been associated with health protective behaviors for other screening practices among other population were considered as predictors to the intent of prostate cancer screening among this population. The purpose was accomplished by asking a series of research questions via surveys. This chapter will present the characteristics of the sample, psychometric estimation of reliability of the instrument as internal consistency, descriptive information related to the scores on the scales, and the outcome of hypothesis testing.

The data were collected over a period of 2 weeks using the following instruments: the researcher-developed demographic questionnaire (Appendix G) and a modified version of the Champion Health Belief Model Scale (Appendix H) adapted for prostate cancer screening for a composite of 29-item survey. A total of 200 surveys were collected from Haitian men living in Haiti. Upon receipt of the surveys, they were numbered and examined for completeness; only surveys containing completed scales were used in the analyses. All surveys were complete and used for data analysis. Data for statistical analyses were taken from 200 surveys and then were entered into SPSS version 22. Accuracy of data entry was assured by examining frequency tables for

impossible values. Additionally, responses on the variable scales were both manually and computer summed. Subtraction of these two sums resulted in a zero difference indicating that the responses to the individual items had been entered correctly. Data were analyzed using SPSS version 22. Various types of analysis were conducted including descriptive and correlational statistics. Hypotheses testing was conducted using binary logistic regression instead of linear multiple regression and Kruskal-Wallis test (*H*), the nonparametric approach to one-way ANOVA.

Characteristics of the Sample

The sample consisted entirely of males, ranging in age from 45 years to 75 years ($M = 55.29$, $SD = 9.28$), who self-reported as being Haitian of African descent. None of the participants had lived outside of Haiti in the past 5 years. The sample was a compilation of participants from eight different states out the 10 official states of Haiti. The majority was from Ouest ($n = 41$; 20.5%), Nord ($n = 40$; 20.0%), and Sud ($n = 38$; 19.0%). The remainder of the participants was drawn from Sud-Est ($n = 29$; 14.5%), Artibonite ($n = 25$; 12.5%), Nord-Ouest ($n = 14$; 7.0%), Grand Anse ($n = 7$; 3.5%), and Nord-Est (n = 6; 3.0%). An overwhelming majority of these men had not been screened for prostate cancer with only one (0.5%) having ever been screened, 187 (93.5%) indicating they had never been screened, and 12 (6.0%) reporting they did not know if they had ever been screened.

Table 2

Characteristics of the Sample (N = 200)

Characteristic	*n*	%
Location of Birth		
Nord-Est	6	3.0
Grand Anse	7	3.5
Nord-Ouest	14	7.0
Artibonite	25	12.5
Nord	40	20.0
Sud-Est	29	14.5
Sud	38	19.0
Ouest	41	20.5
Level of education completed		
Primary school	125	62.5
Secondary school	59	29.5
University	16	8.0
Marital status		
Single	61	30.5
Married	90	45.0
Divorced	8	4.0
Widowed	4	2.0
Other	37	18.5
Religion		
Protestant	58	29.0
Catholic	138	69.0
Voodoo	3	1.5
None	1	0.5
Family history of prostate cancer		
Yes	42	21.0
No	137	68.8
Don’t know	21	10.5

The demographic data also inquired about the participants' level of education, marital status, religion, and family history of prostate cancer. Among the total participants, more than half of the participants reported to have completed primary school (n = 125; 62.5%). Among the remainder, 29.5% reported to have completed secondary school (n = 59), and 8.0% reported to have completed university (n = 16). Furthermore, the marital status was distributed as follows: 45% reported to be married (n = 90), 30.5 % reported to be single (n = 61), 18.5% reported to be in other types of relationships (n = 37), 4.0 % reported to be divorced (n = 8), and 2.0% reported to be widowed (n = 4). Concerning religion, the majority of the participants reported to be Catholic (n = 138; 69.0%). The remainder reported to be Protestant (n = 58; 29%), Voodoo practitioner (n = 3; 1.5%) and to have no religion (n = 1; 0.5%). Regarding family history of prostate cancer, the majority of the participants reported no family history (n = 137; 68.8%). Of the remainder, 21% reported to have a family history of prostate cancer (n = 42), and 10.5% reported not to know if they have a family history or not (n = 21). Additional information related to the characteristics of the sample is provided in Table 2.

Results of Psychometric Estimations

Exploring the Data

The data were explored to determine the descriptive values of the scores for all scales. The values include the scores for all the predictor variables of the Champion Health Belief Model Scales modified for prostate cancer screening. Data measuring the outcome variable, intent to be screened for prostate cancer (demographic survey items 10, 11, 12, and 13), were evaluated for reliability as internal consistency and the frequency distribution of the scores

Descriptive Values for the Scores on the Scales.

The sums for each predictor variable, perceived susceptibility to prostate cancer, perceived benefits to being screened for prostate cancer, and perceived barriers to being screened for prostate cancer, were calculated. The same analysis was carried out for the outcome variable, intent to be screened for prostate cancer. Table 3 provides a summary of the description of these values.

Table 3

Descriptive for the Predictor and Outcome Variables (N = 200)

Variable	Number of items on scale	*M*	*SD*	Actual Range	Possible Range
Perceived susceptibility to prostate cancer	5	13.05	3.43	[5, 20]	[4, 20]
Perceived benefits to being screened for prostate cancer	6	18.55	2.73	[6, 24]	[6, 24]
Perceived barriers to being screened for prostate cancer	5	11.77	2.44	[5, 19]	[5, 20]
Intent to be screened for prostate cancer	4	13.61	2.60	[4, 16]	[4, 20]

Reliability as Internal Consistency.

The items on the measurement scales were subjected to analysis using Cronbach's alpha (α). The benchmark for acceptable reliability of individual items was a corrected item-total correlation of at least .30 and at least .70 for the entire scale. Table 4 provides a summary of the reliability values for the entire 20-item scale, inclusive of the items on the subscales and the four subscales. With the exception of the subscales to measure

perceived susceptibility to prostate cancer and perceived benefits to being screened for prostate cancer, the scales did not achieve the accepted benchmarks for reliability as internal consistency.

Table 4

Summary of Reliability Values for the Scales (N = 200)

Scale	Number of items on scale	Corrected item-total correlation range	α
Entire scale	20	[.00, .51]	.67
Perceived susceptibility to prostate cancer	5	[.59, .73]	.85
Perceived benefits to being screened for prostate cancer	6	[.37, .71]	.79
Perceived barriers to being screened for prostate cancer	5	[.20, .54]	.63
Intent to be screened for prostate cancer	4	[.22, .48]	.55

Distribution of Scores

Scores on the outcome variable, intent to be screened for prostate cancer, ranged from a minimum of four to a maximum of 16. Distribution of these scores were examined. Measures for skewness and kurtosis indicate the extent to which a distribution departs from the normal curve; values that depart from zero indicated that the distribution, to some extent is not normal. The value for skewness, -1.16, *SE* - .17, indicated that the scores tend to skew to the left with scores piling up on the higher side of the distribution. The measure of kurtosis, 1.23, *SE* = .34, indicated that the scores tend

to assume a pointy curve. The significant Kolmogorov-Smirnov (*K-S*) statistic, .19, *df* = 200, *p* = .00, indicated that the distribution of the scores was not normal.

Measures of central tendency (*M* = 13.62, *SE* = .18, 95% CI lower bound = 13.25 to upper bound = 13.98, *Md* = 14.00, *SD* = 2.60) indicated that the *M* and *Md* scores were very similar. Stem and leaf plot identified three extreme scores at the lower end of the distribution (< 5.0) and no extreme cases at the upper end of the distribution. The scores were not normally distributed, and no attempt to transform scores was made. The histogram of scores for the outcome variable, intent to be screened for prostate cancer, is presented in Figure 7.

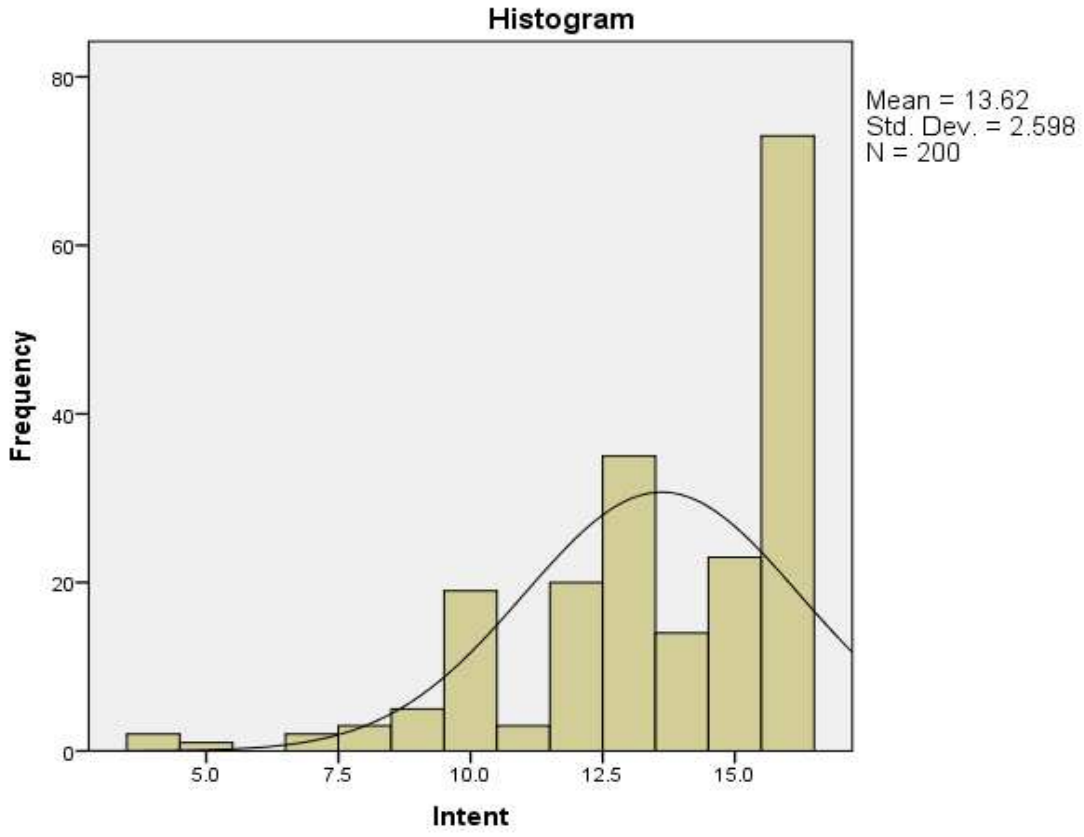

Figure 7. Frequency histogram with normal curve superimposed on scores for intent to be screened for prostate cancer.

Since the scores for intent to be screened for prostate cancer were not normally distributed, they were not appropriate for parametric testing. No attempt was made to transform the data because a robust alternative to parametric testing was available. Using the median score (*Md* = 14) as the dividing point, these continuous level scores were collapsed into two categories representing dichotomous data and coded as:

0. Unlikely to be screened for prostate cancer – scores 4 to 13
1. Likely to be screened for prostate cancer – scores 14 to 16

This categorization resulted in 45% (*n* = 90) of the participants falling into the unlikely to be screened for prostate cancer category and 55% (*n* = 110) falling into the likely to be screened for prostate cancer category. The bar chart of the recoded scores is presented in Figure 8.

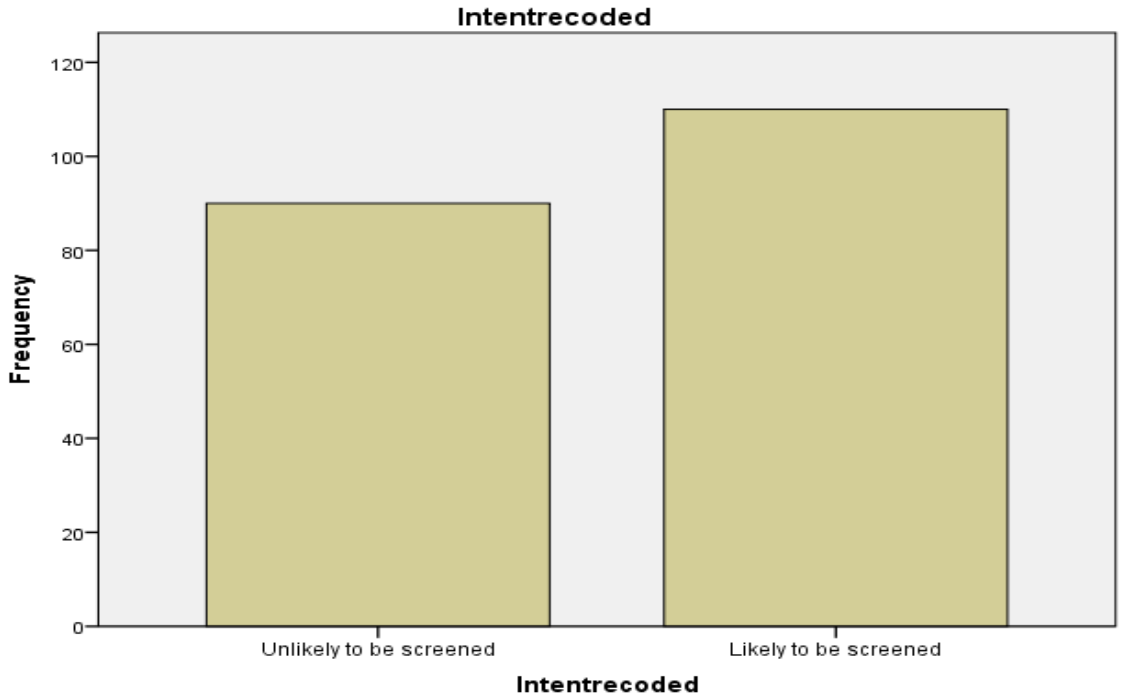

Figure 8. Bar chart of scores for outcome variable, intent to be screened for prostate cancer, recoded into dichotomous, categorical level data.

Testing for the Assumption of Independence of Independent Variables

Prior to hypothesis testing, the assumption of independence of independent predictor variables was assessed using collinearity statistics for tolerance and variance inflation factor (VIF). Multicollinearity exists when there is a strong correlation between two or more independent predictors. The tolerance is the proportion of the variability in one independent variable that is not explained by the other independent variables. Tolerance values may range from 0 to 1; the bigger the tolerance, the more useful the independent variable is to the analysis; the smaller the tolerance, the higher the collinearity. A tolerance value of .10 or smaller indicates severe collinearity. In this data, the tolerance values ranged from a low of .96 to a high of .98. These values were very close to 1, which is the highest tolerance value. Hence, the independent variables of the study were of high importance to the analysis.

The VIF indicates whether an independent variable has a strong linear relationship with the other independent variables. If the VIF values exceeds 10 or if the average VIF is greater than 1, multicollinearity is a concern. In this data set, VIF values ranged from 1.01 to 1.04; the average was 1.03. These values were accepted as confirmation that collinearity was not a problem for the model.

Hypothesis Testing

Seven hypotheses were posed. All hypotheses testing anticipated normal distribution of the scores for the outcome variable, intent to screen for prostate cancer. The general statistical plan was composed of parametric testing strategies. However, as these scores failed to achieve a normal distribution, they violated an essential assumption necessary for parametric testing. The scores for this variable were recoded into

dichotomous, categorical level data and the hypothesis statistical testing plan was reformulated for nonparametric testing using binary logistic regression instead of linear multiple regression and Kruskal-Wallis test (*H*), the nonparametric approach to one-way ANOVA.

Since the statistical plan changed, the power analysis for determination of sample size was recalculated using G*Power (Heinrich Heine Universitat Dusseldorf, 2014). The sample size needed for the Kruskal-Wallis test remained the same at 200. A logistic regression analysis using the input parameters of a two-tailed test, odds ratio (OR) of 1.68 (equivalent to Cohen's $d = 0.2$, small effect size) (Chin, Cohen, & Chen, 2010), alpha = .05 and power = .80, indicated that a sample of 192 would be needed. Since this study recruited a total of 200 participants, a post hoc analysis was completed using G*Power with input parameters of two tailed test ($OR = 1.22$ and $N = 200$) to ensure sample size adequacy. Based on the OR achieved, the achieved power for this sample size was .17, far short of the .80 considered optimal to detect significance.

However, some authorities contend that logistic regression does not require stringent attention to sample size. Several prominent authorities (Hosmer & Lemeshow, 2000; Hsieh, Bloch, & Larsen, 1998; Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996) have offered alternate methods to calculate sample size for logistic regression. Hosmer and Lemeshow (2000) recommend using the rule of 10 as a guide whereby 10 subjects are recruited for each independent variable and that the 10 events per parameter rule should work well. Others (Long, 1997; McDonald, 2014; Vittinghoff & McCulloch, 2007) maintain that the rule of 10 subjects per predictor variable is too conservative and recommend that, if the resulting number is less than 100, the sample size should be

increased to at least 100 with approximately 20 subjects per predictor variable. Following this reasoning, the sample of 200 was considered adequate.

Restatement of Research Questions and Hypotheses

Hypothesis 1

RQ1: What is the relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and the intention of Haitian men in Haiti to screen for prostate cancer?

Hypothesis 1 considered the predictive relationship between three independent predictor variables, perceived susceptibility to prostate cancer, perceived benefits of being screened for prostate cancer, and perceived barriers to such screening and one outcome variable, intent to screen for prostate cancer. Due to the abnormal distribution of the scores, adjustments were made for data analysis accommodation. As a result, this hypothesis considered three continuous level data predictors and one dichotomous, categorical outcome variable. The appropriate statistical test was binary logistic regression.

Logistic regression can predict which of two categories a person is likely to belong to given certain other information. Assumptions for logistic regression include: (a) *Linearity*—this indicates that there is a linear relationship between the predictor variables and the outcome variable; (b) *Independence of errors*—this indicates that the cases of data are not related or that the same people have not provided data at more than one point in time; (c) *Multicollinearity*—this assumption has been met by the testing for tolerance and VIF and found to be acceptable (Field, 2009).

This hypothesis anticipated that there would be a significant positive predictive relationship between these predictors and the outcome variable. This research hypothesis was accepted. Analysis of the data finds the model to be significant, , χ^2 (3) = 14.47, p = .00, indicating that, at least one of the predictor variables (perceived benefits) is significantly predictive of the outcome variable of intent to be screened for prostate cancer. Furthermore, the nonsignificant Hosmer and Lemeshow statistic, χ^2 (8) = 4.33, p = .83, supports that the data was a good fit for the model.

Table 5

Logistic Regression Predicting Intent to be Screened for Prostate Cancer from the Theoretical Predictor Variables (N = 200)

Predictor	*B*	*SE*	*p*	*OR*	95% CI
Perceived susceptibility to prostate cancer	.04	.04	.32	1.04	[0.96, 1.14]
Perceived benefits of screening for prostate cancer	.16	.06	.01	1.17	[1.04, 1.33]
Perceived barriers to prostate cancer screening	-.12	.06	.06	.89	[0.78, 1.00]
Constant	-1.95	1.46	.18	.14	

Note. CI = confidence interval for odds ratio (OR).

Hypothesis 2

RQ2: Which of these select health belief model's constructs (perceived susceptibility, perceived benefits, and perceived barriers) is the most significant positive predictor to the intention of Haitian men in Haiti to screen for prostate cancer?

Hypothesis 2 accompanies hypothesis 1 and aimed to identify the predictor variable, which was most influential in the model. The research hypothesis anticipated

that the perception of susceptibility to prostate cancer would be the most influential predictor. This hypothesis was rejected. Examination of the individual significance values found only perceived benefits of screening for prostate to be a relevant predictor of intent to be screened for prostate cancer among this sample. Table 5 provides a summary of the model.

Hypothesis 3

RQ3: What is the relationship between Haitian men of different ages and their intent to screen for prostate cancer?

Hypothesis 3 sought to determine if there is a relationship between the age of the men and their intent to be screened for prostate cancer. As the outcome variable has been changed from continuous level data to categorical level, the hypothesis was changed to consider if the likelihood of being screened for prostate cancer was predicted by the participants' age. The research hypothesis anticipated that as Haitian men aged, their intent to screen for prostate cancer would increase. This hypothesis was rejected. Another binary logistic regression was performed and the model was not significant, χ^2 (1) = 3.59, p = .06. The nonsignificant Hosmer and Lemeshow statistic, χ^2 (7) = 10.25, p = .17, supports that the data were a good fit for the model. Table 6 presents the summary of this logistic regression analysis.

Table 6

Logistic Regression Predicing Intent to be Screened for Prostate Cancer from Age (N = 200)

Predictor	*B*	*SE*	*p*	*OR*	95% CI
Age	.03	.02	.06	1.03	[1.00, 1.06]
Constant	-1.43	.88	.10	0.24	

Hypotheses 4, 5, 6, and 7

What is the difference of intent to screen for prostate cancer among Haitian men (RQ4) of different levels of education; (RQ5) of different marital status; (RQ6) of different religions; (RQ7) with or without family history of prostate cancer?

Table 7

Summary of Results of Hypothesis Testing Using Kruskal-Wallis Nonparametric One-Way ANOVA

Hypothesis	*H*	*df*	*p*
Hypothesis 4. There will be a statistically significant difference in intent to screen for prostate cancer among Haitian men of different levels of education.	1.38	2	.51
Hypothesis 5. There will be a statistically significant difference in intent to screen for prostate cancer among Haitian men of different marital status.	10.68	4	.03
Hypothesis 6. There will be a statistically significant difference in intent to screen for prostate cancer among Haitian men of different religions.	1.37	3	.71
Hypothesis 7. There will be a statistically significant difference in intent to screen for prostate cancer among Haitian men with or without a family history of prostate cancer.	4.42	2	.11

Hypotheses 4, 5, 6, and 7 each anticipated differences in intent to screen for prostate cancer based on four demographic variables: (H4) level of education completed, (H5) marital status, (H6) religion, and (H7) family history of prostate cancer. As the scores for intent to be screened for prostate cancer were not normally distributed, comparison between groups was carried out using the nonparametric Kruskal-Wallis (*H*) analysis of variance (ANOVA); significant findings were followed up using Mann-Whitney (*U*) analyses with a Bonferroni correction so a .0125 level of significance was used. All of these research hypotheses were rejected; no significant differences in the rankings of the participants' intent to be screened for prostate cancer were found between educational groups, marital status groups, groups based on religion or family history. Table 7 provides a summary of these results.

Chapter Summary

This study recruited a sample of 200 participants ($N = 200$) meeting eligibility criteria who provided complete data sets for analysis. Demographic data indicated that the sample was drawn from a wide geographical area of Haiti. Several concerns found in the analysis of the data limit the ability to have confidence in the results. The measures for the predictor variables and the outcome variable were analyzed for reliability as internal consistency but fell short of the benchmarks accepted as indicating reliability so results using these measures must be considered with caution. Furthermore, the scores for the outcome variable were not normally distributed, thus violating one of the essential assumptions of parametric testing. As a result of this violation, the scores for the outcome variable were recoded into dichotomous, categorical level data, the plan for parametric statistical testing was abandoned and nonparametric approaches were used to

test the hypotheses. Using logistic regression technique, the full model using three predictors and one outcome variable was significant; however, only one of the predictors, the perception of the benefit to being screened for prostate cancer, was significantly related to the intent to be screened for prostate cancer. Additional hypotheses using select demographic variables, age, level of education completed, marital status, religion, or having had a family member with prostate cancer, were tested, but none were significant with the outcome variable, intent to be screened for prostate cancer.

A power analysis was carried to recalculate the sample size for the nonparametric logistic regression tests; the sample of 200 fell short of 234, the number considered optimal to achieve adequate power. While this may affect the confidence in the results of the logistic regressions, other authorities provide guidance, which supports that the sample of 200 is sound for the analyses.

CHAPTER FIVE

SUMMARY AND DISCUSSION

Prostate cancer is one of the top cancers that affects the lives of men and their family. The literature maintains that early detection is the key factor for the high survival rate from prostate cancer (American Cancer Society, n.d.; Canadian Cancer Society, n.d.; CDC, 2013). Many studies have reported that being of African descent is a major contributing factor in contracting prostate cancer. Although there are multiple studies addressing this disease regarding African American men, the literature on prostate cancer concerning Haitian men is very limited.

The most recent report of the global burden of cancer communicated 1,228 diagnosed cases of prostate cancer and 979 deaths per 100,000 persons of the population of Haiti (GLOBOCAN, 2012). These data were related to statistics reported from the years 2008 to 2012 and outlined in the GLOBOCAN report. Despite such high and increasing morbidity and mortality rates of prostate cancer, Haitian men's participation in prostate cancer screening remains low (Kleier, 2010). Consequently, the literature is in great need of studies focusing on Haitian men regarding prostate cancer and screening. Subsequently, it would decrease the gap and provide nurses and other health care professionals with the insight on how to defeat prostate cancer in Haitian men.

The purpose of this study was to examine the predictive nature of specific variables of the health belief model, perceived susceptibility to prostate cancer, perceived benefits of being screened for prostate cancer, and perceived barriers to being screened for prostate, to one outcome variable, the intent to be screened for prostate cancer among age appropriate Haitian men living in Haiti. Moreover, the study also explored the

relative contributions of these variables (age, level of education, marital status, religion, and family history) that have been associated with health protective behaviors for other screening practices as predictors to the intent to screen for prostate cancer among this population.

This chapter encapsulates the study results and discusses the researcher's findings as they relate to the research hypotheses. The major points that will be discussed in this chapter include the following: findings related to demographic and background characteristics of the participants; relationship between select demographic variables (age, level of education, marital status, religion, and family history of prostate cancer); relationship between the predictor variables of the health belief models (perceived susceptibility to prostate cancer, perceive benefits to screening for prostate cancer, and perceived barriers to be screened for prostate cancer) and the outcome variable (intent to screen for prostate cancer). Topics in this chapter will include: (a) summary of the study, (b) summary and discussion of the findings (c) significance of the study, (d) significance of the study to nursing, (e) strengths and limitations of the study, (f) recommendations for future study, and (g) conclusions.

Summary of the Study

Among the many forms of cancer that affect the lives of men and their families around the world, prostate cancer is one of the top five cancers posing a threat to their lives. Prostate cancer is currently classified as the fourth most common type of cancer and the second most common cancer in men, yielding only to lung cancer (GLOBOCAN, 2012). Through the GLOBOCAN report of 2012, the World Health Organization (WHO) reported that an estimated 1.1 million men were diagnosed with prostate cancer in 2012.

That estimate accounted for 15% of all the cancers diagnosed in men (GLOBOCAN, 2012). Prostate cancer is the fifth leading cause of death from cancer in men. In 2012, the Global Burden of Cancer committee from WHO calculated an estimated 307,000 deaths from prostate cancer (GLOBOCAN, 2012). The mortality rates are predominantly high in Black populations. Although men are affected worldwide, the disparity of occurrence and treatment is inescapable among the Black populations. In the United States of America, the Division of Cancer Prevention and Control of the Centers for Disease Control and Prevention (2011) stated that cancer is second to heart disease at a rate of 172.3 per 100,000 in the population and among the top ten causes of death among African American men, with prostate cancer accounting for the majority of the cases. Moreover, the risk factors for prostate cancer only seem to mirror the data with age and ethnicity as the primary risk factor in attaining prostate cancer. Concerning ethnicity, Afro-Caribbean men rank at the top for having prostate cancer, whereas Asian men rank at the very bottom (GLOBOCAN, 2012; Kenny et al., 2014). Haitian men living in Haiti, a West Caribbean country, may be portrayed as a prime example of this phenomenon.

Presently, Haiti is tiered as the 10th in the world regarding prostate cancer mortality rate (World Life Expectancy, n.d.). In 2002, Haiti had 767 cases of prostate cancer with 403 deaths from prostate cancer (International Agency for Research on Cancer, 2005). In 2012, it was reported that Haiti had 1,228 diagnosed cases and 979 deaths from prostate cancer (GLOBOCAN, 2012). In view of the data, the mortality rate is about 80% of the incidence rate. Therefore, the survival rate is only about 20% as compared to American men (5-year survival rate at 100%, 10-year survival rate at 99%, and 15-year survival rate at 94%) according to the latest information posted in ACS

website as of March 2015 (American Cancer Society, n.d.). The literature supports that early detection of cancer comparable to prostate cancer through the use of screening tools similar to prostate specific antigen (PSA) test and digital rectal exam (DRE) are key factors to increasing survival rate (American Cancer Society, 2015). Unfortunately, there is a great gap in the literature regarding Haitian men and prostate cancer. Furthermore, the limited research supports that Haitian men's participation in prostate cancer screening is low (Kleier, 2010). Many factors may contribute to a Haitian man's decision to partake in prostate cancer screening. His general perception of health; his beliefs, whether religious or cultural; and perhaps his level of education may influence his decision. It is imperative to acquire some understanding regarding Haitian men's health beliefs in order to better serve them accordingly.

The goal of this study was to explore the predictability of select constructs (perceived susceptibility to prostate cancer, perceived benefits to be screened for prostate cancer, and perceived barriers to being screened for prostate cancer) with regard to Haitian men's intention to be screened for prostate cancer. The study also examined whether select demographic variables such as age, level of education, marital status, religion, and family history of prostate cancer would be considered as contributing factors to Haitian men's decision making regarding getting screened for prostate cancer. Consequently, the results of this study can provide insight in the development of culturally appropriate interventions and implementation of services to help decrease the morbidity and mortality rates of prostate cancer among Haitian men living in Haiti or abroad. The studied hypotheses and their related findings should offer some clarity on how interventions may be implemented. Most importantly, the results of this study have

helped bridge the gap that currently exists in the literature with regard to Haitian men and prostate cancer. The results have augmented to the body of knowledge of what is known on prostate cancer screening as pertained to Haitian men.

Champion's adaptation of the health belief model (1999) served as the main theoretical framework for this study. Additionally, the Purnell model for cultural competence (2008) was utilized as a complementary framework to account for cultural factors affecting the study. The following hypotheses were tested:

RH1: There will be a statistically significant positive predictive relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and Haitian men's intent to screen for prostate cancer.

RH2: Perceived susceptibility will be statistically the most significant positive predictor to intention of Haitian men in Haiti to screen for prostate cancer.

RH3: There will be a statistically significant positive relationship between Haitian men of different ages and their intent to screen for prostate cancer.

RH4: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men of different level of education.

RH5: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men of different marital status.

RH6: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men of different religious beliefs.

RH7: There will be a statistically significant difference of intent to screen for prostate cancer between Haitian men with or without family history.

A descriptive correlational predictive cross-sectional design was used to explore the relationship between the predictor variables (perceived susceptibility, perceived benefits, and perceived barriers); contributing variables (age, level of education, marital status, religion, and family history of prostate cancer); and the outcome (dependent) variable (the intention of Haitian men to be screened for prostate cancer). Data were collected in Haiti over a period of 2 weeks. Participants (N = 200) were recruited throughout Haiti from numerous states surrounding the Université Polyvalente d' Haiti (UPH) campuses. All participants conveyed their input via two instruments combined into a 29-item survey. The demographic questionnaire was a 13-item researcher-developed instrument that was used to describe the sample and establish homogeneity. It also played the role in measuring the outcome variable. The other instrument was a 16-item standardized instrument of the Champion's Health Belief Model Scale for breast cancer screening modified for prostate cancer screening. It was utilized to measure the major variables of the study. All data were entered into SPSS version 22 for analysis. The studied hypotheses were analyzed using descriptive statistics, Kruskal-Wallis test, and logistic regression techniques.

The recruitment was accomplished through convenience sampling. The sample covered eight of the 10 official states in Haiti. The majority of the participants were from Ouest (n = 41; 20.5%), Nord (n = 40; 20.0%) and Sud (n = 38; 19.0%). The remainder of the participants was drawn from Sud-Est (n = 29; 14.5%), Artibonite (n = 25; 12.5%), Nord-Ouest (n = 14; 7.0%), Grand Anse (n = 7; 3.5%), and Nord-Est (n = 6; 3.0%). The sample comprised exclusively of male participants, ranging in age from 45 years to 75 years (M = 55.29, SD = 9.28). They all reported to be Haitian of African decent, and

none of them had lived outside of Haiti in the past 5 years. All participants (93.5%) with the exception of one (0.5%) reported to have never been screened for prostate cancer. The other 6.0% (*n* = 12) indicated that they did not know if they had ever been screened. The majority reported to be married (n = 90; 45.0%), to have completed primary school (*n* =125; 62.5%), to be of the Catholic faith (*n* = 138; 69.0%), and to have no family history of prostate cancer (*n* =137; 68.8%).

Statistical analysis revealed that Hypothesis 1 was accepted while Hypotheses 2 through 7 were rejected. Hypothesis 1 predicted a statistically significant positive predictive relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and Haitian men's intent to screen for prostate cancer. The results supported that at least one of the predictor variables has such a relationship with the outcome variable. Hypothesis 2 was rejected. It projected that perceived susceptibility to prostate cancer would be the most influential predictor in the model. In lieu of that, analysis of the individual significance values found only perceived benefits of screening for prostate to be a relevant predictor of intent to be screened for prostate cancer among this sample. Hypothesis 3 predicted that the man's age would increase his intention to be screened for prostate cancer. This hypothesis was rejected.

The results did not support a significant relationship between the select demographic variables (age, level of education, marital status, religion, and family history) and the outcome variable. Furthermore, the scores for the outcome variable were not normally distributed, thus violating one of the essential assumptions of parametric testing. Adjustment had to be made to test the hypotheses through nonparametric

methods. Hypotheses 4 through 7 expected differences between the demographic variables and the dependent variable. All of these hypotheses were rejected. The results found no significant differences pertaining to the outcome variable.

Summary and Discussion of the Findings

The study findings are discussed as they relate to the participants' demographic and background characteristics. They are also deliberated in the framework of the hypotheses and the correlations established between the major study's variables. Each hypothesis is heeded accordingly. Furthermore, references to previous studies are presented where applicable in support of or in contrast to the findings of this study.

Demographic and Background Characteristics

This study used a convenience sampling approach to gather data from Haitian men. Hence, the demographic and background findings presented in this discussion will be paralleled with other study findings as well as demographic statistics for Haiti to establish a point of generalizability of the findings. Nonetheless, the primary step taken by this researcher to ascertain generalizability was to widen the range of location for collection. Collection took place in eight different states out the 10 official states in Haiti. The collection was distributed as follows: The majority were from Ouest (n = 41; 20.5%), Nord (n = 40; 20.0%) and Sud (n = 38; 19.0%). The remainder of the participants came from Sud-Est (n = 29; 14.5%), Artibonite (n = 25; 12.5%), Nord-Ouest (n = 14; 7.0%), Grand Anse (n = 7; 3.5%), and Nord-Est (n = 6; 3.0%). Although the states were not equally represented, the data were collected through the perception of eight of 10 official states in Haiti, subsequently 80% of the country.

The sample comprised entirely of males, ranging in age from 45 years to 75 years ($M = 55.29$, $SD = 9.28$). As compared to Haiti statistics, this age range belongs to 45.07% of the Haitian population, with 35.78% aged 25-54 (Central Intelligence Agency: The World FactBook, n.d.). The mean age for the sample of the study is more than twice the national mean for males of Haiti. The current national mean for males of Haiti is 22.3 years, with 22.5 years for the total population (Central Intelligence Agency: The World FactBook, n.d.). Such a radical difference in age is primarily due to the exclusion criteria of the study, which disqualified any participant below age 45.

Concerning level of education, the majority of the participants reported to have completed primary school ($n = 125$; 62.5%); the remainder reported to have completed secondary school ($n = 59$; 29.5%) and university ($n = 16$; 8.0%). The data mirrored the national statistics of literacy in Haiti with 60.7% for the total population and 64.3% for Haitian men. These percentages reflect the literacy rates meaning that those aged 15 and over can read and write (Central Intelligence Agency: The World FactBook, n.d; Colin & Paperwalla, 2013; Dash, 2001). This finding was anticipated due to the reality that exists in Haiti concerning education.

On the surface, the education system is the responsibility of the Ministry of Education and Professional Formation. However, the financial support for public schools from the ministry is almost nonexistent. Most educational institutions in Haiti are private and profit-based including primary and secondary schools. Although Haitians value education, very few of them are privileged enough to attain a formal education (Colin & Paperwalla, 2013). Consequently, most Haitians tend to halt their education after receiving the certificate of completion for primary school, which in itself is an

accomplishment. To receive this certificate, the student must go through some laborious comprehensive state exams consisting of general knowledge. At this level, the student is expected to speak, read, and write French at the basic level (Colin & Paperwalla, 2013). Hence, the study's inclusion criterion for participants to complete primary school was well within its merit to validate that the questionnaires were understood.

Regarding marital status, 45% of the participants reported to be married (n = 90), 30.5% reported to be single (n = 61), 18.5% reported to be in other types of relationships (n = 37), 4.0 % reported to be divorced (n = 8), and 2.0% reported to be widowed (n = 4). The data found in this study may be interpreted through different considerations given the reported Haitian national statistics. According to the Haitian Civil Code, the minimum legal age of marriage is 15 for women and 18 for men (Social Institution & Gender Index, n.d.). Yet, the marriage rate for young women (11.9-19.3) is approximately eight times greater than the rate for young men (1.5-2.3) (NationMaster, n.d.; UNICEF, 2013). The increase in marriage rate for young women versus men in Haiti may be due to the fact that some marriages are still arranged or forced, especially in case of rape or pre-marital pregnancy (Social Institution & Gender Index, n.d.). Moreover, approximately 85% of unions in Haiti take the form of *plasaj* (unregistered consensual unions) (CEDAW, 2008). This may explain the low percentage of divorce, in addition to the fact that the Haitian population is mainly Catholic.

Results of this study indicated that only 18.5% of the participants were in non-marital relationships, which contradicts the current statistics in Haiti. However, this percentage was added to the 45% reported to be married, the sample would represent a paralleled figure at 63.5%. This observation is being made in relation to the well-

accepted practice in Haiti for men to have both a wife and a mistress, with the latter relationship denoted as *plasaj* (CEDAW, 2008; Colin & Paperwalla, 2013). Furthermore, men seem to follow the trend of getting married at a later age. This may explain the percentage of the participants reported to be single.

Concerning religions, the majority of the participants reported to be Catholic (n = 138; 69%). The rest of the participants reported to be mainly Protestant (n = 58; 29%), Voodoo practitioner (n = 3; 1.5%), or to have no religion (n = 1; 0.5%). Among the Protestants, there were Adventist, Baptist, Church of God, Methodist, Nazarene, Pentecostal, and Jehovah Witness. This finding highly mirrors the national statistics. It is reported that 80% of the Haitian population are Catholics, whereas 16% are Protestants, 3% practice other form of religions, and 1% practice no religion (NationMaster, n.d.). Nonetheless, the notion of religion in Haiti is far more complex than being affixed under the above-mentioned categories. A polar notion exists that Haiti is 90 percent Catholic and 100 percent Voodoo. Voodoo is so pervasive in the Haitian culture, it can be considered as interchangeable with Catholicism (Dash, 2001). The practice of Voodoo has been long stigmatized and associated with the masses or the poor. Yet, the practice has been found to be widely adopted in private among various social classes. Most Haitians have a religion with Voodoo serving as a supplementary religion when it is needed (Colin & Paperwalla, 2013; Vonarx, 2011). Hence, the low percentage of Voodoo practitioners reported in the finding may not reflect the actual data.

Concerning family history of prostate cancer, the majority of the participants reported to have no family history of prostate cancer (n = 137; 68.8%). Among the remainder, 21.0% reported to have family history of prostate cancer (n = 42), and 10.5 %

(n = 21) reported not knowing if they have or had a family member with prostate cancer. This finding may be explained by a variety of rationales. The majority reported a firm "no" to family of prostate cancer. It may due to the fact that they do not have that information because it was not shared or because it is simply unknown. As Colin and Paperwalla (2013) discussed, Haitians are very private concerning their health matters. Many times, health information is kept from other family members, especially, if the health matter is relating to factors that are considered taboo by the culture. In addition, the information may not be known due to the lack of resources that exists in Haiti. A country that has a 9.4% of GDP regarding health expenditures (as reported in 2013), with 1.3 hospital beds (reported in 2007), 0.25 physicians, and 0.11 nurses and midwives (reported in 1998) per 1,000 people is in fact in an unsafe position to provide health care for its people (Central Intelligence Agency: The World FactBook, n.d.; NationMaster, n.d.).

Regarding intent to be screened for prostate cancer, the scores were not normally disseminated, triggering the need for a dichotomous rearrangement of the data. The categories were *Likely* and *Unlikely*. More than half of the participants fell under the category of *Likely* to be screened for prostate cancer category (n = 110, 55%), and the remainder fell under the category *Unlikely* to be screened for prostate cancer (n = 90, 45%). This finding was perhaps a revelation given the well-known myths related to manhood that are associated with prostate cancer and prostate cancer screening (Cobran et al., 2014; Ford, Vernon, Havstad, Thomas, & Davis, 2006; Lehto et al., 2010). In addition, the digital rectal exam (DRE) is one of the most commonly used for prostate cancer screening. The DRE consists of the insertion of a gloved finger into the rectum in

order for the nurse practitioner or other health care professionals to manipulate for size, growth, or nodules, etc. Such a practice may be controversial in cultures, including Haitian culture, where homosexuality is taboo (Colin & Paperwalla, 2013; Dash, 2001). Nonetheless, the 10% edge that is reported in this study toward likelihood to be screened for prostate cancer may be due to the submissive nature of Haitians towards authority figures. One of the questions addressing the intent to be screened for prostate cancer had a reinforcing cue (the recommendation of a health care professional). A health care professional is regarded as an authority figure. Therefore, it was expected that most Haitians would comply with such a recommendation.

Relationship Between Major Study Variables

Hypothesis 1. This hypothesis anticipated that there would be a statistically significant positive predictive relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and Haitian men's intent to screen for prostate cancer. Due to the negative skewness of the outcome variable scores, the scores were dichotomized to allow for binary logistic regression in lieu of multiple regression. As a result, this hypothesis now looks at three continuous level data predictors and one dichotomous categorical outcome variable. After the analysis of the data, the research hypothesis was accepted. Analysis of the data found the model to be significant, χ^2 (3) = 14.47, p = .00, indicating that, at least one of the predictor variables is significantly predictive of the outcome variable of intent to be screened for prostate cancer. Furthermore, the nonsignificant Hosmer and Lemeshow statistic, χ^2 (8) = 4.33, p = .83, supports that the data was a good fit for the model.

Among the three predictor variables, only perceived benefits of screening for prostate cancer was found to be a relevant predictor of intent to be screened for prostate cancer among this sample. This finding can be supported by the predictive cross-sectional study conducted by Abuadas, Petro-Nustas, and Albikawi (2015). They explored the strong factors linked to participation in prostate cancer screening among older Jordanian adults ($N = 432$) using the health belief model (HBM). They found that four out of the seven HBM-driven factors (perceived susceptibility, benefits and barriers to PSA test, and health motivation) were statistically significant. Those with greater levels of susceptibility, benefits of PSA test and health motivation and lower levels of barriers to PSA testing were more likely to participate in prostate cancer screening. Similar support may be found in the descriptive study by Ghodsbin, Zare, Jahanbin, Ariafar, and Keshayarzi (2013). They investigated the level of knowledge and health beliefs about prostate cancer screening among retired men ($N = 180$). They found 74.4% and 90.5% of them had good health motivation and perceived benefits scores, respectively.

Regarding the noted predictor, perceived benefits, this finding is similar to numerous studies that look at the constructs of the health belief model (HBM) as predictors to health behavior. Perceived benefits have been found to be a constant predictor. Tanner-Smith and Brown (2010) conducted a comprehensive literature review to address utility of the HBM. Using 10 electronic databases, they selected 39 published studies applying the HBM to mammographic and/or Papanicolaou (Pap) screening. In general, they found strongest support for the HBM's perceived benefit and barrier constructs compared to the other constructs. The weakest support was found for

perceived susceptibility and perceived severity. In addition, Donadiki et al. (2014) conducted a cross-sectional, descriptive study to explore the reasons for refusal of human papillomavirus (HPV) vaccination and to examine participants' perceptions and attitudes about the constructs of the health belief model (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy) among a sample of female university students ($N = 2007$). The predictors of non-HPV vaccination were determined by logistic regression models, using non-HPV vaccination as the dependent variable. Participants who had high scores for general perceived barriers, perceived barriers to vaccination, no perceived general benefits, no perceived specific benefits, and no general benefits were more likely to report being unvaccinated. The findings demonstrated that perceived barriers and perceived benefits were the dominant predictors to the outcome variable.

Thus, the utility of HBM constructs has established a wide confidence in predicting health behavior and intention. These studies mentioned above supports the finding of this study with regard to perceived benefits as significant predictor to the intent to be screened for prostate cancer. Nonetheless, the data for this study did not find any significant statistical support for the other two predictor variables examined by this study. Similarly, such a correlation is also present in several previous studies.

Hypothesis 2. This hypothesis is related to hypothesis 1. Hypothesis 1 proposed that there would a predictive relationship between the three predictors (perceived susceptibility, perceived benefits, and perceived barriers) and the outcome variables (intent to be screened for prostate cancer). Hypothesis 2 projected that perceived susceptibility would be statistically the most significant positive predictor to the intention

of Haitian men in Haiti to screen for prostate cancer. This hypothesis was rejected. The data analysis did not find enough evidence to support perceived susceptibility as a relevant predictor of intent to be screened for prostate cancer among this sample. This finding is in congruence with many other studies conducted using the HBM framework. The previously mentioned descriptive study by Ghodsbin et al. (2013) reported that only 7.2% of the subjects reported good susceptibility scores. This clearly indicated that perceived susceptibility was not a strong contender as predictor.

In other research that examined the HBM constructs as predictors, similar results were found not to be in favor of perceived susceptibility. Lo, Chair, and Lee (2014) conducted a cross-sectional, correlational study to identify the associations between self-efficacy and the various factors in the HBM, and the health-promoting behaviors of people with, or at high risk of, Metabolic Syndrome (MS). Data were gathered from a sample of 132 adults with two or more components of MS. The contributions of each HBM factor towards the respective behavior were identified using a three-step hierarchical regression approach. Only beliefs about barriers were found to be a significant predictor of exercise (β=-.28, $p<.01$). Statistically, the other constructs failed to be supported as predictors. Zhao et al. (2012) conducted a predictive cross-sectional study in the Hubei Province of China to examine predictors of condom use behaviors based on the HBM among female sex workers ($N = 427$). Through 363 valid surveys, they found that perceived benefits and perceived barriers were proximate determinants of condom use ($r = 0.23$ and $r = -0.62$, respectively).

Nevertheless, several studies also support perceived susceptibility as a strong predictor of health behavior. Kleier (2010) surveyed 143 Haitian-American men to (a)

look at if perceived susceptibility to prostate cancer was compatible with the objectively measured disease risk, (b) check the relationship of perceived susceptibility and fear, and (c) examine these constructs for their predictive relationships to screening behavior. Perceived susceptibility was highly correlated ($r = 0.82$, $p < 0.01$) to fear and screening behavior. Although it has been mostly in combination with other constructs, perceived susceptibility is usually noted as a strong predictor (Abuadas et al., 2015; Bennett, Buchanan, & Adams, 2012).

This hypothesis aligned with strong support from the literature. The model recognized that notion of perceived threat as the combination of perceived susceptibility and perceived severity (Champion & Skinner, 2008; University of Twente, n.d). Through a series of revisions and testing, the combined constructs, perceived susceptibility and perceived severity, were found to be the determinant of perceived threat (see Figure 4) (Becker & Janz, 1985). Perceived threat is considered the most predictive construct with regard to health-related behavior (Champion & Skinner, 2008). By means of several revisions, Champion found that the construct, perceived severity, has very little variance with perceived susceptibility. It was then determined that perceived threat could be measured by examining perceived susceptibility alone (Champion, 1999). Hence, if perceived susceptibility is the determinant of perceived threat, it may also be regarded as the most predictive construct of the HBM concerning health-related behavior. Nonetheless, similarly to others, this study demonstrates otherwise.

Hypothesis 3. This hypothesis originally suggested that there would be a statistically significant positive relationship between Haitian men of different ages and their intent to screen for prostate cancer. As the data for the outcome variable was

changed from continuous to categorical data, the hypothesis was reconfigured to consider if the likelihood of being screened for prostate cancer was predicted by the participants' age. The research hypothesis anticipated that Haitian men's intention to screen for prostate cancer would increase as they age. The data were analyzed through a binary logistic regression, and results indicated that the model to be not significant, χ^2 (1) = 3.59, p = .06. Therefore, this hypothesis was rejected. This suggested that age has no influence of Haitian men's intention to screen for prostate cancer.

This finding is not parallel with the model's assumptions. The HBM assumptions maintain that modifying variables play a major role in health beliefs, thereby influencing health behavior. Many studies have shown age as a major contributing factor to health behavior. Carter et al. (2010) conducted a quasi-experimental three-phase design study to evaluate the impact of prostate cancer education on screening rates among African American men in rural Black Belt counties in Alabama. They found that there was a correlation between age and prostate cancer screening. The chi-squared test showed a significant association between age and screening status *(p* = .009). Data were drawn from a sample of 105 Black men. About 64% of the age group 40–49 reported that they have never been screened, and the age group 70–78 is the most screened for prostate cancer.

Franklin (2013) led a quantitative nonexperimental descriptive study to measure the association between knowledge, health beliefs, demographic variables, patient-provider relationships, informed discussion, and African American men's decision-making ability regarding annual prostate cancer screenings. The sample (*N* = 306) consisted of African American men between the ages of 40 to 80 years from Nash

County, North Carolina. Categorical data were analyzed through chi-square test, and the results found that men over age 65 as opposed to younger men ($p < 0.01$) were more likely to participate in prostate cancer screenings. Similar support was found in other studies whether they were qualitative or quantitative in nature. Results showed that older men were more knowledgeable about prostate cancer and expressed less fear about the digital rectal exam than younger men (Franklin, 2013; McNaughton-Collins & Barry, 2011). Logistic regression analyses found that men who were 50 years and older and who had higher scores on the health values survey were more likely to have prostate cancer screening in the past year (age and health values, $\chi 2 = 22.71$, $p < .000$). Specifically, the odds of men 50 years and older having obtained PSA screening were about 16 times higher than those younger than 50 years of age *(odds ratio [OR]* = 15.72, *95% confidence interval [CI]* = 3.45 to 71.64) (Lehto et al., 2010).

Hypothesis 3 anticipated that the older the Haitian man was, the more likely he would intend to be screened for prostate cancer. This hypothesis was in congruence with many studies including the ones mentioned in this discussion. Statistically, the collected data from this sample was not significant to have this hypothesis upheld. The rejection of this hypothesis simply indicated that age was not contributing factor to the outcome variable.

Hypotheses 4, 5, 6, and 7. These four hypotheses are being grouped and addressed together due to the similarity of their proposal and the results of this study. They proposed that there would be a statistically significant difference of intent to screen for prostate cancer among Haitian men (RH4) of different level of education, (RH5) of different marital status, (RH6) of different religious beliefs, and (RH7) with or without

family history of prostate cancer. All four hypotheses were rejected. Due to the abnormal distribution of the score for the dependent variable (intent to screen for prostate cancer), the groups were compared using the nonparametric Kruskal-Wallis (*H*) test. The analysis found no significant differences between the groups in the rankings of the participants' intent to be screened for prostate cancer.

The rejection of these four hypotheses was unexpected. Similar results were found in a descriptive, cross-sectional study conducted by Lehto, Song, Stein, and Coleman-Burns (2010). They sought to identify social ecological factors that affect screening behaviors for prostate cancer in African American men and to ascertain knowledge that could be integral to the design of culturally appropriate interventions. Data analysis was carried out using chi-square tests, one-way ANOVA, and logistic regression. Variables such as age, marital status, education level, insurance status, and screening status were dichotomized to achieve appropriate values. Differing to the study expectations, screening behaviors were not influenced by marital status, education level, health insurance, stress coping, and provider trust.

In contrast of this finding, many studies have reported strong correlation between similar modifying variables and the dependent variables denoted as health behavior. Family history, presence of urinary symptoms, age, and knowledge about prostate cancer significantly predicted the participation in prostate cancer screening as indicated the study conducted by Abuadas et al. (2015). Carter, Tippett, Anderson, and Tameru (2010) also found a strong relationship between marital status, screening within the last 12 months, education, socio-economic status, and insurance status using Pearson correlation analyses of their collected data. In addition, Franklin (2013) found in his quantitative

study that married men were more likely to have informed discussions with their health care provider than unmarried men ($p < 0.01$).

The researcher's assumptions were also in contrast of the findings regarding hypotheses 4, 5, 6, and 7. Similarly to the mentioned evidence from the literature, the researcher assumed that higher level of education, being married, and having family history of prostate cancer would increase the likelihood of intent to be screened for prostate cancer. In addition, the researcher assumed that religion could have been a contributing factor to Haitian men's intention regarding prostate cancer screening. For example, the notion of "Christian" or "Chrétienne" in French is not synonymous with the Catholic religion. It is rather a connotation to Protestant. Hence, in Haiti, Protestants are known to seek healing primarily through their faith in God, unlike the Catholics' source of healing, which would be a combination of Western medicine and alternative spiritual path such as Voodoo (Dash, 2001; Vonarx, 2011). Nonetheless, the results of this study found no significant statistical correlation among these select demographic variables and Haitian men's intention to screen for prostate cancer.

Significance of the Study

Prostate cancer remains one of the top cancers that affect men's lives globally. Early detection of prostate cancer through prostate cancer screening is essential to increasing survival rate. However, there are some population groups that have low participation rate in prostate cancer screen (Forrester-Anderson, 2005; Kleier, 2010). Despite the abundance of research conducted regarding this disease, the causes are still unknown, including the factors supporting the risk criteria (American Cancer Society, n.d.). One of the major risk factors is being of African descent; the highest morbidity and

mortality rates occur in Black populations primarily in the Caribbean (Centers for Disease Control and Prevention [CDC], 2011, 2013; World Health Organization, 2008). Regardless of the abundance of information found in the literature regarding prostate cancer, a lack of research exists in the Caribbean, especially in Haiti.

Haiti is ranked tenth worldwide in prostate cancer mortality rate. (World Life Expectancy, n.d.). The reason for such an increasing mortality rate is unknown. In addition, there is a scarcity of literature regarding Haitian men and prostate cancer. Hence, the completion of this study will provide a step toward closing the wide gap that currently exists in the literature. It will add quantitatively to the body of knowledge of nursing science with respect to prostate cancer in the Caribbean as a whole (considering the location that suffers the most in the world) and prostate cancer in Haiti. It will allow a path for the health belief model to be further examined with regard to Haitian men in Haiti. Moreover, the results from this study will offer the stimulus for further research on prostate cancer in the Caribbean, particularly among this population, to help bridge the current gap. This research will also serve as a baseline for increased interventions provided by nurses and other health care professionals through education, practice, and research. Subsequently, these findings will serve as a reference point for concerned stakeholders with regard to health/public policy.

Significance of the Study to Nursing

Carper (1978) clearly expressed that it is the general conception for any field of inquiry to determine the kind of knowledge the field aims to develop as well as the manner in which that knowledge is to be organized, tested and applied. She emphasized that this conception is also applied to nursing science. The body of knowledge that serves

as the rationale for nursing practice has a set of standards outlining the expectations for the field and illustrates the characteristic way of thinking about phenomena (Carper, 1978). Hence, the advance of nursing science depends on understanding and reflecting on these standards, in order to question and amend them to allow for further advancement of the field. Consequently, the advancement of nursing science is the responsibility of every nurse and every stakeholder given that nursing is the nation's largest health care profession, with more than 3.1 million registered nurses nationwide (Rosseter, 2011).

Concerning this study, an intriguing phenomenon exists in which critical attention is needed. Haitian men face an increasing high risk of prostate cancer incidence with a high mortality rate. Limited information is known regarding the reasons for the high mortality rate of prostate cancer in Haiti. Moreover, a paucity of studies addresses prostate cancer among Haitian men. Early detection of prostate cancer through prostate cancer screening remains to be essential regarding survival rate (American Cancer Society, 2015). This study intended to explain the phenomenon of why Haitian men's participation rate in prostate cancer screening is so low and to identify predictors of Haitian men's intention regarding prostate cancer screening using the constructs of health belief model. The findings of this study may have implications for nursing professionals in multiple areas such as nursing education, nursing practice, nursing research, and health/public policy. Consequently, it could play a positive role in decreasing the mortality rate in Haitian men by bringing forth understanding on how to help increase their participation.

Implications for Nursing Education

Based on the ratio of morbidity and mortality rate of prostate cancer in Haiti, it is evident that Haitian men are not well informed about prostate cancer and prostate cancer screening. They do not generally participate in prostate cancer screening, which is also evident here in the United States (Kleier, 2010). The lack of research found in the literature regarding this population on this subject seems to draw a parallel with their lack of knowledge. The limited research on that matter supports the correlation of Haitian men's lack of knowledge to their low participation in prostate cancer screening (Kleier, 2010; Phillips et al., 2007). Hence, Haitian men's knowledge regarding prostate cancer and prostate cancer screening must be addressed.

It is evident that Haitian men must be educated on the disease process as well as on the methods of prevention. However, one key step that must be accomplished is to educate the primary line of educators: nursing students. Cultural perception of health and health treatment must be integrated into the nursing curriculum, addressing myths and perceptions by providing evidence-based alternatives respectfully. Nurse educators can assist nursing students in understanding the importance of acknowledging Haitian men's perception of their manhood, emphasizing that the ability to make informed decision about his health is also a characteristic of manhood. Through such an approach, nursing students will learn to demonstrate empathy while providing patient education and simultaneously allowing the patients to take part in the treatment plan. Since nursing schools in Haiti could be the primary vehicles through which this crusade can be rooted, they ought to reflect on their current curriculum and amend it to include teaching of their own culture regarding general heath and health treatment. Consequently, the

phenomenon of Haitian men and prostate cancer will be addressed. It is imperative that nursing students understand the power of culture as related to providing the best care. Hence, such integration must not be limited to nursing schools in Haiti but wherever there is a large populous of Haitians outside of the country.

This campaign to be culturally competent in Haitian culture must not be limited to nurses alone but must be integrated in all medical programs curricula, especially those programs in Haiti. The endowment of culturally appropriate education supports and facilitates the health care professional in assessing the disparities that may exist in a multicultural and ethnic diverse population (Purnell, 2013). Although the few subcultures that are found in Haiti are more enmeshed, the disparity between social classes is evident (Colin & Paperwalla, 2013; Dash, 2001; Girard, 2010). Nurse educators and other health care professional educators must acknowledge their responsibility to have prospective nurses and healthcare providers well prepared in this capacity. Consequently, they will bridge the gap in care disparity due to lack of knowledge by educating patients to differentiate between myths and facts regarding prostate cancer and prostate cancer screening, including other diseases that may be subjected to misperceptions. Most importantly, well-prepared nurses and other health care providers in Haiti need to recognize that they might be the answer to help decrease the current mortality rate of prostate cancer in Haiti.

Implications for Nursing Practice

Health matters in the Haitian culture are strictly private matters. Haitians hold their physicians and nurses highly and embrace them as authority figures. Hence, their likelihood to comply with their recommendations is positive (Colin & Paperwalla, 2013;

Vonarx, 2011). The practice of nursing is multifaceted; one essential function of practice is education, whether it is preventive or maintenance. Nurses are in an optimal position to promote education in health care and community settings. This can help to dissipate myths regarding prostate cancer and prostate cancer screening. They must also take into account that education will only be successful if it is culturally appropriate (Dunn, 2002; Purnell, 2013). Despite some controversial opinions regarding screening criteria, one consensus is held that early detection through prostate cancer screening is key to the increasing survival rate (Brett & Ablin, 2011; National Cancer Institute at The National Institutes of Health, n.d.). Nonetheless, it is imperative for nurses to follow the currently accepted international guidelines regarding prostate cancer screening and promote it consistently.

Education is essential in order to make informed decision; therefore, Haitian men must be educated on prostate cancer and its pertinence. The urgency to address this concern may be key to help decrease the mortality rate of prostate cancer in Haitian men in Haiti. The logic expects that an increase in knowledge would lead to an increase of participation in prostate cancer screening (Carter et al., 2010). Nurses are ideal in preventive health education. Their level of interaction with patients provides plenty opportunities to educate whether continuously or intermittently. However, with this population, several aspects must be taken into consideration. First, the Haitian culture must take precedence in all aspect of the education process. Culture plays a powerful role on how an individual interprets and responds to health care (Purnell, 2013). Consequently, nurses and other health care practitioners must be competently familiar with the Haitian culture. Such a competency should not be limited to Haitian men's

perception and intention alone, but instead to the Haitian culture as a whole. The second factor to consider is the language barrier. Although many Haitians are proficient in English, written materials should also be in Haitian Creole as well as in French. This will facilitate the education in whichever language is appropriate, regardless if it is here in the United States or in Haiti. Furthermore, the high illiteracy rate among the Haitian population must be taken into consideration. Therefore, education should also be available via audio or visual format to help close the gap of lack of knowledge.

Implications for Nursing Research

Prostate cancer research continues to advance augmenting the body of knowledge. Regardless of the abundance of research on prostate cancer found in the literature, there is a clear scarcity of published research focused on Haitian men regarding this disease. It must be noted that research on African-American men are fairly represented in the literature. It may be common practice to refer to such research to gain understanding regarding Haitian men as they are categorized as African-Americans in the United States (U.S. Census Bureau, 2012). Nonetheless, health care professionals must not equate race with ethnicity, as this may lead to inaccurate assessment thereby inaccurate treatment. There is clearly a gap in the literature on prostate cancer with respect to Haitian men. It is imperative for this gap to be addressed to advance the knowledge of nurses and other healthcare professionals.

This research may be the impetus for further research on prostate cancer regarding Haitian men both in Haiti and in geographic regions with high populations of Haitians. Research should focus on Haitian men's perception regarding prostate cancer, health and health care in general, and barriers from cultural and social factors that may contribute to

or influence Haitian men's health behavioral intention. As an incentive for further research, this study explored this issue by examining the relationship of the constructs of the health belief model and Haitian men's intention to participate in prostate cancer screening. Given the findings of this study, this research should be replicated with a larger sample for statistical consistency. In addition, demographic criteria should be modified as needed, as responses may be different for different subgroups. Furthermore, other predictor variables such as knowledge and socioeconomic should be studied with Haitian men to help determine other characteristics or contributing factors to their low participation rate in prostate cancer screening.

This study was a quantitative cross-sectional study; perhaps, other types of studies such as qualitative or triangulated should be conducted to further explore this phenomenon of prostate cancer in Haitian men. The Haitian culture is very complex (Colin & Paperwalla, 2013; Dash, 2001; Girard, 2010). Given the fact that culture is fundamentally unconscious and contains powerful influences on health and illness (Purnell, 2013), the Haitian culture must be considered while studying this population. Thus, qualitative studies such as grounded theory and ethnography can help investigate the meaning attached to Haitian men's perception of prostate cancer and the critical factors that may have influenced their low participation in prostate cancer screening. Such an understanding can spring forth many strategies in aid of developing educational and preventive programs addressing Haitian men's high mortality rate of prostate cancer. Moreover, this phenomenon can be further studied through different lenses to advance clarity on Haitian men's perception of prostate cancer and the possible relationship with their low rate of screening for prostate cancer. These lenses can include longitudinal

studies to look at this population over time and help identify any developing trends or long-standing habits regarding Haitian men's health behaviors. It can also include studies conducted via triangulation method to account for all pertinent information from all aspects of research.

Finally, the phenomenon of interest was examined in this study using the Health Belief Model as the theoretical framework. Although the analysis conducted for this study showed that the model was a good fit, other predictive models such as the theory of planned behavior (TPB) and theory of reasoned action (TRA) can be utilized to validate consistency of findings. In a study conducted by Bennett et al. (2012), they found that a combination of HBM and TPB constructs explained nearly 60% of the variance in intentions. In addition, the comparison of the theories suggested that the TPB was a better predictor of intentions than the HBM. Therefore, future research can consider other predictive models as framework. In summary, this study can serve as a point of reference for future research to propel the continuing advancement of nursing science and insight for research of other aspects pertaining to this particular phenomenon.

Implications for Health/Public Policy

Presently, a national screening program for prostate cancer is nonexistent in Haiti (U.S. AID, 2014). All guidelines and efforts for health promotion regarding this disease are held through foreign non-governmental organizations (NGO) such as the World Health Organization (WHO), the Pan American Health Organization (PAHO), and the Caribbean Community and Common Market (CARICOM). International Men's Health Week is in June, and this could be the impetus for nurses and other health care professionals to collaborate with these NGOs to promote general health prevention for

men with the emphasis on prostate cancer screening. Such an outreach can be carried out through the media, especially the radio. The low rate of literacy and the poor economy in Haiti make the radio the primary source for news and information for Haitians (Dash, 2001). The radio will extend the message throughout both the urban and rural areas of Haiti. In addition, the local nurses can continue the movement through their local community organizations, such as churches and community centers.

"Nurses are the backbone of health services." This is a very popular notion that can be supported throughout the literature in multiple disciplines. This notion was recently reiterated in an article from *The Florida Nurse* (Kinnaird, 2015). The nursing workforce is stronger in number than the workforce of medical doctors. It is reported that there is a ratio of 10 nurses to three physicians (The Truth About Nursing, 2009). Yet, the American Medical Association (AMA) seems to exercise more influence than the American Nursing Association (ANA). It is imperative that the nursing force strengthen its leadership to advance its agenda in health/public policy. Nurses are in a great position to be proactive and influence health and public policy with regard to allocating funds, improving access to health care resources, and reducing healthcare disparity. Such influences can be exercised by either having strong representation in law making bodies throughout Haiti and regions in the United States of America and other countries that have a significant population of Haitians. Similarly, there should be a strong and dedicated focus on establishing and sustaining committees focusing on policy advocacy.

The elements of this study including the results should expose the urgency revolved around this phenomenon. The mortality rate of prostate cancer in Haiti is increasing while preventive measures are scarce, if not nonexistent in that country.

Nurses in Haiti ought to recognize the need to organize and voice their concerns to their parliamentary representative. In addition, leaders from organizations such as Haitian American Nurses Association of Florida (HANA) and the Association of Haitian Physicians Abroad (AMHE) can collaborate with global organizations such as WHO, PAHO, and CARICOM to bring this issue to the attention of the Haitian government. Subsequently, funds can be allocated appropriately to address primary prevention (education and screening) regarding prostate cancer.

This venture of collaboration should not be limited to make recommendation solely to the Haitian government but to any other country where there is a substantial Haitian population. Those countries are considered stakeholders in the health of their population as they also benefit from their productivity and their expenditure. Functional health/public policy will account for both cost and effectiveness. Hence, effective preventive program will decrease the mortality rate of Haitian men and decrease the cost of their care, thereby increasing their survival rate and increasing the duration of their productivity and expenditure.

Strengths and Limitations of the Study

The platform of this study encompassed all intended components needed to achieve its anticipated goal. The researcher took time to evaluate each component carefully, from the theoretical framework to the sample size. Most often, the plan for any research study will undergo some adjustments to account for attrition and deviation.

Strengths

Several key strengths of the study were identified. They are being considered as they might reinforce the significance of this study. The order in which they are being listed has no relevance on their degree of importance:

- The completion of this study itself may be considered as a strength. Its completion provides the impetus for future research. This study will serve as a point of reference as it provides implications for nursing education, nursing practice, nursing research, and health/public policy.
- This study addressed an important gap in the literature. There is clearly a paucity in the literature on prostate cancer with regard to Haitian men. This study may have exposed the urgency that exists regarding this matter and subsequently open the door for the research scientist community.
- The setting of the study was in Haiti. Conducting the study in Haiti might have diminished or eliminated the influence of acculturation on the results. This feature was especially importance that this study is about a population whose culture is being considered.
- Data were collected all over Haiti. The perception of 80% of the country was accounted for and contributed to the result of the study and consequently strengthens the ground to generalize the findings of the study.
- Participants from this study were recruited throughout Haiti. Eight out of 10 states of Haiti were represented in the sample. The purpose for such inclusion was to aggregate a wider perspective covering the view of the entire country, thus increasing the generalizability of the study.

- Despite the statistical analysis adjustment, the analysis conducted found that the health belief model was a good fit. Hypothesis 1 was accepted; the predictor variable perceived benefits was found to have a predictive relationship to Haitian men's intention to be screened for prostate cancer. Such a finding can be utilized for educational planning and future research regarding this population.

Limitations

The following limitations of the study were identified and presented in no particular order of priority:

- The data were collected from a convenience sample. Although the sample included participants from 80% of Haiti, the lack of randomization might have increased the probability for sample bias to occur, consequently reducing the generalizability of the study.
- Recruitment of the participants was held in the surrounding of selected areas. This was another opportunity for sample bias to occur. With such a bias, generalizability of study is decreased, thereby limiting the findings of the study.
- The data were collected from 200 participants over a period of 14 days. Such a short period of time with the number of participants required might have provided the opportunity for questionnaires to be completed twice by one participant. A longer period of time would have provided the opportunity to account for duplication and thus may have produced different results.
- All questionnaires were translated into Haitian Creole and French. The fidelity of the original substance might have been compromised through the translation

process. It is possible that the study could have yielded different results if the questionnaires were originally written in Haitian Creole.

- The majority of the participants reported to have only completed primary school. This level of education in addition to translation fidelity may have created moments of misunderstanding, thus, providing room for erroneousness.
- Given that the questionnaires were self-reported; the responses may have been based on social popularity rather than actual belief. Hence, fallacy through response bias may have occurred.
- The data of this study were collected through a correlational, cross-sectional design. Hence, the generalizability of the study was limited with respect to time constraint.
- The projected statistical analysis for the study was adjusted due to the abnormal distribution of the scores for the variables. As a result, parametric testing was abandoned, and the sample size was questioned. Although adjustments were made to rectify the statistical analysis plan, this may have provided room for inaccuracies, thereby influencing the findings.
- The sample size ($N = 200$) may be considered as a limitation because it did not achieve the optimal power to detect significance according to the post hoc calculation of power using G*Power. However, the sample was found to be adequate through other authorities of logistic regression (see Chapter Four).

Recommendations for Future Study

As previously emphasized, this study can be considered as part of the benchmark for much-needed research on this phenomenon among Haitian men. Prostate cancer is a

well-known disease that affects the lives of men and is known worldwide. Unfortunately, the disparity of care is evident based on geographical locations of the world. Such disparity is not limited to care alone; the paucity of literature with respect to certain population is also apparent. The incidence of prostate cancer in Haiti is almost equal to its mortality rates. Based on the current GLOBOCAN (2012) report, the mortality rate of prostate cancer was 80%. Clearly, this phenomenon needs an urgent surge of research with the goal of counteracting these high mortality rates. Yet, the research scientist community has not realized it. Confidently, this study will bring attention to this matter and become an invitation to the global scientific community.

The following are a few recommendations for future research. For quantitative research, a larger sample should be considered to avoid any statistical challenges, which were experienced in this study due to data not normally distributed. The sample recruitment does not have to follow the pattern of this study; however, the inclusion of participants from different states allows for better generalizability. Furthermore, the majority of the participants reported to have only completed primary school. It is possible that a lack of understanding of the questions may have caused the negative skewness and abnormal distribution of the scores. Researchers may consider the level of education criteria due to the low literacy rate of this population. In addition, to address the high illiteracy of this population, researchers may consider a verbal review or an audio version of the questionnaires that are to be administered. Researchers may also consider other theoretical frameworks. Although the HBM was a good fit, there are other predictive models that are more culturally proficient.

Regarding recommendations for qualitative studies, researchers may have to consider their participants very carefully. Health issues in the Haitian culture are private matters. Haitians tend to avoid eye contact and respond in a more socially favorable manner while being addressed by a perceived authority figure (Colin & Paperwalla, 2013; Gany et. al., 2007). This may be a cause of inaccuracy. Hence, the level of education may also be a contributing factor. The less educated the Haitian is, the less he or she will express a genuine thought to a perceived authority figure (Dash, 2001). Therefore, it is imperative that qualitative researchers take these factors into consideration.

In general, the Haitian culture must take precedence in any research being conducted with this population. Although Taitt (2015) found in his phenomenological study that there was no indication that culture played a significant role in attitudes, beliefs, and perceptions of the disease, this finding does not account for the whole picture. Taitt had in-depth interviews with Afro-Caribbean men ($N = 13$) from seven Caribbean territories. His study sought to explore the perceptions, beliefs, and lived experiences of participants. The findings indicated that participants had a low level of awareness and education about prostate cancer. The insignificance of culture in this study may misrepresent the actual fact. Health and health care beliefs and values are assumed in the definition of culture (Purnell, 2013). As previously mentioned, culture is largely unconscious; thereby, its influences on an individual's health are extremely powerful.

Conclusion

Prostate cancer is a well-documented disease affecting men's lives around the globe. Research has made great progress in that subject, supporting early screening as the major contributing factor to the increasing survival rate from prostate cancer. Research has also reinforced that aging, race, and family history of prostate cancer are the primary factors related to the morbidity rate. Men of African descent are on the top of chart with regards to race. In addition, it appears that the Afro-Caribbean men lead with regard to morbidity and mortality rates (CDC, 2011, GLOBOCAN, 2012; World Health Organization, 2008; World Life Expectancy, n.d.). Despite such revealing statistics, the literature fails to fill the gap on prostate cancer with respect to the Afro-Caribbean nations, especially Haiti. The last reported statistics on prostate cancer regarding Haiti suggested that Haiti has an 80% fatality from the reported cases (GLOBOCAN, 2012). It is an obligation from the scientific community and the stakeholders to investigate the possible factors contributing to such a high mortality rate.

This study sought to examine the predictive nature of specific variables of the health belief model: perceived susceptibility to prostate cancer, perceived benefits of being screened for prostate cancer, and perceived barriers to being screened for prostate cancer, to the dependent variable, the intent to be screened for prostate cancer among Haitian men living in Haiti. Other modifying variables (age, level of education, marital status, religion, and family history of prostate cancer) were explored as predictors to the intent of prostate cancer screening among this population. A sample of 200 Haitian men, ranging in age from 45 to 75 years ($M = 55.29$, $SD = 9.28$), were recruited throughout Haiti (eight out of 10 states) by way of convenience sampling. Data were collected

through a correlational, cross-sectional design. The participants were surveyed through two questionnaires for a total of 29 items, including a 13-item demographic questionnaire and a 16-item Champion Health Belief Model Scale questionnaire modified for prostate cancer screening. All participants were volunteers and completed their surveys anonymously.

Seven hypotheses were tested using logistic regression and the nonparametric Kruskal-Wallis (*H*) test. One of the hypotheses was supported, and the other six were rejected. The findings found that only perceived benefits had a predictive relationship to intent to screen for prostate cancer. The other two, perceived susceptibility and perceived barriers, did not have any statistical significance in relation to intent to screen for prostate cancer. Furthermore, none of the modifying variables (age, level of education, marital status, religion, and family history) had any influence on Haitian men's intent to screen for prostate cancer. Nevertheless, the health belief model was found to be a good fit for the study. The data collected for this study were analyzed using collinearity statistics for tolerance and variance inflator factor (VIF) with respect to the model. Both values for tolerance and VIF were found to be acceptable and therefore confirmed that collinearity was not a problem for the model. Furthermore, analysis of the data finds the model to be significant, χ^2 (3) = 14.47, p = .00, indicating that at least one of the predictor variables (perceived benefits) is significantly predictive of the outcome variable of intent to be screened for prostate cancer. Further, the nonsignificant Hosmer and Lemeshow statistic, χ^2 (8) = 4.33, p = .83, supported that the data was a good fit for the model. In addition, the data were found to be a good fit for the model even in instant where the model was found to be not significant (see Chapter Four).

This study was conducted with the probability of creating a path for future research concerning this population. The fundamentals of the study were well thought of to accomplish the underlying goal, which was to bring attention to this urgent predicament. Hopefully, the results of this study may encourage other researchers to confront this issue and address the gap that currently exists in the literature. Finally, it is hoped that this study may serve as a point of reference for stakeholders to consider health/public policy accordingly, for nursing education to incorporate the elements surrounding this study, and other health care professionals to align their cultural competency with the Haitian culture as well.

REFERENCES

References

Abuadas, M. H., Petro-Nustas, W., & Albikawi, Z. F. (2015). Predictors of participation in prostate cancer screening among older men in Jordan. *Asian Pacific Journal of Cancer Prevention: APJCP*, *16*(13), 5377.

Adams, J. (1853). The case of scirrhous of the prostate gland with corresponding affliction of the lymphatic glands in the lumbar region and in the pelvis. *Lancet*.

Africa Cancer Foundation. (n.d.). Homepage. Retrieved from http://www.africacancerfoundation.org/

Aghamolaei, T., Hasani, L., Tavafian, S. S., & Zare, S. (2011). Improving breast self-examination: An educational intervention based on health belief model. *Iranian Journal of Cancer Prevention*, *4*(2), 82-87.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179-211.

Ajzen, I. (2002). Constructing a TpB questionnaire: Conceptual and methodological consideration. Retrieved from

Allen, J. D., Mars, D. R., Tom, L., Apollon, G., Hilaire, D., Iralien, G., ... Zamor, R. (2013). Health beliefs, attitudes and service utilization among Haitians. *Journal of Health Care for the Poor and Underserved*, *24*, 106-119.

American Cancer Society (2007). *Cancer facts and figures for African Americans 2007*. Atlanta, GA: Author.

American Cancer Society (2015). Prostate cancer prevention and early detection. Retrieved from

http://www.cancer.org/cancer/prostatecancer/moreinformation/prostatecancerearlydetection/prostate-cancer-early-detection-acs-recommendations

American Cancer Society (n.d.-a). Survival rate for prostate cancer. Retrieved from http://www.cancer.org/cancer/prostatecancer/detailedguide/prostate-cancer-survival-rates

American Cancer Society. (n.d.-b) What is prostate cancer? Retrieved from http://www.cancer.org/cancer/prostatecancer/detailedguide/prostate-cancer-what-is-prostate-cancer

Atulomah, N. O., Olanrewaju, M. F., Amosu, A. M., & Adedeji, O. (*2*010). Level of awareness, perception and screening behavior regarding prostate cancer among men in a rural community of Ikenne local government area, Nigeria. *Primary Prevention Insights*, 2, 11-20. http://dx.doi.org/10.4137/PPRI.S5955

Babbie, E. R. (2010). *The practice of social research* (12th ed.). Belmont, CA: Wadsworth Cengage.

Baker, S. A. (2009). *Prostate cancer screening intention among African American men: An instrument development study* (Doctoral dissertation). Retrieved from ProQuest. (UMI Number: 3376164)

Baker, S. A. (2009). *Prostate cancer screening intention among African American men: An instrument development study* (Doctoral dissertation, University of South Florida). Retrieved from http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1127&context=etd

Becker, M. H. (1974). *The health belief model and personal health behavior*. Thorofare, NJ: Charles B Slack.

Becker, M. H., & Janz, N. K. (1985). The health belief model: A decade later. *Health Education Quarterly*, *11*, 1-47.

Bennett, K. K., Buchanan, J. A., & Adams, A. D. (2012). Social-cognitive predictors of intention to vaccinate against the human papillomavirus in college-age women. *The Journal of Social Psychology*, *152*(4), 480. http://dx.doi.org/10.1080/00224545.2011.639408

Berg, B. L., & Lune, H. (2012). *Qualitative research methods for the social sciences* (8th ed.). Upper Saddle River, NJ: Pearson.

Bray, F., Lortet-Tieulent, J., Ferlay, J., Forman, D., & Auvinen, A. (2010, November). Prostate cancer incidence and mortality trends in 37 European countries: An overview. *European Journal of Cancer*, *46*(17), 3040-3052. http://dx.doi.org/10.1016/j.ejca.2010.09.013

Brett, A. S., & Ablin, R. J. (2011). Prostate-cancer screening: What the U.S. Preventative Services Task Force left out. *New England Journal of Medicine*, *365*, 1949-1951.

CEDAW (2008). *Consideration of reports submitted by states parties under Article 18 of the Convention on the elimination of all forms of discrimination against women: Haiti, combined first, second, third, fourth, fifth, sixth and seventh periodic reports of states parties*. New York: CEDAW/C/HTI/7, Committee on the Elimination of Discrimination against Women.

Canadian Cancer Society. (n.d.). Treatment of prostate cancer. Retrieved from https://www.cancer.ca/en/cancer-information/cancer-type/prostate/treatment/?region=bc

Carper, B. A. (1978). Fondamental patterns of knowing in nursing. *Advances in Nursing Science*, *1*(1), 13-24.

Carter, V. L., Tippett, F., Anderson, D. L., & Tameru, B. (2010). Increasing prostate cancer screening among African-American men. *Journal of Health Care for the Poor and Underserved*, *21*, 91-106.

Centers for Disease Control and Prevention. (2011, August). New case of prostate cancer by race and ethnicity. Retrieved from http://www.cdc.gov/features/dsprostatecancer/index.html

Centers for Disease Control and Prevention. (2013). What screening tests are there for prostate cancer? Retrieved from http://www.cdc.gov/cancer/prostate/basic_info/screening.htm

Central Intelligence Agency: The World FactBook. (n.d.). Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/ha.html

Champion, V. L. (1984). Instrument development for health belief model constructs. *Advances in Nursing Science*, 73-85.

Champion, V. L. (1985). Use of health belief model in determining frequency of breast self-examination. *Research in Nursing and Health*, 8, 373-379.

Champion, V. L. (1993). Instrument refinement for breast cancer screening behaviors. *Nursing Research*, *42*(3), 139-143.

Champion, V. L. (1995). Development of a benefits and barriers scales for mammography utilization. *Cancer Nursing*, *18*, 53-59.

Champion, V. L. (1999). Revised susceptibility, benefits, and barriers scale for mammography screening. *Research in Nursing & Health*, *22*, 341-348.

Champion, V. L., & Scott, C. (1997). Reliability and validity of breast cancer screening belief scales in African American women. *Nursing Research*, *46*(6), 331-337.

Champion, V. L., & Skinner, C. S. (2008). The health belief model. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research and practice* (4th ed., pp. 45-65). San Francisco, CA: Jossey-Bass.

Champion, V. L., Skinner, C. S., Menon, U., Rawls, S., Giesler, R. B., Monohan, P., & Daggy, J. (2004). A breast cancer fear scale: Psychometric development. *Journal of Health Psychology*, *9*(6), 753-762.

Chin, H., Cohen, P., & Chen, S. (2010). How big is a big odds ratio? Interpreting the magnitude of odds ratios in epidemiological studies. *Communications in Statistics--Simulation and Computation*, *39*, 860-864. http://dx.doi.org/10.1080/.3610911003650383

Cobran, E. K., Wutoh, A. K., Lee, E., Odedina, F. T., Ragin, C., Aiken, W., & Godley, P. A. (2014). Perceptions of prostate cancer fatalism and screening behavior between United States-born and Caribbean-born Black males. *Journal of Immigrant Minority Health*, *16*, 394-400. http://dx.doi.org/10.1007/s10903-013-9825-5

Cobran, E. K., Wutoh, A. K., Lee, E., Odedina, F. T., Ragin, C., Aiken, W., & Godley, P. A. (2014). Perceptions of prostate cancer fatalism and screening behavior between United States-born and Caribbean-born Black males. *Journal of Immigrant Minority Health*, *16*, 394-400. http://dx.doi.org/10.1007/s10903-013-9825-5

Coe, A. B., Gatewood, S. B., Moczygemba, L. R., Goode, J. R., & Beckner, J. O. (2012). The use of the health belief model to assess predictors of intent to receive the novel (2009) H1N1 influenza vaccine. *INNOVATIONS*, *3*(2), 1-11.

Colin, J. M., & Paperwalla, G. (2013). People of Haitian heritage. In L. D. Purnell (Ed.), *Transcultural health care: A culturally competent approach* (4th ed., pp. 269-287). Philadelphia, PA: F. A. Davis.

Consedine, N. S., Horton, D., Ungar, T., Joe, A. K., Ramirez, P., & Borrell, L. (2007, March). Fear, knowledge, and efficacy beliefs differentially predict the frequency of digital rectal examination versus prostate specific antigen screening in ethnically diverse sample of older men. *American Journal of Men's Health*, *1*(1), 29-43. http://dx.doi.org/10.1177/1557988306293495

Costa, T. B., & Moura, V. F. (2013). The meaning of touch the prostate for man: The nurse in health promotion. *Journal of Research Fundamental Care On Line*, *5*(4), 537-546. http://dx.doi.org/10.9789/2175-5361.2013v5n4p537

Cottrell, R. R., & McKenzie, J. F. (2011). *Health promotion & education research methods: Using the five-chapter thesis/dissertation model* (2nd ed.). Sudbury, MA: Jones and Bartlett.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Crotty, M. (2012). *The foundation of social research: Meaning and perspective in the research process*. Los Angeles, CA: Sage.

Dash, J. M. (2001). *Culture and customs of Haiti* (Culture and customs of Latin America and the Caribbean ed.). Westport, CT: Greenwood Press.

DeRigne, L., Choi, J. J., Barsky, A. E., & Albertini, V. (2012). Reaching Haitian-Americans living with HIV/AIDS: Met and unmet health care needs. *Journal of HIV/AIDS & Social Services*, *11*(4), 388-405. http://dx.doi.org/10.1080/15381501.2012.737213

Denmeade, S. R., & Isaacs, J. T. (*2*002, May). Timeline: A history of prostate cancer treatment. *Nature Reviews Cancer*, 2, 389-396. http://dx.doi.org/10.1038/nrc801

Donadiki, E. M., Jimenez-Garcia, R., Hernandez-Barrera, V., Sourtzi, P., Carrasco-Garrido, P., Lopez de Andres, A., ... Velonakis, E. G. (2014). Health belief model applied to non-compliance with HPV vaccine among female university students. *Public Health*, *128*(3), 268-273. http://dx.doi.org/10.1016/j.puhe.2013.12.004

Dunn, A. M. (2002, May). Culture competence and the primary care provider. *Journal of Pediatric Health Care*, *16*(3), 105-111.

D'Souza, C., Zyngier, S., Robinson, P., Schotterlein, M., & Sullivan-Mort, G. (2011). Health belief model: Evaluating marketing promotion in a public vaccination program. *Journal of Nonprofit & Public Sector Marketing*, *23*(2), 134-157. http://dx.doi.org/10.1080/10495142.2011.572668

Ekine, S. (2013, February 25). Haiti's struggling healthcare system [Blog post]. Retrieved from http://newint.org/blog/2013/02/25/haiti-healthcare/

Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavior, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175-191.

Ferrante, J. M., Shaw, E. K., & Scott, J. G. (2011, February 20). Factors influencing men's decisions regarding prostate cancer screening: A qualitative study. *Journal of Community Health*, *36*, 839-844. http://dx.doi.org/10.1007/s10900-011-9383-5

Ford, M. E., Vernon, S. W., Havstad, S. L., Thomas, S. A., & Davis, S. D. (2006). Factors influencing behavioral intention regarding prostate cancer screening among older African-American men. *Journal of the National Medical Association*, *98*(4), 505-514.

Forrester-Anderson, I. T. (2005). Prostate cancer screening perceptions, knowledge, and behavior among African-American men: Focus group findings. *Journal of Health Care for the Poor and Undeserved*, *16*(4), 22-30. http://dx.doi.org/10.1353/hpu.2005.0122

Franklin, C. S. (2013). *Prostate cancer screening in African-American men* (Doctoral dissertation). Walden University. Retrieved from

GLOBOCAN (2012a). Prostate cancer: Estimated incidence, mortality and prevalence worldwide in 2012. Retrieved from http://globocan.iarc.fr/old/FactSheets/cancers/prostate-new.asp

GLOBOCAN. (2012b). http://globocan.iarc.fr/Pages/fact_sheets_population.aspx

Gany, F., Trinh-Shevrin, C., & Aragones, A. (2007). Cancer screening and Haitian immigrants: The primary care provider factor. *Journal Immigrant Minority Health*, *10*, 255-261. http://dx.doi.org/10.1007/s10903-9076-4

Gay, L. R., Mills, G. E., & Airasian, P. W. (2011). Educational research: Competencies for analysis and applications (10th ed.). Upper Saddle River, NJ: Pearson.

Gay, R. L., Mills, G. E., & Airasian, P. (2009). *Educational research: Competencies for analysis and applications* (9th ed.). Upper Saddle River, NJ: Pearson.

Ghodsbin, F., Zare, M., Jahanbin, I., Ariafar, A., & Keshayarzi, S. (2014). A survey of knowledge and beliefs of retired men about prostate cancer screening based on health belief model. *International Journal of Community Based Nursing and Midwifery*, *2*(4), 279.

Girard, P. (2010). *Haiti: The tumultuous history--From the earl of the Caribbean to broken nation*. New York, NY: Palgrave Macmillan.

Glanz, K., & Rimer, B. K. (2005). *Theory at a glance: A guide for health promotion practice* (2nd ed., NIH Publication No. 05-3896). Washington, DC: U.S. Government Printing Office.

Guillaume, F. D. (2013). *Dr Florence Duperval Guillaume, Ministre de la Santé publique et de la Population, Haiti* [Video file]. Available from You Tube.

Hayat, M. J. (2013). Understanding sample size determination in nursing research. *Western Journal of Nursing Research*, *35*(7), 943-956. http://dx.doi.org/10.1177/0193945913482052

Heinrich Heine Universitat Dusseldorf (2014). *G*power: Statistical power analysis for Window and Mac* (Version 3.1.9.2) [Computer software]. Retrieved from http://www.gpower.hhu.de/en.html

Higgins, C. B., & Hodges, C. V. (1941). Studies on prostate cancer: 1. The effects of castration, of estrogen and androgen injection on serum phosphatases in metastatic carcinoma of the prostate. *Cancer Research*, 1, 293-297. Retrieved from http://cancerres.aacrjournals.org/content/1/4/293.full.pdf+html

Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

Hounton, S. H., Carabin, H., & Henderson, N. J. (2005). Towards an understanding of barriers to condom use in rural Benin using the health belief model: A cross sectional survey. *BMC Public Health*, *5*(1). http://dx.doi.org/10.1186/1471-2458-5-8

Hsieh, F. Y., Bloch, D. A., & Larsen, M. D. (1998). A simple method of sample size calculation for linear and logistic regression. *Statistics in Medicine*, *17*, 1623-1634.

Huaman, M. A., Kamimura-Nishimura, K. I., Kanamori, M., Siu, A., & Lescano, A. G. (20*11*). Validation of a susceptibility, benefits, and barrier scale for mammography screening among Peruvian women: A cross-sectional study. *BMC Women's Health*, 11(54), 1-8. http://dx.doi.org/10.1186/1472-6874-11-54

International Agency for Research on Cancer (2005). Prostate cancer: Cases, prevalence, and mortality. *GLOBOCAN 2002*. Retrieved from http://www-dep.iarc.fr/globocan/downloads.htm

Karayurt, O., & Dramali, A. (2007). Adaptation of Champion's health belief model scale for Turkish women and evaluation of the selected variables associated with breast self-examination. *Cancer Nursing*, *30*(1), 69-77.

Kenny, T., Tidy, C., & Cox, J. (2014). Prostate cancer. Retrieved from http://www.patient.co.uk/health/prostate-cancer-leaflet

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Orlando, FL: Harcourt.

Kharameh, Z. T., Foroozanfar, S., & Zamanian, H. (2014). Psychometric properties of the Persian version of Champion's health belief model scale for colorectal cancer. *Asian Pacific Journal of Cancer Prevention*, *15*(11).

Khoury, N. M., Kaiser, B. N., Keys, H. M., Brewster, A. T., & Kohrt, B. A. (2012). Explanatory models and mental health treatment: Is Vodou an obstacle to psychiatric treatment in rural Haiti? *Culture, Medicine, and Psychiatry*, *36*, 514-534. http://dx.doi.org/10.1007/s11013-012-9270-2

Kinnaird, L. (2015, December). Nurses: The backbone of health services. *The Florida Nurse*, *63*(4), 1.

Kleier, J. (2004, Fall). Using the health belief model to reveal the perception of Jamaican and Haitian men regarding prostate cancer. *Journal of Multicultural Nursing & Health*, *10*(3), 41-48.

Kleier, J. A. (2009, November-December). Language adaptation and psychometric estimation of measures of fear of and susceptibility to prostate cancer among Haitian-American men. *Urologic Nursing*, *29*(6), 425-433.

Kleier, J. A. (2010, May-June). Fear of and susceptibility to prostate cancer as predictors of prostate cancer screening among Haitian-American men. *Urologic Nursing*, *30*, 179-188.

Knott, L. (2014). Prostate gland enlargement. Retrieved from http://www.patient.co.uk/health/prostate-gland-enlargement

Krumwiede, K. A., & Krumwiede, N. (2012, September). The lived experience of men diagnosed with prostate cancer. *Oncology Nursing Forum*, *39*(5), E443-E450.

Lee, M. M., Gomez, S. L., Chang, J. S., Wey, M., Wang, R. T., & Hsing, A. W. (2003, July). Soy and isoflavone consumption in relation to prostate cancer risk in China. *Cancer Epidemiology Biomarkers & Prevention*, *12*(7), 665-668.

Lehto, R. H., Song, L., Stein, K. F., & Coleman-Burns, P. (2010). Factors influencing prostate cancer screening in African-American men. *Western Journal of Nursing Research*, *32*(6), 779-793. http://dx.doi.org/10.1177/0193945910361332

Levin, K. A. (2006). Study design III: Cross-sectional studies. *Evidence-Based Dentistry*, *7*, 24-25. http://dx.doi.org/doi:10.1038/sj.ebd.6400375

Lin, P., Simoni, J. M., & Zemon, V. (2005). The health belief model, sexual behaviors, and HIV risk among Taiwanese immigrants. *AIDS Education and Prevention*, *17*(5), 469-483.

Lo, S. W., Chair, S. Y., & Lee, F. K. (2015;2014). Factors associated with health-promoting behavior of people with or at high risk of metabolic syndrome: Based on the health belief model. *Applied Nursing Research: ANR, 28*(2), 197. http://dx.doi.org/10.1016/j.apnr.2014.11.001

Long, J. S. (1997). *Regression models for categorical and limited dependent variables*. Thousand Oaks, CA: Sage.

Lytton, B. (2001, June). Prostate cancer: A brief history and the discovery of hormonal ablation treatment. *The Journal of Urology*, *165*(6, Part 1), 1859-1862. http://dx.doi.org/10.1016/S0022-5347 (5)66228-8

MSPP (2015). Lancement des activite de formation pour le traitement du cancer au niveau national. Retrieved from

http://mspp.gouv.ht/site/downloads/Formation%20sur%20Cancer%20MSPP%20MEDISHARE.pdf

Macionis, J. J. (2012). *Sociology* (14th ed.) Boston, MA: Pearson

Marck, N., Woodsong, C., MacQueen, K. M., Guest, G., & Namey, E. (2005). *Qualitative research methods: A data collector's field guide*. Research Triangle Park, NC: Family Health International.

McCree-Hale, R., Hale, T. M., Rutley, K. R., Aung, M., & Jolly, P. E. (2012). Evaluating a theory-based health education intervention to improve awareness of prostate cancer among men in Western Jamaica. *West Indian Medical Journal*, *61*(6), 580-586.

McDonald, J. H. (2014). *Handbook of biological statistics* (3rd ed.). Baltimore, MD: Sparky

McNaughton-Collins, M. F., & Barry, M. J. (2011). One man at the time: Resolving the PSA controversy. *New England Journal of Medicine*, *365*, 19-51.

Mebrouk, J. (2008, April). Perception of nursing care: Views of Saudi Arabian female nurses. *Contemporary Nurse: A Journal for the Australian Nursing Profession*, *28*(1-2), 149-161.

NationMaster. (n.d.). Country vs. country: Dominica and Haiti compared: People stats. Retrieved from www.nationmaster.com/country-info/compare/Dominica/Haiti/people

National Cancer Institute at The National Institutes of Health. (n.d.). Prostate cancer. Retrieved from http://www.cancer.gov/cancertopics/types/prostate

Ng, P., Schoenfeld, E. R., Hennis, A., Wu, S. Y., Leske, M. C., & Nemesure, B. (2013). Factors influencing prostate cancer healthcare practices in Barbados, West Indies. *Journal of Immigrant Minority Health*, *15*, 653-660. http://dx.doi.org/10.1007/s10903-012-9654-y

Oliver, J. S., Grindel, C. G., DeCoster, J., Ford, C. D., & Martin, M. Y. (2011). Benefits, barriers, sources of influence, and prostate cancer screening among rural men. *Public Health Nursing*, *28*(6), 515–522. http://dx.doi.org/10.1111/j.1525-1446.2011.00956.x

Pan American Health Organization. (2007). Haiti: Health in the Americas. Retrieved from http://www2.paho.org/hq/dmdocuments/2010/HaitiHA2007English.pdf

Pan American Health Organization. (2007). Haiti: Health in the Americas. Retrieved from http://www2.paho.org/hq/dmdocuments/2010/HaitiHA2007English.pdf

Patient.info. (2014). Prostate gland enlargement. Retrieved from www.patient.co.uk/health/prostate-gland-enlargement

Peduzzi, P., Concato, J., Kemper, F., Holford, T. R., & Feinstein, A. R. (1996). A simulation study of the number of events per variable in logistic regression analysis. *Journal of Clinical Epidemiology*, *49*(12), 1373-1379.

Phillips, A. A., Jacobson, J. S., Magai, C., Consedine, N., Horowicz-Mehler, N. C., & Neugut, A. I. (2007). Cancer incidence and mortality in the Caribbean. *Cancer Invest*, *25*(6), 476-483.

Polit, D. F., & Beck, C. T. (2012). *Nursing research: Generating and assessing evidence for nursing practice*. Philadelphia, PA: Wolters Kluwer/Lippincott Williams & Wilkins.

Portney, L. G., & Watkins, M. P. (2008). *Foundations of clinical research: Applications to practice* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Purnell, L. D. (2013). *Transcultural health care: A cultural competent approach* (4th ed.). Philadelphia, PA: F. A. Davis.

Purnell, L., & Paulanka, B. (2003). *Transcultural health care: A cultural approach* (2nd ed.). Philadelphia, PA: F. A. Davis.

Purnell Model for Culture Competence. (2014). *Online Journal of Cultural Competence in Nursing and Healthcare.* Retrieved from http://www.ojccnh.org/project/purnell.shtml

Pyrczak, F. (2010). *Making sense of statistics: A conceptual overview* (5th ed.). Glandale, CA: Pyrczak .

Rahill, G. J., & Rice, C. (2010). Correlates of picuriste use in a sample of health-seeking Haitian immigrants and adult children of immigrants in Miami-Dade County, Florida. *American Journal of Public Health*, *100*(S1), 140-145. http://dx.doi.org/10.2105/AJPH.2009.162479

Rogers, B. L. (2005). *Developing nursing knowledge: Philosophical traditions and influences*. Philadelphia, PA: Lippincott Williams & Wilkins.

Rosseter, R. (2011). Nursing fact sheet. Retrieved from http://www.aacn.nche.edu/media-relations/fact-sheets/nursing-fact-sheet

Rovai, A. P., Baker, J. D., & Ponton, M. K. (2013). *Social science research design and statistic: A practitioner's guide to research methods and SPSS analysis* (1st ed.). Chesapeake, VA: Watertree Press.

Schally, A. V., Kastin, A. J., & Arimura, A. (1971, November). Hypothalamic follicle-stimulating hormone (FSH) and luteinizing hormone (LH)-regulating hormone: Structure, physiology, and clinical studies. *Fertility and Sterility*, *22*(11), 703-721.

Scott, W. W., Johnson, D. E., Schmidt, J. E., Gibbons, R. P., Prout, G. R., Joiner, J. R., ... Murphy, G. P. (1975, December). Chemotherapy of advanced prostatic carcinoma with cyclophosphamide or 5-fluorouracil: Results of first national randomized study. *The Journal of Urology* , *114*(6), 909-911.

Smedley, B., Stich, A. Y., & Nelson, A. L. (2002). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: National Academy Press.

Social Institutions & Gender Index. (n.d.). Haiti. Retrieved from www.genderindex.org/sites/default/files/datasheets/HT.pdf

Starkweather, J., & Moske, A. K. (n.d.). Multinominal logistic regression. Retrieved from http://www.unt.edu/rss/class/jon/Benchmarks/MLR_JDS_Agu2011.pdf

Taitt, H. E. (2015). *Prostate cancer and Afro-Caribbean men: Experiences, perceptions, and beliefs* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses Global.

Talcott, J. A., Spain, P., Clark, J. A., Carpenter, W. R., Kyung Do, Y., & Hamilton, R. J. (2007). Hidden barriers between knowledge and behavior. *North Carolina Prostate Cancer Screening and Treatment Experience*, *109*(8), 1599-1606. http://dx.doi.org/10.1002/cncr.22583

Tanner-Smith, E. E., & Brown, T. N. (2010). Evaluating the health belief model: A critical review of studies predicting mammographic and pap screening. *Social Theory & Health*, *8*(1), 95-125. http://dx.doi.org/ doi:10.1057/sth.2009.23

The Truth About Nursing. (2009). Homepage. Retrieved from truthaboutnursing.org

UF Health. (2015). Prostate cancer treatment: Treatment for prostate cancer with proton therapy. Retrieved from http://www.floridaproton.org/context/prostate-treatment?ppc_campaign=Contextual%20Prostate&ppc_adgroup=Proton%20Therapy%20For%20Prostate%20Cancer&gclid=COfQusCZ1cMCFUQ8gQodbjsA9g

UNICEF. (2013). At a glance: Haiti statistics. Retrieved from www.unicef.org/infobycountry/haiti_statistics.html

US AID. (2014). Global health. Retrieved from http://www.usaid.gov/haiti/global-health

U.S. Census Bureau. (2012). About race. Retrieved from

University of Texas at Austin. (Cartographer). (1999). Haiti: Political [Demographic]. Retrieved from https://www.lib.utexas.edu/maps/haiti.html

University of Twente. (n.d.). Health belief model: Explaining health behavior. Retrieved from http://www.utwente.nl/cw/theorieenoverzicht/theory%20clusters/health%20communication/health_belief_model/

Vittinghoff, E., & McCulloch, C. E. (2007). Relaxing the rule of ten events per variable in logistic and cox regression. *American Journal of Epidemiology*, *165*(6), 710-718. http://dx.doi.org/10.1093/aje/kwk052

Vonarx, N. (2011, September/October). Haitian Vodou as a healthcare system: Between magic, religion, and medicine. *Alternative Therapies*, *17*(5), 44-51.

Welford, C., Murphy, K., & Casey, D. (2012). Demystifying nursing research terminology: Part 2. *Nurse Researcher*, *19*(2), 29-35.

Wood, M. J., & Ross-Kerr, J. C. (2011). *Basic steps in planning nursing research: From question to proposal* (7th ed.). Sudbury, MA: Jones and Bartlett.

World Atlas. (Cartographer). (n.d). Haiti [topographic]. Retrieved from http://www.worldatlas.com/webimage/countrys/namerica/caribb/ht.htm

World Atlas. (n.d.). http://www.worldatlas.com/webimage/countrys/namerica/caribb/ht.htm

World Health Organization. (2008). Haiti. Retrieved from http://www.who.int/country/hti/en

World Health Organization/Pan American Health Organization. (2010). *Culture and Mental Health in Haiti: A Literature Review*. Geneva: WHO.

World Life Expectancy. (n.d.). Haiti: Prostate cancer. Retrieved from http://www.worldlifeexpectancy.com/haiti-prostate-cancer

World Life Expectancy. (n.d.). http://www.worldlifeexpectancy.com/usa/life-expectancy-african-american

Young, H. H. (1905). Four cases of radical prostatectomy. *Johns Hopkins Bulletin*, *16*.

Zhao, J., Song, F., Ren, S., Wang, Y., Wang, L., Liu, W., & Sun, Y. (2012). Predictors of condom use behaviors based on the health belief model (HBM) among female sex workers: A cross-sectional study in Hubei province, China. *PLoS One*, *7*(11), e49542.

APPENDIX A

BARRY UNIVERSITY

APPROVAL LETTER FROM BARRY UNIVERSITY'S INSTITUTIONAL REVIEW BOARD

Barry University

Division of Academic Affairs

Office of the Provost
11300 NE 2nd Avenue, Miami, FL 33161
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Research with Human Subjects
Protocol Review

Date:	October 5, 2015
Protocol Number:	1510005
Title:	Perceived Susceptibility, Perceived Benefits and Perceived Barriers as Predictors to Haitian Men's Intention Regarding Prostate Cancer Screening
Meeting Date:	October 21, 2015
Name:	Mr. Jhonii Louis
Address:	North Miami Beach, FL 33162
Sponsor:	Dr. Ferrona Beason Nursing & Health Science

Dear Mr. Louis:

On behalf of the Barry University Institutional Review Board (IRB), I have verified that the specific changes requested by the IRB have been made. Therefore, I have granted final approval for this study as exempt from further review. Enclosed is the Consent Form with the IRB stamp. Please use this letter when collecting your data.

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

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

The approval granted expires on October 14, 2016. Should you wish to maintain this protocol in an active status beyond that date, you will need to provide the IRB with and IRB Application for Continuing Review (Progress Report) summarizing study results to date.

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

Sincerely,

[redacted]

David M. Feldman, PhD
Chair, Institutional Review Board
Barry University

[redacted]

Cc: Dr. Ferrona Beason

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

APPENDIX B

BARRY UNIVERSITY

PARTICIPANT INTRODUCTORY AND COVER LETTER

FRENCH AND HAITIAN CREOLE TRANSLATION OF COVER LETTER

Barry University
Cover Letter (English)

Dear Research Participant:

Your participation in a research project is requested. The title of the study is "Perceived susceptibility, Perceived Benefits, and Perceived Barriers as Predictors to Haitian Men's Intention Regarding Prostate Cancer Screening". The research is being conducted by Jhonii P. Louis, a student in the College of Nursing and Health Sciences at Barry University, and is seeking information that will be useful in the field of Nursing and healthcare in general. The aims of the research are to determine if these selected construct of the Health Belief Model (perceived susceptibility, perceived benefits, and perceived barriers) are predictors to the intention of Haitian men regarding prostate cancer screening. In accordance with these aims, a survey research will be conducted with Haitian men, age ranged from 45 to 75. Eligible participants are men who self-identify as Haitian of African descent, reported to have been born in Haiti and have not lived outside of Haiti for the past five years. Participants must be fluent in speaking and reading Creole, French or both languages. They must report that they at least completed primary school. Participants must have no prior history of screening for prostate cancer. Finally, they must be able to give informed consent. We anticipate the number of participants to be 200.

If you decide to participate in this research, you will be asked to do the following: Contact to the researcher and he will direct you to come to the designated UPH campus. You will get two surveys for a total 29 questions. It is expected to take 30 minutes to complete the surveys. You will be given an equivalent of five American dollars as a token of appreciation for your participation at the same time you receive the surveys. You are allowed to keep it even if you do not complete the surveys.

Your consent to be a research participant is strictly voluntary and should you decline to participate or should you choose to drop out at any time during the study, there will be no adverse effects on your person, your health, or anything pertaining to you. There are no known risks to you of involvement in this study. Although there is no direct benefit to you, your participation in this study will be helpful.

As a research participant, information you provide will be kept anonymous, that is, no names or other identifiers will be collected on any of the instruments used. Data will be kept in a locked file in the researcher's office. Information will be kept for a minimum of five years upon completion of the study, and then be destroyed by the researcher as per Barry University protocol. By completing and returning this survey you have shown your agreement to participate in the study.

If you have any questions or concerns regarding the study or your participation in the study, you may contact me, Jhonii P. Louis, at (Redacted , my supervisor, Dr. Ferrona Beason, at (Redacted , or the Institutional Review Board point of contact, Barbara Cook, at (Redacted . Thank you for your participation.

Sincerely,

Jhonii P. Louis

Barry University
Lettre de présentation (French)

Cher participant :

Nous sollicitons votre participation à un projet de recherche. Le titre de l'étude est le suivant : « Menace Perçue, Avantages perçus, Obstacles perçus comme signes prédicteurs de l'intention des hommes haïtiens vis-à-vis de la détection du cancer de la prostate. » La recherche sera dirigée par Jhonii P. Louis, un étudiant du département des sciences infirmières de l'université Barry, elle vise à obtenir des informations qui seront utiles dans le domaine des soins et de la santé en général. Les objectifs de la recherche consistent à déterminer si ces élaborations sélectionnées dans le modèle des valeurs de la santé (susceptibilité perçue, avantages perçus, et obstacles perçus) sont des signes prédicteurs de l'intention des hommes haïtiens vis-à-vis de la détection du cancer de la prostate. En conséquence, une enquête-sondage sera menée avec des hommes haïtiens, âgés entre 45 et 75 ans. Les participants admissibles sont les hommes qui s'identifient comme haïtienne d'origine africaine, auraient été né en Haïti et qui n'ont pas vécu à l'extérieur d'Haïti pendant les cinq dernières années. Les participants doivent être à l'aise en parlant et lisant le créole, le français ou les deux langues. Ils doivent déclarer qu'ils ont au moins terminé l'école primaire. Les participants ne doivent pas avoir d'antécédents de dépistage du cancer de la prostate. Enfin, ils doivent être en mesure de donner un consentement éclairé. Nous anticipons un nombre de 200 participants.

Si vous décidez de prendre part à cette recherché, contactez le chercheur et il vous dirigera à venir sur le campus UPH désigné. Vous obtiendrez deux sondages pour un total de 29 questions. Il est prévu de prendre 30 minutes pour compléter les enquêtes. Vous recevrez l'équivalent de cinq dollars américains comme un signe de reconnaissance pour votre participation dans le même temps vous recevez les enquêtes. Vous êtes autorisé à le garder, même si vous ne remplissez pas les enquêtes. Votre participation à la recherché est totalement volontaire, et si vous décidez de ne pas participer ou de cesser de participer à n'importe quel moment du processus, vous n'aurez à encourir aucun risque, que ce soit au niveau de votre personne, de votre santé ou de vos biens.

Il n'existe, à notre connaissance, aucun risque connu lié au fait de participer à cette étude. Quoiqu'il n'existe pas de profit direct à tirer de votre participation dans cette étude, elle nous aidera à comprendre pourquoi les hommes haïtiens participent très peu à la détection du cancer de la prostate, et à formuler des programmes d'éducation de santé pour les hommes haïtiens en relation avec la détection du cancer de la prostate.

Les informations que vous fournirez en tant que participant à la recherché seront gardées de manière anonyme, ce qui signifie que votre nom ou tout autre élément identificateur d'identification seront exclus de la collecte. Les données seront gardées dans un fichier verrouillé dans le bureau du chercheur. Les informations seront conservées pendant un minimum de cinq ans après l'achèvement de l'étude, puis être détruit par le chercheur selon le protocole de Barry University. En remplissant le formulaire d'enquête, vous indiquez que vous êtes d'accord pour participer à l'étude.

Si vous avez des questions et inquiétudes concernant l'étude ou votre participation, vous pouvez me contacter, Jhonii P. Louis, au ([redacted], mon superviseur, Dr. Ferrona Beason, au ([redacted], ou le point de contact de l'Institutional Review Board, Barbara Cook, au [redacted].
Merci pour votre participation.

Sincèrement,

Jhonii P. Louis

Barry University
Lèt prezantasyon (Haitian Creole)

Zanmi patisipan

Nou envite w vin patisipe nan yon rechèch. Tèm etid la se « Menas Presanti, Avantaj Presanti, ak Obstak Presanti ki ka pèmèt predi entansyon gason ayisyen nan zafè deteksyon kansè pwostat. » Se Jhonii P. Louis ki ap kondui rechèch la, li se yon etidyan nan depatman syans efimyè nan Barry University, e li ap chèche enfòmasyon ki pral itil nan domèn swen ak sante an jeneral. Objektif rechèch la se chèche wè si pèsepsyon sa yo nan modèl kwayans ki gen rapò ak lasante (siseptibilite presanti, avantaj presanti ak obstak presanti) se siy ki ka predi entansyon gason ayisyen nan zafè deteksyon kansè pwostat. Pou ka atenn objektif sa yo, rechèch la pral fèt avèk gason ayisyen ki gen ant 45 e 75 an. Patisipan ki elijib yo, se gason ki pwòp tèt yo-idantifye kòm ayisyen ki desandan Afriken, rapòte bay yo te fèt an Ayiti, epi yo pa te viv deyò Ayiti pou senk ane ki sot pase. Patisipan yo dwe pale e li kreyòl, franse oswa toude lang yo. Yo dwe rapòte ke yo omwen fini lekòl prime. Patisipan yo dwe pa gen okenn istwa anvan nan tès depistaj pou kansè nan pwostat. Finalman, yo dwe kapab bay konsantman enfòme. Nou antisipe yon valè 200 gason.

Si w deside patisipe nan rechèch sa a, w ap gen pou ou fè bagay sa yo : Kontakte chèchè a epi li pral dirije w pou vini nan lakou lekòl UPH la. Ou pral jwenn de sondaj pou yon total 29 kesyon. Li espere pran 30 minit pou ranpli sondaj yo. Y ap ba ou yon ekivalan nan senk dola Ameriken kòm yon siy de apresyasyon pou patisipasyon ou nan menm tan an ou resevwa sondaj yo. Ou gen dwa kenbe l 'menm si ou pa ranpli sondaj yo.
Se oumenm, ak pwòp volonte w, ki ap deside pou w patisipe nan sondaj la ; si w chwazi pou w pa ladann oubyen pou kite sa, a nenpòt kèl moman, pagen anyen ki ka rive w, ni afekte sante w oubyen sa w posede. Pa gen okenn danje ki ka menase w poutèt ou chwazi patisipe nan ankèt la. Menm si pa gen avantaj dirèk pou ou, patisipasyon w ap pèmèt nou konprann poukisa gason aysiyen pa renmen al fè tès pou detekte kansè pwostat e kijan pou nou mete sou pye yon plan edikasyon pou fè yo konprann li nesesè pou yo fè tès sa yo. Patisipasyon ou nan rechèch la p ap afekte vi prive w, nou p ap bay okenn enfòmasyon sou oumenm pèsonèlman, tankou non w, ak lòt referans. Tout bagay ap ret sekrè. Enfòmasyon yo ap ret kachte nan biwo chèchè a. Nap kenbe enfòmasyon yo pou yon minimòm de senk ane aprè nou fini ak etid la, aprè sa chèchè ap detwi tout enfomasyon kouman sa dwe fet selon pwotokòl Barry University. Pou w fè konnen ou dakò pou patisipe nan rechèch la, w ap rampli kesyone yo.

Si w gen nenpòt kesyon oubyen enkyetid sou etid sa a oubyen patisipasyon w ladann, ou ka kontakte mwen, Jhonii P. Louis, nan (Redacted , sipèvizè mwen, Dr. Ferrona Beason, nan (Redacted , oubyen pèsòn kontak Institutional Review Board la, Barbara Cook, nan (Redacted . Mèsi pou patisipasyon ou.

Avèk respè,

Jhonii P. Louis

APPENDIX C

BARRY UNIVERSITY

LETTER TO ADMINISTRATORS OF COMMUNITY ESTABLISHMENTS

FRENCH AND HAITIAN CREOLE TRANSLATION OF LETTER TO ADMINISTRATORS OF COMMUNITY ESTABLISHMENTS

June 01, 2015

Dear Sir/Madam:

My name is Jhonii Louis and I am a PhD student in the College of Nursing and Health Sciences at Barry University in Miami Shores, Florida. I will be conducting a research study entitled, "Perceived Susceptibility, Perceived Benefits, and Perceived Barriers as Predictors to Haitian Men's Intention Regarding Prostate Cancer Screening." The aim of the research is to identify predicting factors that may determine how Haitian men will behave regarding prostate cancer tools.

My goal is to collect data from approximately 200 Haitian men for this study. To reach this goal, I seek permission to post the enclosed flyer at your facility so that Haitian men will learn of this study and volunteer their participation. Moreover, I request permission to access men while on your premises to collect data for this study.

The men will be approached either face-to-face or in groups. They will be asked to complete a questionnaire which will take approximately 30 minutes to complete. No information will be collected regarding you or your facility. All participants will complete the questionnaire anonymously. No identifiers will be linked to the participants. They will be given a small token of appreciation (equivalent to $5.00). I will be available at that time to answer any questions and to address any concerns they may have. I will explain the nature of the study to the participants and seek for their voluntary participation. They may withdraw from the study at any time without penalty. There are no risks involved in their participation.

The participants will be instructed to place their completed questionnaires in an envelope, seal it and place the envelope in a locked box which I will keep on a table next to me. The questionnaires will only be accessible by me and my advisor, and will be destroyed after five years, as required by Barry University. I anticipate that data collection will take approximately three weeks. I would like to begin data collection by the last week of October.

I thank you very much for your consideration. Should you have any questions or concerns, I may be reached at (Redacted . My email address is Redacted @mymail.barry.edu.

Sincerely

Jhonii Louis

Cher/ère Monsieur/Madame :

Je m'appelle Jhonii P. Louis et je suis un étudiant en doctorat au département des sciences infirmières et sciences de la santé de l'université Barry à Miami Shores, Florida. Je dirigerai une recherche ayant pour titre « Menace Perçue, Avantages Perçus, et Obstacles Perçus en tant qu'indicateurs prévisionnels de l'intention des hommes haïtiens vis-à-vis de la détection du cancer de la prostate » L'objectif de la recherche est d'identifier les facteurs permettant de déterminer comment les hommes haïtiens se comporteront vis-à-vis des outils du cancer de la prostate.

Mon but est de rassembler des données auprès de 200 haïtiens à peu près pour cette étude. Pour y arriver, je sollicite la permission d'afficher la circulaire ci-jointe dans votre établissement pour que des hommes haïtiens puissent être informés de cette recherche et décide d'y prendre part. Je sollicite aussi la permission d'aborder des hommes dans votre local en vue de rassembler des données pour cette étude.
Les hommes seront abordés face à face ou en groups. Nous leur demanderons de remplir un questionnaire, cet exercice prendra approximativement 30 minutes. Nous ne collecterons aucune information sur vous ou sur votre établissement. Chaque participant remplira le questionnaire de manière anonyme. Aucun indice permettant d'identifier le participant ne sera conservé. Il recevra une petite gratification (à peu près 5 dollars américains) en signe d'appréciation. A ce moment-là, je serai disponible pour répondre à n'importe quelle question ou préoccupation soulevée. J'expliquerai la nature de l'étude aux participants et cherchera leur demandera de participer volontairement. Ils peuvent choisir à n'importe quel moment de mettre fin à leur collaboration, aucune sanction ne s'ensuivra. Ils ne courent aucun risque dans le fait de participer.

On demandera aux participants de placer le formulaire rempli dans une enveloppe, de la sceller et de la mettre dans une boîte verrouillée que je garderai sur une table portable à côté de moi. Mon conseiller et moi serons les deux seules personnes à avoir accès aux questionnaires, et ils seront détruits après cinq ans, comme le requiert l'université Barry. J'anticiperai que la collecte des données prendra approximativement trois semaines. Je voudrais commencer le processus durant la dernière semaine d'Octobre.

Je vous remercie pour votre considération. Si vous avez des questions, vous pouvez me contacter a (Redacted Mon adresse email est Redacted @mymail.barry.edu.

Sincèrement,

Jhonii Louis

Chè Mesye/Madam

Non mwen se Jhonii Louis e mwen se yon etidyan nan pwogram doktora nan kolèj syans enfimyè ak sante nan Barry University nan Miami Shores, Florid. M a pral dirije yon rechèch ki gen pou tit « Menas Presanti, Avantaj Presanti, ak Obstak Presanti ki ka pèmèt predi entansyon gason ayisyen nan zafè deteksyon kansè pwostat. » (“Perceived Threat, Perceived Benefits, and Perceived Barriers as Predictors to Haitian Men’s Intention Regarding Prostate Cancer Screening.”) Bi rechèch la se pou idantifye factè ki ka predi kòman gason ayisyen ap konpòte yo devan zouti kansè pwostat yo.

Objektif mwen se rasanble done nan men apeprè 200 gason ayisyen pou etid la. Pou m ka atenn objektif sa a, mwen mande pèmisyon pou m afiche postè sa a nan lokal ou a pou gason aysisyen ka okouran de etid la e chwazi patisipe ladann. Anplis, mwen mande pèmisyon pou m abòde gason pandan mwen la pou m ka rasanble done pou etid la.

M ap apwoche mesye yo fas a fas ou an gwoup. M ap mande yo pou konplete yon kesyonè, sa ka pran apeprè 30 minit. Mwen p ap anrejistre okenn enfòmasyon sou ou oubyen sou espas ou a. chak patisipan ap konplete kesyonè a de manyè anonim. Nou pap chèche okenn endis pou pèmèt idantifye yon patisipan. N ap ba yo yon ti monnen ki apeprè 5 dola ameriken pou patisipasyon yo. Nan moman sa a, m ap disponib pou reponn nenpòt kesyon, e pou abòde nenpòt pwoblèm yo ta ka soulve. M ap eksplike nati etid la pou patisipan yo e mande yo si yo vle patisipe volontèman. Yo ka deside pou pa kontinye patisipe a nenpòt ki moman, sa pap gen okenn konsekans sou yo. Pa gen okenn menas ki peze sou chwa yo fè a.

N ap mande patisipan yo pou yo plase kesyonè yo ranpli nan yon anvlòp, fèmen li e mete li nan yon bwat ki klete ; bwat sa a ap sou yon tab bò kote mwen. Se mwen sèl ak konseye mwen k ap gen aksè a kesyonè yo; apre senk an map detwi yo tankou sa dwe fèt nan Barry University. Mwen estime koleksyon done sa a ap pran apeprè 3 semèn. Mwen ta renmen kòmanse kolekte done yo nan denye semèn mwa oktob la.

Mwen remèsye w anpil pou konsiderasyon ou. Si ou gen nenpòt kesyon oubyen demand, you ka kontakte m nan ([redacted]. Adrès emel mwen se [redacted]@mymail.barry.edu.

Avèk anpil respè,

Jhonii Louis

APPENDIX D

BARRY UNIVERSITY

LETTERS OF PERMISSION FROM ADMINISTRATORS OF COMMUNITY ESTABLISHMENTS

Université Polyvalente d'Haïti

Rev. Père Castel GERMEIL
Academic Council President
[redacted]

08/10/15

Jhonii Louis
Miami, FL
[redacted]barry.edu

Dear Mr. Louis

I received your letter regarding your intent to conduct a research study in Haiti entitled "Perceived Threat, Perceived Benefits, and Perceived Barriers as Predictors to Haitian Men's Intention Regarding Prostate Cancer Screening." I am very pleased to hear of your interest in the wellbeing of Haitian men and commend you for your academic pursuit.

Given that your research may increase the knowledge of the medical professionals and influence the care that is provided to Haitian men, I feel obliged to contribute to it. I am granting you full permission to be accommodated in all the campuses of UPH throughout Haiti according to your letter.I will be available or have a staff available to you at all time in case you have any question or concern.

Once again, I am thanking for your interest in Haitian men; and I am certain that the outcome of your work will have a great impact in the medical profession regarding Haitian men. I wish you all the best in your endeavor.

Sincerely,

[redacted]

Rev. Père Castel GERMEIL
Academic Council President

[redacted] [redacted] [redacted]

APPENDIX E

BARRY UNIVERSITY

FLYER FOR RECRUITING PARTICIPANTS

FRENCH AND HAITIAN CREOLE TRANSLATION OF FLYER FOR RECRUITING PARTICIPANTS

Barry University

Important Research about Haitian Men

Your participation will help us increase our understanding of Haitian men with regards to prostate cancer screening. It will take about 30 minutes to complete the questionnaires. When you pick up the questionnaires, a small token of five American dollars will be given to you for participating!!!

Participation: You may participate if you are self-identified as a Haitian

This study will be conducted by Jhonii Louis, doctoral student at Barry University, Miami Shores, Florida. For questions and concerns please conatct the researcher at [Redacted] or by email: [Redacted].barry.edu; my advisor Dr. Ferrona Beason at ([Redacted] or by email at [Redacted]barry.edu; or the contact person for Barry University's Institutional Review Board, Barbara Cook at ([Redacted] or toll-free at [Redacted] extension [Redacted]

man, born in Haiti, have not lived outside of Haiti in the past five years, 45 to 75 years old, fluent in speaking and reading Creole, French or both; and never been screened before for prostate cancer.

Barry University

Une recherche important sur les hommes haïtiens(French)

Votre participation nous aidera à mieux comprendre le comportement des hommes haïtiens face à la détection du cancer de la prostate. Vous aurez besoin de 30 minutes pour remplir les questionnaires. Lorsque vous recevez les questionnaires, nous vous donnerons cinq dollars américains Comme une petite marque d'appréciation !!!

Participation : Vous pouvez participer si vous vous présentez comme un homme haïtien, âgé entre 45 et 75 ans, né en Haïti, qui n'a pas vécu en dehors d'Haïti pendant les cinq dernières années ; et ayant une bonne

maîtrise du créole ou du français parlés et écrits ou des deux, et qui n'a jamais passé un test de détection de cancer de la prostate.

Cette étude sera menée par Jhonii Louis, étudiant en doctorat à Barry University, Miami Shores, Florida. Pour questions et inquétudes, contactez le chercheur au ([redacted] ou par email: [redacted]barry.edu; mon conseiller Dr. Ferrona Beason au ([redacted] ou par email at [redacted]barry.edu; ou la personne contact pour Barry University's Institutional Review Board, Barba[redacted] Cook au ([redacted] ou au numéro sans frais [redacted], extension [redacted]

Barry University

Yon Rechèch enpòtan sou gason ayisyen (Haitian Creole)

Patisipasyon w ape de nou konprann pi byen atitid gason ayisyen nan zafè deteksyon kansè pwostat. Lap pran apeprè 30 minit pou w konplete kesyonè a. Lè ou vin pran kesyonè yo, w ap resevwa yon ti grapday ki se 5 dola ameriken pou patitsipasyon w!!!

Patisipasyon: Ou ka patisipe si w se yon gason ayisyen ki fèt an Ayiti, ki gen ant 45 e 75 an e ki pat viv deyò Ayiti pandan 5 lane ki sot pase yo, e ki alèz nan pale ak li Kreyòl ou franse ou toude, e ki pa ko janm fè tès pwostat.

Se Jhonii Louis, yon etidyan nan pwogram doktora nan inivèsite Barry, Miami Shores, Florida kap kondui rechèch sa a. Pou nenpòt kesyon, rele chèchè a nan ([redacted] oubyen emel li nan: [redacted].barry.edu; oubyen konseye li, Dr. Ferrona Beason, nan ([redacted] ousinon emel li nan [redacted]barry.edu; oubyen responsab la pou Barry University's Institutional Review Board, Barbara Cook nan ([redacted] ousinon nan nimewo gratis sa a [redacted] ekstansyon [redacted]

APPENDIX F

PERMISSION TO USE CHBMS

April 14, 2015

Jhonii Louis
North Miami Beach, FL 33162

Dear Mr. Louis,

Thank you for your interest in my work. You have permission to view, modify, and use the Health Belief Model as long as you cite my work and send me an abstract of your completed project.

Sincerely,

Redacted

Victoria Champion, Ph.D., R.N., F.A.A.N.
Distinguished Professor
Edward W. and Sarah Stam Cullipher Endowed Chair
Associate Director Cancer Prevention and Control/Population Sciences
Indiana University Simon Cancer Center

VC:dg

APPENDIX G

DEMOGRAPHIC QUESTIONNAIRE

FRENCH AND HAITIAN CREOLE TRANSLATION OF THE DEMOGRAPHIC QUESTIONNAIRE

Barry University

DEMOGRAPHICS QUESTIONAIRE (English)

Please, read the question and circle your answer. Follow the example below.

What color is the sky?

1. Brown
2. Green
3. Blue
4. Red

1) How old are you?

_____

2) Where were you born in Haiti?

_____

3) Do you consider yourself Haitian of African descent?

1) No
2) Yes

4) Have you lived outside of Haiti in the past five years?

1) No
2) Yes

5) What is your marital status?

1) Single
2) Married
3) Divorced
4) Widowed
5) Other

6) What level of education have you reached?

1) Primary School
2) Secondary School
3) University

7) What is your religion?

_____

8) **Have you ever been screened for prostate cancer?**
   1) Yes
   2) No
   3) I don't know

9) **Has anyone in your family, such as a father, a brother, an uncle, or a cousin been diagnosed with prostate cancer?**
   1) Yes
   2) No
   3) I don't know

10) **Do you have any intention of speaking with your physician or health care provider about prostate cancer screening in the next 12 months?**
   1) No
   2) Maybe not
   3) Maybe
   4) Yes

11) **After speaking to your health care provider and screening was recommended, will you plan to screen for prostate cancer in the next 12 months?**
   1) No
   2) Maybe not
   3) Maybe
   4) Yes

12) **The digital rectal exam (DRE) is an examination where the health care provider inserts a gloved finger into the rectum to feel for size, shape, and hardness of the prostate gland. This is one way to screen for prostate cancer. Would you be willing to let your health care provider perform that exam for you?**
   1) No
   2) Maybe not
   3) Maybe
   4) Yes

13) **The prostate specific-antigen (PSA) test is another way to screen for prostate cancer. The PSA test is a blood test checking for prostate cancer. Would you be willing to have that test done for you?**
   1) No
   2) Maybe not
   3) Maybe
   4) Yes

Barry University

Questionnaire de Démographie (French)

S'il vous plaît, lisez la question et encercler votre réponse. Suivez l'exemple ci-dessous.

De quelle couleur est le ciel ?

1. Marron
2. vert
3. Bleu
4. Rouge

1) **Quel âge avez-vous?**

_____

2) **Où êtes-vous né en Haïti ?**

_____

3) **Vous considérez-vous haïtienne d'origine africaine ?**
   1) Non
   2) Oui

4) **Avez-vous vécu à l'extérieur d'Haïti au cours des cinq dernières années ?**
   1) Non
   2) Oui

5) **Quel est votre état matrimonial ?**
   1) Simple
   2) Marié
   3) Divorcé
   4) Veuf
   5) Autres

6) **Quel est le niveau de l'éducation Avez-vous atteint ?**
   1) Ecole primaire
   2) Ecole secondaire
   3) Université

7) **Quelle est votre religion?**

_____

8) Avez-vous déjà subi un dépistage du cancer de la prostate ?

1) Oui
2) Non
3) Je ne sais pas

9) Est-ce que quelqu'un dans votre famille : comme un père, un frère, un oncle ou un cousin été diagnostiqué avec le cancer de la prostate ?

1) Oui
2) Non
3) Je ne sais pas

10) Avez-vous l'intention de parler avec votre médecin ou professionnel de la santé sur le dépistage du cancer de la prostate dans les 12 prochains mois ?

1) Non
2) Peut-être pas
3) Peut-être
4) Oui

11) Après avoir parlé à votre fournisseur de soins de santé et de dépistage a été recommandé, allez-vous organiser pour dépister le cancer de la prostate dans les 12 mois suivant

1) Non
2) Peut-être pas
3) Peut-être
4) Oui

12) Le toucher rectal (DRE) est un examen Lorsque le prestataire de soins de santé insérer un doigt ganté dans le rectum afin de palper pour la taille, la forme et la dureté de la glande de la prostate. Ceci est une manière pour dépister le cancer de la prostate. Seriez-vous prêt à laisser votre fournisseur de soins de santé effectuer cet examen pour vous ?

1) Non
2) Peut-être pas
3) Peut-être
4) Oui

13) L'antigène spécifique (PSA) test de la prostate est une autre façon de dépister le cancer de la prostate. Le test PSA est un test sanguin pour le contrôle du cancer de la prostate. Seriez-vous prêt à avoir ce test effectué pour vous ?

1) Non
2) Peut-être pas
3) Peut-être
4) Oui

Barry University

Kesyonè Demografik (Haitian Creole)

Tanpri, li kesyon an e sèkle repons ou an. Swiv egzanp ki anba a.

Ki koulè sa syèl la ?

1. mawon
2. vèt
3. ble
4. wouj

1) Ki laj ou ye?

_____

2) Ki kote ou te fèt nan Ayiti?

_____

3) Eske ou konsidere tèt ou ayisyen ki desandan Afriken

1) Non
2) Wi

4) Eske ou te viv andeyò de Ayiti pandan denye senk ane pase yo?

1) Non
2) Wi

5) Ki sa ki se kondisyon matrimonyal ou ?

1) Sèl
2) Marye
3) Divose
4) vev
5) Lot kondisyon

6) Ki nivo edikasyon ou rive ?

1) Lekòl Elemantè
2) Lekòl Segondè
3) inivèsite

7) Ki sa ki se relijyon ou a?

_____

8) **Èske w te janm tèste pou kansè nan pwostat?**
   1) Wi
   2) Non
   3) Mwen pa konnen

9) **Èske gen nenpòt moun ki nan fanmi ou,: tankou yon papa, yon frè, yon tonton, oswa yon kouzen ki te genyen maladi kansè nan pwostat?**
   1) Wi
   2) Non
   3) Mwen pa konnen

10) **Èske ou gen oken entansyon pou pale avèk doktè oswa founisè swen sante ou sou tès depistaj kansè nan pwostat nan 12 mwa kap vini yo?**
   1) Non
   2) Petèt pa
   3) Petèt
   4) Wi

11) **Apre ou fin pale ak doktè oswa founisè swen sante ou e li rekòmande tès depistaj pou kansè nan pwostat , Èske ou pral fè plan pou ou kapab fè yon tès depistaj kansè nan pwostat nan nan 12 mwa kap vini yo?**
   1) Non
   2) Petèt pa
   3) Petèt
   4) Wi

12) **Egzamen dwèt nan rektal (DRE) se yon egzamen kote doktè oswa founisè swen sante ou fouye yon dwèt ki gen gan nan dèyè a pou yo kapab santi pou gwosè, fòm, ak si glann pwostat la di. Sa a se yon fason yo detekte pou kansè nan glann pwostat la. Èske ou ta kapab byen vle kite yo fè egzamen sa pou ou?**
   1) Non
   2) Petèt pa
   3) Petèt
   4) Wi

13) **espesifik-antijèn pwostat (PSA) tès la se yon lòt fason kouman yo ka detekte kansè nan pwostat. Tès sa se yon tès kote yo pran san ou pou kapab egzamine pou kansè nan pwostat. Èske ou ta kapab byen vle kite yo fè tès sa a pou ou**
   1) Non
   2) Petèt pa
   3) Petèt
   4) Wi

APPENDIX H

CHAMPION'S HEALTH BELIEF MODEL SCALES (CHBMS) MODIFIED FOR PROSTATE CANCER

FRENCH AND HAITIAN CREOLE TRANSLATION OF CHBMS FOR PROSTATE CANCER

Barry University

Health Belief Model Survey-Prostate (English)

Please, read the question and circle your answer. Follow the example below. **What color is the sky?** 1. Brown 2. Green 3. Blue 4. Red	
SUSCEPTIBILITY	**1. It is extremely likely I will get prostate cancer in the future.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **2. I feel I will get prostate cancer in the future.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **3. There is a good possibility I will get prostate cancer in the next 10 years.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **4. My chances of getting prostate cancer are great.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **5. I am more likely than the average man to be prostate cancer.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree

Barry University

Health Belief Model Survey-Prostate (English)

Please, read the question and circle your answer. Follow the example below.
What color is the sky?

1. Brown
2. Green
3. Blue
4. Red

Benefits	**6. When I get a DRE or PSA test, I feel good about myself.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **7. When I get a DRE or PSA test, I do not worry as much about prostate cancer.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **8. Having a DRE or PSA test will help me detect prostate cancer early.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **9. Having a DRE or PSA test will decrease my chances of dying from prostate cancer.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **10. Having a DRE or PSA test will decrease my chances of requiring radical or disfiguring surgery if prostate cancer occurs.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **11. Having a DRE or PSA will help me detect prostate cancer before it can be felt by myself or a health professional.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree

Barry University

Health Belief Model Survey-Prostate (English)

Please, read the question and circle your answer. Follow the example below. **What color is the sky?** 1. Brown 2. Green 3. Blue 4. Red	
Barriers	**12. Having a routine DRE or PSA test would make me worry about prostate cancer.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **13. Having a DRE or PSA test is too embarrassing.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **14. Having a DRE or PSA test would take too much time.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **15. Having a DRE or PSA test is too painful.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree **16. Having a DRE or PSA test would cost too much money.** 1) Strongly disagree 2) Disagree 3) Agree 4) Strongly agree

Thank you for your participation

Barry University

Health Belief Model Survey-Prostate (French)

S'il vous plait, lisez la question et encerclez votre réponse. Suivez l'exemple ci-dessous. **Quelle est la couleur du ciel?** 1. Marron 2. Vert 3. Bleu 4. Rouge	
SUSCEPTIBILITÉ	**1. C'est extèmement vraisemblable que j'aurai un cancer à la prostate dans le futur.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **2. Je sens que j'aurai un cancer à la prostate dans le futur.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **3. I y a une grande possibilité pour que j'aie un cancer à la prostate dans les 10 prochains annees.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **4. Il y a beaucoup de chance que j'aie un cancer à la prostate.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **5. Je suis plus susceptible d'avoir un cancer à la prostate que la moyenne des hommes.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord

Barry University

Health Belief Model Survey-Prostate (French)

Avantages	**6. Quand j'ai un test de toucher rectal ou de l'APS, je me sens bien.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **7. Quand j'ai un test de toucher rectal ou de l'APS, je ne m'inquiète pas trop à propos du cancer de la prostate.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **8. Le fait d'avoir un test de toucher rectal ou de l'APS me permettra de détecter un cancer à la prostate tôt.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **9. Le fait d'avoir un test de toucher rectal ou de l'APS diminuera mes possibilités de mourir du cancer de la prostate.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **10. Le fait d'avoir un test de toucher rectal ou de l'APS diminuera mes possibilités de recourir à une intervention chirurgicale radicale ou défigurante en cas de cancer de la prostate.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **11. Le fait d'avoir un test de toucher rectal ou de l'APS me permettra de détecter un cancer à la prostate avant que je puisse en sentir les symptômes ou qu'un professionnel de la santé l'ait découvert.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord

Barry University

Health Belief Model Survey-Prostate (French)

Barrieres	**12. Le fait d'avoir un test de routine de toucher rectal ou de l'APS me donnerait des inquiétudes à propos du cancer de la prostate.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **13. Un test de toucher rectal ou de l'APS est trop gênant.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **14. Avoir un test de toucher rectal ou de l'APS prendrait trop de temps.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **15. Un test de toucher rectal ou de l'APS serait trop douloureux.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord **16. Un test de toucher rectal ou de l'APS serait trop coûteux.** 1) Pas du tout d'accord 2) Pas d'accord 3) D'accord 4) Tout à fait d'accord

Merci pour votre participation

Barry University

Health Belief Model Survey-Prostate (Haitian Creole)

Silvouplè, li kesyon an e ansèkle repons ou a. swiv egzanp ki vin apre a

Ki koulè syèl la?

1) Mawon
2) Vèt
3) Ble
4) Wouj

Siseptibilite	**1. Sanble gen anpil posiblite pou m gen kansè pwostat yon jou nan vi m;** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **2. Mwen santi map gen kansè pwostat yon jou.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **3. Gen anpil chans pou m gen kansè pwostat nan dis an kap vini yo.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **4. Gen gwo chans pou m gen kansè pwostat.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **5. Posiblite pou m gen kansè pwostat la pi plis pase lakay mwatye gason.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò

Barry University

Health Belief Model Survey-Prostate (Haitian Creole)

Avantaj	**6. Lè m fè tès DRE a oubyen PSA, mwen santi m kontan.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **7. Lè m fè tès DRE a oubyen PSA, mwen pa tèlman bay tèt mwen pwoblèm pou kansè pwostat.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **8. Tès DRE oubyen PSA ap ede m detekte kansè pwostat bonè.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **9. Tès DRE oubyen PSA ogmante chans mwen pou m pa mouri a kansè pwostat.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **10. Tès DRE oubyen PSA ogmante chans mwen pou m pa tonbe nan gwo operasyon ki ka defigire moun si m ta gen kansè pwostat.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **11. Tès DRE oubyen PSA ap ede detekte kansè pwostat anvan m santi l oubyen avan yon pwofesyonèls lasante wè l.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò

Barry University

Health Belief Model Survey-Prostate (Haitian Creole)

Obstak	**12. Yon tès woutin DRE oubyen PSA tap fè m pè pou m ka gen kansè pwostat.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **13. Fè yon tès DRE oubyen PSA se yon bagay ki jenan.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **14. Fè tès DRE oubyen PSA tap pran twòp tan.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **15. Tès DRE oubyen PSA fè mal anpil.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò **16. Fè tès DRE oubyen PSA tap koute twòp kòb.** 1) Mwen pa dakò ditou. 2) Mwen pa dakò 3) Mwen dakò 4) Mwen san pou san dakò

Mèsi pou patisipasyon ou

APPENDIX I

LETTER FROM TRANSLATOR

New York, 8-29-2015

To whom it may concern,

I the undersigned hereby certify that I translated from English into Creole and French the documents relating to Mr. Jhonii Louis' survey entitled "Perceived Threat, Perceived Benefits, and Perceived Barriers as Predictors to Haitian Men's Intention Regarding Prostate Cancer Screening".

Jean François, [redacted]

Associate professor of Creole, French and Linguistics

York College, City University of New York (CUNY)

APPENDIX J

RESEARCH QUESTIONS AND HYPOTHESES DATA SHEET

Research Questions and Hypotheses Data Sheet

#	Research Questions	Research Hypotheses	Instrument	Statistical Test	Results
RQ1 & RH1	RQ1: What is the relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and the intention of Haitian men in Haiti to screen for prostate cancer?	RH1: There will be a statistically significant positive predictive relationship between select constructs of the health belief model (perceived susceptibility, perceived benefits, and perceived barriers) and Haitian men's intent to screen for prostate cancer.	Champion's Health Belief Model Scales (modified for prostate cancer screening) Subscales: (Susceptibility, Benefits, and Barriers) Researcher's Developed Demographic Questionnaire (Items 10-13)	Logistic Regression Analysis Nonparametric Kruskal-Wallis (*H*) ANOVA	Analysis of the data finds the model to be significant, χ^2 (3) = 14.47, p = .00, indicating that, at least one of the predictor variables (perceived benefits) is significantly predictive of the outcome variable of intent to be screened for prostate cancer. Further, the nonsignificant Hosmer and Lemeshow statistic, χ^2 (8) = 4.33, p = .83, supports that the data was a good fit for the model.
RQ2 & RH2	RQ2: Which of these select health belief model constructs (perceived susceptibility, perceived benefits, and perceived barriers) is the most significant positive predictor to the intention of Haitian men in Haiti to screen for prostate cancer?	RH2: Perceived susceptibility will be statistically the most significant positive predictor to intention of Haitian men in Haiti to screen for prostate cancer.	Champion's Health Belief Model Scales (modified for prostate cancer screening) Subscales: (Susceptibility, Benefits, and Barriers) Researcher's Developed Demographic Questionnaire (Items 10-13)	Logistic Regression Analysis Nonparametric Kruskal-Wallis (*H*) ANOVA	This hypothesis was rejected. Examination of the individual significance values finds only perceived benefits of screening for prostate to be a relevant predictor of intent to be screened for prostate cancer among this sample. Perceived susceptibility *(p = .32)*; perceived benefits *(p = .01);* perceived barriers *(p = .06)*

RQ3 & RH3	RQ3: What is the relationship between Haitian men of different ages and their intent to screen for prostate cancer?	RH3: There will be a statistically significant positive relationship between Haitian men of different ages and their intent to screen for prostate cancer.	Researcher's Developed Demographic Questionnaire (Items 1, 10-13)	Logistic Regression Analysis Nonparametric Kruskal-Wallis (*H*) ANOVA	This hypothesis was rejected. Another binary logistic regression was performed and the model was not significant, χ^2 (1) = 3.59, p = .06. The nonsignificant Hosmer and Lemeshow statistic, χ^2 (7) = 10.25, p = .17, supports that the data was a good fit for the model.
RQ4 & RH4	RQ4: What is the difference of intent to screen for prostate cancer among Haitian men of different levels of education?	RH4: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men of different level of education.	Researcher's Developed Demographic Questionnaire (Items 6, 10-13)	Nonparametric Kruskal-Wallis (*H*) ANOVA	This hypothesis was rejected; no significant differences in the rankings of the participants' intent to be screened for prostate cancer were found between different levels educational *(p = .51).*
RQ5 & RH5	RQ5: What is the difference of intent to screen for prostate cancer among Haitian men of different marital status?	RH5: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men of different marital status.	Researcher's Developed Demographic Questionnaire (Items 5, 10-13)	Nonparametric Kruskal-Wallis (*H*) ANOVA	This hypothesis was rejected; no significant differences in the rankings of the participants' intent to be screened for prostate cancer were found between different marital s tatus *(p = .03)*

RQ6 & RH6	RQ6: What is the difference of intent to screen for prostate cancer among Haitian men with different religions?	RH6: There will be a statistically significant difference of intent to screen for prostate cancer among Haitian men with different religions.	Researcher's Developed Demographic Questionnaire (Items 7, 10-13)	Nonparametric Kruskal-Wallis (*H*) ANOVA	This hypothesis was rejected; no significant differences in the rankings of the participants' intent to be screened for prostate cancer were found between groups based on religion *(p = 71).*
RQ7 & RH7	RQ7: What is the difference of intent to screen for prostate cancer between Haitian men with or without family history of prostate cancer?	RH7: There will be a statistically significant difference of intent to screen for prostate cancer between Haitian men with or without family history.	Researcher's Developed Demographic Questionnaire (Items 9, 10-13)	Nonparametric Kruskal-Wallis (*H*) ANOVA	This hypothesis was rejected; no significant differences in the rankings of the participants' intent to be screened for prostate cancer were found between groups based on family history of prostate cancer *(p = .11).*

VITA

1970	Born- Port-de-Paix, Nord-Ouest
	Haiti, West Indies
1994	Bachelor (Psychology and French)
	University of Miami, Coral Gable, FL
1994	Outpatient Intake Specialist
	New Horizon Community Mental Center, Miami FL
1999	MSW/Registered Intern
	Barry University, Miami Shores, FL
	Outpatient Clinic/Crisis Clinic Coordinator
	New Horizons Community Mental Health Center
	On-site Therapist
	Children Psychiatric Center, Miami, FL
	School Social Worker
	Dillard High School, Broward County Public Schools, Broward, FL
2007	Bachelor of Science
	Nursing/RN
	Barry University, Miami shores, FL
	Staff Nurse, Ortho/Neuro/Telemetry
	Memorial Regional Hospital, Hollywood, FL
2009	Staff Nurse, IMCU/Step-Down Unit
	Memorial Regional Hospital, Hollywood, FL
2010	LCSW, Co-Chair of Teen Parent Alliance, District Teen Parent Social Worker

Broward County Public Schools, Broward FL