Differences in Perceptions of Prostate Cancer Screening Among Multiethnic Black Men

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Approval Page

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Abstract

Prostate cancer (PCa) affects Blacks disproportionately when compared to other groups. PCa is the primary cancer and second cause of cancer mortality among Black men. Some researchers have declared that the high PCa incidence and mortality rates in the Black population are a result of poor screening rates. PCa screening perceptions are reasonably known among African American men; however, limited documentation is available for the ever-expanding population of ethnic Black Caribbean men in the United States. Ethnic Blacks from the Caribbean are at high risk for PCa, with PCa incidence and mortality rates comparable to, or exceeding those of African American men. This quantitative non-experimental comparative analysis study examined differences in the perception of ethnic Blacks toward PCa and PCa screening. Also being examined was the extent and manner in which these PCa perceptions among ethnic Black men differ with respect to specific ethnic groups within the Black population and varied with respect to demographic factors of age, education, marital status, health insurance coverage, and income. The Health Belief Model – Prostate Cancer Scale (HBM-PCS) was theoretical framework used in this study. The HBM-PCS and a Demographic survey were provided to 167 participants (40 to 80 years), recruited via flyers at grocers, shopping malls, plazas, restaurants, and barbershops frequented by ethnic Black men residing in Broward County, Florida. There was a statistically significant difference in Perceived PCa Seriousness with respect to ethnic identity, $F(4, 162) = 4.54$, $MSE = .531$, $p = .002$, $\eta^2 = 0.10$. There was also a statistically significant difference in Perceived PCa Screening Barriers with respect to ethnic identity, $F(4,162) = 4.08$, $MSE = .226$, $p = .004$, $\eta^2 = 0.09$. There was no statistically significant difference in Perceived PCa Screening Benefits with respect to ethnic identity, $F(4, 162) = .80$, $MSE = .188$, $p = .526$, $\eta^2 = 0.02$. The interaction effect between ethnicity and age $F(8, 152) =$

2.08, MSE = .180, p = .041, η_p^2 = .099 and ethnicity and income $F(14, 142) = 1.79$, MSE = .177, p = .045, η_p^2 = .150 on perceived PCa screening Benefits were of statistical significance. Perceived PCa Screening Barriers also statistically significantly differed with respect to education level [$F(5, 160) = 4.48$, MSE = .221, p = .001, $\eta^2 = 0.12$], income level [$F(4, 160) = 6.21$, MSE = .216, $p < .001$, $\eta^2 = 0.13$], and health insurance coverage [$t(165) = 3.22$, $p < .001$]. Future studies should take into consideration additional ethnic Black groups, which should consist of larger samples that are more equally weighted among each ethnic group being examined. Additionally, future studies should focus on how ethnic Black men perceived the benefits of PCa, and how their perceptions of the benefits of screening contribute to, or prevent them from screening for PCa disease. Of interest should also be studies on PCa trajectory in ethnic Black immigrants in the United States, as to whether PCa incidences and mortalities become lessened upon migration from their country of origin.

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Chapter 1: Introduction

Prostate cancer (PCa) unduly afflicts Black men (ACS, 2013, 2014). Similar trends of this disproportionate affect exist in ethnic Black cultures of Caribbean descent and some men of African and European ancestry (Glover et al., 1998; Gunderson, Wang, Y., & Wang, R., 2011; Odedina et al., 2009, 2011). In the United States (US), PCa incidences (IN) and mortality rates (MR) have steadily declined for all racial categories; nonetheless, Blacks still exhibit high PCa IN and MR (Howlader et al., 2013, 2014; Wu & Modlin, 2012). The most recent report from the Surveillance Epidemiology and End Results (SEER) Program on US cancer rates revealed PCa IN of 223.9 and MR of 48.9 per 100,000 among Blacks, which was a slight reduction from the PCa IN (228.5) and MR (50.9) documented a year ago (Howlader et al., 2013, 2014, t. 2311, p. 11). Despite this reduction however, the PCa IN in Blacks remain almost 2.4 times that of White men (139.9 IN and MR 20.6), who in 2014, also experienced a slight reduction in PCa IN and MR as well (Howlader et al., 2013, 2014, t. 2311, p. 11; NCI, n. d.).

A few ethnic Blacks in the US with high PCa IN and MR that were documented based on nativity of their former countries include Jamaicans (IN 78.1 to 304 and MR 53.9 per 100,000), Barbadians (IN 160.4 and 63.2 per 100,000 MR), Haitians (IN 767 and MR of 403 per 100,000), and Tobagonians, whose alleged 15.1 per 100 PCa risk is speculated at three times that of White men (Aiken & Eldemire-Shearer, 2012, p. 90; Bunker et al., 2002; Glover et al, 1998, p. 1985; Hennis et al., 2011, p. 1; IARC, 2005). Along with the high PCa IN and MR, PCa screening and treatment upon diagnosis continues to be a major hurdle for ethnic Black men (Consedine, Morgenstern, Kudadjie-Gyamfi, Magai, & Neugut, 2006; Phillips et al., 2007). Late stage presentation and differential treatments after PCa diagnosis also disproportionately influence PCa IN and MR in Black men (Carpenter et al., 2010; Jackson et al., 2012; Odedina et al., 2011).

Despite impediments such as late diagnosis and low PCa screening rates, some researchers have declared that even with PCa screening adherence among Black men, upon diagnosis with the disease, substandard healthcare services and less aggressive treatments are typically provided to, and reported by Blacks when compared to more aggressive alternatives offered to White men (Pedersen, Armes, & Ream, 2012; Schwartz et al., 2009). It is not an uncommon consensus that Blacks have been said to have lower PCa screening rates than other groups (Odedina et al., 2009; Wray et al., 2009). Some researchers have also found that after controlling for comorbidities, socioeconomic status (SES), and accessibility in Blacks, PCa screening does not increase (Gonzalez, Consedine, McKiernan, & Spencer, 2008; Wells et al., 2010). However, it is important to note that these practicalities emphasize how imperative it is to examine the PCa screening perceptions of ethnic Black men who continue to be at high PCa risk, thereby allowing an understanding of how perceptions impact willingness to participate in PCa screening research.

Kleier (2010), Consedine et al. (2009) and Zeigler-Johnson, Tierney, Rebbeck, and Rundle (2011) declared that low PCa screening rates among Blacks are linked to mistrust of providers, education level, low SES, PCa knowledge, neighborhood deprivation, and outcome belief. Aiken and Eldemire-Shearer (2012) have also affirmed that ethnic perspectives on manhood along with access to care, poverty, illiteracy, indifference, passivity, stoicism, risk denial, and unacceptability of the Digital Rectal Examination (DRE) are factors that impact PCa screening willingness in Black men (p. 91). In addition to the above stated findings, Wu and Modlin (2012) indicated that there continues to be lack of knowledge on early PCa detections methods among many Blacks (p. 315). These researchers argue that costs, transportation issues, poor communication, and lack of cultural competency among physicians result in many Black

men being deprived of the opportunity by their providers to participate in PCa screening (Wu & Modlin, 2012).

This chapter provided information to demonstrate the need for further examination on the perceptions of ethnic Black men towards PCa screening and how the results of those examinations may enhance our understanding of how PCa and screening are perceived by ethnic Black men who are of African American and Caribbean heritage. Furthermore, the background section of this study will provide information on the study's theoretical framework, statement of the problem, purpose statement, research questions, nature of the study, significance of the study, definition of key terms, and a summary of the research information.

Background

Prostate cancer (PCa) affects men regardless of ethnic or racial background (ACS, 2014). However, compared to other racially classified groups, ethnic Black men are disproportionately affected by the disease both in incidences and mortalities (Howlader et al., 2012, 2013, 2014, t. 2311; Odedina et al., 2009). The prostate cancer (PCa) incidence and mortality rates on record for ethnic Black men are said to be some of the highest in the world (ACS, 2013, 2014). In the United States (US), the Surveillance, Epidemiology, and End Results (SEER) program publishes information on the US cancer incidence and mortality rates for all groups according to a racially classified system (Howlader et al., 2013, 2014). However, within group differences of ethnic subgroups are not a part of the classification system. In the United States, PCa represented 14% of all new cancer cases (Howlader et al., 2014). Additionally, in 2014, there was an estimated 233,000 PCa cases and 29,480 PCa deaths reported (ACS, 2014; Howlader et al., 2014).

Additionally, the median age of diagnosis was 66 years with 36.3% of cases diagnosed between 65-74 years; while the median age of death was age 80 with 36.8% of deaths occurring

between 75-84 years of age (Howlader et al., 2014). The latest SEER report also showed that Black men had a PCa incidence rate of 223.9, down from 228.5 per 100,000 persons, and a mortality rate of 48.9, down from 50.9 per 100,000 persons a year ago, making PCa IN in Black men approximately 2.4 times higher than the PCa incidence seen in White men (Howlader et al., 2013, 2014). The incidence and mortality rates are also about three times the rates found in some other racially defined groups (ACS, 2013, 2014; Howlader et al., 2013, 2014). PCa IN was 147.8 per 100,000 persons for all races, and MR of 22.3 per 100,000 persons for all races (Howlader et al., 2014). With regards to other racially classified groups, Asian / Pacific Islander had a PCa IN of 79.3 and MR of 10.0 per 100,000 persons, American Indian / Alaskan Native had a PCa IN of 71.5 and MR of 21.2 per 100,000 persons, Hispanic had a PCa IN of 121.8 and MR of 18.5 per 100,000 persons, and Non-Hispanic had a PCa IN of 151.6 and MR of 22.6 per 100,000 persons (Howlader et al., 2014). In brief, though slight reduction is being experienced, the PCa IN disparities for Black men remain similar to disparities experienced in previous years.

The American Cancer Society (ACS) report revealed that there was an estimated PCa IN of 35,430 cases (37%), and an expected 4980 PCa deaths in African American men (ACS, 2013, 2014, p. 14). The ACS also found that during their lifetime, one in five African American men will be diagnosed with PCa (ACS, 2013, 2014, p. 14). It has also been purported that from the years 2000-2009, PCa incidence rates fell by 2.0% among African American men compared to 2.3% in White men (Jemal et al., 2013, p. 14). Researchers believe the use of the Prostate Specific Antigen test (PSA), hormonal treatment, and clinical interventions may be responsible for the gradual decrease in PCa mortality seen in African American men though the benefits of PSA intervention remain unclear (Brawley, Ankerst, & Thompson, 2009; Etzioni, Gulati, Falcon, & Penson, 2008; Hankey et al., 1999; Hsing & Devesa, 2001).

Despite the gradual decrease in PCa incidences and mortalities for all racial groups in the US, Blacks as a racial group continue to experience higher risks for PCa incidence and mortality (Howlader et al., 2013, 2014; Lee, Consedine, Gonzalez, & Spencer, 2012). Additionally, there is also the possibility that PCa incidence and mortality rates reported for Blacks and African Americans could be higher or lower in African Americans and Black ethnic groups due to confounding factors. For example, if researchers collected PCa research data intending to include only African American participants but in actuality, also include samples of other ethnic Black groups as well, the findings of the study would be unreliable and lack validity especially if results conclude that the findings pertain to only African American men (Arthur & Katkin, 2006; Consedine et al., 2012; Jones, 2005; Siegel, Ma, Zou, & Jemal, 2014). Some researchers have argued that the higher PCa burden in African Americans is not only because of their predisposition to PCa disease based on age, family history, and race, but also because of extremely low PCa screening rates among the group (ACS, 2013, 2014; Consedine, Morgenstern, Kudadjie-Gyamfi, Magai, & Neugut, 2006; Lee, Consedine, & Spencer, 2011; Hosain, Sanderson, Du, Chan, & Strom, 2011).

Other researchers have asserted that the low PCa screening rates in Blacks are also due to a lack of education, which is essentially a preventable and correctable barrier (Odedina et al., 2004). Some additional reported barriers to PCa screening include mistrust of providers, provider non-recommendation, provider disrespect of patients, fear of prostate exams and outcome, fatalism, transportation issues, financial hardship, lack of insurance, unemployment, cultural incompetence, lack of sensitivity, and low socioeconomic status (Archibald, 2011; Lee et al., 2011; Jones, 2005; Odedina et al., 2004). Among the incidences and mortalities for Black men reported by the ACS and SEER Program, since there were no reported data for ethnic Black

subpopulations in the PCa research data collection process, it was impossible to determine how much of the sample included ethnic Black immigrant groups including Caribbean and African men (ACS, 2013, 2014; Howlader et al., 2013, 2014). Historically, ethnic Black men have either been termed "African Americans" or "Blacks" for the purposes of research studies in the US or other identification purposes (Arthur & Katkin, 2006; Magnus, 2004). This interchangeable classification might possibly inflate or deflate reported PCa incidence and mortality rates seen in Black men and or African American men (Arthur & Katkin, 2006; Consedine, Magai, & Conway, 2004; Parchment, 2004). Additionally, even though high PCa incidence and mortality rates are reported among ethnic Black immigrant groups who are not African Americans, it is difficult to ascertain the validity of incidences and mortality rates in cultures where nativity rather than ethnicity is the primary factor used to determine PCa incidence and mortality rates.

Many research studies on PCa screening fail to acknowledge the ethnic diversity of the Black population, which can detrimentally affect screening policies and outcomes (Jackson et al., 2004). As a result, most providers and researchers continue to miss essential opportunities to look at ethnic Black populations, which might provide vital information on any differences in their perceptions towards the PCa screening process (Arthur & Katkin, 2006; Magnus, 2004). There have been a handful of studies in the US that have shown that ethnic Blacks who are foreign-born typically show a health advantage in some chronic illnesses over that of African Americans; however, PCa is not one of the recognized health advantage (Odedina et al., 2011; Read, Emerson & Tarlov, 2005; Singh & Siahpush, 2002). These findings demonstrate the importance of undertaking research activities to understand PCa perceptions in ethnic Blacks who continue to have the highest PCa risks when compared to all other ethnic groups including the health disadvantage that exists with this particular disease.

Despite research proclaiming that foreign born ethnic Blacks from the Caribbean belt have been found to have lower overall rates of chronic health conditions such as lower obesity rates, lower infectious diseases, respiratory illnesses, cardiovascular diseases, hypertension, and some cancer sites (Consedine, Tuck, Ragin, & Spencer, 2014; Read et al., 2005; Schmidley, 2001; Singh & Siahpush, 2001, 2002), there are other health conditions that are problematic and pervasive among these diverse populations. For example, PCa continues to be a major public health issue and the number one cancer diagnosis in Caribbean born ethnic Black men (Globocan, 2008; Kleier, 2010; Roberts, 2009). There has been evidence of the disproportionately high PCa IN and MR among Caribbean populations with some populations being afflicted much worse than others. However, there continues to be a lack of study on PCa perceptions in ethnic Black men. Nevertheless, it is important to understand the incidence and mortality rates in ethnic Black men in and outside the US in order to make stride towards understanding how to reduce the disparity that currently exists.

Glover et al. (1998) reported PCa incidence of 304 per 100,000 persons in a PCa study exploring the epidemiology of prostate cancer (PCa) in the Caribbean island of Jamaica, and based on a large population sample based on adjusted rates (p. 1986). The sample population consisted of Jamaican ethnic Black men totaling a sample of 1,121 cases with 80% of the PCa cases being from pathologically confirmed data for PCa diagnosis from 1989 to the year 1994 in Jamaica (p. 1985). Some of the study population data were obtained from recorded PCa cases, which were located at clinic records, hospital records, physician office records, government pathology laboratory, and the Jamaican Cancer Registry (p. 1985). The researchers adjusted the age of the participants based on the standardized age adjustment rates in the United States population, then computed the PCa incidence rates with Jamaican PCa data from the year 1991, as

recorded by the Jamaican Census population counting system (Glover et al., 1998, p. 1985). The data was then compared with United States data for African Americans and White Americans.

Glover et al. (1998) found that in Jamaica's capital city of Kingston, there was an age adjusted PCa incidence of 304 per 100,000 persons among the population, with 72 years old being the median age when diagnosis of the disease occurred (p. 1985). In 1989, the PSA measured in this population was only conducted in 7% of the PCa cases, where in the year 1994, the researchers found that there was an increase to 48% of the PCa cases being measured for PSA in the acquired PCa cases (p. 1985). They also found that in their sample, 42% of PCa cases showed abnormality in the Digital Rectal Examination (DRE), bone metastases were found in 16% of PCa cases, 15% of the cases presented with gross hematuria during diagnosis, and there were acute urinary retention in 30% of the PCa cases in their acquired data (Glover et al., 1998, p. 1985). Glover et al. (1998) concluded that during similar periods showing the high PCa incidence of 304 per 100,000 persons in Jamaican Black men, PCa incidence were much higher than incidence rates for African Americans (249/100,000) and White Americans (182/100,000) during the same time periods (Glover et al., 1998, p. 1985).

Jamaican Black men also showed later clinical presentation with PCa disease and greater indisposition compared to African Americans and White men (Glover et al., 1998, p. 1985). Some researchers have questioned the validity of the PCa incidence recorded by Glover et al. (1998). Others believe that there was a possibility of overstated figures presented by Glover et al. (1998) depending on whether the researchers relied on the five-year cumulative PCa rates or the yearly age-adjusted rate per 100 000 persons, in addition to oversight of the denominators (Ben-Shlomo et al., 2007; Gibson, Blake, Hanchard, Waugh, & McNaughton, 2008; Hanchard et al., 2001). The study is still an invaluable resource for those interested in foundational PCa

research in ethnic Black men outside the US, and in reducing and eventually eliminating the PCa disparity that encompass PCa screening, PCa research, and PCa treatment of those predisposed, highly predisposed, or are currently affected by the disease in the Black community. Any information available on PCa screening and PCa in ethnic Black men can undoubtedly be replicated if results are questionable, and can further interests in addressing within group challenges in this at risk populations.

Additionally, the research study by Glover et al. (1998) also demonstrated the need for more healthcare attention on the healthcare and service disparities encountered by foreign born individuals of African descent that encompasses the diverse ethnic Black populations in the United States (Arthur & Katkin, 2006; Magnus, 2004). Ethnic Black men from the Caribbean encompass high PCa risk groups; and, they account for a large portion of the over 3.7 million US residents from the Caribbean alone (Camarota, 2012). Their healthcare needs in every facet of the American healthcare system has either been substandard care, lack of care from being overlooked in research studies that could benefit them, and lack of culturally appropriate interventions to provide for their healthcare needs or understand their predisposed health status and risks (Camarota, 2012; Kleier, 2010; Magnus, 2004). The failure to include these large populations in healthcare research in the United States can only further the disparities encountered by Blacks as a racially categorized group in the US (Consedine et al., 2014; Hammond et al., 2011).

Another issue that has been realized in PCa research in the Caribbean is that though many Caribbean ethnic Black men present late for PCa screening and PCa diagnosis, making treatment extremely impractical, the issue is not only pervasive among Jamaican Black men (Coard & Skeete, 2008). Coard and Skeete (2008) conducted a study over a 6 year period that was aimed at documenting PCa clinicopathological physiognomies with the use of a population sample

obtained from a Jamaican public. Since PCa disease is the primary cause of cancer deaths among Jamaican Black men, the researchers also intended to observe over a period of time, any developments in these physiognomies. Between 2000 and 2005 at the University Hospital of the West Indies in Jamaica, pertinent quantifiable and pathological data was collected from histopathology request forms on men who were identified as active PCa cases based on a diagnosis obtained through the use of a transrectal ultrasonography-guided (TRUS) biopsy. Over the course of the 6 year period, the researchers collected information based on 529 PCa diagnosed cases (p. 1483). According to their data, there were a total of 137 cases that were 70 to 74 years of age, with mean age being 70.66 (8.74) among the group (p. 1484).

There were a total of 490 (92.6%) PCa cases from whom a serum PSA level was taken by the researchers, with a 456 (86.2%) precise PSA value, while the outstanding 34 PCa cases had a PSA level of >100 ng/mL 'minimum level' documented (Coard & Skeete, 2008, p. 1484). Of the sample with existing PSA data, 91 (18.5%) PCa cases show a level of < or = 10.0 ng/mL, where 155 (31.6%) PCa cases showed levels of >100 ng/mL (p. 1484). The researchers found that 198 (37.5%) and 160 (30.2%) PCa cases individually accounted for abstemious and "poorly" distinguished PCa malignancies (p. 1484). The confirmations of the sample data after analysis have led the researchers to conclude that Jamaican Black men typically present with, and are diagnosed in the most progressive stages of PCa disease, show considerably higher levels of PSA during diagnosis, and are generally much older when diagnosed, compared to neighboring Caribbean islands and many countries worldwide (Coard & Skeete, 2008, p. 1484).

The researchers proclaimed that there is a lack of PCa screening programs that might be fueling the lack of screening among these men who are at high risk for PCa (p. 1485). They also concluded that there appears to be no instrumental modifications in the PCa case profiles of the

men who present for screening, diagnosis, and the stage with which these men are appearing for treatment (Coard & Skeete, 2008). This study provides a basis with which to look at the current PCa screening process among not only Jamaican Black men in the United States, but also other ethnic Black men at high risk for PCa and who are currently not a vital part of the screening and research efforts in the US. Among ethnic Black men in the Caribbean, there were no noted differences in efforts to screen early even with public awareness of the high risk of PCa (Coard & Skeete, 2008). Providing culturally appropriate targeted PCa screening programs among ethnic Black groups might help with not only increasing screening, but in also reducing or eliminating the high costs and burdens (physical, emotional, psychological, financial, and social) associated with late clinical presentation.

Lack of access to PCa research for ethnic Black men from the Caribbean and other countries in the United States can only result in low screening rates, high PCa incidence, and overall health disparity and inequity for all Black men affected or predisposed to PCa. These consequences not only affect those predisposed to PCa, but also their family members and communities that will be heavily parented by single individuals and possibly one less provider in the family unit. Ethnic Black men from Haiti were also found to have PCa incidence of 767 per 100,000 persons and mortality rate of 403 per 100,000 persons, as reported by the International Agency for Research in Cancer (IARC, 2005; Kleier, 2010). Kleier (2010) conducted a study using surveys to obtain information from a sample population of 143 Haitian-American men living in South Florida. The study explored PCa perceived susceptibility and congruency with PCa disease risks, assessed the correlation between fear and perceived susceptibility, and investigated the specified concepts for extrapolative associations to PCa screening behavior (Kleier, 2010, p. 179).

Based on the data collected on language preferences, 41.3% of respondents spoke English (n = 59), which was the main language spoken by the participants, 39.2% spoke Creole (n = 56), which was the second most spoken language, and 19.6% (n = 23) of the participants spoke French (p. 186). The age of the sample population was 40 to 87 years old and the mean age of the sample was 54.83 years (SD = 8.57), with 60 (42%) illiterate participants requiring the research assistants to read the questions and record responses for them (p. 180). Regarding participants' demographics, 45.5% (n = 65) were married, 14.7% (n = 21) were cohabitating, 10.5% (n = 15) were divorced, 10.5% (n = 15) reported never having been married, and the remainder of participants were separated, widowed, single, or in a non-cohabitation partnership (p. 186). The participants reported that their residency in the United States ranged from less than 1 year to 79 years (M = 14.29, SD = 10.37) of residency (Kleier, 2010, p. 186).

According to the study findings, 55.93% (n = 80) of the participants stated that they had never received a PCa screening, whereas 86% (n = 43) conveyed that over the last five years, a PCa screening exam was conducted by a provider (p. 186). Conversely, there were three participants who reported no PCa exam over the last ten years, and another seven participants who claimed that their PCa exam has exceeded five years. Of the men surveyed, 44.1% (n = 63) did not recall exactly when they had a PCa exam, and 79.4% (n = 50) gave an idea about the last PCa exam, which was not exact (p. 186). A total of 57.3% (n = 82) reported no intentions to screen in the future, and there was a significant association between perceived susceptibility and fear and PCa screening behaviors ($p < 0.05$) in the sample (Kleier, 2010, p. 186). The researcher also found that fear by itself was not independently predictive of prior or future intent to screen, with perceived risks being very low compared to actual perceived risks. In short, the researchers concluded that ethnic Black men from Haiti, who are currently residing in the United States, fail

to identify or comprehend their high PCa risks, making them a group that will not likely consider PCa screening as a high priority (Kleier, 2010, p. 179).

Kleier (2010) declared that it is important for Haitian men in the United States to be educated about their real PCa risks and be provided with enough opportunity to make informed decisions about their PCa screening. This research study is another important study demonstrating the need for more healthcare and research access for ethnic Black men from high PCa risks populations who are currently living in the US. Based on the large concentration of Caribbean ethnic Black immigrants living in the United States (Camarota, 2007, 2012), it is imperative that researchers acknowledge their presence by making ethnicity or place of origin an important factor in PCa research (Arthur & Katkin, 2006). As with all research studies, the accuracy of any PCa incidence and mortality rates for any racial or ethnic group is dependent on the correct sample being included in the research and all affected groups being considered equally for the PCa benefits (screening and treatment) that other groups are obtaining (Siegel et al., 2014).

There are always a number of factors impacting PCa screening and PCa figures in Black populations and among them, the principal problem may be the misidentification and grouping of ethnic Black men under a single group for research studies (Arthur & Katkin, 2006). For high PCa risk groups, inclusion in PCa screening and PCa studies should be an absolute must, as the inclusion of these high risks groups will provide a better picture of PCa screening and PCa figures in ethnic Black populations in the US (Consedine et al., 2014; Odedina et al., 2009; Siegel et al, 2014). Ethnic Blacks living in the US are predisposed to PCa, and the trajectory of PCa predisposition does not necessarily change because one has migrated to another country. Furthermore, ethnic Black groups do not necessarily share similar high PCa burden because of environmental factors alone (ACS, 2013, 2014; Odedina et al., 2009). PCa incidence and

mortality rates are extremely low in ethnic Black men in Africa, and the incidences and mortality figures are extremely modest when compared to the PCa incidences and mortalities seen in African Americans and Caribbean nationals (Odedina et al., 2009).

For example, research has shown that African American men are 10 times more likely to get PCa, and 3.5 times more likely to succumb to PCa disease when compared to ethnic Black men in Western Africa (Odedina et al., 2009, Suppl. 2). Odedina et al. (2004) proclaimed that the "U.S. Healthy People 2010" goal was to meaningfully reduce PCa death rates to 28.8/100,000 (p. 780). As of 2014, Black men have a mortality rate of 48.9/100,000 (Howlader et al., 2014). PCa research access to ethnic Black groups could have positively assists in the accomplishment of this goal. There are researchers who believe that high PCa incidence and mortality rates in African Americans may be due to the inclusion of other ethnic Black populations that are not independently acknowledged in research studies (Siegel et al., 2014). According to the Global Cancer Facts, and Figures 2nd edition, Caribbean men have the highest PCa incidence (37.3%) and the highest PCa mortality (24.9%) worldwide (Globocan, 2008, p. 5). The Caribbean ethnic Black population was also the most affected by PCa based in their findings, when comparing countries globally to identify PCa incidences and death rates trajectory (Globocan 2008, p. 18).

PCa is also the leading cancer incidence and mortality in the Caribbean region, showing age standardized rates (ASR) estimated at more than four times the ASR of the US (Globocan, 2008, p. 18). The United States has been the country of choice for most ethnic Blacks from the Caribbean, and Florida has one of the largest immigrant population including Caribbean immigrants in the US (Camarota, 2007, 2012). The high number of Caribbean nationals living in the State of Florida, New York, and California can provide PCa researchers with invaluable information on PCa screening and disease trajectory, immigration effect on PCa screening or PCa,

and also provide targeted screening care to help reduce PCa disparities (Camarota, 2007; Consedine et al, 2014; Moul, 2003). One ethnic Black Caribbean group that the American Cancer Society's yearly "Cancer Facts and Figures" report mention in passing is Jamaican Black men whose PCa rates are comparable to African Americans (ACS, 2013, 2014, p. 14). With Florida having a large concentration of immigrant population from the Caribbean, researchers are provided with the perfect opportunity to do PCa research and develop culturally specific screening campaigns to target those populations. There were 16,590 new PCa cases in Florida and 2170 PCa deaths (ACS, 2014). Additionally, the PCa IN of 131.2 and MR of 20.1 for the State of Florida are far below the PCa IN and MR of Black men (ACS, 2013, 2014, p. 7).

However, since ethnic Blacks are generally grouped for PCa data and PCa screening research in the US, it difficult to understand the total impact ethnic Black men have on the current PCa screening and PCa IN and MR (Magnus, 2004; Odedina, 2012). Ethnic Blacks make up a sizable portion of the US population and should be considered vital in research aiming to reduce the PCa screening and PCa health disparity among Blacks and other groups. This can be achieved by addressing the within and between groups disparities in screening among ethnic Black populations (Arthur & Katkin, 2006; Consedine et al., 2014; Kleier, 2010; Magnus, 2004). Identifying differences in the health practices in ethnic Black groups, and their perceptions regarding PCa screening can help providers and policymakers develop culturally appropriate programs, and or ethnically relevant screening approaches to address the PCa needs of ethnic Black men in the US. For example, in many Caribbean islands and African countries, views of health and illness are generally tied to cultural systems, religious systems, and generational superstitions, which play major roles in how medicine, health, illness, life, and death are perceived (Juckett, 2005; Kleier, 2004, 2010; Leinenger, 1995; Odedina, 2012).

In many ethnic Black families in the Caribbean and other countries, it is not unusual for medical treatment to be optional in lieu of Medicine men or Shaman being the first line of care for people who believe illnesses are the result of evil spirits or other supernatural causes (Archibald, 2011). Many individuals will only seek medical treatment when all other options have failed from their initial approach to care with Healers, or they may simply choose to accept their faith as the will of God or bad luck (Archibald, 2011; Jones, 2005; Juckett, 2005). The worldviews of ethnic Black men can influence their perceptions of health and illnesses including their perspectives on PCa disease and PCa screening (Consedine, 2012; Consedine et al., 2014; Parchment, 2004).

Many medical providers may not understand that relying on medicine men or religious leaders is the traditional manner chosen to resolve health and illness challenges in a great majority of families who use herbal concoctions, spiritual blessings by church members, cleansings from medicine men, and other recognized healers in their communities despite being in a new country or a part of a new culture (Juckett, 2005). Juckett (2005) asserted that providers must courteously discover their patient's belief systems based on religious and cultural frameworks because illness and disease states might be explained and accepted (fatalistic view) based not only the physical manifestation of the illness, but also from a spiritual perspective (p. 2267). Understanding the distinctiveness of ethnic Black cultures and acknowledging that diversity in health and treatment matters, may undoubtedly improve the healthcare needs of ethnic Blacks, reduce health disparity, and contribute valuable knowledge on PCa screening perceptions of ethnic Blacks who are foreign born, living in the US permanently, and are highly predisposed to PCa disease (Arthur & Katkin, 2006; Consedine, 2012; Kreuter & Haughton, 2006).

Some researchers argue that the health care needs of ethnic Blacks from the Caribbean and other countries are based on the conventional treatments of Americans or African American's standards, which ignores the reality that health, healing, and belief systems of foreign-born Blacks are not the same as those that are coined for "mainstream" America and African Americans (Archibald, 2011; Jones, 2005). Jones (2005) and Archibald (2011) asserted that it is important to base treatment in the Black population on their principles and cultural belief. Despite available screening methods such as the Digital Rectal Examination (DRE), Prostate Specific Antigen (PSA), and Transrectal Ultrasound (TRUS), and the multiplicity of PCa treatment modalities ranging from simple observation to surgical interventions, ethnic Black men continue to be disadvantaged in screening, diagnosis, incidence, mortality rates, and culturally relevant healthcare access (Modlin, 2003; Patel et al., 2010; Wu & Modlin, 2012).

More research on PCa screening in ethnic Black men, along with better culturally competent physician-client relationships can improve state of health, disease outlook, and medicinal perspectives already in place; however, those factors aforementioned need to be culturally appropriate to meet the healthcare needs of the large ethnic Black population in the US (Wu & Modlin, 2012). Researchers have found that PCa incidence and mortality rates in ethnic Black men, who are foreign-born, are frequently higher than those on record for African American men, even after migrating to another country (Glover et al., 1998; Kleier, 2003; 2004, 2010). Some researchers believe that this revelation demonstrated a difference between ethnic Blacks and African Americans, which could profoundly impact health status in important ways (Bunker et al., 2002; Chinegwundoh, Enver, Lee, Nargund, Oliver, & Ben-Shlomo, 2006; Taioli, Attong-Rogers, Layne, Roach, & Ragin, 2010). There is also limited availability of information

on “within-groups” variations of Black men whose PCa screening perceptions continue to be understudied, yet important to understanding PCa challenges (Consedine et al., 2014).

Broward County, Florida has a large concentration of ethnic Blacks and is considered to be the third largest county for diversity in the State of Florida (Office of Urban Planning & Redevelopment, 2004, v. 18, p. 1). Given that Caribbean nationals remain among the largest contributors to the large immigrant population in Florida and the realism that the PCa IN and MR for Black men are almost twice that of the national average for all groups, it is important that PCa research resources are also dedicated to understanding the PCa risks of this high risk population in the State. Notwithstanding elevated PCa risk among Blacks that have been reported by ACS and SEER, PCa screening campaigns and PCa documented rates are practically nonexistent among these high risk Caribbean populations in South Florida, or the United States for that matter (Consedine et al., 2014). Many of the residents in Broward County are from the West Indies / Caribbean islands, and South and Central America and any PCa information on ethnic Black groups are typically grouped under the broad category of “Blacks” (Camarota, 2007, 2012). The Office of Urban Planning and Development (OUPD) reported that as of their last data gathering in 2000, there were 325,305 West Indians or Caribbean nationals in Broward County, and a projected 605,962 total by the year 2030, which demonstrate a significant presence in that county alone (OUPD, 2004, v. 18, p. 4).

In Florida, Caribbean ethnic Black population could also increase if individuals, who reported their ethnic identity as “Other” in the year 2000, were actually of West Indian or Caribbean descent, but refused to self-identify as “Black / Negro / African Americans” (OUPD, 2004, v. 18, p. 4). OUPD has estimated that by the year 2030, the self-reported ethnic identification as “Other” populations in Broward County will reach an estimated 135,962 persons

that could also comprise of a vast amount of Caribbean nationals (OUPD, 2004, v. 18, p. 4). Due to the growing population of ethnic Blacks in Broward, health research in PCa screening and PCa should appropriately identify ethnic Black groups for PCa research in order to access, record, and have a realistic PCa IN and MR of these PCa high risk groups. It is imperative to remember that diverse and ethnic Black populations will, and do exhibit differences in culture, ideals, treatment preferences, and should have a choice in pinpointing treatment that works for them as a group, including what level of treatment is acceptable based on how healthcare treatment was approached in their native homelands (Archibald, 2011; Odedina et al., 2009).

PCa screening does not come without its share of controversy and some researchers argue that the controversy surrounding the harms of the PCa exams have been overstated (ACS, 2012, 2013, 2014; Barry, 2009; Catalona et al., 2012; Moyer, 2012). In 2008, the U.S. Preventive Services Task Force (USPSTF) recommended that men, who were over the age of 75 years needed to avoid screening for PCa (USPSTF, 2008). The agency's panel of experts also concluded that there was not sufficient evidence to argue for or against the benefits versus the harm of PCa screening for men younger than age 75 years (USPSTF, 2008). In essence, there was no substantial evidence demonstrating that screening in men less than 75 years of age actually resulted in a reduction in mortality rates in this age group (USPSTF, 2008). Despite these warnings, other agencies have stepped forward and argued against the USPSTF recommendations, stating that PCa screening does actually save more lives than the harm/s associated with the screening process (ACS, 2013, Catalona et al., 2012; AUA, 2013).

Some agencies, whether they are in support of or against screening, have agreed that the decision to screen should include informed decision-making on the patient's part, and a provider's input based on a patient's circumstances (ACS, 2012; AUA, 2013). Odedina et al. (2011) have

found that PCa early detection or screening practices and PCa "risk reduction" differs in a group of native-born and foreign-born US Black men. Though the researchers used a convenience sampling method, which was not generalizable to all ethnic Black men, the results points to the need for targeted PCa screening programs to accommodate the diverse and ever-growing high risk ethnic Black populations in the United States and a new approach to screening these populations (Archibald, 2011; Chinegwundoh et al., 2006; Lee et al., 2011). This is especially important because of the continued lack of consensus from different authorities regarding whether the benefits of PCa screening with PSA outweighs the harms that may result in screening (ACS, 2012, Catalona et al., 2012; Moyer, 2012).

Statement of the Problem

Black men are disproportionately affected by PCa (ACS, 2013, 2014), and have been purported to have some of the highest prostate cancer (PCa) incidence and mortality rates on record (Howlader et al., 2013, 2014; Odedina et al., 2011; Smith et al., 2011). The most recent Surveillance Epidemiology and End Results Program (SEER) found PCa incidence of 223.9 and mortality rates of 48.9 per 100,000 persons among African American men (Howlader et al., 2013, 2014, t. 23.7, 23.11). These numbers are almost twice that of Whites and double the rates of some racially classified groups in the United States, where it is estimated that 1 in 5 African American men will be diagnosed with PCa in his lifetime (ACS, 2013, p. 14; Howlader et al., 2012. t. 23.7, 23.11).

The disproportionate rate of PCa IN and MR among Black men, emphasize the importance of PCa screening for ethnic Black men of diverse cultures within the Black population (Weinrich, Boyd, Bradford, Mossa, & Weinrich, 1998). Reflective of the disproportionate rate of PCa IN and MR, the PCa screening rate among Black men is lower than

all other segments of the male population (Gonzalez, Consedine, McKiernan, & Spencer, 2008; Wells et al., 2010). While numerous studies have identified factors impeding PCa screening among Black men, few studies have examined these factors with respect to specific ethnic identities and PCa perceptions differences within the broader Black population.

The Black population is an ethnically heterogeneous and large segment of the US population that includes African Americans, Jamaicans, Bahamians, Trinidadians / Tobagonians, Haitians, and other Islanders (Camarota, 2007, 2012; Consedine, 2012). While these ethnic groups share a common African ancestry, the island descent of each ethnic group reflects a unique distinct culture (Arthur & Katkin, 2006; Magnus, 2004; Wheeler & Mahoney, 2008). The distinct culture of each ethnic group shares unique values and beliefs that influence health related decisions. To improve the PCa screening rates and PCa research participation among the Black population, it is necessary to understand the unique values and beliefs that influence PCa screening perceptions and decisions within the specific ethnic groups of the Black population.

Purpose of the Study

The purpose of this quantitative non-experimental comparative analysis study was to examine the extent and manner in which perceptions of PCa screening differed with respect to the ethnic identity of Black men within the following ethnic populations: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian / Tobagonian. Also being examined was the extent and manner in which ethnic identity contributed to the differences in perceptions and varied with respect to (a) age group, (b) education level, (c) marital status, (d) health insurance coverage, and (e) income. Toward this end, a modified version of the Health Belief Model survey instrument (HBM-PCS) was used to measure perceived PCa screening barriers, perceived PCa screening benefits, and perceived PCa seriousness within a large population of

ethnic Black men (Capik & Gozum, 2011). This survey also measured relevant demographic factors or attributes of this study population – including ethnic identity.

Differences in perceived PCa screening barriers, perceived PCa screening benefits, and perceived PCa seriousness was examined with respect to ethnic identity. Differences due to demographic factors were explored independently and along with ethnic identification specific to each group in the study. The results of this study provided important insights regarding PCa seriousness, barriers, and benefits toward PCa screening specific for individual ethnic groups within the Black population. These insights, in turn, can be used to develop PCa screening campaigns and initiatives within individual ethnic groups, as well as the broader Black population.

Theoretical Framework

The purpose of this quantitative non-experimental comparative study was to examine the extent and manner in which perceptions of PCa screening differed with respect to the ethnic identity of Black men within the following ethnic populations: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian / Tobagonian. Also being examined was the extent and manner in which ethnic identity contributes to these differences in perceptions and varied with respect to (a) age group, (b) education level, (c) marital status, (d) health insurance coverage, and (e) income.

The Health Belief Model (HBM) was used as the theoretical framework for the historical and foundational support of this study (Hochbaum, 1958; Janz & Becker, 1984; Rosenstock, Strecher, & Becker, 1994). The HBM model was developed in the 1950s by three United States Public Health Service (USPHS) Social Psychologists: Hochbaum, Rosenstock, and Rosenstock and Kirscht, (Hochbaum, 1956, 1958; Rosenstock, 1966, 1974; Rosenstock & Kirscht, 1974).

Rosenstock (1974) has credited Hochbaum (1958) as the predecessor of the first HBM that comprised of studies on chest x-ray screenings and tuberculosis reuptake (p. 4). The HBM contributed to knowledge of preventive health services by showing that perceived susceptibility to illness and treatment outcome greatly impacted health decisions (Hochbaum, 1958; Rosenstock, 1966).

According to the theoretical premise of the HBM, an individual will act to prevent an illness or disease state only under circumstances that permitted the individual to believe that the illness would: (a) affect the individual's life in a moderately severe manner, which is the "perceived severity" construct, (b) the individual is in fact susceptible to the illness, which is the "perceived susceptibility" construct, (c) proactive action would be beneficial and reduce the individual's susceptibility to the disease, which is the "perceived benefit" construct, and (d) the individual's action to avoid the disease state would not result in psychological barriers being dismissed, which is the "perceived barrier" construct (Hochbaum, 1958; Rosenstock, 1966, 1974; Rosenstock & Kirscht, 1974). A later construct was added to the HBM because it was believed that a "cues to action" construct to commence the health action to change the maladaptive behavior could enhance the change process (Rosenstock, 1974).

For the current study, the HBM-PCS instrument, which is a modified instrument developed to measure perceptions of PCa screening in men over 40 years will be used in this study (Capik & Gozum, 2011). Some background information on research studies using the HBM comprises a wide variety of health research decision-making and health promotion studies on different health and illnesses. Davis, Buchanan, and Green (2013) conducted a study to examine racial /ethnic differences in beliefs about cancer and cancer prevention with a nationally representative sample of American adults. The researchers used the Health Information National

Trends Survey (2007), which is a biennial cross-sectional survey that uses a system of random-digit-dial telephone frame and mailing address frame to collect information. There were a total participant sample of 7452 individuals involved in the study, measuring perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, cues to action, and race / ethnicity (p. 384). The researchers found that HBM constructs of perceived benefits, perceived susceptibility, and self-efficacy were significantly related with race / ethnicity (p. 386).

However, they concluded that perceived barriers, perceived severity, and cues to action were not significantly related to race / ethnicity (Davis et al., 2013, p. 385). The researchers also found that the Hispanics participants were less likely to believe it was possible to reduce their probability of getting cancer than did the African-Americans and White participants (p. 388). Additionally, African Americans, Asians, and Hispanic participants assumed that their chances of getting cancer were lower than White participants (p. 388). The researchers concluded that health education / promotion interventions for cancer needs to be culturally relevant, and also developed in a manner that is appropriate to meeting the PCa knowledge needs of racial / ethnic minority groups (Davis et al., 2013; Meyerowitz, Richardson, Hudson, & Leedham, 1998).

The HBM model has extensive and efficacious historical, foundational (Becker, 1974; Becker, Haefner, & Maiman, 1977b; Haefner & Kirscht, 1970; Hochbaum, 1958; Rosenstock, 1974), and continued support among theoreticians who have utilized and continue to use and expand the model in diverse health and behavioral research settings and policies (Ali, 2002; Carpenter, 2010; Davis et al., 2013). More recent use of the HBM among health educators include use in health promotions research, and modification to measure proactive involvement in health preventive services such as prostate cancer screening, cancer prevention beliefs, weight

management, and condom use behaviors among sex workers (Capik & Gozum, 2011; Davis et al., 2013; James, Pobee, Oxidine, Brown, & Joshi, 2012; Zhao et al., 2012).

The HBM model has also been used extensively in recent studies on health promotion programs that include self-care behaviors and disease prevention behaviors as they pertain to health issues such as breast cancer, breast self-exam, human papillomavirus vaccine reuptake, self-care in patients with heart failures (Baghianimoghadam et al., 2013; Erbil & Bolukbas, 2012; Gerend & Shepherd, 2012), contraception use and sex behaviors (Asare et al., 2013; Herold, 1983; Zhao et al., 2012), HIV testing (Asare et al., 2013; Lin, Simoni, & Zemon, 2005; Mattson, 1999; Zhao et al., 2012), and osteoporosis prevention program (Ghaffari et al., 2012; Turner et al., 2004). In brief, the HBM is invaluable to research including health behaviors.

Jerant, Fiscella, Tancredi, and Franks (2013) conducted a study with a large nationally representative sample population with the aim of investigating the relationship of health insurance modifications, such as gain versus loss of insurance coverage on the alterations in preventive care and participants' health behaviors. The preventive care encompassed compliance with influenza vaccination, screening for colorectal cancer, participating in mammogram screening, PSA exam, and papanicolaou or Pap smear exam. The researchers examined the following health behaviors: "becoming non-obese, quitting smoking, and adopting consistent use of seatbelts" (p. 761). The researchers scrutinized data from the 2000 to 2009 Medical Expenditure Panel Surveys (n = 76,518) with an adult sample of individuals ≥ 18 years old who were actively enrolled for 2 years (p. 760).

The researchers made adjustments for capricious features as they pertain to year to year modifications ("income, employment, total health care expenditures, office visits, prescriptions, availability of usual source of care, and health status") based on a conditional logistic regression

analyses that modeled year-to-year singular changes in preventive care and health behaviors correlated with modifications of insurance status (Jerant et al., 2013, p. 761). Upon analyzing the data using the "Stata software version 12.1, the researchers found that insurance gain or loss was correlated with the increases or decreases in use of preventive care services; however, a modification in insurance coverage was not related to any substantial alterations in health behaviors (p. 766). The researchers concluded that these findings were reliable based on "economic theory and the Health Belief Model", that preventive care would increase or decreased when an individual either gains or loses insurance coverage (Jerant et al., 2013). This study is very important in demonstrating how many individuals balance their healthcare needs with access to health insurance, which can predict healthcare usage and consistency in usage.

These findings are consistent with studies that have explored and attempted to understand the health behaviors of immigrant populations without health insurance coverage and how they maneuver the healthcare system in the United States (Ku & Matani, 2001). Of course, there are a few limitations noted in the study such as non-generalizability to non-respondents in the surveys, and the inability to draw causal interpretation from the findings since the study was purely observational. The researchers are also uncertain whether similar results would be yielded in other types of care; however, PSA exam was one of the factors in this study, which means that it is very important to the current study being undertaken on PCa screening in ethnic Black men. Researchers have extended the HBM by creating scales to meet the changing healthcare issues that patients continue to encounter. Guvenc, Akyuz, and Acikel (2011) conducted a study to assess the development and psychometric testing of a new version of the HBM established as a gender specific scale, called the Health Belief Model Scale for Cervical Cancer and Pap Smear Test.

The study included 237 female participants who were randomly selected to be used in the adaptation of "The Champion Health Belief Model Scale" (CHBM) in order to make the scale available to use for studies including cervical cancer and Pap smear test (p. 428). The CHBM was translated into Turkish and validated by professionals in the field before being translated back into English (p. 430). The researchers included five factors in factor analysis: Pap smear benefits and health motivation, Pap smear barriers, seriousness, susceptibility, and health motivation. All five scales had Cronbach's alpha reliability coefficients ranging from 0·62 to 0·86, with test-retest reliability coefficients ranging from 0·79 to 0·87 for the subscales (Guvenc, Akyuz, & Acikel, 2011). The researchers concluded that the Health Belief Model Scale for Cervical Cancer and the Pap Smear Test is was found to have reliability and validity as an instrument for measuring the women's health beliefs (Guvenc, Akyuz, & Acikel, 2011, p. 430).

Though the HBM was developed in an attempt to comprehend and elucidate the pervasive lack of participation in preventive or screening tests among individuals with access to services (Becker, 1974; Hochbaum, 1956; Rosenstock, 1974), the model has comprehensively evolved into a foundational and theoretical model of support in explaining behaviors beyond the initial intent of the model and extending to studies on cross-cultural groups (Sayegh & Knight, 2013). The HBM has been progressively extended from its novel prototype to include symptom responses in illnesses, compliance to medical treatment, and even behaviors that include risk taking conducts among different groups (Becker, 1974; Kirscht, 1974). During its initial development, the researchers theorized that understanding the reasons behind failure to participate in free health screens for preventive illnesses could help to predict, explicate, and address future studies involving prevention behaviors among health care recipients (Hochbaum, 1958; Janz & Becker, 1984; Rosenstock, Strecher, & Becker, 1994). This assertion has been

supported by the vast amount of research that has been completed using the HBM or modified versions of the HBM to accommodate the research study being undertaken.

The fundamental emphasis of the Health Belief Model (HBM) is concentrated on motivational health behaviors and researchers continue to use the model for the identification, elucidation, and prediction of health beliefs for different preventive health and behavioral contentions (Consedine et al., 2004; Haefner & Kirscht, 1970; Odedina et al., 2008). Behavioral contentions such as the failed screening efforts in the first HBM research, notwithstanding that the health services being provided were free and accessible in convenient locations allowed researchers to understand that screening efforts requires more than free services and accessibility (Hochbaum, 1958). Since its development, the HBM has also been used to explain health behavior by focusing on individual's attitudes and beliefs as those variables pertained to proactive involvement in health screenings, health promotion, disease deterrence, and preventive services (Bandura 1977; Janz & Becker, 1984).

Being one of the most widely recognized and utilized psychosocial models in health research, the HBM is extremely effective at explaining decisions to participate or not participate in health behaviors such as screening decisions for disease states, sick role behaviors, and preventive illnesses decisions (Bandura, 1989, Brown, DiClementi, & Reynolds, 1991; Janz & Becker, 1984). The HBM variety of models postulates that two variables influence behaviors (Janz & Becker, 1984). This includes the significance an individual places on a specified health objective, and an estimation of whether there is a probability that a particular action will result in the health objective being sought (Janz & Becker, 1984). For example, HBM focuses on health behaviors and modifications health behaviors with the goal of the encouraging proactive involvement in preventive services in order to circumvent an ailment and or recover from the

particular illness with minimal drawbacks from treatment. Additionally, an individual might choose to take part in a treatment if being proactive in the treatment will result in a positive outcome of the problematic health issue that is affecting the individual (Janz & Becker, 1984; Meyerowitz et al., 1998; Rosenstock et al., 1994).

The HBM consists of key variables that are integral to identifying and explaining health-related behaviors based on the four foundational constructs, which was also modified to include additional constructs after its development (Janz & Becker, 1984; Rosenstock et al., 1994). The foundational constructs of the HBM are perceived seriousness, perceived susceptibility, perceived benefits, and perceived barriers (Abraham & Sheeran, 2005; Hochbaum, 1958; Kircht, 1974; Rosenstock & Becker, 1974). However, the HBM model has been expanded to include "self-efficacy", which researchers believed would provide an operative model that will better facilitate comprehending health-related comportments (Abraham & Sheeran, 2005; Rosenstock, Strecher, & Becker, 1988). Self-efficacy demonstrates whether an individual is confident in his or her ability to act (Abraham & Sheeran, 2005). The construct has been used in, and confirmed in numerous studies as a favorable addition to the HBM, which demonstrates predictive utility with minor limitations (Abraham & Sheeran, 2005).

The noted limitation cited by researchers using the "self-efficacy" construct is known as the "floor and ceiling effect", where individuals may be equally very apprehensive, or equally very self-assured about executing a mandatory action (Abraham & Sheeran, 2005). As such, this construct was not considered for this study, and was not a part of the HBM-PCS instrument developed to measure perceptions of PCa screening in men over 40 years (Capik & Gozum, 2011). An additional factor that became a later addition to the HBM is the construct of "cues to action", which focuses on willingness or readiness to act or perform a task for change to occur

(Austin, McNally, & Stewart, 2002). This construct was also not included in the current study. In a study conducted with Hispanic women, researchers investigated factors that are correlated with breast and cervical screening amongst the group using the initial four HBM constructs of perceived susceptibility, perceived, severity, perceived benefits, and perceived barriers and the later additions of "self-efficacy" and "cues to action" (Austin et al., 2002).

Perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action are considered by some researchers the core HBM constructs that can influence an individual's decisions concerning whether an action will be taken to avoid, screen for, and prevent illness (Abraham & Sheeran, 2005; Austin et al., 2002; Rosenstock et al., 1988). However, many researchers continue to use the original four HBM constructs of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers in research studies declaring that the original constructs are considered more probative in explaining health behavior and more grounded in extensive research and measurements (Carpenter, 2010; Zimmermann & Vernberg, 1994). Some researchers do not believe that the added constructs of "self-efficacy and cues to action" compliment the original four constructs of the HBM, as there are not enough studies that use "self-efficacy and cues to action" constructs in health research.

Lack of extensive usage of "self-efficacy and cues to action" in health education and health promotion studies indicated that the putative improbability of the added constructs in the HBM model would not benefit but rather reduce the effectiveness of the original HBM's four established and proven four constructs (Carpenter, 2010; Zimmermann & Vernberg, 1994). For the purposes of this study, the HBM theoretical framework was used with emphasis on three theoretical constructs (perceived seriousness, perceived barriers, and perceived benefits) examining the differences in PCa perceptions of ethnic Black men towards PCa and PCa

screening including the extent and manner those perceptions vary according to demographic factors being studied (Capik & Gozum, 2011; Hochbaum, 1958; Rosenstock, 1966; Rosenstock et al., 1988). The three HBM theoretical constructs or key descriptors are defined below, as they pertain to this study:

Perceived Barriers: With the perceived barriers construct, the individual seek to understand how a decision to act would compare to the benefits received from the outcome of that action. Perceived costs, challenges, barriers that would be involved in acting such as embarrassment, financial costs, and or discomfort involved could deter action of the benefits do not outweigh the costs associated with the action (Rosenstock, 1974).

Perceived Benefits: With the perceived benefits construct, the individual seek to understand how beneficial or effective an anticipated action will be in diminishing the current or impending health issue. The individual will consider sociocultural factors in the decision-making process (Rosenstock, 1974).

Perceived Seriousness: With the perceived seriousness construct, the individual is interested in how severe a condition is, and whether the severity of the condition will result in costs to the individual such as becoming disabled or dying from the condition. Additionally, focus will be on whether the condition affects social relationships and reduce the individual's ability to participate in important life events such as jobs and social settings (Rosenstock, 1974).

Research Questions

The purpose of this quantitative non-experimental comparative study was to examine the extent and manner in which perceptions of PCa screening differed with respect to the ethnic identity of Black men within the following ethnic populations: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian / Tobagonian. Also being examined

was the extent and manner in which ethnic identity contributes to these differences in perceptions and varied with respect to (a) age group, (b) education level, (c) marital status, (d) health insurance coverage, and (e) income. In accordance with this study purpose and guided by the theoretical framework of this study, the following research questions were addressed:

Q1. To what extent and in what manner do perceptions of PCa Seriousness among Black men differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian? Does the extent and manner in which ethnic identity contributes to differences in perceived PCa Seriousness vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level?

Q2. To what extent and in what manner do PCa Screening Barriers perceived by Black men differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian? To what extent and in what manner do perceived Barriers toward PCa Screening differ with respect to specific ethnic identity among Black men and vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level?

Q3. To what extent and in what manner does ethnic identity among multiethnic Black men contribute to differences in perceived PCa screening Benefits? Does the extent and manner in which ethnic identity contributes to differences in perceived PCa screening Benefits vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level?

Hypotheses

In accordance with the above research questions, this study tested the following research hypotheses:

$H1_0$. Perceptions of PCa Seriousness among Black men do not differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian. The extent and manner in which ethnic identity contributes to differences in perceived PCa Seriousness do not vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

$H1_a$. Perceptions of PCa Seriousness among Black men do differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian. The extent and manner in which ethnic identity contributes to differences in perceived PCa seriousness do vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

$H2_0$. PCa Screening Barriers perceived by Black men do not differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian. The extent and manner in which Perceived Barriers toward PCa Screening differ with respect to specific ethnic identity among Black men and do not vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

$H2_a$. PCa Screening Barriers perceived by Black men do differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian. The extent and manner in which Perceived Barriers toward PCa Screening differs with respect to specific ethnic identity among Black men and does vary with respect to (a) age, (b) education, (c) marital status (d) health insurance

coverage, and (e) income level.

$H3_0$. Ethnic identity among multiethnic Black men does not contribute in any extent and manner to differences in perceived PCa screening benefits. The extent and manner in which ethnic identity contributes to differences in perceived PCa screening Benefits do not vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

$H3_a$. Ethnic identity among multiethnic Black men does not contribute in any extent and manner to differences in perceived PCa screening Benefits. The extent and manner in which ethnic identity contributes to differences in perceived PCa screening Benefits do not vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

Nature of the Study

The purpose of this quantitative non-experimental comparative study was to examine the extent and manner in which perceptions toward PCa screening differ among ethnic Black men in Broward County, South Florida, and whether ethnicity and PCa perceptions vary according to demographic factors (age, education, marital status, health insurance coverage, and income). The study used the Health Belief Model-Prostate Cancer Scale survey instrument (HBM-PCS) to measure Health Belief Model constructs, as they relate to PCa screening perceptions in men age 40 years and older (Capik & Gozum, 2011; Appendix C). The HBM-PCS survey instrument examined the constructs of (a) perceived Seriousness of PCa, (b) perceived Barriers of PCa screening, and (c) perceived Benefits of PCa screening, in order to examine the extent and manner in which these constructs are perceived by ethnic Black men regarding PCa screening and demographic factors.

The primary dependent variable of interests in this study was the perceptions of PCa screening. These dependent variables were examined via the HBM-PCS (Capik & Gozum, 2011; Appendix C), with respect to the following ethnic groups within the ethnic Black populations: (a) African Americans, (b) Bahamians, (c) Haitians, (d) Jamaicans, and (e) Trinidadians / Tobagonians. A demographic data form was provided to participants for the purpose of collecting background information pertinent to factors impacting screening perceptions (Appendix D).

A quantitative method was used in this study as the surveys for study respondents were converted to numerical format through the use of a Likert scale design to document participant's responses. Upon documentation of the data, responses were converted to numerical format and analyzed statistically using the "Statistical Package for the Social Sciences" (SPSS, v 18) software. Additionally, even though the participant sample was based on a convenience sampling recruitment approach, the study was accurate, valid, reliable, and replicable. The quantitative method answered the study purpose and problem statement through the facilitation of numerical gathering of research data analyzed in order to explain the particular questions that were being asked and hypothesized. A descriptive analysis was initially conducted to deliver a synopsis of the applicable central tendencies for each variable in the study.

The central tendencies of perceptions of PCa Screening were presented per each ethnic group, and per each demographic variable. Descriptive analyses were conducted to depict the demographic make-up of the study sample and to assess the dispersion and distribution of the data measuring the outcome variables (i.e., perceived Seriousness of PCa, perceived Barriers to PCa screening, and perceptions of PCa screening Benefits) and demographic factors (age, education, marital status, health insurance coverage, and income level) within the study sample.

The research hypotheses of this study were examined via a series of one way ANOVA and factorial ANOVA via GLM-Univariate analyses procedures. Specifically, one way ANOVA procedures were first be used to examine differences in Perceptions of PCa Screening [(a) perceived Seriousness of PCa, (b) perceived Barriers of PCa screening, and (c) perceived Benefits of PCa screening] with respect to ethnic identity [(a) African Americans, (b) Bahamians, (c) Haitians, (d) Jamaicans, and (e) Trinidadians / Tobagonians]. A series of factorial ANOVA analyses using GLM-univariate procedures were then used to examine whether differences in Perceptions of PCa Screening with respect to ethnic identity varied with (a) age, (b) education, (c) marital status, (d) health insurance coverage, and (e) income level.

The values and corresponding levels of significance were presented for differences between and within groups. If a statistical significance was indicated, Scheffe's post hoc analysis was used to identify the specific differing groups. Accuracy, validity, reliability, and replicability of the current study will provide researchers, providers, and policymakers with foundational data that can be translated into possible improvements in PCa screening approaches in ethnic Black populations for whom PCa cancer risk is extremely high, as reported not only by researchers in the United States and the Caribbean, but also from reliable data obtained from the continued updated Global Cancer, Figures, and Facts Report (Globocan, 2008; Howlader et al., 2013; IARC, 2005; Kleier 2010). Ensuring ease of access for the study was very important as access to transportation, funds, and time constraints are among factors that have been found to be barriers influencing many Black men's participation in PCa screening and research studies (Odedina et al., 2004).

Ease of access was facilitated by study advertisements placed at minority accessed services, and by recruiting participants in business locations frequented by ethnic Black

populations for services from barbershops, grocers, clothing stores, restaurants, and shopping malls. The surveys were of a reasonable length in order to increase participation, as researchers have found that small incentives and shorter surveys typically resulted in more willingness to participate in research studies (Sahlqvist et al., 2011; Singer & Couper, 2008). Informational booklets from the National Cancer Institute (NCI) on PCa in the form of pamphlets and bookmarks were provided to participants in addition to a $5 incentive towards a haircut or a restaurant item. All but one participant accepted the information booklets, and though there were a total of 167 participants that completed the surveys, there were almost 300 of the NCI booklets given away. The remaining booklets were given to individuals who did not meet the study requirements, or who stated that they were unable to participate in the study for one reason or another. The financial incentive did not play a major role in participation in the study, as most participants did not require or accept the incentive, opting for the booklets and bookmarks.

Significance of the Study

Prostate cancer (PCa) screening among Blacks as a racial group is very low when compared to other racially classified groups (ACS, 2013, 2014; Odedina et al., 2011). Some researchers believe that the low PCa screening rates seen among Blacks are due to many factors including but not limited to a lack of knowledge and health insurance and other social and demographic factors (Magnus, 2004; Odedina et al., 2009; Parchment, 2004). Another major factor that could positively impact PCa screening research with the Black population is the within group differences in perceptions of ethnic Black men towards PCa screenings. Ethnic Black men are practically invisible in health research studies, including PCa screening and PCa research studies, as most studies use the ethnic term “African Americans” to represent all ethnic Blacks (Arthur & Katkin, 2006; Consedine et al., 2014; Magnus, 2004).

The standardization of all ethnic Blacks can impact the PCa screening disparities, which can essentially proliferate the same PCa screening disparity that some researchers have recognized, and that all in the field are trying to reduce in the Black population (Consedine, 2012; Consedine et al., 2014; Odedina et al, 2004, 2009; Zeigler-Johnson et al., 2011). It is important to understand differences in perceptions of ethnic Black men towards PCa screening as the perceptions relate to (a) perceived PCa screening Barriers, (b) perceived PCa screening Benefits, and (c) perceived PCa Seriousness and demographic factors they influence. Differences in perceptions towards PCa screening among ethnic Black men can impact PCa screening approaches and can be negative due to continued healthcare disadvantages experienced by ethnic Black men at high PCa risk (Howlader et al., 2013, 2014). By acknowledging ethnic Black men in research studies, researchers, providers, and healthcare policymakers can get a clearer understanding of the PCa screening rates, incidences, and mortalities of African Americans compared to the within and between-group differences among other ethnic Black populations.

Additionally, by understanding the perceptions of ethnic Black men towards PCa screening, researchers, providers, and healthcare policymakers can develop cultural competency, while creating culturally relevant PCa screening approaches that are in line with how ethnic Blacks perceive health and illnesses. The PCa screening approaches that work best for ethnic Blacks as distinct ethnic groups and how those approaches impact the overall PCa screening disparity, incidences, and mortalities among Blacks as a racially classified group may differ, but can also result in more accurate, reliable, and valid results of PCa and PCa screening rates. It is important to provide accurate findings in research studies and comprehending the foundation that underlies groups being studied is essential to providing accurate data and interpreting results.

Definition of Key Terms

African American. A person of African American descent is generally considered as having ancestral or genetic linked to individuals from the continent of African. African American is also used interchangeably to describe individuals who describe themselves as Blacks (ACS, 2009). Ethnic Black groups are usually classified as African Americans and can include individuals from the Caribbean islands, Africa, and other ethnic Black groups globally. The United States Census Bureau has suggested that the nationality of African American should be utilized in cases where individuals specify their intentions to be identified as such (U.S. Census Bureau, 2010, 2011, 2012).

Age-Adjusted Rate. An age-adjusted rate is based on a standardized population summary or average that is calculated by using the age-specific rates as the weighted average (Howlader et al., 2012).

Age Standardized Rate. The age-standardized incidence rate is based on any referenced population with age composition that has been observed and standardized to the specific population (Ahmad et al., 2000).

Attitude. Attitude characterizes an immediate evaluation of a psychological perception or idea acquired through assigned mechanisms such as good versus bad, harmful versus beneficial, pleasant versus unpleasant, and likable versus dislikable (Ajzen & Fishbein 2000; Eagly & Chaiken 1993; Petty, Wegener, & Fabrigar, 1997). People's attitudes are generally determined by the types of behaviors they have been exposed to throughout life and also the type of message that has been taken away from such exposure (Becker et al., 1997; Myers et al., 1999; Odedina et al., 2008).

Behavior. Behavior is the manner in which individuals conduct themselves in any given situation. The theoretical construct of "planned behavior" dictates that an individual's conduct is dictated by three types of deliberations (Azjen, 1988). The first type of deliberation is an individual's understanding or behavioral perspectives in regards to the resulting outcome of a conduct (Azjen, 1988, 1991). The second deliberation is an individual's beliefs and conduct concerning anticipation of external response from peers or outsiders (Azjen, 1991). The final deliberation in the individuals' belief system focuses on the obstacles that one could encounter that may possibly precede and prevent the execution of a conduct (Ajzen, 1988; 1991). Azjen (1998) identified the three deliberations as behavioral, control, and normative beliefs in that order (Azjen, 1991; Odedina et al., 2008; Ronis, 1992; Stretcher & Rosenstock, 1997).

Behavioral Intention. Behavioral Intention comprises of plans and goals that are set for future execution and can include plans or intention to exercise, eat healthier, screen for diseases, and change lifestyles that are maladaptive behaviors in order to achieve a set goal (Ajzen & Fishbein, 1980; Becker et al., 1974; Gibbons, Gerrard, Ouellette, & Burzette, 1998).

Black Caribbean Immigrants, Black Immigrants, or Caribbean Blacks. Black Caribbean Immigrants are also identified as Afro-Caribbean, African Americans, West Indians, or identified by their countries of origin. The terms also describe Caribbean immigrants of African or Black descent living in the United States (Rogers, 2006). Many people of Caribbean descents are very resolute in being identified by their nationality instead of being racially classified with other minority groups (Waters, 1994).

Brachytherapy (Implant Radiation / Internal Radiation).
Brachytherapy is a type of radiation therapy that uses radioactive material that is sealed in needles, seeds, wires, and catheters or tubes, which are positioned near a tumor or directly into

the tumor to destroy cancerous cells and is a treatment method for prostate cancer (Porter, Blasko, Grimm, Reddy, & Ragde, 1995; NCI, n. d.).

Cancer Incidence Rate. A cancer incidence rate is the number of new cancers cases of a particular type of cancer per 100,000 persons in a specific population during any given year. The incidence rate is calculated using the following formula: Incidence rate = (New cancer cases / Population) × 100,000 persons in the population. New cases of cancer may include more than one type of cancer occurring on an individual, but only the primary cancer is reported and incident rates are not inclusive of cancers that have reoccurred in an individual, as reoccurring cases would have been reported prior (NCI, n. d.).

Cancer Mortality Rate. A cancer mortality rate is based on the number of deaths from cancer that has occurred in a particular population in any given year. Cancer mortality is based on the number of deaths occurring from cancer per 100,000 persons in the population. Mortality Rate = (Cancer Deaths / Population) × 100,000 is the formula calculated when estimating death rates from cancer. The number of deaths is the numerator of the mortality while the size of the population is denominator during calculation. Computation of cancer sites can be done singly or combined (NCI, n. d.).

Cancer Survival Statistics. Cancer survival statistics are typically expressed as the proportion of patients alive at some point subsequent to the diagnosis of a cancer. The identification is typically done through a method of classification, which includes age, race, sex / gender, type of cancer, dates, and geographic location. This information is generally collected as a way to understand cancer trends and how groups or racially classified people are affected by that specific cancer site (NCI, n. d.).

Caribbean, Jamaican, Black, or West Indian. The terms Caribbean, Jamaican, Black, and or West Indians are terms used synonymously to refer to persons of Jamaica descent and other Caribbean islands (Sherlock & Hazel, 1998). There is characteristically no distinction or separate classification among ethnic Blacks in the United States Census Bureau (U. S. Census Bureau, 2010).

Chemotherapy. Chemotherapy is a medical treatment method that is used as to destroy cancer cells in the body. The procedure does not involved destroying healthy cells, but rather the bad cancer cells that are metastasizing and causing harm to the nearby cells (Gilligan & Kantoff, 2002; NCI, n. d.).

Culture. Culture comprises of commonalities and consensuses regarding customs and traditions that is carried over from one generation to the next (Hong et al., 2000; Kroeber & Kluckhohn, 1952, p. 181). Culture permits individuals to follow family or generational traditions by obtaining and disseminating information that is important the particular group. A distinction of different cultures is the etymology or linguistics that is used specifically within that culture to communicate in spoken or unspoken manner (Kendall, 2000, p. 36).

Digital Rectal Examination (DRE). The digital rectal examination is a screening method that is conducted by a doctor in order to detect cancer of the prostate. During the examination, a lubricated and gloved finger is inserted into the rectal cavity in order to search for and locate any abnormalities in the rectum that may give rise to cancer cells (Murthy, Byron, & Pasquale, 2004).

Efficacy. Efficacy is exercising control over one's conduct by planning what actions to take to achieve a goal (Ajzen, 2002; Bandura, 1977; De Vries, Dijkstra, & Kuhlman, 1988; Odedina et al., 2008).

External Beam Radiation or External Radiation Therapy. External Beam Radiation Therapy is used by doctors to send high-energy rays into cancer cells from outside of the body with the use of a machine (Heidenreich et al., 2011).

Healthcare Access. Healthcare access involves an individual or groups' ability to access necessary healthcare needs for preventive or long-term care. This includes an individual's ability to pay for healthcare by attaining insurance for medical needs and accessing health care services when needed (Ward et al, 2008). Healthcare access can be determined by identifying whether there is in fact an appropriate and affordable offering of services that accommodate the needs of population that services are being rendered to. In sum, are the healthcare access and the services being offered representative of the health issues in the population within the community, readily obtainable, reachable, helpful, inexpensive, and suitable for treating the population being served (Penchansky & Thomas, 1981)?

Health Belief Model. This model (HBM) was originated with concepts that represent manners in which behaviors can be measured. According to researchers, the original constructs of the HBM are "perceived threats or barriers, perceived benefits, perceived severity, perceived susceptibility, with cues to action being added later" (Becker, 1974; Rosenstock & Becker, 1974). Additional subscales of self-efficacy and motivation have been included in later research on health topics such as breast and prostate cancer (Capik & Gozum, 2011).

Health Disparities. Health disparities refer to the discrepancies or continual gaps in health status found among minority groups and their White counterparts. The discrepancies in health occur as a result of a multiplicity of factors including, but not limited to ethnicity, race, gender, education, culture, linguistic barriers, socioeconomic status, disabilities, demographic

locations, sexual orientation, and immigration status (Baquet & Carter-Pokras, 2002; Lasse, Himmelstein, & Woolhandler, 2006).

Homophobia. Homophobia is defined as judgmental perspectives and conduct concerning individuals who identify or are perceived as gays, lesbians, or homosexuals. Attitudes regarding homosexuality (Alturi, 2001; Fyfe, 1983; Gutzmore, 2004) and homophobia are generally connected to inflexible principles, sexual illiteracy, and learned homophobia (Weinberg, 1972). Weinberg (1972) also found that anxiety, unreasonable distress, revulsion, and prejudice are fear responses experienced by homophobic individuals (King, 2006) during encounters with an individual is perceived or identified as gay or lesbian (p. 7).

Hormone Therapy. Hormone Therapy is a form of medical treatment that can be used in cancer treatments as a mechanism for removing hormones or impeding their active state to prevent cancer cells from metastasizing (Currie, Haase, Hashmi, & Kiat, 2013; Heidenreich et al., 2011).

Immigrant. Immigrant is a broad categorical term used to describe different groups of individuals who enter a country other than their birth country with the intent or visiting, working, or living on a permanent (Gans, 2006). The term "immigrant" typically extends to anyone who was born overseas, irrespective of the new country of residence. Some immigrants do apply for status modification from temporary to permanent residents of a foreign nation, becoming naturalized citizens after meeting immigration requirements (Gans, 2006).

Immigration Status. Immigration status refers to the various categorizations of immigrants who enter a country. The categories of immigrant that are most frequently identified are expatriates or refugees seeking asylum, humanitarian accommodation for victims of

trafficking, provisional or transitory lawful populations, lawful aliens, and lawful citizens (Martin & Midgley, 2006).

Lifetime Risk. A lifetime risk is the prospect of getting or dying from a disease during an individual's life cycle, which can either be lessened or hastened based on health decisions, genetic predispositions to an illness, and lifestyle behaviors a person engage in their lifetime (NCI, n. d.).

Ethnic Blacks. The term ethnic Blacks is used to describe Blacks who are of African descent with ancestry in Europe, Africa, and the Caribbean (Magnus, 2004). Ethnic Blacks are not homogenous and have different cultures and belief systems (Magnus, 2004). For example, although the population of Jamaica, Barbados, Trinidad & Tobago, Bahamas, Haiti, among other islands in the Caribbean have population with African ancestry, they are all separate countries with distinct cultures (Arthur & Katkin, 2006; Magnus, 2004; Wheeler & Mahoney, 2008).

Observation (Surveillance or Watchful Waiting). Observation, surveillance, or watchful waiting occur when a patient present in the early stages a disease. Depending on the risks involved in using medical treatment such as surgical intervention, or other treatment that may not be very beneficial compared to watching or observing the disease progression, providers use the strategy of observation or watchful waiting to see whether the body may in fact heal itself (Warlick, Trock, Landis, Epstein, & Carter, 2006; Wilt et al., 2012).

Patois. Patois is used to describe the spoken dialect of Jamaica. The language is recognized internationally as a Creole dialect of the Jamaican people; however, it has not been formally recognized as an official first language. The language has been recognized by some agencies of the US government for the purposes of foreign relations and interception of criminal activities by individuals of Jamaican descent (Harry, 2006).

Predisposing Factors. These are considered factors such as lifestyle, education, socioeconomic status, insurance, race, culture beliefs, health beliefs, religious beliefs, genetics, and all other factors that predispose someone to developing a disease, or impede them partaking in screening and health decisions that would be beneficial. Predisposing factors are essentially, biopsychosocial factors that are in place as a result of an individual's biology or genetics, psychology or mental perceptions, and social environment (Benjamins, 2006; Herek, 1978a; Levin, Chatters, & Taylor, 2005; Odedina et al., 2008, 2009).

Prevalence. Prevalence is used to describe the numerical value or percentage of individuals that are alive as of a given date in a population that has been found to have a specific illness or disease state such as PCa. Prevalence is based on new incidences and pre-existing conditions in addition to cases of survival. Any information that has been acquired on prevalence can help with health education, estimation of survival, and apportionment of available resources such as financial incentives to assists organizations with providing preventive or social services to groups affected by a disease (NCI, n. d.).

Prostate. The prostate surrounds the urethra and is a gland located within the male reproductive system. The prostate gland empties urine from the bladder, and can be affected by malignant tumors, which cause PCa (NCI, n. d.).

Prostate Cancer (PCa). Prostate cancer can affect men younger than 40 years old. However, most of the literature on the topic believes that men who are 40 years and older are at more risk. The disease is detected through screening. Prostate cancer is characterized by stages / phases and is formed in the tissues of the prostate before metastasizing to the surrounding areas. Blacks are twice as likely as other racial minority groups to be affected by PCa and approximately 2.4 times the rates of White men (Howlader et al., 2012).

Prostate Cancer Knowledge. PCa knowledge is the amount of information an individual has about PCa disease, screening, treatment modalities, and the predisposing factors that place people at risk or high risk for the disease (Baker, 2008; Oliver, 2008; Weinrich et al., 2004). In a constructed scale on PCa knowledge, questions can include but are limited to familial history, lifestyle, information and educational knowledge pertaining to prostate cancer awareness (Weinrich et al., 2004). Items about PCa knowledge are typically based on a Likert Scales that demonstrates low to high prostate cancer knowledge from participants (Odedina et al., 2008; Weinrich et al., 2004).

Prostate Cancer Screening. Prostate cancer screening involves the use of the prostate specific antigen blood test (PSA) digital rectal examination (DRE), and the transrectal ultrasound (TRUS) to detect the presence or absence of prostate cancer (ACS, 2011; Brooks et al., 2010; Smith et al., 2011).

Prostate Specific Antigen (PSA). The prostate gland makes the protein called PSA, which is in the blood. Higher levels of PSA in a man typically signify prostate cancer, infection, or benign prostatic hyperplasia also known as benign enlargement of the prostate (Thompson et al., 2007; NCI, n. d.).

Prostate Specific Antigen Test. The prostate specific antigen test is a blood test that is used to measure the level of prostate-specific antigen (PSA) in the blood (Thompson et al., 2007; NCI, n. d.).

Psychosocial Differences. Psychosocial differences in attitudes can be psychologically and socially indicative of willingness to act based on ethnic identity, perceptions of barriers, benefits, and seriousness of a condition. Psychosocial differences can be influenced by cultural beliefs and social environment (Addis & Mahalik, 2003; Bourne, 2010; Consedine et al., 2006).

Radical Prostatectomy. Radical Prostatectomy is a surgical procedure that involves removing prostate or surrounding tissues a laparoscope (Wilt et al., 2012).

Social Influence. Since many factors influence willingness to screen, the social influence of community can contribute to screening or refusal to screen. This factor will facilitate an understanding of the role played by social influences in screening (Odedina et al., 2008).

Socioeconomic Status. Socioeconomic status (SES) denotes the social and economic standing of an individual within society. It is a system by which individuals are generally classified according to social status and wealth or economic wellbeing. In determining SES, collective methods are employed based on constructed categories such as a family's earnings, profession, and educational attainment in order to further define societal rank and position (Demarest et al., 1993; Weber, 1928, 1968).

Screening Barriers. Screening barriers include but are limited to concerns about insufficient disease knowledge and abnormal test results, embarrassment, fatalism, fear of post-operative sexual difficulty, frustrations regarding not having a regular doctor, financial limitations for adequate screening, lack of cultural sensitivity, and physician mistrust (Bal, 1992; Blocker et al., 2006; Boring et al., 1992; Consedine et al., 2007; Magnus, 2004; Nash & Hall, 2002; Weinrich et al., 2004).

Taxonomy. For this study, taxonomy simply refers to any system of classification involving human beings (Irvin-Painter, 2008; Taxonomy).

Transrectal Ultrasound (TRUS) / Endorectal Ultrasound (ERUS). The TRUS or ERUS exam is conducted using a probe that transmits high-energy sound wave into the rectal cavity. Echoes are produced from the sound waves influencing the internal organs and tissues,

which in turn create images called sonograms. Any anomalies in the rectal cavity or adjacent structures can be revealed by the TRUS or ERUS based on the images that are transmitted (Renfer, Schow, Thompson, & Optenberg, 1995; Waterhouse & Resnick, 1989).

United States Preventive Services Task Force (USPSTF). USPSTF is an autonomous board of non-Federal specialists in "prevention and evidence-based medicine" (Moyer, 2012). The USPSTF board of specialists conducts reviews that are scientific in the field of preventive health services with, and is comprised of primary care providers, specializes in nursing, gynecology, obstetric, pediatric, health behavior, internal, and family medicine (Moyer, 2012).

Summary

Prostate cancer is a public health issue that affects all men globally, regardless of ethnic or racial identification, and socioeconomic status (SES) (ACS, 2013, 2014; Globocan, 2008). However, some ethnic Black populations have a higher PCa risk than others (Consedine et al., 2014; Rebbeck et al., 2012); and, Blacks as a racial group have higher PCa incidence and mortality rates than White men (ACS, 2013, 2014; Freeman, 2013; Niang, Kouka, Jalloh, & Gueye, 2011). Ethnic Black men from Sub-Sahara Africa (SSA) has showed lower PCa incidences and mortality rates internationally (Odedina et al., 2009, 2011) than those of Caribbean ethnic Black men located in the Caribbean, and African American in the US (Odedina et al., 2009, 2011). Researchers have found that Caribbean ethnic Black men have the highest PCa globally according to data received from the Global Cancer Facts, and Figures on global cancer rates (Globocan, 2008).

African American men have been purported to have similar PCa rates as Caribbean ethnic Black men (ACS, 2013, 2014). However, the African American PCa rates may be somewhat misleading due to the large presence of Caribbean ethnic Black men, and Sub-Saharan

African men living in the United States, who are classified as African Americans for the great majority of PCa research studies (ACS, 2013, 2014; Consedine et al., 2014; Howlader et al., 2013; Odedina et al., 2009, 2011; Rebbeck et al., 2012). Many researchers have contend that the PCa screening rates among African American or Black men are extremely low when compared to Whites and other racial minority groups (ACS, 2013, 2014; Consedine et al., 2014). Caribbean ethnic Black men are an invisible PCa risk group in the US, and most of the data on PCa screening research has a combination of different groups of ethnic Black men under the pseudonym African Americans or Blacks (Magnus, 2004).

Due to the disproportionate difference in the high PCa burden of ethnic Black men when compared to other racial groups and ethnic Blacks from Sub-Sahara Africa (Howlader et al., 2013; Odedina et al., 2011; Rebbeck et al., 2012), PCa screening within ethnic Black populations is important for examining differences in ethnic Blacks' perceptions towards PCa screening. PCa screening within-groups of ethnic Blacks in the United States can provide a cogent picture of PCa screening rates in the large ethnic Black immigrant groups understand many researchers believe the higher PCa incidence and mortality is due to low PCa screening (ACS, 2013, 2014; Chu et al., 2011; Freeman, 2013). The comparison of PCa incidence and PCa mortality rates between African Americans (also termed "Blacks") and White men demonstrate a health advantage for Whites whose PCa incidence and mortality rates are 2.4 times lower than that of African Americans, but whom also are considered frequent PCa screeners compared to low rates of screening seen among Blacks (ACS, 2013, 2014, p. 14).

The health disadvantage experienced by ethnic Black men due to low screening rates based on data collected from African American samples unfortunately contributes to, and results in health disparity among Blacks as a racial group (ACS, 2013, 2014, p. 14). There are currently

three recognized factors that can place men at risk, or higher risks of being diagnosed with PCa – African ancestry or descent, age, and a family history of the disease (ACS, 2013, 2014). These factors apply globally and include ethnic Blacks who are from Africa, the Caribbean, and Europe (Consedine, 2012; Consedine et al., 2014; Glover et al., 1998; Kleier, 2010).

Many ethnic Blacks, especially Caribbean ethnic Black nationals (has highest tumor stage and grade among SSA) who immigrate to the United States are located in areas of large immigrant settlements within cities such as Fort Lauderdale (Broward County), New York, and California, where immigrant groups have a tendency to stay among their own cultural groups or their "own kind" (Archibald, 2011; Jones, 2005; Rebbeck et al., 2012). This intentional decision by a lot of immigrants to remain in enclaves among their own cultural and ethnic groups, facilitate PCa screening data collection from these groups easily accomplishable (Camarota, 2007; Juckett, 2005).

The purpose of this quantitative non-experimental comparative study was to examine the extent and manner in which perceptions toward PCa screening among Black men differ with respect to specific ethnic groups within the Black population and vary according to demographic factors (age, education, marital status, health insurance coverage, and income). The study used the Health Belief Model-Prostate Cancer Scale survey instrument (HBM-PCS) to measure Health Belief Model constructs, as they relate to PCa screening perceptions in men age 40 years and older (Capik & Gozum, 2011; Appendix C). The HBM-PCS survey instrument will examine the constructs of (a) perceived seriousness of PCa, (b) perceived barriers of PCa screening, and (c) perceived benefits of PCa screening, in order to examine the extent and manner in which these constructs are perceived by ethnic Black men regarding PCa screening and demographic factors.

The primary dependent variable of interests in this study was the perceptions of PCa screening. These dependent variables were examined via the HBM-PCS (Capik & Gozum, 2011; Appendix C), with respect to the following ethnic groups within the Black male population: (a) African Americans, (b) Bahamians, (c) Haitians, (d) Jamaicans, and (e) Trinidadians / Tobagonians. A demographic data form was provided to participants for the purpose of collecting background information pertinent to factors impacting screening perceptions (Appendix D).

A descriptive analysis was initially conducted to deliver a synopsis of the applicable central tendencies for each variable in the study. The central tendencies of perceptions of PCa Screening were presented per each ethnic group, and per each demographic variable. Descriptive analyses were conducted to depict the demographic make-up of the study sample and to assess the dispersion and distribution of the data measuring the outcome variables (i.e., Perceived Seriousness of PCa, Perceived Barriers to PCa Screening, and Perceptions of PCa Screening Benefits) and demographic factors (age, education, income level, marital status, and health insurance coverage) within the study sample.

The research hypotheses of this study were examined via a series of one way ANOVA and factorial ANOVA via GLM-Univariate analyses procedures. Specifically, one way ANOVA procedures were first be used to examine differences in Perceptions of PCa Screening [(a) perceived seriousness of PCa, (b) perceived barriers of PCa screening, and (c) perceived benefits of PCa screening] with respect to ethnic identity [(a) African Americans, (b) Bahamians, (c) Haitians, (d) Jamaicans, and (e) Trinidadians / Tobagonians]. A series of factorial ANOVA analyses using GLM-univariate procedures was then used to examine whether differences in Perceptions of PCa Screening with respect to ethnic identity vary with (a) age, (b) education, (c)

marital status, (d) health insurance coverage, and (e) income level. If a statistical significance is indicated, Scheffe's post hoc analysis was used to identify the specific differing groups.

The proposed study provided accurate and reliable information on the extent and manner in which differences in PCa screening perceptions are observed among the high PCa risk populations of African Americans and other ethnic Black men, who are foreign born and are currently living in Broward County, Florida. The proposed research can provide researchers, providers, and policymakers with data that can be translated into improvements in PCa screening approaches among ethnic Black populations. The need for research on the within-group examinations of the perceptions of ethnic Blacks towards PCa screening has been recognized and acknowledged by researchers who monitor the global cancer facts, and figures, in an effort to examine and report on all cancer sites, including high risk populations worldwide (Consedine et al., 2014; Globocan, 2008; Kleier, 2003, 2004, 2010; Odedina et al., 2004, 2006, 2008, 2009, 2011).

Ethnic Black immigrant men being researched independently of African Americans may assists in understanding the part they play in the PCa screening rates, incidences and mortalities being reported in the US. A failure to acknowledge that ethnic Blacks play an important role in influencing the high PCa incidences, PCa mortality, and low PCa screening in the African American population can further disparity for Blacks as a racial group. Black diversity is important in research studies and as a heterogeneous population; they remain pervasively invisible in the US (Arthur & Katkin, 2006). To be able to benefit from culturally appropriate interventions and screening approaches to improve PCa screening and awareness among ethnic Black men of different cultures, they must first be acknowledged as a high PCa risk group that is highly invisible due to incorrect categorical group that prevents them from having reasonable

access to PCa research and treatment benefits appropriate to their groups. The results of this study can introduce or augment PCa screening information, assists in developing culturally appropriate interventions, and making PCa research accessible based on collecting ethnic identifiers to determine PCa screening rates, perceptions, incidences, and mortalities among ethnic Black groups in the US, besides African American men.

Study results can also facilitate an easier healthcare transition for ethnic Black men who are not fully acculturated or assimilated within the larger US population. Lack of proper assimilation or acculturation can make these men invisible to many PCa researchers, and policymakers in the US, while being widely misunderstood by most healthcare providers whose cultural competency on ethnic Black groups are severely lacking (Archibald, 2011). The need to examine the within-group differences of perceptions of ethnic Black men towards PCa screening can be an invaluable look into the trajectory of PCa in high risk men who are from immigrant populations and are permanently residing in the US. Invaluable information can be gathered from such research studied that can aid policymakers in facilitating, or influencing the manner in which PCa screening approaches are implemented in screening campaigns directed at Blacks. This is important because the easiest way in which to get individuals to participate in any type of event is to first approach them with culturally appropriate events that demonstrate commonalities or likeness to that which they are familiar, which then opens the door for communication and feedbacks from the population of interests.

Chapter 2: Literature Review

The purpose of this quantitative non-experimental comparative analysis study was to examine the extent and manner in which perceptions of PCa screening among Black men differ with respect to specific ethnic groups within the Black population, and extent and manner that those ethnic perceptions vary according to demographic factors (age, education, marital status, health insurance coverage, and income level). Toward this end, a modified version of the Health Belief Model survey instrument (HBM-PCS) was used to measure (a) perceived PCa seriousness, (b) perceived PCa screening barriers, and (c) perceived PCa screening benefits within a large population of ethnic Black men (MBM). Relevant demographic factors of this study population – including ethnic identity were collected via a demographic form.

This brief review of the literature provides an overview of prostate cancer (PCa) in ethnic Black men in PCa screening and PCa research studies. PCa statistics for the United States will be reviewed addressed in addition to the United States Preventive Services Task Force (USPSTF), American Cancer Society (ACS), and the American Urological Society (AUA) recommendations for PCa screening for PCa disease. This overview will also include PCa symptoms, diagnostic instruments, and treatment modalities available to men who are diagnosed or at high PCa risk. The benefits and harms associated with PCA screening will be discussed along with screening perceptions and barriers. The review will conclude with the discussion of cultural differences in screening ethnic Black men, and a brief summary to cement the key points discussed in the study.

The key words entered in Google Search Engine and PubMed included *Prostate Cancer, Blacks, African Americans, Whites, Caribbean, Haitians, Jamaicans, Bahamian, Trinidad &*

Tobago, Unites States, Measurement, Scales, Health, PCa Incidence, PCa Mortality, PCa Screening, Globocan, International, Foreign, Ethnic, Diagnosis, Instruments, and *Disparity.*

In this literature review, the peer-reviewed journal articles included periodicals with historical and foundational value to the research and the search extended to the research timeframe in 2014. Sources or references that exceeded 5 years old were included in the research study to cement the foundational studies and continued research on PCa and PCa screening. The research engines and databases that were used to secure peer-reviewed periodicals and recent information on PCa and PCa screening in the study population included: National Institute of Health, United States Library of Medicine / PubMed / National Center for Biotechnology, National Cancer Institute, NCI Record Locator, American Cancer Society, American Urological Society, Google Scholar, Globocan, International Agency for Research on Cancer / World Health Organization Cancer Report, and Hindawi Publishing Corporation.

Overview of Prostate Cancer in Ethnic Black Men

Globally, prostate cancer (PCa) affects Black men disproportionately and the disease account for more incidences and deaths among Black men, than any other racially classified groups (ACS, 2013, 2014, p. 19; Howlader et al., 2013, 2014, t. 2311). African Americans have been purported to have some of the highest PCa incidence and mortality worldwide, with Jamaican Black men showing comparable rates (ACS, 2013, 2014, p. 14). According to the American Cancer Society's (ACS) "Cancer Facts and Figures" (2013-2014), there was expected to be 35,430 PCa incidences among African Americans, accounting for 37% of all cancer cases among African Americans (p. 14). The ACS has also projected that 4980 African Americans would die from PCa during the year of 2013-2014, which is a mortality rate that was 2.4 times higher than those seen among White populations, and that has been consistently so despite

gradual decreases in PCa incidence and mortality among all racially classified groups (ACS, 2013-2014, p. 14). The ACS also estimated that 1 in 5 African American men would be diagnosed with PCa in his lifetime, while the number was 1 in 6 for White men (ACS, 2013, p. 14).

There were documented reduction in PCa incidences and mortalities for all groups during the 2014 SEER report (Howlader et al., 2014). In comparison to the 2013 SEER reported PCa IN and MR, the 2014 SEER numbers are again presented for comparisons, as noted on pages 12-13. To reiterate the findings, the latest SEER report also showed that Black men had a PCa incidence rate of 223.9, down from 228.5 per 100,000 persons, and a mortality rate of 48.9, down from 50.9 per 100,000 persons a year ago, making PCa IN in Black men approximately 2.4 times higher than the PCa incidence seen in White men (Howlader et al., 2013, 2014). The incidence and mortality rates are also about three times the rates found in some other racially defined groups (ACS, 2013, 2014; Howlader et al., 2013, 2014). PCa IN was 147.8 per 100,000 persons for all races, and MR of 22.3 per 100,000 persons for all races (Howlader et al., 2014). With regards to other racially classified groups, Asian / Pacific Islander had a PCa IN of 79.3 and MR of 10.0 per 100,000 persons, American Indian / Alaskan Native had a PCa IN of 71.5 and MR of 21.2 per 100,000 persons, Hispanic had a PCa IN of 121.8 and MR of 18.5 per 100,000 persons, and Non-Hispanic had a PCa IN of 151.6 and MR of 22.6 per 100,000 persons (Howlader et al., 2014).

Despite the 2014 improvements, the Surveillance Epidemiology and End Results Program (SEER) covering 18 geographical areas in the United States (2006-2010) provided data in 2013 that comparatively showed the gaps in PCa incidence and mortality by race had still existed among all racial groups (Howlader et al., 2013. t. 23.7, t. 23.11). In 2013, for all races

specified: Whites with a sub-category for Hispanics and Non-Hispanics, Blacks, Asian Pacific Islanders, American Indian / Alaskan Natives, and Hispanics, there was a SEER PCa incidence of 152.0 rate per 100,000 persons, while the SEER reported PCa mortality rate for all races was 23.0 (Howlader et al., 2013, t. 2311). Individually, SEER PCa incidence rates for White men was listed as 144.9 rate per 100,000 persons, and their PCa mortality rate was listed as 21.2 (t. 23.11). The PCa incidence rate for White Hispanic men was 124.9, while their mortality rate was listed as 19.8 rates per 100,000 persons (t. 2311). SEER PCa incidence rate for White Non-Hispanic men stood at 148.2, while the PCa mortality is 21.3 rates per 100,000 persons (t. 2311).

For individuals classified under the group "Asian Pacific Islander", the PCa incidence was 81.8, with mortality rates documented as 10.1 per 100, 1000 persons (t. 2311). American Indians and Alaskan Natives were found to have PCa incidence rate of 77.8, while mortality rate was 16. 9 based on calculations for the entire US (t. 2311). Hispanics was documented as having PCa incidence of 125.8, and mortality rate of 19.2 rates per 100, 000 persons, as reported by SEER (Howlader et al., 2013, t. 2311). As evidenced by the above PCa incidences and mortality rates for all races, and followed by the specified racial classifications, the PCa incidence of 228.5, and mortality rate of 50.9 for Blacks were still very high considering the other groups (Howlader et al., 2013, t. 2311). Due to the continued use of African American ethnicity to represent all ethnic Blacks throughout the United States and the racial classification of the term "Black" to represent African Americans and all other ethnic Black men, it is quite possible that an accurate PCa incidence and mortality rate may take some time to acquire for ethnic Black men and African Americans (Archibald, 2011; Arthur & Katkin, 2006; Meyer et al., 1998).

The significance of this assumption would lead one to speculate that the low PCa screening rates, unusually high PCa incidence and mortality rates that have been recorded, and

are bring documented for African Americans or Blacks in the United States, may be majorly flawed due to the influence of other ethnic Black men being sampled as African Americans and inflating incidences and mortality rates. All PCa research studies generally report PCa incidence and PCa mortality rates from the ACS and SEER report (ACS, 2013, 2014, p. 14; Howlader et al., 2013, 2014, t. 2311). In most PCa research studies on PCa, researchers will cite the ACS and SEER reported PCa IN and MR for Blacks, as the PCa IN and MR for African Americans. This would be and is incorrect as African Americans and Blacks cannot have the same PCa IN and MR, as African Americans are an ethnic Black group that does not represent the entire Black racial group. If the PCa incidence and mortality rates on record represent all Blacks as a racial category, then it would essentially mean that all ethnic Black men in the ACS and SEER report are not African American men but also all Black men qualified to participate in the study.

All ethnic Black men from the Caribbean islands and many African countries have extremely high PCa risk (Forman et al., 2013; IARC, 2005). The PCa incidence and mortality rates among Caribbean national have been determined to be higher than those of African Americans, and all countries surveyed by the International Agency for Cancer Research (IARC), responsible for following cancer trends and trajectory globally (Globocan, 2008; Glover et al., 1998). Rebbeck et al., (2012) have conducted a study to determine global PCa rates among men with African Ancestry and have found that PCa is more common among African Americans and Caribbean ethnic Black men, than is evidenced in men who are from Sub-Sahara Africa (p. 2). This conclusion has also drawn support from other researchers who specialize in PCa research focusing on ethnic Black population (Consedine et al., 2014; Kleier, 2010; Odedina & Ogunbiyi, 2006; Odedina et al., 2009).

Since, there is a large presence of ethnic Blacks from the Caribbean who are residing in the United States, it is important to understand the role they play in contributing to the low PCa screening rates that has continuously been reported for African American or Blacks throughout the US (Archibald, 2011; Camarota, 2007; Consedine et al., 2014). Jamaican Black men, the one ethnic Black group mentioned by the ACS as having similar high PCa risk as African American men have been documented as having some of the highest PCa incidences and mortality rates worldwide (ACS, 2013; Howlader et al., 2012; Odedina et al., 2009). Of all racial groups, ethnic Blacks also have the shortest PCa survival rates on record in the United States (ACS, 2010, 2011, 2012, 2013). Categorical or taxonomical grouping of ethnic Black men in the United States under the pseudonym "African Americans, or Blacks" (Archibald, 2011; Arthur & Katkin, 2006; Magnus, 2004), have resulted in ethnic Black men, who are high risk PCa populations, becoming an invisible group in PCa research (Consedine et al., 2014; Rebbeck et al., 2012).

Ethnic Black men are subjected to health disparities and health disadvantages, as the majority of research studies on PCa screening and PCa disease focuses on African American, which prevent the accumulation of data on the perceptions of ethnic Black men towards PCa screening, including how PCa screening and PCa disease affect ethnic Blacks men from the Caribbean, and residing permanently in the United States. There is also not much focus on what factors drives the PCa screening habits of many ethnic Black men whose PCa screening habits may differ from that of African Americans (ACS, 2013; Howlader et al., 2012, 2013). This study will determine whether there are differences in perception of prostate cancer screening among ethnic Black men living in Broward County, Florida. The research study will provide information on the PCa screening perceptions of ethnic Blacks, which may further the effort to

address the PCa screening needs of ethnic Black men who are at the highest PCa incidence and mortality risks worldwide.

United States Prostate Cancer Statistics

The United States is comprised of an impressive number of diverse cultures, subcultures, and ethnic Black population when compared to other countries. Ethnic Blacks make up a good portion of the population, but are not typically acknowledged based on distinct cultural and ethnic identities (Arthur & Katkin, 2006; Magnus, 2004). Prostate cancer is a major burden for men in the US, especially ethnic Black men. The Surveillance Epidemiology and End Results (SEER) of 2011 estimated 240,890 cases of prostate cancer incidences in addition to 33,720 cases of mortality in the US (ACS, 2011, p. 19; Altekruse et al., 2010; Howlader et al., 2010, 2011). The information was from the SEER prostate cancer data from 2004 to 2008, which included 17 SEER geographic areas (ACS, 2010; Kohler et al., 2010). Among the SEER prostate cancer incidences and mortality estimates, African Americans feared the worst in the US when compared to all other racially classified groups (ACS, 2011; Howlader et al., 2010, 2012).

As mentioned before, ethnic Black men besides those of African American heritage are typically not considered as distinct ethnic groups in the SEER studies, which make it difficult to understand PCa screening rates, incidences and mortality among these men. SEER PCa mortality rates for 2012 was 28,170 cases, showing a noticeable decrease from 2011 where there was 33,720 cases of PCa mortality (ACS, 2012, p. 19; Altekruse et al., 2010; Howlader et al., 2012, 2013). The PCa IN of 241,740 cases in 2012 revealed a slight increase in prostate cancer among all groups from the 2011 estimated incidences (ACS, 2012, p. 19; Howlader et al., 2012, 2013). However, similar to the SEER 2011 estimates, PCa incidence and mortality remained higher for African American men than all other groups in the study data (Howlader et al., 2012;

Smith et al., 2011). Nonetheless, African American men experienced a 1.7% reduction in PCa incidence and a 4.9% reduction in PCa mortality between 1999 and 2008, showing some promise in relieving the PCa burden among the group (Eheman et al., 2012, p. 2348). Since 2011, it can be seen in the literature that PCa continue to slightly reduce in all groups, though Blacks continue to show the same difference in PCa disparity.

Though the incidence and mortality rates have continued to slightly improve among African Americans (identified as Blacks interchangeably in studies), many ethnic Black men are not considered as distinct high risk groups, which excludes them from reports on PCa trajectories in those groups (Eheman et al., 2012, p. 2348). The SEER report for 2012 included 18 geographical areas but it is not known what percentage of ethnic Blacks besides African Americans were surveyed for the findings published by the SEER program (ACS, 2012, p. 19; Howlader et al., 2012). The 18 SEER geographical areas used for the PCa data collection included "African American or Blacks" being represented as African American men with no distinction of individual ethnic Black cultures (ACS, 2012, p. 19; CDC, 2012; Howlader et al., 2012; Kohler et al., 2011). The SEER report has also been based on what is described as a "Vintage 2009 population" with data gathered between 1975 and 2009, in an effort to update current cancer statistics in the US (Howlader et al., 2012; SEER, 2012).

The reported PCa age-adjusted incidence for all groups in the United States in 2012 was 152.0 rate per 100,000 persons, a slight reduction from 154.8 per 100,000 in 2012 (ACS, 2012, p. 19; Howlader et al., 2013, t. 2311), while the year 2012 PCa age-adjusted death rate was 23.6 per 100,000 based on 18 SEER geographical areas, and the year 2013 showed a 23.0 rate per 100,000 person in mortality among all races (ACS, 2012; Siegel, Naishadham, & Jemal, 2012, p. 15; Howlader et al., 2012, 2013, t. 2311). During this same period in 2012, PCa incidence

increased to 236.0 per 100,000 from 233.8 per 100,000 among Black men (Howlader et al., 2012; Sigel et al., 2012, p. 18). During 2012, the PCa mortality rate for Blacks as reported by SEER, was 53.1 per 100,000 cases which demonstrated a slight decrease from the year 2011 rates of 54.2 per 100,000 persons, and a 2013 decrease of 50.9 per 100,000 persons (Howlader et al., 2012, 2013, *t.* 23.11). Accordingly, the SEER report for PCa incidence for Blacks as a racial group in 2013 was 228.5 per 100,000 persons, and a 50.9 per 100,000 mortality rate, but a 223.9 IN and a MR of 48.9 in 2014 showed that the gradual decrease continues consistently, though not at a risk that is lower than the prior years due to other racial groups having reductions in PCa IN and MR as well (Howlader et al., 2013, 2014, t. 23.11, p. 11).

The median age of PCa cancer diagnosis of all men in the United States was 67 years during the 2013 report (Howlader et al., 2012, 2013, t. 1.11). African Americans' median age of diagnosis was 64 years old (Howlader et al., 2012, t 1.11). According to SEER, from 2005-2009 the median age of PCa mortality was 80 years old for all groups (Howlader et al., 2012, t. 1.11). The median age of mortality for African American men with PCa was 77 years, and 81 years of age for White men (Howlader et al., 2012, t. 1.13). The median age of PCa incidence and mortality rates for ethnic Black men of diverse cultures are currently unavailable in the US since ethnic Blacks are not recognized as distinct ethnic groups in the great majority of PCa research studies (Wheeler & Mahoney, 2008; Magnus, 2004). The closest PCa IN and MR that can be obtained for ethnic Black men of diverse cultures living in the US would be data and research studies conducted back in their native homelands, which does not follow the PCa trajectories of immigrant populations in the US. It is not very clear the extent to which ethnic Black men are affected by PCa and the screening process, but it would not be illogical to assume they have very

low or worse PCa screening participation rates than African American men and same or worse mortality rates that are reported alongside that of African American mortality rates.

The International Agency for Research on Cancer (Forman et al., 2013; IARC, 2005) continues to provide PCa information through a report called Globocan, that posts PCa incidence and mortality rates for the United States and other countries internationally based on report from all countries (Bray, Ren, Masuyer, Ferlay, 2013; Ferlay et al., 2010; IARC, 2005). A few US researchers and some international researchers have also recognized the high PCa burden among ethnic Black men and continue to focus attention on the topic by involving some groups of ethnic Black men in PCa and PCa screening research studies (Consedine et al., 2004, 2007, 2009; Odedina et al., 2004, 2006, 2008). However, the study numbers are vastly limited when compared to research on African Americans as an at-risk PCa group in the United States, as Globocan report can only provide data given by countries with different approaches to research than in the US. For example, overseas research studies on ethnic Jamaican Black men show that the typical age at diagnosis among the group is 72 years old, and more than 80% of the cases are confirmed posthumously unlike other countries and Caribbean islands (Coard & Skeete, 2008; Glover et al., 1998, p. 1985; Shirley et al., 2002).

However, it is not known for certain whether these rates are reliable and whether limited resources do complicate the efficacy and consistency with which research is conducted in these populations overseas. Most ethnic Jamaican Black men normally seek treatment in the latest stages of PCa disease, where treatment is not viable because their life expectancy is less than 10-15 years if the intended treatment recommendation follows PCa treatment protocols in the US (Shirley et al., 2002). Nevertheless, with 80% of cases being confirmed posthumously by some researchers, that is an alarming rate that does point to screening barriers that are definitely

culturally motivated instead of being compounded by challenges such as income, health insurance, access to services, and other sociodemographic factors. Many Jamaican Black men currently reside in the US along with a vast number of Caribbean immigrants from other countries (Camarota, 2012). Since these groups are among some of the largest immigrant populations with the highest PCa incidences documented globally, the opportunity exists to learn about their PCa screening perceptions and whether their PCa knowledge have increased or stayed the same since their immigration to the US, without ever having to leave the US to carry out this type of research.

Like many third world countries, there are no screening programs that provides PCa awareness and screening programs on a national scale in Jamaica or in countries that many ethnic Black men reside prior to immigrating to the US (Shirley et al., 2002). The absences of nationally recognized PCa screening programs pose a challenge for those who are unaware of the signs of PCa and PCa screening, challenged by knowledge and cultural ideals, and are in an environment that highly fear PCa screening due to culturally engrained homophobia attitudes (Gutzmore, 2004; Kempadoo, 2009). These are extremely challenging barriers that could point to the men who have PCa, but refuse to visit a provider, thereby resulting in late clinical PCa presentation and late PCa diagnosis (Coard & Skeete, 2008; Shirley et al., 2002). PCa information concerning the PCa incidence and mortality rates of ethnic Black men who are at high risk for PCa are also based on data acquired through a number of studies conducted overseas, which can adhere to different standards than that of US research studies on PCa (Bunker et al., 2007; Chinegwundow et al., 2006; Gibson et al., 2008; Glover et al., 1998).

Incidence and mortality rates do vary among ethnic Black men, with some groups having extremely high incidence and mortality, while others have incidence and mortality that are more

comparable the PCa burden of Whites and other racial minorities (ACS, 2011, 2012, 2013, 2014; Barros et al., 2003; Gibson et al., 2008, 2010; Odedina et al., 2006, 2009; Ukoli et al., 2003). Many researchers have turned their focus on genetic predispositions and some of the genetic similarities among ethnic Black men that might factor into the high incidence and PCa mortality rates among the groups (Bunker et al., 2002; Consedine et al., 2009; Haiman et al., 2011; Odedina et al., 2009; Okobia, Zmuda, Ferrell, Patrick, & Bunker, 2011). In the US, cancer of the prostate accounts for the most cancer incidences, and is the second leading cause of mortality among African American men, which continues to be the case year after year (ACS, 2014; Howlader et al., 2014). Though a lack of healthcare coverage and social disparities in PCa treatments can influence late stage diagnosis and death rates of African American and other ethnic Black men who are an underserved healthcare population, culturally appropriate approach to research, screening, and treatment can counter some of these challenges (Shavers & Brown, 2002; Ward et al., 2008; Weinrich, S. P., Weinrich, Weissbecker, Brent, & Seger, 2004).

There are many factors that do contribute to late, no, or low PCa screening. Yet, some factors such as late clinical presentation for treatment and lack of healthcare accessibility for men from low socioeconomic backgrounds can be corrected easily by better interventions in screening approaches before men become diagnosed with the disease, as these issues negatively affect the PCa screening behaviors of these men and their PCA outcome (Chou et al., 2011; Meyerowitz et al., 1998). For some men, fear of the screening exams, lack of insurance coverage, financial hardship, lack of family support, lack of screening knowledge, lack of provider recommendation, mistrust for providers, inconsistent screening guidelines, and lack of effective and culturally relevant PCa screening programs can delay the time that ethnic Black men become actively involved in PCa screening and the health care system (Consedine et al.,

2007; Odedina et al., 2006; Sanchez, Bowen, Hart, & Spigner, 2007; Winterich et al., 2009). However, though screening is highly encouraged and controversial in some circles, comorbid disorders are highly likely in many cases where prostate cancer is present, and many men will die from a comorbid disorder before succumbing to prostate cancer (Albertsen et al., 2011). Men who understand this fact may outright refuse to participate in screening, which is still their right. However, this should not impact researchers, healthcare providers, and policymakers' decision to provide equal access to research and culturally relevant care to these high PCa risk groups.

It is imperative to remember that comorbid disorders and death from such disorders instead of PCa may be more common among individuals with preexisting conditions, genetics, poor health, maladaptive behaviors, and poor lifestyle choices and behaviors (Odedina et al., 2009; Robbins, Hooker, Kittles, & Carpten, 2011). For example, it has been found that Black men are more likely than Whites to die at each stage of diagnosis, and less likely to survive five years after being diagnosed with prostate cancer (Bach et al., 2002; Smart, 1997). There are a number of factors that could be influencing the five year low survival rates among ethnic Blacks, but these factors are only speculation until researchers start making these at-risk groups' priority groups in PCa screening and research. However, even with the continued health and PCa disparity in Black men, there has been no increase in PCa screening among ethnic Black men, which may be the fact that there are no podiums dedicated to recruiting these men as distinct cultural groups for PCa screening research studies. Physicians, researchers, and policymakers should make PCa screening a priority and targeted goal among ethnic Black men.

Efforts to make PCa screening research a necessity among ethnic Black men is warranted, as a great majority of them are considered working poor, illiterate, lacking insurance, lacking PCa education, lacking access to healthcare services, have low or no source of income,

and are socially influenced by family members and friends who may be lacking in the same factors or resources mentioned. It is unrealistic to rely solely on friends and family members as principals in encouraging PCa screening in men. It is also unacceptable for ethnic Black men who present with the disease to be offered less aggressive PCa treatment because a physician does not possess culturally competent skills (Arthur & Katkin, 2006; Blendon et al., 2008). In regards to their screening and survival rates, while one or more causes may be predominant in the low PCa screening and survival rates for ethnic Blacks, it is quite possible that ethnic Blacks choose to screen for PCa less than other groups because providers offering the PCa screening knowledge are not relatable and make no efforts to accommodate differences in culturally different patients. Sensitive information is typically more accepted by groups when the provider communicating the information has something in common with the patient (Odedina et al., 2004, 2006).

There are currently three screening examinations (PSA, DRE, and TRUS) that providers recommend to clients at risk for PCa (ACS, 2007, p. 19; Andriole et al., 1999). While these tests focus on using one or more of these methods to examine whether evidence for prostate malignancy exists, providing PCa information to men can help them to understand the symptoms of PCa if they have never been screened. The first exam used in screening is the Prostate Specific Antigen test (PSA), which is a diagnostic blood test for PSA levels in the blood (Penderson et al., 1990). The second exam is the Digital Rectal Examination (DRE), which can be done at a doctor's office without much preparation or advance notice (Andriole et al., 1999). The last exam is the Transrectal Ultrasound (TRUS) that is used to detect prostate cancer, and according to some researchers, it can be implemented with the DRE and PSA test to increase effectiveness (Murthy, Byron, & Pasquale, 2004; Pendersen et al., 1990).

Researchers have suggested that the DRE, PSA, and the TRUS can augment detection of prostate anomalies when used concomitantly though others do not share the consensus (IPSTEG, 1999; Mettlin et al., 1993; Smart, 1997; Smith et al., 2001; Thompson & Ziedman, 1992). However, the USPSTF now believe that PSA-based screening has "no net benefits" and recommend against screening for prostate cancer for all men (Moyer, 2012). The ACS (2011) and the American Urological Association (AUA) continue to recommend that high PCa risk men be screened at age 45, and men with multiple first degree relatives with the disease should try to screen by age 40 years of age (ACS, 2011, AUA, 2009). With continued lack of consensuses among different panel of experts and researchers in the field of prostate cancer, targeting specific population may be beneficial as race continues to be one of the strongest predictors of prostate cancer (Altekruse et al., 2010; Odedina, Ogunbiyi, & Ukoli, 2006). Additional factors associated with prostate cancer cases are exposure to chemical or biological agents, and drug abuse (Giri et al., 2009; Jackson et al., 2009; Stanford & Ostrander, 2001).

Prostate Cancer Awareness in Ethnic Blacks

According to the American Cancer Society (ACS), "African American men have been diagnosed with 40% of the prostate cancer malignancies in the United States in 2011 and 37% in 2014", and other researchers have supported these findings (ACS, 2011, 2013, 2014; Chou et al., 2011; Howlader et al., 2011, 2014). There were no distinctions made as to whether the term "African Americans" included all ethnic Black men of different ethnic identity and cultural background who are permanently residing in the United States (ACS, 2011, 2012, 2013, 2014). Nonetheless, the numbers are still extremely alarming in a group whose total population is about 15% of the United States populace, but very promising based on the continued slight decreases in PCa incidence between 2011 and 2014. Currently, there is a lack of consensus on the best

treatment modality for prostate cancer and whether treatment is worth it in the large majority of cases. Requirements for treatment continue to change with new research and changing recommendations by different expert panels on PCa (ACS, 2011, AUA, 2013; 2013; Smith et al., 2011; USPSTF, 2011, 2012). Researchers believe that lifestyle changes can be incorporated into health routines to reduce the disease probabilities, especially in cases where certain lifestyle habits contribute to PCa and comorbid illnesses (ACS, 2011; Jackson et al., 2009; Odedina et al., 2009, 2010; Shirley et al., 2002). However, there is still the controversy surrounding the benefits of PCa screening.

Recommendations regarding PCa screening and lifestyle changes are typically encouraged by providers and are often viewed as the first line of preventive health service for those at risks for PCa, (ACS, 2013, 2014). Researchers also continue to speculate about causes of prostate cancer in all racially classified groups, as there are no definitive and underlying factor that can be tied to every group affected by the disease, except for few established risks factors (race, age, and family history) in Black men (Goldstein et al., 2010; Hoffman et al., 2001; Woods et al., 2004). Many studies focus on multiple factors when researching PCa and in an effort to understand PCa screening habits among Blacks and other groups (Howlader et al., 2011, 2012, 2013, 2014; Consedine et al., 2007; Odedina et al., 2004, 2006, 2008; Realms et al., 2011). Prostate cancer occurs in the prostate gland and typically metastasizes throughout the reproductive system during late presentation where the disease has all but destroyed the prostate gland (Andriole et al., 2011). The disease naturally develops in older men, but age 40 and older and men younger than 40 years old are at risks as PCa disease can occur in younger men with a family history of the disease (ACS, 2013, 2014; Howlader et al., 2014).

Prostate cancer usually metastasizes to the bones and the lymph nodes and can spread slowly or occur aggressively in men depending on lifestyle, and or whether early treatment has been sought to manage the spread, and treat the disease (ACS, 2011, 2014; Hsing & Chokkalingam, 2006). Individuals affected by PC disease also experience difficulties that include other chronic illnesses that may mimic the symptomologies of PCa, making it easy to ignore symptoms (ACS, 2011, 2012, 2013). These challenges make it important for men to understand the warning signs of PCa and to also speak with their providers about screening options. Some difficulties men experienced with PCa include erectile dysfunction, pain, sexual fears, inability to engage in sexual intercourse, and painful and difficult urination (Andriole et al., 2011). Some symptomologies of prostate cancer can be overlooked in the earliest stages of the disease if other health issues are present and masked the disease as well (Odedina et al., 2004). As such, it is important that men learn the symptomologies of the disease and screen for the disease according to the recommendations of their providers in addition to their level of predisposition to PCa (age, family history, race, and genetics).

Since PCa is a primary cancer diagnosis among ethnic Black men of African descent and the second leading cause of death among African American men and leading cause of death among some ethnic Black groups, PCa screening could possibly do more good than harm in these high risk populations if other risks and challenges are taken into consideration by both the affected and their physicians (ACS, 2010, 2014; Jemal et al., 2010; Odedina et al., 2011). However, the high PCa incidences and mortality rates among ethnic Black men like African Americans, Jamaican / West Indians, Barbadians, Bahamians, Haitians, Trinidadians, and many other ethnic Blacks are still eluding researchers who are unable to pinpoint a real cause of the high PCa disparity among these groups compared to other ethnic minorities and White men in

the US (ACS, 2010; Howlader, et al., 2011, 2012, 2013; Odedina et al., 2006; 2009). Research studies have shown that some ethnic Blacks of African ancestry from cultures outside the United States experience both high and low incidences and mortality from PCa, have low screening rates, late presentation, and low treatment rates of PCa (Chu et al., 2011; Consedine et al., 2004; Lee et al., 2011; Niang et al., 2011).

Currently, the only constant predictors or firm risks factors for PCa among ethnic Black men are age, family history of PCa, prior PCa diagnosis, and race (Brawley & Berger, 2008; Jemal, Center, & DeSantis, 2010; Murthy et al., 2011). However, for the African men outside the US with lower rates of PCa diagnosis, these factors are evidently not factors that mimics the predispositions of ethnic Blacks of the US and Caribbean region. In a few research studies including Haitian Black men, it was found that many of these men screened less than many other ethnic Blacks, and also have a lower life expectancy (59 years) than many ethnic Blacks, with an even higher PCa incidence and mortality rate than most (Kleier, 2004, 2006b). According to findings from the International Agency for Research in Cancer (2005), Globocan 2002 report on PCa incidence and mortality in Haitian men showed some of the highest numbers on record in the Caribbean. The study report was based on information collected from a representative sample of Haitian men, where there was a documented PCa incidence of 767, and a mortality rate of 403 per 100,000 persons among Haitian Black men, which has also been reported(Globocan, 2002; IARC, 2005).

These findings were also cited by Kleier (2010) in a study comprising of Haitians and PCa screening behaviors. These PCa IN and MR would in effect make ethnic Black men from Haiti the group with the highest documented rates worldwide, rivaling the incidences and mortality reported among African American and Jamaican Black men (ACS, 2014; Glover et al.,

1998; Howlader et al., 2014). The second highest PCa IN of 647 per 100,000 persons was reportedly based on a "population-based audit for African-Caribbean (all Blacks) in the United Kingdom, with age-adjusted rate for men 50 years or older over 2 years" and recorded by Chinegwundoh et al. (2006). Studies have also found that among Haitian Black men in PCa screening studies, fear of screening and fatalism are among some of the reasons reported as reasons given by Haitian men who screen less often than other groups including African Americans and other Caribbean nations (Consedine, Morgenstern, Kudadjie-Gyamfi, Magai, & Nougut, 2006; Kleier, 2010). Kleier (2010) have proclaimed that some of the high rates of PCa incidence and mortality among Haitian men may be due to them not recognizing that they are at risk, which is not farfetched especially in light of the revelation that Haitian men have the lowest lifespan survival age of any group in the Caribbean (Bloom, Stewart, Oakley-Girvans, Banks, & Chang, 2006; Kleier, 2010, p. 183).

Kleier (2010) found that in her study, the majority of men have never had a PCa screening exam and a slightly greater number reported that they had no intentions of screening in the future (p. 185). It has also been found by researchers that Haitian Black men believe that men get PCa disease from engaging in maladaptive behaviors, sexual promiscuous behaviors which result in sexually transmitted diseases, and make poor decisions with regards to their nutritional practices (Kleier, 2004, 2010; Parchment, 2004). Even though there are some known barriers to PCa screening (Boyd, Weinrich, S.P., Weinrich, & Norton, 2001) effective PCa screening and treatment modalities can be a challenge for to explain to now that there are no consensuses on the benefits of PCa screening (ACS, 2010, 2012; Chinegwundoh et al., 2006; Gibson et al., 2008; Jemal et al., 2010; Moyer et al., 2012). Many men find the PCa tests intrusive, especially the DRE which most cite as embarrassing and would prefer to avoid that

method, though the test is very effective in finding any anomaly within the rectal cavity (Chinegwundoh et al., 2006; Gany, trinh-Shervin, & Aragones, 2008). The DRE screening method has not only resulted in men avoiding the screening process all together, but may also play a part on their unwillingness to volunteering in PCa research studies, or considering other methods of screening for the disease (Gibson et al., 2008; Jemal et al., 2010; Lee et al., 2011; Woods et al., 2006).

With PCa affecting Black men more than Whites and other racial minorities, screening is an effective way of identifying those who are at-risk and are in the earliest stages of the disease in order to make viable treatment modalities available (Delancy et al., 2008; Jemal, Center, & Ward, 2008; Odedina et al., 2008; 2009). Between 2003 and 2007, there was an age-adjusted incidence of 229.4/100,000 persons for African American men (ACS, 2011, p. 13; Albano et al., 2007). The incidences were still considered some of the highest worldwide despite advances in PCa screening and PCa treatments available (Brawley & Berger, 2008; Jemal et al., 2010). Though the incidences have continued to slightly reduce, they are still disturbingly high and seem to remain high even when it seems as though the overall numbers for all groups are declining. In the most recent report from the Surveillance Epidemiology and End Results (SEER) Program on US cancer rates, PCa IN of 223.9 and 48.9 MR per 100,000 persons among Blacks demonstrated positive changes in the PCa IN and MR but there is still a large health disparity among the groups represented in the SEER report and there is no clear explanation of what caused the decline (Howlader et al., 2013, 2014, t. 2311, p. 11).

Though their high PCa burden makes them vulnerable to low survival rates due to low screening and less aggressive treatment when diagnosed, it has been shown that even information outlets publicizing the disproportionate PCa burden among African American have not resulted

in better screening rates among the group (Agho & Lewis, 2001; Odedina et al., 2004). It is important to understand PCa perception towards prostate cancer screening among ethnic Black men, as there is limited knowledge about the screening habits of ethnic Blacks. For example, in a study conducted in Jamaica by an independent research group with one third of the population, the researchers revealed that they found 304 / 100,000 age-adjusted PCa incidences existed among Jamaican Black men (Glover et al., 1998, p. 1985). However, along with high PCa IN, clinical presentation is a major issue with men do not typical screen or receive health services until it is too late to get treated (Coard & Skeete, 2008). The study population used by Glover et al. (1998) was not limited to the Jamaican Cancer Registry (maintains cancer information for the country) located in the city of Kingston, but also included additional areas not covered by the registry (Glover et al., 1998).

Some researchers believe that the prostate cancer incidences among Jamaican Black men proposed by Glover et al. (1998) was exceedingly high, conducting additional studies and questioning the accuracy of the PCa incidences (Gibson et al., 2008; Gibson, Hanchard, Waugh, & McNaughton, 2010; Odedina et al., 2008; 2009). Glover et al. (1998) purported incidences (304 / 100,000) surpassed the 56.4 and 65.5 per 100,000 incidences later documented by other researchers with smaller samples covering less land mass and participants (Gibson et al., 2008, 2010, p. 88; Glover et al., 1998, p. 1986; Hanchard et al., 2001, p. 65). Cancer of the prostate has consistently remained the main cancer diagnosis among Jamaican Black men (Gibson et al., 2008, 2010). Though there has been speculation as to whether the age-adjusted incidences of 304 / 100,000 were overstated, no study has since replicated that particular study under the same conditions as the original study (Gibson et al., 2008; Hanchard et al., 2001; Shirley et al., 2002). Currently, there is no consensus on a single etiological explanation for the disproportionately

high PCa rates in ethnic Black men (Hsing & Chokkalingam, 2006). Researchers have suggested a combination of factors may be blamed for the high PCa incidence and mortality, but no one specific factor besides those already established by ACS (ACS, 2014; Bunker et al., 2002; Ross & Schottenfeld, 1996; Odedina et al., 2006).

Some researchers speculated that age, race, family history, fatty diet (ACS, 2014; Jackson et al, 2012), and sexually transmitted diseases [STDs], obesity, androgens, and hazardous occupations can contribute to PCa disease (Hsing & Chokkalingam, 2006; Jackson et al., 2009; Ross & Schottenfeld, 1996; Stanford & Ostrander, 2001). Chen et al. (2004) claimed that African American and Jamaican Black men showed similarities in PSA serum levels, which is due to similarity in African ancestry, which means that it is possible that ethnic Black men from other groups with African ancestry may show the same PSA serum levels (p. 525). It has also been alleged that racial differences in PCa incidence and mortality are due to major factors such as screening habits and lack of PCa knowledge among minority populations who do not have the same access to care as their counterparts (Weinrich, S. P., Weinrich, Boyd, & Atkinson, 1998). Odedina and Ogunbiyi (2006) stated that in order to reduce PCa burden among men of African descent, it is important to also identify and address environmental factors as influences on PCa among these groups, as genetics only account for 5-10% of PCa cases among ethnic Black men (p. 543).

The researchers also emphasize that future studies on PCa in ethnic Black men should look at comparisons of the PCa risks in these groups and their screening habits (Odedina & Ogunbiyi, 2006). Roberts (2009) and Roberts and Mathan (2007) have studied the PCa incidences, disease, and mortality among Bahamian Black men in the Caribbean. The researchers found that despite the improvements made by developing countries and their efforts

with PCa screening, diagnosis, disease, and treatment, Bahamian Black men continue to suffer high incidences and mortalities (Roberts, 2009; Roberts & Mahan, 2007). Roberts (2009) claimed that PCa is responsible for the most cancer death in the Bahamas and that clinical presentations has not shown the "down stage migration" that continues to be seen in developing countries notwithstanding efforts that have markedly reflected improvements and more prevalence in PCa campaigns for screening since PSA introduction (s4). The author of the study also noted that the extremely high incidences and mortality among Bahamian Black men are of concern, noting that 85% of the population is of African ancestry (Roberts, 2009, s4).

Roberts (2009) conducted a study to determine whether Bahamian Black men who presented with PCa at a government-owned public health facility would opt for a surgical versus medical castration in PCa cases where treatment was viable. Incoming patients were informed of the two PCa treatment options available (surgical versus medical hormonal options) and were also presented with the benefits and drawbacks of each treatment modality. The patients / participants in the study were also presented with information that the health facility would be responsible for the cost of the surgical option of treatment (bilateral orchiectomies); however, patients would be responsible for the medical treatment option (s4). Study results demonstrated that men with advance PCa chose the surgical castration or bilateral orchiectomies method (removal of both testes) over the medical option, when the former was presented "positively". Roberts (2009) intended to prove that the "macho" perception of the Caribbean male did not deter Bahamian Black men from choosing to be castrated (s4).

There are a few limitations that Roberts (2009) did not present in the study. The study was a convenient sample, which comprised of low income men, which was evident from the choice of care facility (free hospital), and who made the decision for castration because the costs

of one treatment option was being paid by the health facility, with a positive message that encouraged the castration or bilateral orchiectomies, while presenting the procedure in a "positive" manner. It is important to note also that literacy do impact an individual's decision-making capacity, and lower income and educational level will result in more compliance and less questioning of a provider's recommendation (Odedina et al., 2004; Sellers & Ross, 2003). There was also no explanation of the concept "positively presented" with regards to how the PCa surgical option (bilateral orchiectomies) was presented to the men who had advance PCa. Additionally, given the positive message that paid surgical intervention would relieve them of associated costs, opting for medical debt or physical death would seem most certainly the wrong choices to choose from. It is reasonable to assume that when faced with the psychological burden of pain and death by a disease state impacting one personal life and social environment, people with opt for whatever treatment a provider encourages or that provides the best outcome.

Many ethnic Blacks from the Caribbean belt do not engage in frequent preventive health services, and treatment of ailments is typically taken care of by home remedies, and sought mostly from Pastors and Spiritual leaders (Garcia-Jones, 2005). Whenever ethnic Black men with low income become a part of the healthcare system, adherence to providers is normally a certainty (Odedina et al., 2004). Many Black men may have an education gap with a majority having only completed high school in addition to working low income occupations, and this makes the authority wielded (imbalance of power) by providers an imperative part of the involvement in the screening process and in encouraging these men to screen (Odedina et al., 2004). For example, PCa screenings among the Bahamian Black men were found to be low and not improving even with encouragement in the forms of screening that promoted the PSA exams (Roberts, 2009, s4). None were reported to have steady healthcare providers recommending

screening. Many ethnic Black men with PCa or who needs to screen for PCa also encounter some commonly seen issues that are shared among other Black groups (ACS, 2011, 2014). Culturally, the decision to screen can be influenced by attitudes, behaviors, and knowledge concerning the importance of screening (Kleier, 2003; Shelton, Weinrich, & Reynolds, 1999; Smith et al., 1997).

Ethnic Black men in the US are bicultural and multicultural making it important to consider cultural principles and their ethnic identity in PCa screening approaches (Braithwaite, 2001; Odedina et al., 2004; Woods, Montgomery, & Herring, 2004). These men can become more proactive in their healthcare by adopting culturally appropriate health-seeking behaviors from culturally competent providers (Braithwaite, 2001; Clarke-Tasker & Wade, 2002; Hart & Bowen, 2004). As distinct cultural groups, some researchers have emphasized the importance of ethnic Blacks being appropriately represented in PCa screening and research studies (Clarke-Tasker &Wade, 2002). Some researchers believe that poor representation of Blacks in research are a matter of ineffective recruiting strategies and continued grouping of Black participants as one group in research studies (Royal et al., 2000; Steele et al., 2000). Weinrich et al (1998) emphasized that in order to increase prostate cancer screening among African Americans, it is important to develop effective PCa educational programs. The researchers believe that providers can use the educational programs to target PCa screening and access of care as a follow-up to educational training among ethnic Black men.

Some researchers acknowledged that lack of access to proper care, distrust for providers, physician's attitudes, traditional gender roles, and inadequate insurance coverage affect Black men's health decisions (Lambert et al., 2002; Shelton et al., 1999; Thom & Campbell, 1997). Additional PCa screening barriers such as low socioeconomic status, fear of prognosis, fear of

sexual dysfunction, lack of education, cultural, and religious beliefs pertaining to health and illness, and other factors have plagued the screening process (Clarke-Tasker & Wade, 2002; Lambert et al., 2002; Royal et al., 2000). Homophobia and sexual orientation attitudes and beliefs may also impact screening in some ethnic Black men who were, or are raised in an environment of homosexual intolerance (Herek, 1990a, 2000; Kempadoo, 2009). A culturally sensitive approach by researchers and providers can augment PCa cancer awareness and screening involvement, proactive care, and build trust among ethnic Black men and their providers (Weinrich et al., 1998). Such an approach can also build trust and physician-client relationship that centers on compliance and trust, thereby positively influencing the screening process.

Parchment (2004) conducted a study with African and Caribbean men residing in Miami, Florida in an effort to explore their PCa health beliefs and whether their participation in a PCa educational program would augment PCa screenings among those who received the aforementioned treatment. The study sample included 37% US born African American men, 3% African men, 28% Jamaicans, 14% Bahamians, 10% Trinidadians, 6% Haitians, and 2% Guyanese men with ages ranging from 37 to 89 years old (Parchment, 2004, p. 117). A total of 60% of the men were of Caribbean descent, and Parchment (2004) found that 80% of the men in the participant pool avoided PCa screening due to a revulsion of the DRE and lingering trepidations of sexual health issues such as "impotence and incontinence" (p. 119). It was also discovered that cultural sensitivity was a necessity in addressing PCa screening in ethnic Black men, as 75% reported no interests in wanting to screen even if they were informed by the providers to do so (Parchment, 2004, p. 120). Brooten and Youngblut (2005), Kleier (2003), and Odedina et al. (2004) have found similar perceptions of screening among Black men.

In the study by Parchment (2004), more than half of the participants (60%) had apprehensions concerning being diagnosed with PCa, as they believe impotence and incontinence would be major barriers for them (p. 119). It was also revealed that the treatment decisions by men who were diagnosed with PCa involved "watchful waiting" or observations of disease progression, and there were also less invasive methods of treatment that was used in treatment (p. 119). Due to the fact that many men refused to screen due to fears and beliefs that they would become sexually castrated, impotent, and experience issues with incontinence, they delayed screening and treatment despite the advantages of early screening and clinical presentation (Parchment, 2004, p. 117; Weinrich, Reynolds, Tingen, & Starr, 2000). A limitation of this study is the small participant sample, making the application or generalization limited and not representative of groups outside of the study population. However, the study did point to the need for more culturally appropriate PCa screening programs for ethnic Black men, which is a practically nonexistent health service area in PCa screening efforts (Odedina et al., 2004). Additionally, the study by Parchment (2004) sheds light on the importance of focusing PCa screening efforts in ethnic Black populations in the US.

Odedina, Scrivens, Emanuel, LaRose-Pierre, Brown, and Nash (2004) conducted a study on PCa screening in an effort to determine the factors that influence screening conduct among African American men. The researchers emphasized that predisposing factors impacting PCa screening participation are behavioral, biological, cultural, social, and psychological, and these factors have been supported by models such as the HBM by reliable health behavioral theorists (Odedina et al., 2004; Rosenstock, 1974). There were a total of ten focus groups and forty-nine African American men participating in one of ten focus groups (Odedina et al., 2004). The focus groups lasted between 44 minutes and 165 minutes, with researchers completing their data

analysis through the use of ethnography. During the focus groups, the following themes were identified by researchers: "perceived threat of PCa, perceived severity of PCa, perceived susceptibility of PCa, experience with illness, impediments to PCa, PCa knowledge, positive health activities, positive outcome beliefs associated with PCa, negative outcome beliefs associated with PCa, resources and opportunities that facilitate PCa screening, and social influence" (Odedina et al., 2004, p. 785).

The researchers found that the top three factors impacting screening in this particular study are social influence, impediments to PCa screening, and outcome beliefs (p. 786). PCa screening impediments that significantly influence screening participation and were highlighted by participants included mistrust the of healthcare system, lack of information from their providers on PCa screening, DRE discomfort, feelings of powerlessness, and illiteracy (p. 786). The researchers concluded that culturally sensitive and relevant intervention methods can improve screening in vulnerable African American population (Odedina et al., 2004, p. 787). The study sample was a convenient sample, which restricts generalization to all groups represented. However, this study much like the study by Parchment (2004) emphasizes the importance of screening ethnic Black population and identifying their ethnic background when doing so, in order to get a better understanding of how ethnic Blacks view PCa screening and improve screening among the group.

Chan, Haynes, O'Donnell, Bachino, and Vernon (2003) conducted a study on the issue of cultural sensitivity and culturally competent delivery of PCa information as a way to increase PCa screening participation. The researchers conducted the study in order to discover the most appropriate methods of PCa information delivery or presentation among African Americans, Whites, and Hispanic groups (Chan et al., 2003; Odedina et al., 2004). The researchers

presented five couples from each ethnic group with videotape and educational brochures, requesting that they review the materials for appropriateness of design and content as those variables apply to their ethnic identification and willingness to participate in PCa screening after they have reviewed the materials. The researchers found that all three ethnic groups (African Americans, Whites, and Hispanics) identified with the contents of the PCa materials differently. All three participant groups believe that the colors of the brochures should identify with colors that are most identifiable in their populations. For example, the African American group believed that colors such as the red, green, yellow, and black found in the Kente cloth theme would be more relatable in the African American community. Kente cloth is traditionally created by Ghanaians (i.e. from Ghana) and symbolizes meanings that are associated with birth, status, and emotions associated with life events (Clark-Smith, 1975, p. 36).

Additionally, both the African American and Hispanic groups stated that the prostate gland comparison to a walnut is a bad analogy since walnut is not a part of the African American and Hispanic dietary patterns. In sum, culturally sensitive approaches and materials might impact PCa screening more positively if healthcare providers or researchers presented the materials with culturally relevant or sensitive approaches on the various screening methods and when considering the design, content, and delivery of PCa information resources (Chan et al., 2003; Odedina et al., 2004; Parchment, 2004). A limitation of the study is the sample size that had limited participants. Another noted drawback of the findings of the study identified by this writer is that while Kente cloth theme may be culturally appropriate and effective in African American communities and African groups, the Kente cloth may prove less effective among Caribbean nationals (Gutzmore, 2004). While the colors identified by African Americans may be recognizable and acknowledged by ethnic Black Caribbean nationals, there is still a

separateness of cultures, where ethnic Blacks from the Caribbean are very proud of their own culture, cultural experiences, and their countries' recognizable symbols, and do not identify with African American heritage since it would seem as though they were abandoning their own cultural roots (Arthur & Katkin, 2006; Dyer, 2003; Magnus, 2004; Wheeler & Mahoney, 2008).

It is not only important to identify PCa screening habits or perceptions of ethnic Black men, it is also important to learn how their ethnic identity defines their role in the healthcare system, as it relates to PCa screening and treatment appropriateness (Odedina et al., 2004; Parchment, 2004). Noteworthy is that African Americans and other ethnic Black men continue to encounter social barriers within the research communities and medical settings that negatively influence PCa screening and treatment trajectory as well, not only the barriers that are personal to them such as income, transportation, or lack of health insurance (Reddy et al., 2003; Shavers et al., 2004; Weinrich et al., 2000). It is common knowledge that there are many speculated biological and behavioral reasons for the high PCa incidences and mortality rates in ethnic Black populations (Fernandez et al., 2012; Giri et al., 2009; Haiman et al., 2011; Odedina & Ogunbiyi, 2006). However, not all theories do not emphasize the importance of ethnic PCa screening perceptions among ethnic Black men, which could improve the overall screening rates of Blacks as a racially classified group, since genetics only account for 5-10% of PCA among Blacks (Belpomme & Irigaray, 2011; Reams et al., 2011; Odedina & Ogunbiyi, 2006).

It is important to consider ethnic identity in studying the PCa perception of ethnic Blacks towards PCa screening under different standards (not as one racial group) than is currently being done in collecting data and researching PCa screening, incidence, and mortality of Blacks as a single racially classified group. By using culturally appropriate PCa screening methods to identify ethnic Black groups, we may have a better and more accurate representation of PCa,

PCa screening, incidences, and mortality within the different ethnic populations within the US, which could result in a more accurate PCa screening picture of African Americans as well. Developing culturally sensitive and culturally appropriate PCa screening methods among ethnic Black men could reveal important differences or similarities in PCA screening perceptions, along with the reported incidence and mortality rates within the African American population and other groups (Odedina et al., 2004). Additionally, researchers studying ethnic Blacks in PCa screening research will be able to study from a rich and mostly untapped pool of participants whose PCa experience may be vastly different from that of African Americans and other racial minorities.

Using a true sampling of ethnic Blacks in PCa studies can prove invaluable to establishing commonalities and differences in PCa perceptions and behaviors as they are associated with their perceptions towards PCa screening. A true sampling method that considers ethnic Black men and their ethnic identity can positively impact screening and assist researchers in getting a clearer understanding of the etiological challenges of PCa screening in ethnic Black populations (ACS, 2011; Reams et al., 2011; Smith et al., 2011). In a study by Bunker et al. (2002), the researchers found that PCa etiology differed among Jamaican Black men in Jamaica despite some shared genetics. The researchers found that studies of Jamaica family history demonstrated that men who had first degree relatives that were affected by PCa, were twice as likely to develop prostate cancer (Bunker et al., 2002; Glover et al., 1998). Additionally, it was found that there was a wide dispersion among the "diaspora", pointing to way of life and ecological factors that could be implicated in the diversity of the PCa rates among the Jamaican populace (Bunker et al., 2002). Ethnic Black men have been, and continue to be at the forefront of the PCa disparity challenges with low screening, and extremely high incidences, and mortalities (Pedersen et al., 2012).

As such, it important for PCa researchers to start using differences in perceptions, ethnicity, and culture, as major factors of PCa screening efforts and a priority in PCa research studies (ACS, 2011; Gibson et al., 2008, 2010; Glover et al., 1998; Odedina at al., 2009). Ethnic Black men continue to be diagnosed with higher rates of PCa disease and succumb to the disease at much higher rates than all other racial groups in the US and overseas, which is not being helped by the current recruitment, and treatment strategies that are available to them (Blocker et al., 2006; Howlader et al., 2012; Steele, Miller, Maylahn, Uhler, & Baker, 2000). It is important to acknowledge how ethnic identity and perceptions interplay with the high incidences and screening rates that have been overdue for a reduction in ethnic Black men. Black men are not a homogenous group though most studies continue to group all Blacks as a homogenous group with no consideration for their ethnic identities (Magnus, 2004; Singh & Siahpush, 2002). Ethnically grouping Blacks as African Americans, or all Blacks as a single ethnic group in PCa screening studies deprive researchers the opportunity of truly understanding PCa in ethnic Black populations.

Inappropriate categorical groupings of ethnic Blacks men in PCa screening, research, research findings, and treatment modalities deprive them of the opportunity to get their health care needs met based on health beliefs, screening approaches, and cultural beliefs associated with their ethnic identity and heritage. The ACS governing board on cancer has emphasized the importance of permitting men to have the opportunity to make their PCa screening and treatment decisions along with provider input (ACS, 2013, p. 19). However, it is important to first have a provider who is culturally competent and who understand the background of the population he or she is treating. Treating ethnic Blacks are not a “one cap fit all” strategy. Treatment include being able to identify with and relate to the ethnic population, so as not to insult clients, ignore

culture, use stereotypes on patients, and lose patients in the healthcare process because their providers do not understand them and are culturally insensitive and incompetent to treat them (Odedina et al., 2004). According to the recommendations of ACS, men should be provided with adequate information regarding the advantages and shortcomings of PCa early detection, screening, and examinations in order to facilitate their decision-making based on their "personal values and preferences" (ACS, 2013, p, 19; Sellers & Ross, 2003). In order to provide culturally competent information to diverse cultures of ethnic Black men based on their values and preferences, it is important that providers understand how Black men's culture and ethnic identity impact their health care decisions, so they can use the correct approaches to treating these diverse groups.

For example, though ethnic Black men from Martinique are of Caribbean heritage, their French language and proximity to France, customs, and traditional values are highly influenced by their French neighbors and their Caribbean heritage (Belpomme & Irigaray, 2011). Additionally, although their PCa incidences are extremely high, rivaling other Caribbean Islanders, their French neighbors do not share similar PCa incidence and cancer mortality rates (Belpomme & Irigaray, 2011). Belpomme and Irigaray (2011) stated that the current PCa incidence on Martinique Black population is 173.7 per 100,000 persons, despite having a small population of 414,516 individuals (p. 1). The researchers believe that genetics and lifestyle factors contribute somewhat to the incidences but again, it is imperative to remember that genetics is only a minor factor among the speculative causes of PCa (p. 2). Some researchers even speculate that variants of the chromosome 8q24 are more common among individuals with African ancestry, which might demonstrate increased risks for PCa (Haiman et al., 2007; Okobia et al., 2011; Robbins et al., 2011).

Many researchers have also emphasized the need for race-specific PSA due to admixture among African Americans (Benn-Torres et al., 2008; Freedman et al., 2006; Giri et al., 2009). The researchers in these studies typically emphasize that African ancestry result in the genetic disadvantage of the unusually high PCa incidence and mortality rates seen in ethnic Blacks, and Blacks as a racial group (Freedman et al., 2006). Nonetheless, shared African ancestry alone does not account for the high prostate cancer incidences in ethnic Blacks because as stated before, researchers have also found that genetics on account for 5-10% of PCa in Blacks (Arthur & Katkin, 2006; Glover et al., 1998; Odedina et al., 2009). There are many distinct cultural groups in the US and their health decisions vary according to their cultural beliefs and health perceptions towards health and illness so these perspectives should be instrumental in their healthcare treatment (ACS, 2011; Arthur & Katkin, 2006; Odedina et al., 2004, 2006, 2009).

Though researchers have argue that Black men have similar experiences with PCa and low screening rates, ethnic, cultural identities, and resource access are not always similar so background information should be gathered to understand the risk of a particular group (Odedina et al., 2009, 2011; Robbins, Hooker, Kittles, & Carpten, 2011). There are many barriers to PCa screening (Hatzfeld, Cody-Connor, Whitaker, & Aston-Johansson, 2008; Sanders-Thompson, Talley, Caito, & Kreuter, 2009). Factors such as lack of knowledge, spiritual beliefs, DRE fears, fears of sexual difficulty, low SES, income level, language barriers, immigration status, discrimination, screening apprehensions, risk denial, lack of health insurance coverage, lack of primary care provider, lack of culturally competent providers, mistrust of providers, perceived surgical difficulties, and lack of transportation are all issues that can result in low PCa screening (Brown, Ojeda, Wyn, Levan, Penner et al., 2009; Hatzfeld et al., 2008; William & Mohammed, 2009; Xanthos, Treadwell, & Holden, 2010). Oliver (2007) conducted a

study to determine African American men's perceptions and beliefs regarding PCa screening. The sample consisted of nine African American men responding to questions through semi-structured interview guides lasting 60 minutes.

Additionally, a great majority of the participants were married (78%), and ranged in ages from 34 years old to 72 years (p. 75). The researcher found six themes (disparity, fear, threats to manhood, lack of understanding, mistrust of the system, and traditions) and among them, African American men's fears and distrust of healthcare providers and the healthcare system needs to be addressed before there can be positive improvement and participation in PCa screening (Oliver, 2007). This study demonstrated a need for understanding the PCa screening fears of ethnic Black men and develops ways to counter those negative perceptions in order to improve PCa screening rates among Blacks and reduce PCa disparity.

United States Preventive Services Task Force (USPSTF) on Screening

Prostate cancer screening remains an issue of contention among providers and researchers alike (ACS, 2012; Catalona et al., 2012). The U.S. Preventive Services Task Force (USPSTF) panel does not recommend that men screen for prostate cancer with PSA-based screening because the USPSTF panel concluded that the harms of screening outweighs the benefits that will be derived from the screening (Moyer, 2012). However, it has been argued that the recommendation against PCa screening by USPSTF is "careless and ill-advised" with the harms being overstated and the benefits being underestimated (Catalona et al., 2012). Some urologists have argued that urological subject matter experts should be involved in decisions concerning PCa screening, and that the USPSTF has no urological specialists on their panel of reviewers (Catalona et al., 2012). Other agencies have also stressed the importance of PCa

screening as men need to understand that PCa is indiscriminate of racial backgrounds and affect individuals of different educational, social class, and SES status (ACS, 2011, 2012, 2013, 2014).

Race, family history, and age are the only factors that have been well-established as predictors for PCa disease, but genetics have also been partly implicated as of late (ACS, 2012, 2013, 2014; Hoffman, 2012; Reams et al., 2011). African American and Jamaican Black men have also been found to have higher than usual PSA levels when compared to Whites, which might also be a commonality but not a certainty among other ethnic Black men in general (ACS, 2011, 2012; Odedina et al., 2011; Hoffman, 2011; Howlader et al., 2011). Though it was projected that during 2013-2014, there would have been 238,590 new PCa cases diagnosed, slightly down from the 241,740 PCa cases that were projected during the 2012-2013 period, the current cases now stands at 233,000 for 2014 (ACS, 2012, 2013-2014, p. 19). Additionally, 29,720 deaths were estimated in 2013, which decreased from the 2012 estimates of 28,170 PCa incidences, but in actuality the cases for 2013-2014 were 29,480 deaths (ACS, 2012, p. 19, 2013-2014, p. 4; Howlader et al., 2012). The slight reduction in PCa incidences is promising though the slight increase in mortality may point to late clinical presentation that was associated with no screening or delayed screening.

Of all racial groups with PCa incidences and mortality cases estimated by ACS in 2013-2014, African American men had an estimated 35,430 PCa cases, which accounted for 37% of all PCa cases (ACS, 2013, 2014, p. 3). During the years 2013-2014, mortality rates in African American were estimated at 4,980 cases, which accounted for 15% of all PCa deaths (p. 3). Due to the continued classification of ethnic Black men as African Americans (Arthur & Katkin, 2006; Consedine et al., 2006; Magnus, 2004), there were no reported incidences and mortality rates reported independently for ethnic Black men of Caribbean or African descent. Limited

research interests and studies are conducted on ethnic Black men who are currently in the US. As such, PCa and PCa screening information are typically gathered from their former countries and limited studies that have been conducted by a few researchers in the US in order to understand PCa burden and screening habits of Black men (Consedine et al., 2004, 2007, 2009; Magnus, 2004; Odedina et al., 2006, 2009; Parchment, 2004).

USPSTF Prostate Cancer Grade Definitions

The USPSTF panel provide a grade for PCa disease based on the recommendations received from all panel members, either supporting or against screening for PCa disease (Moyer, 2012). The United States Preventive Services Task Force (USPSTF) is an autonomous board of non-federal specialists in "prevention and evidence-based medicine" (Moyer, 2012). The USPSTF Board of specialists conduct scientific reviews of preventive health services, and is comprised of primary care providers who specialize in nursing, Gynecology, Obstetrics medicine, Pediatric medicine, health behaviors, Internal, and Family medicine (Moyer, 2012). The PCa grading system was developed by the USPSTF with the purpose of providing recommendations that practitioners can follow in addressing PCa screening needs of their patients in their practice of medicine (Moyer, 2012). USPSTF panel's recommendations are accompanied by information on the "levels of certainty regarding PCa net benefits" with Grades being provided (Moyer, 2012).

The grades used by USPSTF are "A, B, C, D, and I", and each grade provides information on whether screening using the PSA test is advisable (Moyer, 2012). Whenever the USPSTF assigns a "Grade A", it means that the agency recommends the PSA test for prostate cancer, as there is a "high certainty" that an individual can substantially benefit from this testing method (Chou et al., 2011; Moyer, 2012). If a "Grade B" is assigned by the USPSTF, the PSA

test is recommended because there is a "high certainty" that the net benefit is moderate, or the agency finds that there is moderate certainty that there is moderate to substantial net benefit from screening (Chou et al., 2011; Moyer, 2012). The USPSTF panel has issued a memo for the purposes of informing providers of how to approach using an assigned "Grade C", since this particular grade is currently under revision. A "Grade C" assignment by the USPSTF indicates that a provider could offer PSA testing to certain individuals based on particular situations. Conversely, if individuals present without signs or indications, it is imperative that the provider understands that the benefit from PSA testing is quite small (Moyer, 2012).

In 2008, the USPSTF panel issued a "Grade D", which recommends against PCa screening in men who are 75 years or older, stating that there is not sufficient evidence to recommend the service (Lin, Croswell, Koenig, Lam, & Maltz, 2011). It was determined that research evidence demonstrated that there is a moderate or high certainty that PCa screening demonstrated no net benefits and the harm caused was more than the benefits received from screening (Lin et al., 2011). Additionally, USPSTF panel also concluded that there was a lack of evidence to conclude that PCa mortality is reduced through screening. The agency also found that there was inadequate evidence to use in the evaluation of the benefits and harms of PCa screening in men who were younger than 75 years of age (Chou et al., 2011; Moyer, 2012; Lin et al., 2011). A "Grade D" score means that USPSTF panel completely recommends against any type of PCa screening for individuals over and under the age of 75 years due to what they consider inadequate research evidence (Moyer, 2012).

The USPSTF agency also assigns a "Grade I Statement", suggesting that existing evidence is deficient, of inferior quality, and inconsistent, which make the decision process extremely challenging when trying to determine the balance of benefits and detriments of

screening for PCa with the PSA testing or other methods (Moyer, 2012). There are a few other PCa panels that provide recommendations on PCa screening.

American Cancer Society on Prostate Cancer Screening

The American Cancer Society (ACS) comprises of physicians and laypersons who are volunteers located throughout the US through a national network (ACS, 2013, 2014). The objective of the ACS is to promote cancer awareness through information on symptoms, preventive behaviors, and treatment modalities used in cancer treatment (ACS, 2013). The ACS focuses on all cancers in the United States, and each year the ACS provides updates of current cancer statistics for all cancer sites (ACS, 2012, 2013; Siegel, Naishadham, & Jemal, 2012). In 2013, the ACS (2013) reported that there were an estimated 238,590 PCa incidence and 29,720 deaths during 2013, with African American men showing a 70% higher incidence than White men (p. 19). However, there have been slight reductions in PCa cases (233,000) and deaths (29,480) which demonstrate slight improvements (ACS, 2014). The ACS (2013) had also concluded that PCa is the primary cancer site most frequently diagnosed in African American men, while it is diagnosed as the second leading cause of cancer death for the group (p. 19). In regards to the ACS recommendation for PCa screening, the ACS concluded that there was inadequate data to argue for or against early PCa detection using the PSA test (p. 20).

However, if a man was turning 50 years old and was at average risk with a life expectancy of at least 10 years, he should be provided with information stating both the detriments and benefits of early screening in order to have the opportunity to make an informed decision about screening (ACS, 2013, p. 20). Health discussions and information on PCa screening and PSA testing should be provided to men age 45 years if they are at high risk (African American), and have a close relative (any ethnicity) who have been diagnosed with PCa

before 65years of age (p. 20). Finally, men who are facing even higher risk than the aforementioned groups, and have multiple relatives who have been diagnosed with PCa, should be provided PCa information at 40 years old in order to provide them with adequate time and opportunity to augment their PCa knowledge and make informed decisions regarding PCa screening (ACS, 2013, p. 20).

American Urological Association on Prostate Cancer Screening

The American Urological Association (AUA) uses an independent panel of urological experts to conduct research on PCa in order to present PCa guidelines aimed at addressing early PCa screening and detection (Carter et al., 2013). The AUA's intended audience for the dissemination of the PCa information and recommendations guidelines are Urologists who are in active practice (AUA, 2013). The main objective of the AUA is to diminish mortality rates by providing Urologists with its research findings on PCa by using PCa specialists who are knowledgeable and current in research on the topic (Carter et al., 2013).

In the AUA's PCa detection and screening guidelines, strength ratings are assigned with their guidelines (A = High, B = Moderate, and C = Low) when they are able to adequately substantiate findings that PCa evidence exists to permit the recommendations of screening methods and treatment interventions (Carter et al., 2013, p. 17). The AUA authorities on PCa guidelines do not emphasize or differentiate between PCa screening and early detection, as both screening and detection suggest early disease detection during the phase before symptoms appear in men, who may have no cause to seek care (Carter et al., 2013).

AUA Patient Indexes and Corresponding Guidelines for PCa Screening

There are four patient indexes that specify the ages and recommendations for each age group that is set out in the AUA guidelines, which include men less than 40 years of age, men

ages 40-54, ages 55-69, and men who are 70 years and older (Carter et al., 2013, p. 3). In regards to "Guideline One", which included patient indexes of men age 40 years and below, the AUA panel of experts do not recommend PSA testing for this group (AUA, 2013). Further support for the AUA's decision was substantiated by a standard evidence strength of "C" being assigned based on the recommendation and available evidence of research supporting the recommendation (Carter et al., 2013, p. 17). The Panel believes that "clinically detectable PCa" has low frequency with no evident advantages of PCa screening among the 40 and under age group and harms was similar to the other patient indexes (Carter et al., 2013, p. 3).

Guideline Two included patient indexes of men age 40-54 years who are at average risk for PCa (AUA, 2013). The AUA's panel of experts does not recommend any routine screening for the patient indexes in "Guidelines Two". The panel believes PCa screening for men who are in this age group should be individualized, as they are at greater risk because of age, African American background, and family history (AUA, 2013, p. 2). Therefore, standard evidence strength of "C" was assigned based on the recommendation and available evidence for the recommendation (Carter et al., 2013, p. 17). The AUA panel of experts strongly recommends shared decision-making among patients and providers in "Guideline Three" for men in this patient index (55-69 years) who are planning to participate in the PSA test (AUA, 2013, p. 18). The Panel also advises that it is important to consider shared-decision based on men's inclinations and beliefs, as those factors pertain to undergoing PSA testing (Carter et al., 2013, p. 18). For "Guideline Three", standard evidence strength of "B" was assigned based on the recommendation and available evidence showing that this age group benefited the most from PSA screenings (Carter et al., 2013, p. 18).

The panel believes that screening every two years for PCa can reduce harms and decrease false positive results of PSA testing. An evidence grade of "C" was assigned for "Guideline Four", which included men in the patient index of 70 years and older with a life expectancy of ten to 15 years (Carter et al., 2013, p. 19). Despite assigning a standard strength of "C", the panel advises that men who are 70 years old but are in great health may actually benefit from PCa screening (AUA, 2013, p. 2). Nonetheless, the panel advises that Urologists should at all costs, avoid false positives and over diagnosing patients who show interests and have made the decision to undergo screening (p. 2).

Modifications of Prostate Cancer Screening Requirements

PCa occurs as a result of cancerous cell growth on the prostate gland and the disease affects all men despite SES and ethnic background (Andriole et al., 2009). Ethnic Black men experience the most marked effect of PCa incidence and mortality and continue to be twice as likely as other groups of being affected by PCa (Andriole et al., 2009; Walsh, Deweese, & Eisenberger, 2007). PCa malignancy is usually diagnosed by use of the PSA, DRE, or TRUS in men over the age of 40 who have had a family history of the disease, are older in age, and are of African ancestry (ACS, 2013, 2014). PCa screening continues to be one of the major issues affecting ethnic Black men and despite recommendations against the use of PSA testing, some expert panels still recommend the tests based on a provider's recommendation and individual situation (ACS, 2011, 2013; Shirley et al., 2002; Walsh et al., 2007). Changes in screening requirements have resulted in recommendations for and against PCa screening, which is a challenging feat to overcome for physicians who might want to speak to their patients about PCa screening and not have a convincing argument to supply to their patients, for or against screening

(ACS, 2011, 2012, 2013; Carter et al., 2013; Catalona et al., 2012; Moyer, 2012; USPSTF, 2011).

Modifications to PCa screening requirements and lack of consensuses among PCa experts regarding who would be the best for screening, or whether screening should be used in diagnosing PCa are barrier to screening for both patients and providers (Catalona et al., 2012). The changes in PCa screening recommendations may become barriers for all men who may doubt the screening process in light of the new recommendations, not only those of ethnic Black men. For example, researchers have found that there was no convincing evidence that randomized trials have demonstrated increased survival rates when the PCa disease was diagnosed at its earliest stages (Myers, 2005; Prorok, 1994). Evidence such as this contributed to the current recommendation standards. There continues to be a lack of consensus on whether PSA-based screening is more beneficial compared to the associated harms that the PSA test might cause (Catalona et al., 2012; Moyer et al., 2012). A PCa screening decision might impact men's sexual and psychological health for the rest of their lives if harm is done through false positive findings. However, the screening process may also save many lives, but there are no certainties as to who might benefit more.

Many providers are left to make the most medically conscious decisions for their patients without much consensus among the governing PCa panels, making PCa recommendation one that might be a personal and financial liability if men are screened and harmed by the process (Albertsen, 2005; Catalona et al., 2012; Moyer et al., 2012). The most recent literature by the USPSTF panel recommending against screening based on their conclusion that screening has "no net benefits" has definitely left many experts, providers, and patients overwhelmed on how to approach PCa screening (Catalona et al., 2012; Moyer, 2012). Ethnic Black men who already

have low PCa screening rates may also screen even lesser than they currently have been, which may be a disservice to the group. There has been much effort made over the years encouraging men to screen for PCa disease, which makes the current screening recommendations controversial and worrying (ACS, 2013, 2014; Barry, 2009). In sum, it will be the responsibility of primary care providers to either encourage or discourage PCa screening to their patients, while providing information on the current state of the topic. Additionally, a provider may have to ultimately make the final screening decision for patients based on the recommendations of the panels or agencies they consider most credible, are in line with their practice philosophies, and with no personal financial gains preceding recommendations to screen or not screen (ACS, 2013; AUA, 2013; Albertsen, 2005; Moyer, 2012).

Prostate Cancer Symptoms

There are many physical symptoms that are indicative of PCa disease. However, not all symptoms meet the criteria for, or ultimately result in PCa disease (Hamilton & Sharp, 2004). Some of the symptoms of prostate cancer are urination difficulty, blood in ejaculation and urine, leakage after urination, and pain in areas that cancer has already metastasized (ACS, 2011; Andriole et al., 2009; Hamilton, 2010; Hamilton & Sharp, 2004). However, it is important to note that these PCa symptoms may actually be pointing to other comorbid illnesses that mimic PCa symptoms but are in fact not the disease itself. Media advertisements, healthcare providers, and educational outlets have been used to focus attention on the prevalence of prostate cancer and the need for screening for the disease (ACS, 2010, 2011; Consedine et al., 2007; Odedina et al., 2006, 2009; Woods et al., 2004). These outlets including health agencies such as the National Cancer Institute generally make brochures available with information on PCa. There are many ethnic Black men who are unaware of the physical signs and symptomologies

associated with prostate cancer, or who may be in denial even when the signs are present and they are aware of them because of fatalism or acceptance of one's faith (Odedina et al., 2011; Powe & Finnie, 2003).

There are many more ethnic Black men who refuse to be screened for PCa, despite informational outlets and their provider's recommendations (ACS, 2011; Parchment, 2004; Wilkinson et al., 2003). It is important that ethnic Black men are made aware of their PCa risks and provided PCa knowledge information on the symptoms to look out for when they are nearing the age of 40 years old, especially if they have a first degree relative who was a PCa case.

Diagnosing Prostate Cancer

PCa occurs as a result of a combination of factors. During the earliest stages of the disease, symptoms can progress slowly and men affected can be asymptomatic initially (Hoffman, 2011). Learning to control known factors such as lifestyle and environmental contributors to the disease may reduce the chances of the disease and the progression of the illness when diagnosed (Ornish et al., 2005). However, it is important to remember that age, familial history, and race are uncontrollable factors (Altekruse et al., 2010; Lichtenstein et al., 2000). When an individual is being screened for prostate cancer, a clear diagnosis of the malignancy is usually difficult without the use of a biopsy (Shinohara et al., 2006). A biopsy is the surgical removal of tissue from the area of the prostate that is suspected of cancerous growth (Chernecky & Berger, 2008; Pagana & Pagana, 2010).

In order to determine the aggressive nature of any cancerous tumor, a Gleason grade (1-5) is used to create a Gleason score (2-10) (Carter et al., 2007; Epstein, 2010). A cancerous tumor is given a higher Gleason score depending on how much it has metastasized outside the prostate area (Carter et al., 2007). Providers typically use the DRE and PSA tests as the first line

of inquiry in determining whether there is a presence or absence of prostate cancer (Fischbach & Dunning, 2009; Smith et al., 2011). If cancer is present, treatment type will be dependent on the age of the individual, comorbid illnesses, and the prognosis (Altekruse et al., 2010; Odedina et al., 2009). There are several types of treatment that can be used by providers to treat prostate cancer (Walsh, 2010; Wilt et al., 2008). These treatments are not a cure all, as cancers can form in the body at any time and cancerous cells that have been destroyed can regrow regardless of efforts made to treat a patient. Some treatment types are:

Digital Rectal Examination (DRE)

The Digital Rectal Examination (DRE) is an uncomplicated and safe exam for prostate cancer screening (ACS, 2011). Healthcare providers utilize the DRE screening method in searching for lumps in the prostate area by way of the rectal cavity (ACS, 2011). The procedure involves a provider using a lubricated finger to feel for any abnormality on the prostate (ACS, 2011). The DRE test can be conducted singularly. However, some researchers have agreed that it is more beneficial to conduct both the DRE and PSA concurrently (Murthy et al., 2004; Smart, 1997).

Murthy, Byron, and Pasquale (2004) found that utilization of the DRE is determined by a number of factors that can be controlled (p. 314). They conducted a study to determine the utilization of the digital rectal examination during prostate cancer screening and found that there is a vast underutilization of the DRE (p. 315). They found that the probability of utilizing the DRE increases when prostate cancer screening is being conducted by female providers and physician extenders (Murthy et al., 2004, p. 313). Male providers and physicians performed poorly and it is not known if this is due to lack of initiative by these providers, being

uncomfortable with performing the tests, or other factors associated with the low performers (Murthy et al., 2004).

However, studies have shown that many African American men believe that providers do not make much effort to inform them of PCa screening or to educate them about PCa disease (Odedina et al., 2004; William & Mohammad, 2009). One study using a convenient sample found that the great majority of men in the study revealed that a physician recommendation would make no difference in their screening habits (Parchment, 2004). The study does not have a far reaching effect on men in general because of the type of sample. However, information indicative of screening habits are generalizable with the use of a representative sample or a much larger convenience sample than that used in the study.

Prostate Specific Antigen (PSA)

The Prostate Specific Antigen test (PSA) is a test examining the patient's PSA level (ACS, 2011). The prostate gland produces PSA, and the protein in the blood is measured by the PSA blood test (ACS, 2011). The PSA test is currently an issue of controversy stemming from a lack of consensus on when and whether the benefits of the test outweighs any harms that might result (ACS, 2011; Catalona et al., 2012; Chou et al., 2011; Moyer, 2012). The PSA test can be conducted singularly; however, some researchers have agreed that it is more beneficial to conduct both the PSA and DRE concurrently (Murthy et al., 2004; Smart, 1997). Higher levels of PSA can mean that cancer is present, but it is not always the case as some men have elevated levels of PSA and no cancer present in the body (Thompson et al., 2004). There are factors such as age, race, prostate enlargement, and prostatitis that can alter a man's PSA levels (Smith, Humphrey, & Catalona, 1997; Thompson et al., 2004).

Another issue of contention with the PSA test is concerning the age a man should commence screening for cancer of the prostate (Andriole et al., 2009; Ries et al., 2009). It is important to note that different agencies will propose different recommendations for screening including the age of screening, and whether screening is more beneficial than detrimental to potential screeners. In essence, individuals can make informed decision with a provider after gathering enough data to assess risks of the disease but the weight of the decision should be that of the patient after they are well informed, in order to prevent biased recommendations. Some providers recommend that men screen for prostate cancer in their forties or fifties depending on family history, race, and age (Shroder et al., 2009). As stated before, age, race, and family history remain the only certain factors that predispose men to PCa, thereby dictating a man's PCa risk. Researchers are also working on ways to mend the exactness of testing with the PSA exam (Andriole et al., 2009; Carter et al., 2006; Smith et al., 1997).

There are several methods currently under study to improve and authenticate the PSA examination. The methods and improvement will include alteration of PSA cut-off level, free versus attached level, PSA density, PSA velocity, differential detection of metabolites, and gene fusions (Andriole et al., 2009; NCCN, 2009; Shroder et al., 2009). Additional methods being researched in order to facilitate PSA testing include "non-mutation gene alterations, microRNA patterns, PCA3, Proteo-Imaging, and Protein patterns in the blood" (Andriole et al., 2009; Thompson et al., 2004). As with all things, the PSA has its limitations. These include the inability to save lives even when cancer has been detected early, false positive exams, false negative exams, and follow-up tests, which includes biopsy and any resulting effects of the biopsy and testing (Smith et al., 1997). These limitations should be revealed to patients by their providers, so that they are well-informed of risks and dangers involved in testing.

Transrectal Ultrasound (TRUS)

The transrectal ultrasound is a procedure where providers use a probing instrument to transmit high energy sound waves into the rectal cavity to investigate anomalies that might be cancer causing (Harvey, Pilcher, Richenberg, Patel, & Frauscher, 2012). The high energy sound waves result in echoes from the sound waves that are bounced off the internal organs and tissues in the rectal cavity and create a sonogram, which is an image of the body tissues. Since the TRUS is used by practitioners to investigate whether there are anomalies in the rectum and nearby structures, including the prostate, the exam is considered to be a preferred method for some providers (Harvey et al., 2012).

According to Harvey et al. (2012), the TRUS is currently one of the most pervasively accepted diagnostic tools for PCa (s. 3). While the TRUS is beneficial in PCa screening, the researchers proclaimed that detection of PCa is low (s. 3). However, all the PCa screenings tools have their benefits and drawbacks, and it is up to patients and their providers to decide which PCa screening method is right for the patient's situation (ACS, 2013).

Prostate Cancer Treatment Interventions

PCa treatment interventions include brachytherapy, chemotherapy or radiation, external beam radiation plus hormone therapy, surgical intervention, radical prostatectomy, observation (surveillance/watchful waiting), and clinical trial of new treatments (De Bono et al., 2010; Higano et al., 2009; Nanda et al., 2010; Warlick et al., 2006). It has been determined that a great majority of men who are eventually identified as having prostate malignancy will not die from the disease but from other causes (Ketchandji et al., 2009; Waterbor & Bueschen, 1995). Currently, PCa screening is not encouraged by the USPSTF; however, the ACS and AUA have

set guidelines for physicians to still offer screening to those predisposed for PCa disease (ACS, 2013, 2014; AUA, 2013; Moyer, 2012).

There are many divergent perspectives and PCa research studies that currently support, or recommend against PCa screening. However, providers do screen men whether or not a comorbid illness is present, especially if they are predisposed to PCa and have a good chance of benefiting from treatment (Feuer, Merrill, & Hankey, 1999; Nieder et al., 2011). Checking for comorbid illnesses during the investigative stages for prostate malignancy can help providers decide which treatment intervention is the best for their clients (Nieder et al., 2011). Additionally, many men are influenced by their wives and family members in their decision-making process (Odedina et al., 2006; Sellers & Ross, 2003). Giving them the opportunity and information to discuss PCa screening with relatives may ease the burden of the decision to screen for PCa. Research has shown that social influence in a major factor in ethnic Black men and other groups choosing whether to undergo the screening process or avoid the process all together (Odedina et al., 2004).

Brachytherapy

Brachytherapy is a type of radiation therapy where surgical placement of radioactive material is introduced to the body by way of "sealed in needles, seeds, wires, or catheters" to placing the treatment in nearby prostate tumor. The procedure is also called internal radiation therapy, implant radiation therapy, and radiation brachytherapy, and the process include temporary or permanent body implants of the catheters or wires for treatment (Skowronek, 2013). This procedure like other medical interventions can be discussed with patients depending on their PCa status after diagnosis, and their preference of treatment methods. Brachytherapy, like chemotherapy, destroys invasive cancerous cells of the prostate but with a different method.

Chemotherapy / Radiation

This treatment uses drugs to destroy cancerous cells in the body, and is typically accompanied by biological therapy, surgical intervention, and radiation therapy (Millikan, 1999; Warlick et al., 2006). Chemotherapy is an effective way of reducing the sizes of tumors before opting for surgical or radiation treatment. The process of reducing the tumors through the chemotherapy process is called neo-adjuvant chemotherapy (Eisenberger, 1988). Chemotherapy destroys cancerous cells by reducing or stopping cancer cells from growing to prevent them from metastasizing, as cancer cells can grow rapidly ending (Millikan, 1999). The only problem with the chemotherapy method of treatment is that the process of destroying bad cells can result in healthy cells being harmed, thereby inhibiting their growth, which is bad for recovery.

External Beam Radiation

External beam radiation is a type of radiation therapy that uses high-energy rays to destroy cancer cells by focusing on the external body rather than directing treatment internally for initial treatment (Aparici & Seo, 2012). The procedure is very brief and typically is repeated a few times per week and can involve either three-dimensional conformal radiation therapy (TDCRT), or intensity-modulated radiation therapy (IMRT), where the type of treatment follow a set treatment session, or treatment with multiple beams of radiation therapy (Aparici & Seo, 2012). The multiple beams of radiation treatment are non- invasive and treatments using the external beam radiation therapy typically occur through the week, for a course of six to eight weeks depending on the cases (Aparici & Seo, 2012).

Hormone Therapy

Hormone treatment is also called androgen deprivation therapy or androgen suppression therapy (Connolly, Carducci, & Antonarakis, 2012). The treatment works by removing

blockages and adding hormonal treatment to the areas of the prostate affected by PCa. Hormonal treatments are generally delivered by giving pills to the patients or injections (Connolly et al., 2012). Hormone treatments in pills or in injection form can cease the production of testosterone and protect other cells that are prone to being exposed to androgens (Connolly et al., 2012). Practitioners can use a combination of hormonal therapies including surgical castration or bilateral orchiectomy (removal the testes), which would prevent testosterone from facilitating the growth of the cancer malignancy of the prostate (Connolly et al., 2012).

Observation / Surveillance

With observational/surveillance, the asymptomatic patients who have comorbid illnesses and are of advanced age are placed under observation. Swift, aggressive, and proactive treatment are held off while careful observation may be warranted without immediate active treatments, especially in cases where there are comorbid illnesses that could affect treatment effectiveness or cause further harm (Witmore, 1994). Some providers use the terms "watch and wait, observation, expectant management, and active surveillance" however, they all have the same meaning, and treatment is actually the observation of the patient (Whitmore, 1994).

Radical Prostatectomy

Radical prostatectomy is an operation that involves removing the prostate gland and nearby tissues in order to destroy PCa, which is sometimes done by laparoscopic surgery, which is small incisions in the body (Graefen & Schlomm, 2012). Practitioners frequently use radical prostatectomy as the treatment method whenever cancer has not spread outside of the prostate region. However, radical prostatectomy is also used to help patients who are in advance stages of cancer (stage 3) and are encountering issues such as urinary obstruction (Graefen & Schlomm,

2012). Providers also frequently use an operational procedure called a "transurethral resection of the prostate" (TURP) to also aid in urinary obstructions.

Prostate Cancer Screening – Benefits and Harms

PCa screening includes the use of prostate specific antigen blood test (PSA), transrectal ultrasound (TRUS), and the digital rectal examination (DRE) in detecting cancer (ACS, 2011, 2013; Brooks et al., 2010; Smith et al., 2011). The prostate specific antigen test (PSA) and the digital rectal examination (DRE) are conducted sequentially or independently (Thompson & Ziedman, 1992). The PSA test is an easier test for many men who believe the DRE is embarrassing and invasive (Odedina et al., 2004). However, PSA-based tests are considered to have "no net benefits" due to the harms caused to patients (Moyer, 2012). The DRE might locate tumors but may miss other issues. PSA and DRE screening are associated with noteworthy harms (ACS, 2011; Moyer, 2012). Such harms include biopsies, frequent false-positive results, unnecessary anxiety, and potential complications of treatment (Harris & Lohr, 2002; Lin et al., 2008). Wolf et al. (2010) declared that there continues to be ambiguity over the benefits and harms associated with prostate cancer screening. They emphasize that the tests should occur after knowledgeable discussions or education rather than just routine examinations (p. 75).

The American Cancer Society panel suggests that men who are asymptomatic with 10 years of life expectancy be given adequate information and opportunity to make knowledgeable decisions about screening (ACS, 2013, 2014; Briss et al., 2004; Smith et al., 2011). This can be done with the support of the primary care provider who is in the best position to provide the informational knowledge necessary to make well-versed decisions (ACS, 2011). The primary care provider can disseminate information concerning the ambiguities, dangers, and probable advantages linked to screening for prostate cancer (Howlader et al., 2011). The ACS panel

further suggested that men can begin to receive prostate cancer screening information at the age of 50 if they are among those with average risk factors (Brooks et al, 2011). However, it is necessary to provide this information to men under the age of fifty if they are among those who are in higher risks groups (ACS, 2011; Brooks et al., 2010; Smith et al., 2011).

The attitudes and behaviors of individuals influenced whether they screen or bypass the process even in the most well-informed of cases (Ajzen & Fishbein, 2005). Despite efforts to inform the public of the importance of screening for prostate cancer, ethnic Black men continue to have low rates of screening and even higher rates of diagnosis and death (Coard & Skeete, 2008; Odedina et al., 2011). Many men fear and associate the DRE with sexual dysfunction and some distrust providers (Woods et al., 2004). It is not known whether the fear extends to being labeled or associating the DRE with a fear of homosexuality based on cultural perspectives. For example, Jamaican Black men grew up in an environment of intolerance for homosexual individuals (Haaga, 1992; Williams, 2000), where homosexuality is criminalized and stigmatized (HRW, 2004; Kempadoo, 2009). As such, many of these men may view the DRE as invasive and a threat to their masculinity (Kempadoo, 2009). The choice to screen for prostate cancer can be facilitated through education and culturally sensitive delivery methods (ACS, 2010; Woods et al., 2004). The decision to screen can also be at the discretion of the health provider in cases where the client is unable to make the decision (Brooks et al., 2010).

Providers need to have adequate knowledge of their client's medical history, and know whether the benefits of PCa screening outweigh the harms associated with screening (ACS, 2010; Brooks et al., 2010; Lin et al., 2008). However, providers should also remember that PCa knowledge is not an adequate motivator for ethnic Black men to participate in screening (Modeste, Fox, & Cort, 2003; Odedina et al., 2006). Underlying cultural and sociodemographic

factors can undermine the PCa screening process even when educational factors are controlled for in ethnic Black men (Consedine et al., 2007; Etzioni et al., 2002; Magnus, 2004). In order for PCa screening to be effective, the provider and researchers involved in PCa and PCa screening research need to understand how the ethnic differences and identity of ethnic Black men influence their cultural attitudes and PCa screening outlook.

Prostate Cancer Screening Perceptions and Barriers

There are many barriers associated with PCa screening, or in avoiding the screening process (Forrester-Anderson, 2005; Nash & Hall, 2002; Weinrich et al., 2004). Screening barriers include insufficient disease knowledge, fear of abnormal test results, embarrassment, fatalism, fear of post-operative sexual difficulties, and lack of a primary care doctor (Bal, 1992; Blocker et al., 2006; Boring et al., 1992; Consedine et al., 2007; Odedina et al., 2004). Additional barriers such as financial status, inadequate screening recommendations, lack of cultural sensitivity, fatalism, mistrust of physicians also play a part in minimal participation of Black men in research studies (Consedine et al., 2007; Magnus, 2004; Thom & Campbell, 1997; Odedina et al., 2004). These barriers are not exclusive to all men who partake or avoid the screening process (Modeste et al., 2003).

Pertaining to screening barriers, some researchers have found that some men not only find the DRE screening exam uncomfortable but some men will outright refuse to screen just to avoid having to do a DRE exam (Clarke-Tasker & Wade, 2002; Odedina et al., 2004). Refusing to participate in PCa screening is a health disparity issue that requires the attention of health providers and researchers, especially for ethnic Black men who are predisposed to PCa and already have extremely low PCa screening rates, high PCa diagnosis, and high PCa mortality rates (Gibson et al., 2008; Herk & Berrill, 1990; Hudson & Ricketts, 1980). Furthermore,

researchers have found that the Black communities are highly influenced by religiosity (Benjamins, 2006), culture, and these belief systems influence decision-making even more than that of other ethnic groups (Consedine et al., 2009; Kreuter & McClure, 2004; Herek, 1978a; Odedina et al., 2009). As such, it may be practical to use community churches, neighborhood shops such barbershops and restaurants, and social services agencies that cater to ethnic Blacks to assists with the effort to encourage PCa screening among ethnic Black men and disseminate educational tools (Magnus, 2004; Odedina et al., 2004; Parchment, 2004).

Many countries do not have a cancer registry and a national screening program (Odedina et al., 2006; Shirley et al., 2002). For example, screening programs are practically nonexistent in Jamaica, many Caribbean islands, African countries, which might influence PCa attitudes and screening behaviors among immigrants of these countries (Glover et al., 1998; Odedina et al., 2009; Shirley et al., 2002). Religious beliefs also inundate every aspect of ethnic Black cultures, making religious beliefs and religious centers a point of contact for healthcare information delivery in regards to offerings and services for those who are at risk for PCa and need to participate in PCa screening programs (Herek, 1978a; Levin, Chatters, & Taylor, 2005; Odedina et al., 2004). There are a number of PCa screening programs in the US that promote PCa awareness and the importance of early screening, which have benefited some African American men to some extent, even though there continues to be limited participation in PCa screening and research studies (Woods et al., 2004).

These facts demonstrate that other strategies are necessary to encourage the involvement of this high-risk group in PCa research. Many ethnic Black men have some similar and dissimilar values and also unique cultural and religious beliefs (Benjamins, 2006; Herek, 1978a; Levin, Chatters, & Taylor, 2005). It is essential that providers and researchers develop culturally

appropriate programs for these groups if the dissimilarity is in fact so different from that of African Americans that it would be a disservice to not offer a more culturally sensitive program to these groups. Cobran et al. (2013) conducted a study with US born and Caribbean born ethnic Blacks to examine perceptions of PCa fatalism and PCa screening behavior, in addition to uncovering predictors of PSA test for PCa screening with both groups. The sample population age range was 35 to 75 years of age, and included 211 men born in the United States and in the Caribbean (Cobran et al., 2013). The sample population was recruited in South Florida by means of the Powe Fatalism Inventory and the Personal Integrative Model of PCa Disparity Survey. In order to examine the statistically significant predictors of PCa screening, the researchers used a created multivariate logistic regression models.

They found that participating in PCa screening and PSA examination in the last year, were not significantly influenced by nativity of the participant (Odds ratio [OR] = 0.80, 95 % confidence interval [CI] = 0.26, 2.48, $p = 0.70$). Additionally, PCa screening and PSA examination within the last year were not significantly influenced by higher levels of PCa fatalism (OR = 1.37, 95 % CI = 0.48, 3.91, $p = 0.56$). The researchers confirmed that nativity did not influence PCa screening using the PSA exam in either group (Cobran et al., 2013). They concluded that in order to assess the correlational between PCa screening behavior and fatalism levels in PCa, further studies are warranted. Limitations of this study are inherent in the sample population represented. The study findings will lack generalization among the larger population of US born Blacks and Caribbean born Blacks because the study was conducted with a convenient sample.

Another limitation is the possibility of biased data responses based on the concept of social desirability (lying to look good), acquiescence (tendency to agree), and extremity

(tendency to use extreme ratings) since the assessed study was based on self-administered. This study is however, very invaluable to the groups being studied, especially Caribbean ethnic Black men, who are not a constant in PCa screening and PCa research studies in the United States, despite their extremely high PCa risk.

Cultural Differences in Screening Ethnic Black Men

Psychosocial differences in the attitudes or perceptions of ethnic Black men toward PCa screening and of their ethnic approach to health and disease can have a positive or negative impact on PCa screening (Weber & Sherwill-Navarro, 2005; Weinrich et al., 2000). Many ethnic Black men may refuse to actively engage in healthcare preventive services if the psychosocial differences of culturally acceptable norms that influences how health and disease are seen in their ethnic cultures, differ from the treatment being provided by a practitioner in a new cultural environment (Addis & Mahalik, 2003; Bourne, 2010; Holland, 1999). It is well known that men delay or avoid seeking medical and mental health treatment more often than women do, which is due to cultural expectations ad perceptions or health and illness (Addis & Mahalik, 2003; Husaini, Moore, & Cain, 1994).

Psychosocial differences among ethnic cultures and ethnic subcultures can influence how the educated and uneducated, those of different social class, or those who have healthcare access view disease states and preventive healthcare (Kreuter et al., 2003; Wheeler & Mahoney, 2008). In a study conducted by Odedina et al. (2004), it was established that men consider the DRE to be embarrassing and a threat to their masculinity and sexual function, which was based on their perceptions of PCa screening (p. 786). Culturally, acceptance among social groups and social influence can improve PCa screening, which makes social influence a major plus for providers

offering PCa screening men at risk for PCa (Odedina et al., 2004; Spears, Doosje, & Ellemers, 1997).

In cases where social acceptance is essential to masculine identity development and preservation, threat of rejection from important social groups will influence help-seeking behaviors (Addis & Mahalik, 2003; Gorski, 2010; Reid et al, 2009; Ridgeway, 2001). Furthermore, many individuals do not take health action unless the benefits far outweigh the detriment of not acting (Courtenay, 2000). Practitioners encounter many psychosocial differences in attitudes and perceptions among many different cultures and need to coin their treatment plan in a culturally sensitive manner to address any cultural challenges or barriers to screening and treatment while respecting an individual's cultural belief (Consedine et al., 2007; Consedine et al., 2009; Weinrich et al., 2000). For example, Glen et al. (2012) conducted a study with 1,029 men from four racial groups with first-degree relatives of PCa cases. The population sample included 272 African Americans, 354 non-Latino Whites, 228 Latinos, and 175 Asians who were identified by PCa cases (p. 562).

The California Cancer Registry was used to identify PCa cases in order to accumulate their associated sample with the objective of exploring whether there were possible ethnic differences in PCa screening behavior and links of screening among the racial groups. All applicants were recruited through the use of PCa cases who were asked to refer first-degree relatives, and the researchers used telephone survey to collect data (Glen et al., 2012, p. 564). What they found was that in the past year, less than half of their sample reported undergoing a PSA test (Glen et al., 2012). They also found that African Americans were more likely to screen if the PCa case was their brother instead of a father figure (p. 566). Glen et al. (2012) also found that influences that were independently related to positive PCa screening among the men

included physician recommendations and prior PSA examination/s (p. 567). The researchers believe that while ethnicity was not independently predictive of screening among the sample used in the study, there were evident ethnic differences in the variability associated with PCa screening in addition to PCa screening predictors (Glen et al., 2012, p. 567).

They also concluded that the findings could assists with improving how men make their decisions when considering PCa screening in order to reduce health inequalities (p. 568). While this study did not look at within-group differences among ethnic Blacks, the findings could be a source of information and a starting point for conversations for practitioners with PCa cases, who can assists in recruiting family members who meet the first-degree relative criterion, or the race and age criteria. A limitation to the study is the sample size. The study used a convenient sample, which is generalizable to the general population of African Americans or other ethnic Blacks.

Summary

Prostate cancer affects ethnic Black men disproportionately despite socioeconomic status or country of origin (ACS, 2012, 2013; McNaughton et al., 2011; Reams et al., 2011). For ethnic Black men in the United States, it is not known whether PCa screening perceptions consistently differ among these groups, as they are generally considered African Americans for purposes of research and this classification is also used even in healthcare settings where they seek treatment for health concerns. For these ethnic Black men, accessibility to healthcare and addressing their healthcare needs are barriers in and of themselves because of poverty and low standards of care. These barriers complicate efforts to provide PCa knowledge and encourage PCa screening among ethnic Black men who have low screening rates, may vary in PCa perceptions, and are underserved as diverse cultures in the healthcare setting that lacks culturally competent providers

and intervention approaches to cater to their healthcare needs (ACS, 2013; Arthur & Katkin, 2006; Dyer, 2003).

Another issue that has become a barrier and a challenge to the already low screening rates and limited PCa screening research on ethnic Black men are the opposing perspectives and lack of consensus on PCa screening benefits (ACS, 2013; Carter et al., 2013; Moyer, 2012; Sanchez et al., 2007). The USPSTF has stated that PSA-based screening has "no net benefits" and recommend against screening even for men who would otherwise be considered high risk, both younger than and older than 75 years old (Moyer, 2012). There are still concerted efforts by PCa experts who still recommend that individuals should continue to screen for PCa, despite the USPSTF recommendations (Catalona et al., 2012; Moyer, 2012). Those having a PCa family history, who are predisposed due to race (Black), and who are at the recommended age for PCa screening will need to rely on established factors for PCa risk and decided with their practitioner how best to approach PCa screening (ACS, 2013).

The aim of this study was to examine PCa perceptions of ethnic Black men with regards to specific ethnic groups and examine in what manner and to what extent those perceptions varied according to demographic factors (age, education, marital status, health insurance coverage, and income level). It is my hope that the research findings will contribute to PCa literature with regards to the differences that exist among ethnic Black men in the United States, and their perceptions of PCa and PCa screening, including the influence of demographic factors. The results of the study can assists researchers, health providers, and policymakers in developing more culturally appropriate interventions and approaches to addressing the PCa screening and PCa needs of the study populations involved in the study in order to improve PCa screening and reduce incidences and mortality in Blacks as a racially classified group.

Chapter 3: Research Method

Black men are disproportionately affected by PCa and have been purported to have some of the highest prostate cancer (PCa) incidences and mortality rates on record (ACS, 2014; Howlader et al., 2013, 2014; Odedina et al., 2011; Smith et al., 2011). The most recent Surveillance Epidemiology and End Results Program (SEER) found PCa incidence of 223.9 and mortality rates of 48.9 per 100,000 persons among African American men (Howlader et al., 2014, t. 23.7, 23.11). These numbers are almost twice that of Whites and double the rates of some racially classified groups in the United States, where it is estimated that 1 in 5 African American men will be diagnosed with PCa in his lifetime (ACS, 2013, p. 14, 2014).

The disproportionate rate of PCa IN and MR among Black men, highlight the importance of PCa screening for this segment of the male population (Weinrich, Boyd, Bradford, Mossa, & Weinrich, 1998). Reflective of the disproportionate rate of PCa IN and MR, however, the PCa screening rate among Black men is lower than all other segments of the male population (Gonzalez, Consedine, McKiernan, & Spencer, 2008; Wells et al., 2010). While numerous studies have identified factors impeding PCa screening among Black men, few studies have examined these factors with respect to specific ethnic identities and PCa perceptions within the broader Black population.

The Black population is an ethnically heterogeneous segment of the US population that includes but is not limited to African Americans, Bahamians, Haitians, Jamaicans, and Trinidadians / Tobagonians. While these ethnic groups share a common African ancestry, the island descent of each ethnic group reflects a unique distinct culture (Arthur & Katkin, 2006; Magnus, 2004; Wheeler & Mahoney, 2008). The distinct culture of each ethnic group shares unique values and beliefs that influence health related decisions. To improve the PCa screening rate among the Black male population, it is necessary to understand the unique values and beliefs

that influence PCa screening decisions within the specific ethnic groups of the Black male population. The results of this study will provide important insights regarding perceived PCa screening for individual ethnic groups within the Black population. These insights, in turn, can foster culturally appropriate interventions, screening approaches, and assist with the development PCa screening campaigns and initiatives within individual ethnic groups, as well as the Black population.

The purpose of this quantitative non-experimental comparative study was to examine the extent and manner in which perceptions of PCa screening differed with respect to the ethnic identity of black men within the following ethnic populations: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian / Tobagonian. Also being examined was the extent and manner in which ethnic identity contributes to these differences in perceptions and varied with respect to (a) age group, (b) education level, (c) marital status, (d) income, and (e) health insurance coverage. In accordance with this study purpose and guided by the theoretical framework of this study, the following research questions were addressed:

Q1. To what extent and in what manner do perceptions of PCa Seriousness among Black men differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian? Does the extent and manner in which ethnic identity contributes to differences in perceived PCa Seriousness vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level?

Q2. To what extent and in what manner do PCa Screening Barriers perceived by Black men differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian? To what extent and in

what manner do perceived Barriers toward PCa Screening differ with respect to specific ethnic identity among Black men and vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level?

Q3. To what extent and in what manner does ethnic identity among multiethnic Black men contribute to differences in perceived PCa screening Benefits? Does the extent and manner in which ethnic identity contributes to differences in perceived PCa screening Benefits vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level?

Hypotheses

In accordance with the above research questions, this study tested the following research hypotheses:

$H1_0$. Perceptions of PCa Seriousness among Black men do not differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian. The extent and manner in which ethnic identity contributes to differences in perceived PCa seriousness do not vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

$H1_a$. Perceptions of PCa Seriousness among Black men do differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian. The extent and manner in which ethnic identity contributes to differences in perceived PCa seriousness do vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

$H2_0$. PCa Screening Barriers perceived by Black men do not differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican,

and (e) Trinidadian & Tobagonian. The extent and manner in which Perceived Barriers toward PCa Screening differ with respect to specific ethnic identity among Black men and do not vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

$H2_{a.}$ PCa Screening Barriers perceived by Black men do differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian & Tobagonian. The extent and manner in which Perceived Barriers toward PCa Screening differ with respect to specific ethnic identity among Black men and do vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

$H3_{0.}$ Ethnic identity among multiethnic Black men does not contribute in any extent and manner to differences in perceived PCa screening benefits. The extent and manner in which ethnic identity contributes to differences in perceived PCa screening benefits do not vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

$H3_{a.}$ Ethnic identity among multiethnic Black men does not contribute in any extent and manner to differences in perceived PCa screening benefits. The extent and manner in which ethnic identity contributes to differences in perceived PCa screening benefits do not vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

This chapter covered the research design that was used for this study. There is a comprehensive explanation of the study participants, research variables, data collection

instrument, and the data analyses that will be conducted. At the conclusion of this chapter, the assumptions, limitations, delimitations, and ethical assurances of this study will be presented.

Research Method and Design

This proposed quantitative non-experimental comparative analysis study examined the extent and manner in which perceived PCa seriousness, perceived PCa barriers, and perceived PCa benefits of screening among ethnic Black men differed and vary according to demographic factors (age, education, marital status, health insurance, and income level). This study was based on convenience sampling, as there was no random selection of the participants in the study sample. There was also no application of an intervention to the sample population. Differences in perceived PCa screening barriers, perceived PCa screening benefits, and perceived PCa seriousness was examined with regard to ethnic identity. Differences due to demographic factors were examined as to whether they varied with PCa perceptions per each ethnic group. Surveys were provided to participants recruited through an advertisement posted, or left with business owners of services that are frequented by the study population of interest. Additionally, surveys were also provided through active solicitation of participants in areas frequented by the study population, as specified in the next section of this paper.

The quantitative research design was used in this study because data collected on the survey instruments was for conversion into numerical format. The design methods permit study surveys to be quantifiable. A Likert scale design was used to document participant's responses, then the converted numerical data will be analyzed statistically using the "Statistical Package for the Social Sciences" (SPSS, v 18) software. Additionally, even though the participant sample was based on a convenience sampling recruitment approach, the study was accurate, valid, reliable, and replicable. The quantitative design answered the study purpose and problem

statement through the facilitation of numerical gathering of research data that was analyzed to explain the particular questions that were being asked and hypothesized. A descriptive analysis was initially conducted, which delivered a synopsis of the applicable central tendencies for each variable in the study.

Population

The participants for the current study was a convenience sample of ethnic Black men (African Americans, Bahamians, Haitians, Jamaicans, and Trinidadians / Tobagonians) living in several cities throughout Broward County, South Florida. Other ethnic Blacks besides those listed above will also be included in the sample if they meet the study criteria. Participants were solicited through advertisements and active solicitation at grocers, restaurants, barbershops, and other locations frequented by ethnic Blacks (Fraser et al., 2009; Luque et al., 2011; Magnus, 2004). To encourage study participation, the following incentives were offered (a) $5 gift card and (b) informational pamphlets and bookmarks from National Cancer Institute on PCa and PCa resources. The great majority of participants did not accept any financial incentives or gift cards. However, all respondents except one accepted the prostate cancer booklets.

Participants participated voluntarily in the study and they were provided with informed consent forms to sign. The inclusion criteria for participants were: be between the ages of 40 and 80 years old, able to give consent, speak, read, and write English, had no current or prior PCa diagnosis, and have had prostate cancer screening, or have never participated in PCa screening. The exclusion criteria were as follows: active PCa evaluation, current PCa diagnosis, past PCa diagnosis, unable to speak, read, and write English, and being unable to give consent. Participants completed the HBM-PCS instrument and Demographic background data form that was pertinent to the collection of the study data. No identifications were collected in order to

secure the anonymity of the participants involved in the study. All participants signed a consent form advising them that all data received will be confidentiality stored without any identifying information that could compromise their privacy and that their privacy will be maintained.

Sample

A prior power analysis was conducted to determine the necessary *n* size to ensure a power of .80 with alpha set at .05 and an effect size of .50. The sample size was calculated using Raosoft survey software, which provides services in data collection, evaluation, analysis, survey interpretation, reports, and form-type data based on a statistically capable database of software (Raosoft Inc., 2004). Based on the power of .80, effect size of 0.50, alpha of .05, a 5% margin of error, response distribution of 50%, and an assumed population of 20,000 from which to choose a random sample, a sample size of (n = 163) was provided by the Raosoft sample size calculator (Raosoft Inc., 2004).

Data Collection Instrument: HBM-PCS and Demographic Data Form

The HBMS-PCS is a modified version of the Health Belief Model Scale (HBM) designed to measure health beliefs related to PCa screening. The aim of the authors who created the HBM-PCS was to explain health behaviors by identifying particular perceptions and beliefs that impact an individual's decision to engage in, or avoid using preventive services (PCa screening) for at-risk and existing health issues (PCa) (Capik & Gozum, 2011; Carpenter, 2010; Davis et al., 2013; Hambolu, Freeman, & Taddese, 2013). These health behaviors may be associated with the preemptive measures that individuals practice to avoid or reduce the probability of an illness, or to increase the chances of recovering from an ailment (Baghianimoghadam et al., 2013; Erbil & Bolukbas, 2012; Gerend & Shepherd, 2012).

The HBM-PCS is comprised of 41 items within the following 5 subscales: (a) perceived barriers of PCa screening, (b) perceived benefits of PCa screening, (c) motivation toward of PCa screening, (c) perceived seriousness of PCa, and (d) perceived PCa susceptibility. The subscales of motivation toward of PCa screening and perceived PCa susceptibility were determined to be of no relevance to this study – hence, these subscales were eliminated from the survey instrument in order to focus on the subscales of interests.

There are 26 items for the 3 subscales of interest to this study: (a) 4 items measuring perceived PCa Seriousness, (b) 15 items measuring perceived PCa screening Barriers, and (c) 7 items measuring perceived PCa Benefits. The statement "It frightens me to think of PCa" is an example of the survey items measuring perceived Seriousness of PCa. An example of a survey items measuring perceived Barriers is the statement "Sexual ability declines after PCa treatment". An example of a survey item measuring perceived screening Benefits is the statement "I will be doing something good for myself if I participate in PCa screening".

Each subscale measures the corresponding PCa screening perception along a 5 point Likert scale ranging from 1-*Strongly Disagree* to *5-Strongly Agree*. Accordingly, (a) perceived seriousness of PCa, (b) perceived barriers of PCa screening, and (c) perceived benefits of PCa screening are ordinal variables. A high score on the subscale of *perceived barriers to PCa screening* indicates a negative perception toward PCa screening. High scores on the subscales of *perceived benefits* and *perceived seriousness of PCa* reflect a positive perception toward PCa screening benefits and seriousness that are recognized by the participant (Capik & Gozum, 2011, p. 3).

The HBM-PCS has been tested for validity and reliability with each subscale tested individually. Internal reliability or consistency of a psychometric instrument is tested by

Cronbach's alpha (Cronbach, 1951; Gadermann, Guhn, & Zumbo, 2012). Since the HBM-PCS was a new instrument established for PCa screening use, an internal consistency or reliability coefficient of 0.70 was found to be an acceptable reliability coefficient (DeVon et al., 2007; Parsian & Dunning, 2009). The HBM-PCS obtained a coefficient or Cronbach's alpha of 0.90 for the reliability and validity of the perceived Barriers of PCa screening subscale (Capik & Gozum, 2011, p. 6). For the perceived Benefits of PCa screening subscale, the HBM-PCS attained a 0.94 Cronbach's alpha, while a Cronbach's alpha of 0.83 was obtained for reliability and validity of the perceived Seriousness of PCa subscale (Capik & Gozum, 2011, p. 6). As such, the subscales were found to be internally consistent and can be applied to research studies as independent instruments based on the reliability coefficient of the HBM-PCS.

Operational Definition of Variables

Dependent Variables: Perceptions of PCa Screening

The primary dependent variables (DV) of interest in this study are perceptions of PCa screening. Specifically, this study examined (a) perceived Seriousness of PCa, (b) perceived Barriers of PCa screening, and (c) perceived Benefits of PCa screening. These dependent variables will be measured via the HBM-PCS (Capik & Gozum, 2011; Appendix C).

Independent Variable: Ethnic Identity

Of particular interest to this study is the extent and manner in which perceptions of PCa and PCa screening vary with respect to ethnic identity among ethnic Black men. Accordingly, the primary independent variable (IV) of interest in this study is ethnic identity. This is a nominal variable. The ethnic identities within the sample population of ethnic Black men for this study include (a) African Americans, (b) Bahamians, (c) Haitians, (d), Jamaicans, (e)

Trinidadians / Tobagonians. Ethnic Identity was self-reported by each study participant via the corresponding survey item: "How would you ethnically identify yourself"?

Capik and Gozum (2012) conducted pretest-posttest longitudinal study, with the objective of examining the "effect of web-assisted education and reminders on health belief, level of knowledge and early diagnosis behaviors regarding PCa screening" (p. 71). The study participants included men from Turkey, age 40 years and older (p. 72). All the participants were provided with shared instructive seminars or "interactive educational sessions" on PCa and PCa screening. Following the "interactive educational sessions" by the participants, the researchers provided them with a total of 6 months web-assisted education and consultation that was associated with the original interactive educational sessions. The study also included the use of "booklets, cellphone messages, email messages, internet, and a desk calendar as reminders during the six months period (p. 72). Upon the completion of the intervention period, the researchers examined the participants three and six months after, in order to determine any changes in their PCa screening behaviors, PCa knowledge level, and health belief (Capik & Gozum, 2012).

The researchers found that the participants' PCa examination frequency showed increases from 9.3% to 19.1% and their measurement frequency for PSA went up from 6.7% to 31.4%, demonstrating that educational interventions increased perceived PCa susceptibility and PCa screening (Capik & Gozum, 2012, p. 75). Though there were no observed modifications of their health belief and level of PCa knowledge, the participants' PCa screening was amplified, while reducing the perceived PCa barriers ($p < 0.05$) (p. 75). There were progressive modifications in the barrier and susceptibility perceptions of individuals via the web-assisted instruction and reminders, PCa screening intensifications (Capik & Gozum, 2012, p. 75). This research study

was quite important despite the fact that the participants were not ethnic Blacks, because the HBM-PCS was created as an instrument to be used with any ethnic or racial groups. Additionally, the researchers also concluded that participation in PCa screening typically show positive results once educational seminars or information are disseminated to providers and patients, regardless of the platform, and once that platform is readily accessible (Feng et al., 2013; Steele, Miller, Maylahn, Uhler, & Baker, 2000; Winterich et al., 2009).

Demographic Factors. In addition to the HBM-PCS instrument with the independent variables of perceived PCa seriousness, barriers, and benefits, and the dependent variable of ethnicity, this study examined differences in perceptions of PCa screening with regards to the following demographic factors: (a) age, (b) education, (c) marital status, (d) health insurance coverage, and (e) income level. The demographic variable of Age was measured via the use of participants with age groups ranging: (a) 40-49 years old, (b) 50-59 years old, (c) 60-69 years old, and ages (d) 70 to 80 years old. Age was measured using a ratio scale. Income of the study participants was measured via the following income level ranges: (a) $0-$19,999, (b) $20,000-$39,999, (c) $40,000-$59,999, (d) $60,000-$79,999, and (e) $80,000 and above. Accordingly, income was be measured by using a ratio variable.

Education is an ordinal variable that was measured via the format: (a) No Education (never attended school), (b) Some High School, (c) High School, (d) Trade School, (e) Some College, (f) College Degree, or (g) Graduate Education. Marital Status is a nominal variable with the following selection options: (a) single, (b) married, (c) divorced or separated, (d) widowed, or (e) cohabitating. Lastly, Health Insurance Coverage is a nominal variable with the following selection options: (a) No Health Insurance Coverage, and (b) Health Insurance

Coverage. The demographic data was obtained via the corresponding survey items in the demographic section of the survey instrument for this study.

Mistrust of healthcare providers and the healthcare system are major obstacle to quality healthcare among ethnic Black men (Halbert, Armstrong, Gandy, & Shaker, 2006; Thom, Hall, & Pawlson, 2004). This makes it important to understand the demographics of the participants being studied in this research on PCa screening perceptions among different ethnic groups. Hughes et al. (2009) conducted a study aimed at identifying "sociodemographic, clinical, and cultural determinants of mistrust among men diagnosed with prostate cancer", who were recruited from oncology practices within the metropolitan area of Philadelphia, PA. The study was observational and comprised of a total sample of 196 men, which included African-American men (n = 71) and White men (n = 125) who were diagnosed with PCa between 2003 and 2007 (p. 2254). The researchers obtained demographics such as "race, age, marital status, education, income, and employment status", as were self-reported by participants in the study, and they found that "race, education, healthcare experiences, and cultural factors" substantially influence mistrust.

According to the findings, greater levels of mistrust was found among African American men (p = .01) and men without much formal education (p = .001) when paralleled with White men and men who had more education (p. 2255). An interesting finding in this study is also that men who had been seeing their providers for a longer period of time actually exhibit more mistrust for their healthcare providers, with similar findings noted among men who were found to have "lower perceptions of interdependence" (p = .01). The researchers declared that the need to improve trust for providers among African American men with PCa diagnosis, by targeting African American men, men who are of low SES or financial backgrounds, in addition to men

who perceive themselves as having low interdependence. This study pinpoints a common complaint found among ethnic Black men, who typically complain of mistrust for providers in cases where there is access to care (Halbert et al., 2006; Odedina et al., 2004). It is important to address the perceptions and challenges that prevent ethnic Black men from receiving the PCa screening and PCa care. This can be facilitated by addressing mistrust in providers through the encouragement of a healthcare environment that is culturally welcoming and accommodating of the diverse patient groups from various ethnic and cultural backgrounds.

Procedures

Data Collection

The data for this study was obtained via a collective survey instrument consisting of the HBMS-PCS three chosen subscales (perceived PCa seriousness, Perceived PCa barriers, and perceived PCa benefits) and the Demographic data form consisting of 6 survey questions. The informed consent and protection of human subject's signature page was attached to the survey instrument. The survey instruments were distributed to ethnic black men at grocers, restaurants, barbershops, and other locations frequented by ethnic Black populations (Fraser et al., 2009; Luque et al., 2011; Magnus, 2004). The survey instruments were completed at safe public locations and private businesses such as barbershops, restaurants, and plazas that provided prior permission for filling the forms. All participants signed a confidentiality form (Appendix E).

Data Analyses

The data collected for this study was analyzed via SPSS, v 18. A descriptive analysis and frequency analysis were first conducted to provide an overview of the appropriate central tendencies for each of the variables in the study. The central tendencies of perceptions of PCa Screening were presented per each ethnic group, and per each demographic variable.

The research hypotheses of this study were tested via a series of one way ANOVA and GLM-Univariate procedures via a series of factorial ANOVA analysis. Specifically, the one way ANOVA procedures were first used to examine differences in Perceptions of PCa Screening [(a) perceived seriousness of PCa, (b) perceived barriers of PCa screening, and (c)] perceived benefits of PCa screening with respect to ethnic identity [(a) African Americans, (b) Bahamians, (c) Haitians, (d), Jamaicans, and (e) Trinidadians / Tobagonians]. A series of factorial ANOVA analysis were then used to examine the extent and manner in which differences in perceptions of PCa Screening with respect to ethnic identity vary with respect to the demographic factors of (a) age, (b) education, (c) marital status, (d) health insurance coverage, and (e) income level. The values and corresponding levels of significance were presented for differences between and within groups. If a statistical significance was indicated, Scheffe's post hoc analysis was used to identify the specific differing groups.

Assumptions

The primary assumption of this study was that all Caribbean groups listed would be recruited as part of the study respondents. Another assumption of this study was that all the participants responding to the surveys would maintain the integrity of the study by being honest with their responses, and be guaranteed that full confidentiality would be in effect upon the signing of the informed consent form. Additionally, there was no collection of any identifying characteristics or data that could potentially cause harm to participants, or result in their identity being compromised outside of the research interests. Due to the nature of the study, another assumption was that participants would agree that the expectation of privacy is low due to the study occurring in public settings, which was acknowledge and understood by each participants who agreed to participate in the study.

Limitations

The principal limitation of this study was inherent in the format being used to recruit participants. The sample population was a convenience sample that inherent in the sample's representation; would not be readily generalizable to all ethnic Black men or all Blacks as a racial classification. Another limitation noted was that the study was through self-administered survey assessment, which may be biased based on social desirability (lying to look good), acquiescence (tendency to agree), and extremity (tendency to use extreme ratings). Additionally, there was an uncertainty with some of the PCa estimates provided by Globocan, as the rates reported for countries may be underestimated especially in countries with lack of adequate research resources.

Adequate research resources would provide more high quality PCa research data, such as national screening programs and representative sample of the populations that was not limited to participants living in the metropolitan areas. Another limitation that should be noted and considered for future research was the exclusion of illiterate individuals and those with linguistic challenges from sampling for PCa screening for this research study and most PCa research studies for that matter. Future research on the PCa screening and perceptions of ethnic Black men who are unable to read and write is important to increasing equal access to care and eliminating PCa disparity in all groups despite literacy ability.

Delimitations

This research study was not intended to represent all ethnic Black men from the Caribbean islands or other countries having ethnic Black populations. The research was intended to address the PCa perceptions of ethnic Black men in Broward County, Florida, with regards to the extent and manner that their ethnic identity and PCa perceptions (perceived PCa barriers, perceived PCa

benefits, and perceived PCa seriousness) varied according to specific ethnicity and demographic factors.

Ethical Assurances

An informed consent form (Appendix E) was provided to all sampled participants in order to advise participants that their involvement in the study was completely voluntary. Additionally, study participants signed the consent form verifying and acknowledging that they were informed that they would be able to withdraw from the study at any time for any reason, without any hardships. The informed consent form also indicated that survey responses would be kept confidential, and that no identifiable information would be collected throughout the course of the study. No deception was included in the study, and any and all collected data was used for the intended purposes they were being collected for. Any obtained data from participants was kept in privacy in personal folders and protected in a safe environment. Per university guidelines, the Institutional Review Board (IRB) at Northcentral University provided any and all necessary approvals that were required prior to data collection.

Summary

The Black population is an ethnically heterogeneous segment of the US population that includes African Americans, Jamaicans, Bahamians, Trinidadians / Tobagonians, Haitians, and other diverse ethnic Black groups. While these ethnic groups share a common African ancestry, the island descent of each ethnic group reflects a unique distinct culture (Arthur & Katkin, 2006; Magnus, 2004; Wheeler & Mahoney, 2008). The distinct culture of each ethnic group shares unique values and beliefs that influence health related decisions. To improve the PCa screening rate among the Black male population, it is necessary to understand the unique values, belief

systems, and perceptions that influence PCa screening decisions within the specific ethnic groups of the Black population.

This quantitative non-experimental comparative analysis study examined the extent and manner in which perceived PCa screening (seriousness, barriers, and benefits) differed among ethnic Black men, and the extent and manner that these perceptions vary according to demographic factors of age, education, marital status, health insurance coverage, and income level. Toward this end, a modified version of the Health Belief Model survey instrument (HBM-PCS) was used to measure perceived PCa screening barriers, perceived PCa screening benefits, and perceived PCa seriousness within a large population of ethnic Black men. Relevant demographic factors of this study population – including ethnic identity were also examined with the HBM-PCS subscales used in this study.

Differences in perceived PCa seriousness, perceived PCa screening barriers, and perceived PCa screening benefits were examined with respect to ethnic identity. Differences due to demographic factors were examined and provided important insights regarding ethnic Black men toward PCa screening specific to individual ethnic groups within the black population. These insights can be used to develop PCa screening campaigns and initiatives within individual ethnic Black groups, as well as the Black population. It is hoped that the study findings will contribute invaluably to the efforts to increase visibility among foreign born ethnic Black men living in the United States (Archibald, 2011; Magnus, 2004; Parchment, 2006). Visibility in healthcare for PCa screening and PCa is especially needed for men whose PCa screening and PCa rates have not been pervasively studied, acknowledged, or confirmed by researchers (Odedina et al., 2004, 2006, 2009, 2011; Consedine t al., 2007, 2014; Rebbeck et al., 2012) as

essential to reducing the current and continued PCa screening and PCa disparities observed in Blacks as a racial group.

PCa incidence and mortality figures are among the highest in Caribbean populations when compared to other countries worldwide (Forman, 2013; Globocan, 2008; IARC, 2005). Therefore, any findings that can bring attention to the needs of high-risks PCa health disparity groups could potentially influence PCa IN, MR, and screening rates. Additionally, these findings could assist policymakers and health researchers with developing culturally appropriate programs to address the needs of disadvantaged and underserved ethnic Black populations while tracking PCa migratory patterns or PCa trajectory in ethnic Black immigrant populations in the US. It is hoped that providers will use this research as well, as a tool to improve their healthcare performances among ethnic Black men and provide them with the culturally appropriate quality of care that they deserve by also becoming culturally competent and responsive to their clients of different ethno-cultural backgrounds, regardless of what health issue is being addressed.

Chapter 4: Findings

The purpose of this quantitative non-experimental comparative study was to examine the extent and manner in which perceptions of PCa seriousness, perceived PCa benefits and perceived barriers to PCa screening differed with respect to the ethnic identity of black males within the following ethnic populations: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian / Tobagonian. Also being examined in this study, was the extent and manner in which differences in perceptions of PCa seriousness, perceived PCa screening benefits, and perceived PCa screening barriers per ethnicity varied with respect to (a) age group, (b) education level, (c) marital status, (d) income, and (e) health insurance coverage.

Each research variable and demographic factor were measured by data collected via a multi-part survey instrument distributed to the ethnic black male population of interest in Broward County, Florida. This survey instrument measured perceived seriousness of PCa and perceived PCa screening benefits and barriers via the corresponding subscale survey items from the validated HBM-PCS survey instrument (Capik & Gozum, 2011). The demographic factors of age, level of education, income level, marital status, and health insurance coverage were measured via corresponding survey items on the demographic portion of the multipart survey instrument.

A total of 167 surveys were collected from the study population of interest over a four week period, from July 19th to September 2nd of 2014. There were two surveys with missing data for two survey items. These surveys were retained in the study sample as it was determined that missing data would not alter the statistically significant findings of the corresponding analyses. The final study sample size of the study sample was $N = 167$, reflecting a 100% response rate.

The data from each completed survey were entered into SPSS. Descriptive analyses were conducted to depict the demographic make-up of the study sample and to assess the dispersion and distribution of the data measuring the outcome variables (i.e., Perceived Seriousness of PCa, Perceived Barriers to PCa Screening, and Perceptions of PCa Screening Benefits) with respect to the demographic factors of age, education, income level, marital status, and health insurance coverage within the study sample ($N = 167$). A series of one-way ANOVA analyses were then conducted to examine the extent and manner in which Perceived Seriousness of PCa, Perceived Barriers to PCa Screening, and Perceptions of the Benefits of PCa Screening differed with respect to each demographic factor. Each research hypothesis was then tested via a series of one-way ANOVA analyses and subsequent Factorial ANOVA analyses using GLM-univariate procedures. The results of these analyses are presented next.

Results

Descriptive Analyses: Demographic Attributes. The study sample was comprised of 167 ($N = 167$) ethnic black men who have not had a PCa screening exam. The study participants within this study sample represented the following ethnic identities: (a) African American ($n = 35$), (b) Bahamian ($n = 17$), (c) Haitian ($n = 18$), (d) Jamaican ($n = 61$), and (e) Trinidadian / Tobagonian ($n = 36$). The largest ethnic group within the study sample were Jamaicans ($n = 61$), representing 36.5% of the study sample. The combined ethnic group of Trinidadian & Tobagonian made up the next largest group ($n = 36$), representing 21.6% of the study sample. There were ($n = 35$) study participants identified as African Americans, representing 21% of the study sample. Haitians represented 10.8% of the study sample with ($n = 18$) study participants in this group. Lastly, there were ($n = 17$) study participants identified as Bahamian, representing 10.2% of the study sample.

Table 1 depicts the study sample with respect to the demographic factors of age, education, income, marital status, and health insurance coverage. With respect to age, there were 74 study participants between the ages of 40-49 years old (n = 74) and 64 study participants between the ages of 50-59 years old (n = 64), representing 44.3% and 38% of the study sample, respectively. There were 24 study participants between the ages of 60-69 years old (n = 24), representing 14% of the study sample. There were 5 study participants between the ages of 70-80 years old (n = 5), representing 3% of the study sample.

A high school education was the highest level of education attained by 55 of the study participants (n = 55), representing 33% of the study sample. There were 24 study participants with a college degree (n = 24), while 31 study participants reported having some college (n = 31), and 23 study participants reported attending a trade school (n = 23). There were 15 study participants with a reported graduate level education (n = 15), representing 9% of the study sample. There was 1 study participant who reported never attending school (n = 1).

The median income range among the study participants was $40,000-$49,000 (n = 40) representing 24% of the study sample. There were 35 study participants who reported an income of less than $19,999 ($n$ = 35) and 30 participants who reported an income range over $80,000 ($n$ = 30). There were 2 study participants who reported no income (n = 2), representing 1.2% of the study sample.

The majority of the study participants were either married (n = 86) or single (n = 59) representing 51% and 35% of the study sample, respectively. The Remaining study participants were divorced, separated, or widowed (n = 18). The majority of study participants reported having health insurance coverage (n = 134), representing 80.2% of the study sample. The remaining study participants reported “no health insurance coverage” (n = 33).

Demographic Attributes of Ethnic Groups

Table 1 continues to delineate the demographic attributes of the study sample per each ethnic group. With respect to age, the ethnic groups of African Americans, Trinidadians / Tobagonians, Haitians, and Jamaicans reflected the study samples with the highest number of study participants in the age group of 40-49 years old: (n = 17, n = 17, n = 10, and n = 25). Regarding the age group 50-59 years old, the ethnic groups of African Americans, Jamaicans, and Trinidadians / Tobagonians reflected the study samples with highest number among study participants: (n = 14, n = 26, and n = 12). Jamaicans and Trinidadians / Tobagonians also continued to reflect high numbers of participants among age group 60-69 years old: (n = 6 and n = 9).

With respect to education level, a high school education was the predominant education level among African Americans, Haitians, and Jamaicans: (n = 14, n = 11 and n = 20). A trade school education was highest among Jamaicans (n = 11). African Americans, Jamaicans, and Trinidadians / Tobagonians reflected the highest number of study participants among education level "some college": (n = 7, n = 7, and n = 12), and among participants with a "college degree": (n = 6, n = 6, and n = 6); however, Jamaicans and Trinidadians / Tobagonians had the highest number of participants with a "graduate education": (n = 6 and n = 5).

With respect to health insurance coverage, all ethnic groups reflected high insurance coverages. Of the 134 study participants with health insurance coverage (n = 134), African Americans, Bahamians, Haitians, and Trinidadians / Tobagonians reflected participants with the highest coverage: (n = 32, n = 14, n = 12 and n = 29), while Jamaicans (n = 47) had the least amount of participants with health insurance. With respect to income, the ethnic groups of Haitian, Jamaican, and Trinidadian / Tobagonian reflected the study sample with the highest

number of study participants within income group "$0-$19,999: (n = 8, n = 14 and n = 6). The ethnic groups of African American, Jamaican, and Trinidadian / Tobagonian had the highest number of study participants within income group "$40,000-$59,999: (n = 10, n = 17, n = 15, and n = 10). African Americans, Jamaicans, and Trinidadians had the highest number of study participants within the highest income group "$80,000 and above": ($n$ = 8, n = 10, and n = 8).

With respect to marital status, the ethnic groups of African Americans, Jamaicans, and Trinidadians / Tobagonians continued to reflect the study sample with the majority of the study participants in each ethnic group reported as married: (n = 19, n = 33, and n = 18), and single: (n = 12, n = 20, and n = 13). Jamaicans reflected the study sample with the highest number of participants who were within the "divorced or separated" group: (n = 6).

Table 1

Demographic Frequencies Per Ethnic Group and Study Sample

	Respondent Ethnic Groups					
	African American	*Bahamian*	*Haitian*	*Jamaican*	*Trinidadian Tobagonians*	*Total*
Demographic Variables	*n=35 (21%)*	*n= 17 (10.2%)*	*n=18 (10.8%)*	*n=61 (36.5 %)*	*n=36 (21.6%)*	*N=167 (100%)*
Age range (*N* = 167)						
40-49	17	5	10	25	17	74 (44.3)
50-59	14	5	7	26	12	64 (38.3)
60-69	3	5	1	9	6	24 (14.4)
70-80	1	2	0	1	1	5 (3)
Marital Status (*N* = 167)						
Single	12	7	7	20	13	59 (35.3)
Married	19	6	10	33	18	86 (51)
Divorced/Separated	2	3	0	6	4	15 (9)
Widowed	2	0	0	1	0	3 (1.8)
Cohabitating	0	1	1	1	1	4 (2.4)
Education (*N* = 167)						
Never attended school	0	0	0	1	0	1 (.6)
Some High School	2	0	2	10	4	18 (10.8)
High School	14	4	11	20	6	55 (32.9)
Trade School	4	3	2	11	3	23 (13.8)
Some College	7	5	0	7	12	31 (18.6)
College Degree	6	3	3	6	6	24 (14.4)
Graduate Education	2	2	0	6	5	15 (9)
Health Insurance (*N* = 167)						
No Coverage	3	3	6	14	7	33 (19.8)
Coverage	32	14	12	47	29	134 (80.2)
Income (*N* = 165)*						
$0 - $19,999	3	4	8	14	6	35 (21)
$20,000 - $39,999	6	1	6	14	2	29 (17.4)
$40,000 - $59,999	10	2	3	15	10	40 (24)
$60,000 - $79,9999	8	6	0	7	10	31 (18.6)
$80,000 and Above	8	4	0	10	8	30 (18)
Missing	0	0	1	1	0	2 (1.2)
Total						167 (100%)

**Notes. [N=Sample; (N=165): There were 2 missing responses for the income group]. [Age Range = age in years; No Coverage = no health insurance coverage, Coverage = health insurance coverage, Education = level of education, Income = income group].*

Descriptive Analysis of PCa Seriousness and PCa Screening Barriers and Benefits

The outcome variables of interest to this study were (a) Perceived Seriousness of PCa, (b) Perceived Barriers to PCa Screening, and (c) Perceptions of PCa Screening Benefits. These variables were operationalized via the mean score of the survey items on each corresponding HBM-PCS subscale (i.e., PCa Seriousness, PCa Screening Barriers, and PCa Screening Benefits). Each survey item was measured along a 5-point Likert scale indicating level of agreement; hence, each variable was measured along an ordinal scale ranging from 1-5. A low score on the PCa Seriousness subscale was the unfavorable condition indicating deficient perceptions of the seriousness of PCa. A low score on the PCa Screening Barriers subscale was the favorable condition indicating few barriers impeding PCa screening. Finally, a low score on Benefits of PCa Screening subscale was the unfavorable condition indicating PCa screening benefits were not fully recognized. The section below presents the means and dispersion measures of each outcome variable for the study sample, per ethnic group, and per each demographic factor.

Per Ethnic Group

Table 2 presents the mean and measures of dispersion for the data measuring PCa Seriousness, PCa Screening Barriers, and Benefits of PCa Screening with respect to each ethnic group and the entire study sample. The overall mean and standard deviation of the study sample, 3.38 (*SD* = .76) on the HBM-PCS PCa Seriousness subscale show individual scores ranging from 1.25 (min.) to 5.00 (max.). Among each ethnic group, the Haitian segment of the study sample had the lowest mean score on the PCa Seriousness subscale, 3.06 (*SD* = .78), with individual scores ranging from a minimum score of 1.75 (min.) to the highest score average of 4.50 (max.). The Jamaican segment of the study population had the highest mean on this

subscale measure, 3.68 (*SD* = 0.71), with individual scores ranging from 2.00 (min.) to 5.00 (max.).

With regards to PCa screening Barriers, the overall mean and standard deviation, 2.46 (*SD* = .49) of the study sample is also presented with individual scores ranging from 1.13 (min.) to 3.73 (max.). With respect to ethnic identity, the Haitian segment of the study sample had the highest mean score 2.79 (*SD* = 0.54) on the PCa Screening Barriers subscale measure with individual scores ranging from 1.67 (min.) to 3.73 (max.). The Bahamian segment of the study population had the lowest mean 2.26 (*SD* = 0.22) on this subscale measure, with individual scores ranging from 2.00 (min.) to 2.87 (max.).

With regard to Benefits of PCa Screening, the overall mean and standard deviation (*M* = 3.67, *SD* = 0.43) is presented with individual scores ranging from 1.14 (min.) to 5.00 (max.) on the PCa Benefits subscale. The Bahamian segment of the study sample had the highest mean score on the PCa Benefits subscale, 3.74 (*SD* = 0.34) with individual subscale scores ranging from 3.00 (min.) to 4.43 (max.). The African American segment of the study sample had the lowest mean score on this subscale with 3.59 (*SD* = 0.52) with individual scores on this subscale ranging from 1.14 (min.) to 4.14 (max).

Table 2

Dispersion of HBM-PCa Subscales Mean Scores Per Ethnic Group

Variables	*PCS Seriousness*				*PCS Barriers*				*PCS Benefits*			
Ethnic Groups (N)	*M*	*SD*	*Min*	*Max*	*M*	*SD*	*Min*	*Max*	*M*	*SD*	*Min*	*Max*
African Americans (35)	3.31	0.62	2.00	4.75	2.33	0.40	1.47	3.47	3.59	0.52	1.14	4.14
Bahamians (17)	3.12	0.69	2.00	4.00	2.26	0.22	2.00	2.87	3.74	0.34	3.00	4.43
Haitians (18)	3.06	0.78	1.75	4.50	2.79	0.54	1.67	3.73	3.71	0.45	2.57	4.57
Jamaicans (61)	3.68	0.71	2.00	5.00	2.53	0.47	1.20	3.67	3.72	0.32	3.00	5.00
Trinidadians / Tobagonians (36)	3.23	0.85	1.25	5.00	2.40	0.59	1.13	3.60	3.61	0.53	1.57	4.71
Total (167)	3.38	0.76	1.25	5.00	2.46	0.49	1.13	3.73	3.67	0.43	1.14	5.00

Notes. [*N = sample, PCa = prostate cancer, PCS = prostate cancer subscale, Variable measurement = survey item mean; # of survey items per variable (PCa Seriousness = 4 survey items, PCS Barriers = 15 survey items, PCS Benefits = 7 survey items); M = mean, SD = standard deviation, Min = minimum, Max = maximum*].

Per Demographic Factors

The next series of tables presents the mean and dispersion of the data measuring perceptions of PCa seriousness, perceptions of PCa screening barriers, and perceived benefits of PCa Screening with respect to the demographic factors of age, education, income level, marital status, and health insurance coverage. The differences in mean scores are examined for statistical significance in the next section.

PCa Seriousness. An examination of PCa Seriousness with respect to Education Level shows that study participants with "some high school" had the highest mean score on the PCa Seriousness subscale and study participants with a reported college degree had the lowest mean score on this subscale measure, 3.72 (*SD* = 0.70) and 3.21 (*SD* = 0.75) respectively. With respect to Age group, the mean score on the PCa Seriousness subscale was lowest for the age group 40-49 years of age, 3.33 (*SD* = 0.79). The study participants between the ages of 60-80 years old had the highest mean score, 3.49 (*SD* = 0.73) on the PCa Seriousness subscale.

Examining PCa Seriousness with respect to Income shows that participants with a reported annual income of $60,000-$79,999 had the highest mean score, 3.54 (*SD* = 0.62). Study

participants with an annual income of $80,000 and above scored the lowest on perceptions of PCa Seriousness measure, 3.21 (*SD* = 0.80). With regard to marital status, study participants who were single had the highest mean score on the PCa Seriousness subscale, 3.41 (*SD* = 0.76), and participants who were married had the lowest score on this subscale, 3.36 (*SD* = 0.77). Lastly, study participants with health insurance coverage (*n* = 134) had a higher mean on the PCa Seriousness subscale than those participants without health insurance coverage (*n* = 33), 3.41 (*SD* = 0.72) and 3.29 (*SD* = 0.89), respectively.

Table 3

HBM-PCa Seriousness Subscale Scores Per Demographic Groups

Variables	*M*	*SD*	*Min*	*Max*
Age Group (167)				
40 – 49 years old (74)	3.33	0.79	1.25	5.00
50 – 59 years old (64)	3.40	0.74	2.00	4.75
60 – 80 years old (29)	3.49	0.73	2.00	5.00
Education Level (166)				
Some High School (18)	3.72	0.70	2.00	4.75
High School (55)	3.32	0.70	1.75	4.75
Trade School (23)	3.40	0.77	2.00	5.00
Some College (31)	3.42	0.76	1.75	5.00
College Degree (24)	3.21	0.75	1.25	4.25
Graduate Education (15)	3.35	0.99	1.75	4.75
Marital Status (167)				
Single (59)	3.41	0.76	1.25	4.75
Married/Cohabitating (90)	3.36	0.77	1.75	5.00
Divorced/Separated/Widowed (18)	3.38	0.75	2.00	4.75
Health Insurance (167)				
No Health Insurance (33)	3.29	0.89	1.25	4.75
Health Insurance (134)	3.41	0.72	1.75	5.00
Income Group (165)*				
$0 - $19,999 (35)	3.35	0.78	2.00	4.75
$20,000 - $39,999 (29)	3.44	0.72	2.00	4.50
$40,000 - $59,999 (41)	3.40	0.82	1.25	5.00
$60,000 - $79,999 (31)	3.54	0.62	2.00	4.75
$80,000 and above (30)	3.21	0.80	1.75	5.00
Total (165)	3.39	0.75	1.25	5.00

Notes. PCa Seriousness = HBM-PCa seriousness subscale mean (4 survey items). PCa = prostate cancer, PCS – prostate cancer subscale; HBM = Health Belief Model. N=165 per missing data points on [Income Group M = mean, SD = standard deviation, Min = minimum, Max = maximum].

PCa Screening Barriers. An examination of PCa Barriers to Screening with respect to Education Level shows that study participants with "some high school" had the highest mean score on the PCa Barriers to Screening subscale, 2.86 (*SD* = 0.42). Study participants with "some college" and "graduate education" had similar mean scores, and the lowest mean score on this subscale measure, 2.26 (*SD* = 0.45) and 2.26 (*SD* = 0.45) respectively. With respect to Age group, the mean score on the PCa Barriers to Screening subscale was lowest for the age group

40-49 years of age, 2.44 (*SD* = 0.45). The study participants between the ages of 60-80 years old had the highest mean score, 2.50 (*SD* = 0.56) on the PCa Barriers to Screening subscale.

Examining PCa Barriers to Screening with respect to Income shows participants with a reported annual income of $0-$19,999 had the highest mean score, 2.73 (*SD* = 0.50*),* and study participants with an annual income of $80,000 and above scored the lowest on perceptions of PCa Barriers to Screening, 2.29 (*SD* = 0.36). With regard to marital status, study participants who were single had the highest mean score on the PCa Barriers to Screening subscale 2.54 (*SD* = 0.50) and participants who were married / cohabitating had the lowest score on this subscale, 2.40 (*SD* = 0.49). Lastly, study participants with health insurance coverage (*n* = 134) had a lower mean on the PCa Barriers to Screening subscale than those participants without health insurance coverage (*n* = 33), 2.40 (*SD* = 0.47) and 2.70 (*SD* = 0.52), respectively.

Table 4

HBM-PCa Barriers Subscale Scores Per Demographic Groups

Demographic Variables	*M*	*SD*	*Min*	*Max*
Age Group (167)				
40 – 49 years old (74)	2.44	0.45	1.20	3.47
50 – 59 years old (64)	2.46	0.51	1.13	3.73
60 – 80 years old (29)	2.50	0.56	1.27	3.67
Education Level (166)				
Some High School (18)	2.86	0.42	2.07	3.67
High School (55)	2.48	0.45	1.47	3.73
Trade School (23)	2.54	0.50	1.67	3.60
Some College (31)	2.26	0.45	1.13	3.27
College Degree (24)	2.42	0.56	1.27	3.47
Graduate Education (15)	2.26	0.45	1.33	3.13
Marital Status (167)				
Single (59)	2.54	0.50	1.13	3.60
Married/Cohabitating (90)	2.40	0.49	1.20	3.73
Divorced/Separated/Widowed (18)	2.54	0.45	2.00	3.47
Health Insurance (167)				
No Health Insurance (33)	2.70	0.52	1.67	3.73
Health Insurance (134)	2.40	0.47	1.13	3.60
Income Group (165)*				
$0 - $19,999 (35)	2.73	0.50	1.93	3.73
$20,000 - $39,999 (29)	2.61	0.45	1.67	3.47
$40,000 - $59,999 (40)	2.36	0.46	1.47	3.60
$60,000 - $79,999 (31)	2.29	0.53	1.13	3.47
$80,000 and above (30)	2.29	0.36	1.33	3.00
Total (165)	2.46	0.49	1.13	3.73

Notes. PCa Barriers = HBM-PCa screening Barriers subscale mean (15 survey items). [*N = 165 per missing data points on [Income Group]. M = mean, SD = standard deviation, Min = minimum, Max = maximum*].

PCa Screening Benefits. Table 5 presents the means and dispersion measures for perceived PCa Screening Benefits. An examination of PCa Benefits of Screening with respect to Education Level shows that study participants with "some college" had the highest mean score on the PCa Benefits of Screening subscale, and study participants with "some high school" had the lowest mean score on this subscale measure, 3.76 (*SD* = 0.47) and 3.57 (*SD* = 0.44) respectively. With respect to Age group, the mean score on the PCa Benefits of Screening

subscale was lowest for the age group 40-49 years of age, 3.65 (*SD* = 0.36). The study participants between the ages of 50-59 years old had the highest mean score, 3.71 (*SD* = 0.44) on the PCa Benefits of Screening subscale.

Examining PCa Benefits of Screening with respect to income group shows participants with a reported annual income of $40,000-$59,999 had the highest mean score, 3.75 (*SD* = 0.35*),* and study participants with an annual income of $80,000 and above scored the lowest on perceptions of PCa Benefits of Screening, 3.52 (*SD* = 0.53). With regard to marital status, study participants who were single had the highest mean score on the PCa Benefits of Screening subscale 3.71 (*SD* = 0.35) and participants who were married / cohabitating had the lowest score on this subscale, 3.65 (*SD* = 0.50). Lastly, study participants with health insurance coverage (*n* = 134) had a lower mean on the PCa Benefits of Screening subscale than those participants without health insurance coverage (*n* = 33), 3.65 (*SD* = 0.46) and 3.75 (*SD* = 0.30), respectively.

Table 5

Perceived Benefits of PCa Screening Subscale Scores Per Demographic Group

Demographic Variables	*M*	*SD*	*Min*	*Max*
Age Group (167)				
40 – 49 years old (74)	3.65	0.36	2.57	5.00
50 – 59 years old (64)	3.71	0.44	1.57	4.71
60 – 80 years old (29)	3.65	0.57	1.14	4.71
Education Level (166)				
Some High School (18)	3.57	0.44	2.57	4.71
High School (55)	3.62	0.54	1.14	4.57
Trade School (23)	3.73	0.28	3.00	4.29
Some College (31)	3.76	0.47	2.29	5.00
College Degree (24)	3.68	0.19	3.43	4.00
Graduate Education (15)	3.67	0.36	3.14	4.29
Marital Status (167)				
Single (59)	3.71	0.35	2.57	4.71
Married/Cohabitating (90)	3.65	0.50	1.14	5.00
Divorced/Separated/Widowed (18)	3.67	0.27	3.00	4.14
Health Insurance (167)				
No Health Insurance (33)	3.75	0.30	2.71	4.57
Health Insurance (134)	3.65	0.46	1.14	5.00
Income Group (165)*				
$0 - $19,999 (35)	3.67	0.58	1.14	4.71
$20,000 - $39,999 (29)	3.70	0.26	3.00	4.29
$40,000 - $59,999 (40)	3.75	0.35	3.00	5.00
$60,000 - $79,999 (31)	3.68	0.35	2.71	4.71
$80,000 and above (30)	3.52	0.53	1.57	4.29
Total (165)	3.67	0.43	1.14	5.00

Notes. PCa Screening Benefits = Mean of HBM-PCa Benefits subscale (7 survey items)
PCa N= 165 per missing data points for [Income Group].
[M = mean, SD = standard deviation, Min = minimum, Max = maximum].

Univariate Analyses of PCa and PCa Screening per Demographic Factors

Following the descriptive analysis, a series of one-way ANOVA analyses were conducted to determine if Perceptions of PCa Seriousness, Perceived PCa Screening Barriers, and Perceptions of PCa Screening Benefits statistically significantly differed with respect to each demographic factor. The results of this series of one-way ANOVA analysis indicated that PCa Seriousness and PCa Benefits did not statistically significantly differ with respect to the individual demographic factors of age, level of education, income level, marital status, or health insurance coverage. (See Tables 3 and Table 5 for descriptive comparisons.)

This series of one-way ANOVA analyses did reveal a statistically significant difference in Perceived PCa Screening Barriers with respect to (a) education level, (b) income level, and (c) health insurance coverage. The results of these analyses are presented in Tables 6-8, respectively.

With $F(5, 160) = 4.48$, Perceived PCa Screening Barriers did statistically significantly differ with respect to education level at the $p = .001$ level, $F(5, 160) = 4.48$, $MSE = .221$, $p = .001$, $\eta^2 = 0.12$. With $\eta^2 = 0.12$, education contributed 12% of the variation in PCa Barriers Scheffe's post-hoc analysis showed that PCa Screening Barriers were statistically significantly different between study participants with some high school ($M = 2.86$, $SD = 0.42$), study participants with some college ($M = 2.26$, $SD = 0.45$), and study participants with a graduate level of education ($M = 2.26$, $SD = 0.45$), $p = .003$ and $p = .023$, respectively. The results of this analysis are presented in Table 6. The mean scores and measures of dispersion are presented in Table 4.

With regard to income level, perceived PCa Screening Barriers did statistically significantly differ with respect to income level, $F(4, 160) = 6.21$, $MSE = .216$, $p < .001$, $\eta^2 =$

0.13. With $\eta^2 = 0.13$, income contributed 13% of the variation in PCa Barriers. Scheffe's post-hoc analysis showed that study participants with an annual income of less than $20,000 statistically significantly differed from study participants with an annual income of $40,000-$59,999, 60,000-$79,999 and $80,000 and above with respect to perceived PCa Screening, p = .023, p = .007, and p = .007, respectively. As depicted in Table 4, study participants with an annual income of less than $20,000 ($M$ = 2.73, SD = 0.50) had a higher PCa Barrier mean score than study participants with annual income of $40,000-$59,999, $60,000-$79,999, and $80,000 and above ($M$ = 2.36, SD = 0.46, M = 2.29, SD = 0.53 and M = 2.29, SD = 0.36), respectively. The results of this analysis are presented in Table 7. The mean scores and measures of dispersion are presented in Table 4.

With regard to health insurance coverage, study participants who did not have health insurance coverage (n = 33) had a statistically significantly higher mean score on the perceived PCa Screening Barriers measure than study participants who had health insurance coverage (n = 134), t (165) = 3.22, $p < .001$. Study participants without health insurance coverage had a mean PCa Screening Barriers score of 2.70 (SD = 0.52), while study participants with coverage had a mean score of 2.40 (SD = 0.47). The result of this analysis is presented in Table 8. The mean scores and measures of dispersion are presented in Table 4.

Table 6

One-Way Analysis of Variance for PCa Barriers to Screening on Education Level

Education	*df*	*SS*	*MS*	*F*	*p*	η^2
Between Groups	5	4.94	.99	4.48	.001	0.12
Within Groups	160	35.29	.22			
Total	165	40.23				

*Note. * The mean difference is significant at the p <0.05 level. df = degrees of freedom, SS = sums of squares, MS = mean square, F = F-ratio, p = p-value,* η^2 *= eta squared.*

Table 7

One-Way Analysis of Variance for PCa Barriers to Screening on Income Group

Income Group	*df*	*SS*	*MS*	*F*	*p*	η^2
Between Groups	4	5.37	1.34	6.21	.000	0.13
Within Groups	160	34.56	.22			
Total	164	39.93				

*Note. * The mean difference is significant at the p <0.05 level. df = degrees of freedom, SS = sums of squares, MS = mean square, F = F-ratio, p = p-value,* η^2 *= eta squared.*

Table 8

Independent Samples T-Test for PCa Barriers to Screening on Health Insurance

Health Insurance	*n*	*M*	*SD*	*df*	*t*	*p*
No Insurance Coverage	33	2.70	.52	165	3.22	.002
Insurance Coverage	134	2.40	.47			

*Note. * The mean difference is significant at the p <0.05 level. df = degrees of freedom, , p = p-value.*

Univariate Analyses of Differences per Ethnic Identity

This study was particularly interested in the extent and manner in which perceptions of PCa seriousness, perceptions of PCa screening barriers, and perceived benefits of PCa screening differed with respect to the ethnic identity of ethnic black men. Also of interest was the extent and manner in which the demographic factors of age, level of education, income level, marital status, and health insurance coverage statistically significantly contributed to differences in

perceptions of PCa seriousness, perceptions of PCa screening barriers, and perceived benefits of PCa screening with respect to the ethnic identity of ethnic black men. The corresponding research hypotheses were examined via a series of one-way ANOVA analyses and factorial ANOVA analyses using GLM-univariate procedures. The results of each analysis are presented next.

Hypothesis 1

In the first research hypothesis, the extent and manner in which Perceived Seriousness of PCa differed with respect to ethnic identity was examined. This hypothesis was tested via a one-way ANOVA analysis. The independent variable, ethnic identity, included five groups: African American, Bahamian, Haitian, Jamaican, and Trinidadian / Tobagonian. The dependent variable was perceptions of PCa Seriousness, as measured by participant scores on the HBM-PCS subscale of PCa Seriousness. The results of the one-way ANOVA analysis indicated a statistically significant difference in Perceived PCa Seriousness with respect to ethnic identity, $F(4, 162) = 4.54$, $MSE = .531$, $p = .002$, $\eta^2 = 0.10$, see Table 9. With $\eta^2 = 0.10$, ethnicity contributed 10% of the variation in PCa Seriousness. A Scheffe's post-hoc analysis was then used to identify which groups statistically significantly differed with respect to Perceived PCa Seriousness. This post-hoc analysis indicated that perceived Seriousness of PCa was statistically significantly greater for Jamaican study participants than study participants identified as Haitian, $p = .039$. Jamaican participants ($M = 3.68$, $SD = .71$) had a greater PCa Seriousness mean score than study participants identified as Haitian ($M = 3.06$, $SD = .78$).

Hypothesis 2

The extent and manner in which perceived Barriers to PCa screening differed with respect to ethnic identity was examined in the second research hypothesis. Accordingly, a one-

way ANOVA analysis was conducted to examine PCa Screening Barriers with respect to ethnic identity. Once again, the independent variable, ethnic identity, included five groups: African American, Bahamian, Haitian, Jamaican, and Trinidadian / Tobagonian. The dependent variable was Perceived PCa Screening Barriers.

The results of the one-way ANOVA analysis indicated a statistically significant difference in Perceived PCa Screening Barriers with respect to ethnic identity, $F(4,162) = 4.08$, $MSE = .226$, $p = .004$, $\eta^2 = 0.09$, see Table 10. With $\eta^2 = 0.09$, ethnicity contributed 9% of the variation in PCa Barriers. Importantly, however, Levene's test for equality of the variances was of statistical significance $F(4, 162) = 3.25$, $p = .014$, indicating that PCa Screening Barriers did not meet the homogeneity of the variances assumption. Accordingly, the more rigorous test statistics, Welch test statistic and Brown-Forsythe statistic was used to reassess the statistical significance. With $F(4, 62.37) = 5.44$ and $F(4, 100.41) = 4.37$, differences in Perceived PCa Screening Barriers continued to be of statistical significance for this analysis, $p = .001$ and $p = .003$, respectively.

A Scheffe's post-hoc analysis was then used to identify which groups statistically significantly differed with respect to Perceived PCa Barriers. This post-hoc analysis indicated that study participants identified as Haitian had a statistically significantly higher Perceived PCa Barrier than African American and Bahamian study participants, $p = .030$ and $p = .033$ respectively. Participants identified as Haitians, ($M = 2.79$, $SD = .54$), had greater perceived PCa Barriers mean than participants identified as African Americans, ($M = 2.33$, $SD = .40$) and Bahamians, ($M = 2.26$, $SD = .22$).

Hypothesis 3

The extent and manner in which perceived benefits of PCa screening differed with respect to ethnic identity was examined in the third hypothesis. Accordingly, a one-way ANOVA analysis was conducted to examine PCa Screening Benefits with respect to ethnic identity. Once again, the independent variable, ethnic identity, included five groups: African American, Bahamian, Haitian, Jamaican, and Trinidadian / Tobagonian. The dependent variable was Perceived PCa Screening Benefits.

The results of the one-way ANOVA analysis indicated that Perceived PCa Screening Benefits did not statistically significantly differ with respect to ethnic identity. As anticipated, an examination of the PCa Screening Benefits per each ethnic group via estimated marginal means continued to lack statistical significance. Hence, Perceived PCa Screening Benefits did not statistically significantly differ per ethnic group. See Table 11.

Table 9

One-Way Analysis of Variance for Ethnicity on Perceived PCa Seriousness

Ethnicity	*df*	*SS*	*MS*	*F*	*p*	η^2
Between Groups	9.64	4	2.41	4.54	.002	0.10
Within Groups	85.95	162	.531			
Total	95.59	166				

*Note. The mean difference is significant at the *p<0.05 level. Df = degrees of freedom, SS = sum of squares, MS = mean square, F = F-ratio, p = p-value,* η^2 *= eta square.*

Table 10

One-Way Analysis of Variance for Ethnicity on Perceived PCa Barriers to Screening

Ethnicity	*df*	*SS*	*MS*	*F*	*p*	η^2
Between Groups	3.68	4	.92	4.08	.004	0.09
Within Groups	36.55	162	.226			
Total	40.23	166				

*Note. The mean difference is significant at the *p<0.05 level. Df = degrees of freedom, SS = sums of squares, MS = mean square, F = F-ratio, p = p-value.*

Table 11

One-Way Analysis of Variance for Ethnicity on Perceived PCa Benefits of Screening

Ethnicity	*df*	*SS*	*MS*	*F*	*p*	η^2
Between Groups	.60	4	.15	.80	.526	0.02
Within Groups	30.45	162	.188			
Total	31.05	166				

*Note. The mean difference is significant at the *p<0.05 level. Df = degrees of freedom, SS = sums of squares, MS = mean square, F = F-ratio, p = p-value.*

Inferential Analyses

Each research hypothesis was also interested in the extent and manner in which differences in perceived PCa Seriousness, PCa Screening Barriers, and PCa Screening Benefits per ethnic identity varied with respect to the demographic factors of age, education, income, marital status, and health insurance coverage among ethnic black men. The corresponding research hypotheses were examined via a series of factorial ANOVA analyses using GLM-univariate analysis procedures. Specifically, using GLM-Univariate procedures, the interaction effects of each demographic factor across ethnic groups were tested for statistical significance. The results of these analyses are presented next.

Hypothesis 1

In hypothesis 1, whether or not perceptions of the seriousness of PCa statistically significantly differed with respect to each ethnic group, and whether or not these differences varied per the demographic factors of age, education level, income level, marital status, and health insurance coverage were examined via factorial analysis. As presented previously, PCa Seriousness did statistically significantly differ per ethnic group [$F(4, 162) = 4.54$, $MSE = .531$, $p = .002$, $\eta^2 = 0.10$]. A series of factorial ANOVA analyses were then conducted to determine whether or not the effect of ethnicity on PCa Seriousness varied with respect to each demographic factor.

The interaction effect of each factorial analysis of PCa Seriousness with respect to each individual demographic factor was not of statistical significance. Specifically, the interaction effect of the factorial 5 X 3 ANOVA conducted to determine if the effect of ethnicity on PCa Seriousness depended on the age of ethnic black men was not of statistical significance, $F(8, 152) = .404$, $MSE = .549$, $p = .917$, $\eta_p^2 = .021$. The interaction effect of the factorial 5 X 6 ANOVA conducted to determine if the effect of ethnicity on PCa Seriousness depended on the education of ethnic black men was not of statistical significance [$F(17, 139) = 1.54$, $MSE = .508$, $p = .089$, $\eta_p^2 = .159$].

The interaction effect of the factorial 5 X 3 ANOVA conducted to determine if the effect of ethnicity on PCa Seriousness depended on the marital status of ethnic black men was not of statistical significance [$F(7, 153) = .358$, $MSE = .551$, $p = .925$, $\eta_p^2 = .016$]. The interaction effect of the factorial 5 X 2 ANOVA conducted to determine if the effect of ethnicity on PCa Seriousness depended on the health insurance status of ethnic black men was not of statistical significance [$F(4, 157) = .675$, $MSE = .535$, $p = .611$, $\eta_p^2 = .017$]. Finally, a factorial 5 X 5 ANOVA was conducted to determine if the effect of ethnicity on PCa Seriousness depended on income level of ethnic black men. As indicated previously, the interaction effect was not of statistical significance [$F(14, 142) = .298$, $MSE = .563$, $p = .994$, $\eta_p^2 = .029$].

With the interaction effect lacking statistical significance for each demographic factor, the main effects of ethnicity and each demographic factor was further examined for statistical significance. As anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined with respect to age group was of statistical significance. With $F(4, 152) = 3.25$, $MSE = .549$, $p = .014$, $\eta_p^2 = .079$, $\eta_p^2 = .079$, ethnicity contributed 7.9% of the variation in PCa Seriousness. Estimated marginal mean (compare means of unequal sample

sizes) for participants identified as Jamaican was higher (M = 3.72, SE = .10) than participants identified as Haitian (M = 3.33, SE = .28) on PCa Seriousness measure. Scheffe's analysis was statistically significantly different for Haitian and Jamaican study participants, (p = .046). As anticipated per the previous one-way ANOVA analysis of differences in PCa Seriousness with respect to Age Group, the main effects of age group when examined in conjunction with ethnicity was [F(2, 152) = .897, MSE = .549, p = .410, η_p^2 = .012].

As anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with education level continued to be of statistical significance. With η_p^2 = .09, ethnicity contributed 9% of the variation in PCa Seriousness when examined in conjunction with education level. Estimated marginal means for Jamaican and Haitian study participants differed on the PCa Seriousness measure, (M = 3.72, SE = .10) and (M = 3.17, SE = .21), respectively. Scheffe's analysis identified the statistically significant mean difference among Haitian and Jamaican study participants, p = .036. As further anticipated per the previous one-way ANOVA analysis of differences in PCa Seriousness with respect to Education Level, the main effects of Education Level when examined in conjunction with ethnicity was [F(5, 139) = 1.21, MSE = .508, p = .309, η_p^2 = .042].

As also anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with marital status also continued to be of statistical significance. With η_p^2 = .070, ethnicity contributed 7% of the variation in PCa Seriousness. Estimated marginal means for Jamaican and Haitian study participants differed on the PCa Seriousness measure, (M = 3.65, SE = .12) and (M = 3.08, SE = .18), respectively. Scheffe's analysis revealed a statistically significant mean difference among Haitian and Jamaican study participants, p = .046. As anticipated per the previous one-way ANOVA analysis of differences

in PCa Seriousness with respect to Marital Status, the main effects of Marital Status when examined in conjunction with ethnicity was [$F(2, 153) = .055$, $MSE = .551$, $p = .947$, $\eta_p^2 = .001$].

When examined in conjunction with health insurance status, the main effect of ethnicity continued to be of statistical significance. With $\eta_p^2 = .095$, ethnicity contributed 9.5% of the variation in PCa Seriousness. Estimated marginal means for Jamaican and Haitian study participants continued to differ on the PCa Seriousness measure, ($M = 3.69$, $SE = .11$) and ($M = 2.96$, $SE = .18$), respectively. Scheffe's criterion revealed a statistically significant difference between Haitian and Jamaican study participants, $p = .041$ when examined with respect to Health Insurance Status. Pairwise comparisons also revealed statistically significant differences between Haitian and Jamaican ethnic groups, $p = .008$. As anticipated per the previous one-way ANOVA analysis of differences in PCa Seriousness with respect to Health Insurance Status, the main effects of Health Insurance Status when examined in conjunction with ethnicity was [$F(1, 157) = 1.14$, $MSE = .535$, $p = .29$, $\eta_p^2 = .007$].

Finally, as anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with income level continued to be of statistical significance. With $\eta_p^2 = .10$, ethnicity contributed 10% of the variation in PCa Seriousness when examined in conjunction with income level. Estimated marginal means for Jamaican and Haitian study participants differed on the PCa Seriousness measure, ($M = 3.72$, $SE = .10$) and ($M = 3.08$, $SE = .20$), respectively. As anticipated per the previous one-way ANOVA analysis of differences in PCa Seriousness with respect to Income Level, the main effects of Income Level when examined in conjunction with ethnicity was [$F(4, 142) = 1.19$, $MSE = .563$, $p = .317$, $\eta_p^2 = .032$].

As indicated above, while the first part of the null hypothesis was rejected for Hypothesis 1, the later part of this hypothesis cannot be rejected: (a) PCa Seriousness did statistically significantly differ based on ethnic identity; (b) the extent and manner in which PCa Seriousness differed with respect to ethnicity did not vary with respect age, education, income, marital status, or health insurance.

Table 12

Univariate Analysis of Variance for Effect of Ethnicity on Perceived PCa Seriousness per Demographic Variables (Age, Education, Marital Status, Health Insurance, and Income Group)

PCa Seriousness	*df*	*SS*	*MS*	*F*	*p*	η_p^2
Ethnicity	4	7.14	1.79	3.25	.014*	.079
AgeRecoded	2	0.99	0.49	0.90	.410	.012
Ethnicity * AgeRecoded	8	1.78	0.22	0.40	.917	.021
Error	152	83.52	.549			
Ethnicity	4	7.02	1.76	3.46	.010*	.090
EducationRecoded	5	3.07	0.61	1.21	.309	.042
Ethnicity * EducationRecoded	17	13.30	0.78	1.54	.089	.159
Error	139	70.54	.508			
Ethnicity	4	6.32	1.58	2.87	.025*	.070
MaritalRecoded	2	0.06	0.03	0.06	.947	.001
Ethnicity * MaritalRecoded	7	1.38	0.20	0.36	.925	.016
Error	153	84.36	.551			
Ethnicity	4	8.79	2.20	4.10	.003*	.095
Insurance	1	0.61	0.61	1.14	.288	.007
Ethnicity * Insurance	4	1.45	0.36	0.68	.611	.017
Error	157	84.06	.535			
Ethnicity	4	9.29	2.32	4.13	.003*	.104
Income	4	2.68	0.67	1.19	.317	.032
Ethnicity * Income	14	2.35	0.17	0.30	.994	.029
Error	142	79.95	.563			

*Note. The mean difference is significant at the *p<0.05 = α level. Df = degrees of freedom, SS = sums of squares, MS = mean square, F = F-ratio, p = p-value, η_p^2 = partial eta square. [AgeRecoded = a. R Squared = .126 (Adjusted R Squared = .046), EducationRecoded = a. R Squared = .259 (Adjusted R Squared = .120), MaritalRecoded = a. R Squared = .117 (Adjusted R Squared = .042), Health Insurance = a. R Squared = .121 (Adjusted R Squared = .070), Income = a. R Squared = .143 (Adjusted R Squared = .010)].*

Hypothesis 2

For hypothesis two, a factorial ANOVA was used to examine whether or not perceived Barriers to PCa Screening statistically significantly differed with respect to each ethnic group and whether or not these differences varied per the demographic factors of age, education level, marital status, health insurance coverage, and income level. As presented previously, PCa Barriers did statistically significantly differ per ethnic group $F(4,162) = 4.08$, $MSE = .23$, $p = .004$, $\eta_p^2 = 0.02$. A series of factorial ANOVA analyses were then conducted to determine whether or not the effect of ethnicity on PCa screening Barriers varied with respect to each demographic factor.

The interaction effect of each factorial analysis of PCa screening Barriers with respect to each individual demographic factor was not of statistical significance. Specifically, the interaction effect of the factorial 5 X 3 ANOVA conducted to determine if the effect of ethnicity on PCa screening Barriers depended on the age of ethnic black men was not of statistical significance, $F(8, 152) = .756$, $MSE = .230$, $p = .642$, $\eta_p^2 = .038$. The interaction effect of the factorial 5 X 6 ANOVA conducted to determine if the effect of ethnicity on PCa screening Barriers depended on the education of ethnic black men was not of statistical significance [$F(17, 139) = .487$, $MSE = .224$, $p = .956$, $\eta_p^2 = .056$]. The interaction effect of the factorial 5 X 3 ANOVA conducted to determine if the effect of ethnicity on PCa screening Barriers depended on the marital status of ethnic black men was not of statistical significance [$F(7, 153) = .345$, $MSE = .228$, $p = .932$, $\eta_p^2 = .016$].

The interaction effect of the factorial 5 X 2 ANOVA conducted to determine if the effect of ethnicity on PCa screening Barriers depended on the health insurance status of ethnic black men was not of statistical significance [$F(4, 157) = 1.27$, $MSE = .216$, $p = .283$, $\eta_p^2 = .031$].

Finally, a factorial 5 X 5 ANOVA was conducted to determine if the effect of ethnicity on PCa screening Barriers depended on income level of ethnic black men. As indicated previously, the interaction effect was not of statistical significance [$F(14, 142) = .318$, $MSE = .227$, $p = .991$, $\eta_p^2 = .030$]. With the interaction effect lacking statistical significance for each demographic factor, the main effects of ethnicity and each demographic factor was further examined for statistical significance. As anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined with respect to age group was of statistical significance. With $F(4, 152) = 4.65$, $MSE = .230$, $p = .001$, $\eta_p^2 = .109$, $\eta_p^2 = .109$, ethnicity contributed 11% of the variation in PCa screening Barriers. Estimated marginal means (compare means of unequal sample sizes) for participants identified as Haitian was higher ($M = 3.04$, $SE = .18$), than participants identified as African American ($M = 2.30$, $SE = .10$), Bahamian ($M = 2.26$, $SE = .12$), and Trinidadian / Tobagonian ($M = 2.41$, $SE = .09$) on the PCa screening Barriers measure.

Scheffe's analysis was statistically significantly different for Haitian and African American, and Haitian and Bahamian study participants, $p = .032$ and $p = .036$, respectively. Pairwise comparison analysis using Bonferroni corrections was statistically significantly different for Haitian and African American, Haitian and Bahamian, and Haitian and Trinidadian / Tobagonian study participants ($p = .004$, $p = .004$, *and* $p = .019$) on the perceived PCa Barriers measure, with mean difference significant at $p < .05$. As anticipated per the previous one-way ANOVA analysis of differences in PCa screening Barriers with respect to Age Group, the main effects of age group when examined in conjunction with ethnicity was [$F(2, 152) = 1.26$, $MSE = .230$, $p = .287$, $\eta_p^2 = .016$].

Interestingly, and in contrast of the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with education level was not of statistical

significance was [$F(4, 139) = 1.32$, $MSE = .224$, $p = .266$, $\eta_p^2 = .037$]. .As further anticipated per the previous one-way ANOVA analysis of differences in PCa screening Benefits with respect to Education Level, the main effects of Education Level when examined in conjunction with ethnicity was [$F(5, 139) = 2.15$, $MSE = .224$, $p = .064$, $\eta_p^2 = .072$]. As also anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with marital status also continued to be of statistical significance. With $\eta_p^2 = .086$, ethnicity contributed 9% of the variation in PCa screening Barriers. Estimated marginal means for participants identified as Haitian was higher ($M = 2.80$, $SE = .12$) than African American ($M = 2.42$, $SE = .10$), Bahamian study participants ($M = 2.29$, $SE = .13$), on the perceived PCa Barriers to Screening measures.

Scheffe's analysis revealed statistically significant difference among Haitian and African Americans and Haitian and Bahamian study participants, $p = .031$ and $p = .035$, respectively. Pairwise comparisons with Bonferroni corrections was of statistical significance for participants identified as Haitian and Bahamian, $p = .034$. As anticipated per the previous one-way ANOVA analysis of differences in PCa screening Barriers with respect to Marital Status, the main effects of Marital Status when examined in conjunction with ethnicity was [$F(2, 153) = 1.45$, $MSE = .228$, $p = .237$, $\eta_p^2 = .019$]. When examined in conjunction with health insurance status, the main effect of ethnicity continued to be of statistical significance. With $\eta_p^2 = .089$, ethnicity contributed 9% of the variation in PCa screening Barriers. Estimated marginal means (compare the means of unequal sample sizes) for participants identified as Haitian was higher ($M = 2.81$, $SE = .12$) than African American ($M = 2.32$, $SE = .14$) and Bahamian study participants ($M = 2.29$, $SE = .15$) on the PCa screening Barriers measure.

Scheffe's analysis revealed a statistically significant difference between Haitian and African Americans and Haitian and Bahamian study participants, $p = .024$ and $p = .028$, respectively. As anticipated per the previous one-way ANOVA analysis of differences in PCa screening Barriers with respect to Health Insurance Status, the main effects of Health Insurance Status when examined in conjunction with ethnicity was [$F(1, 157) = 2.17$, $MSE = .216$, $p = .283$, $\eta_p^2 = .014$].

Interestingly, and unanticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with income was not of statistical significance was [$F(4, 142) = 1.35$, $MSE = .227$, $p = .253$, $\eta_p^2 = .037$]. .As further anticipated per the previous one-way ANOVA analysis of differences in PCa screening Benefits with respect to income, the main effects of income when examined in conjunction with ethnicity was [$F(4, 142) = 2.29$, $MSE = .227$, $p = .063$, $\eta_p^2 = .061$].

The first part of the hypothesis cannot be rejected for Hypothesis 2, but the later part of this hypothesis can be rejected; PCa Barriers does statistically significantly differ based on ethnic identity. The extent and manner in which PCa Barriers differs with respect to ethnicity does vary with respect to the demographic variables of education, income, and health insurance.

Hypothesis 3

The last hypothesis was examined via a factorial ANOVA, examining whether or not perceptions of PCa Screening Benefits statistically significantly differed with respect to each ethnic group and whether or not these differences varied per the demographic factors of age, education level, income level, marital status, and health insurance coverage. As indicated previously, Perceived Benefits of PCa Screening did not statistically significantly differ per ethnic group $F(4,162) = .80$, $MSE = .19$, $p = .526$, $\eta_p^2 = 0.02$, see Table 11. A series of factorial

ANOVA analyses were then conducted to determine whether or not the effect of ethnicity on PCa screening Benefits varied with respect to each demographic factor.

The interaction effect of the factorial analysis of PCa screening Benefits with respect to demographic factor age and income were of statistical significance, while education, health, and marital status were non-significant. Specifically, the interaction effect of the factorial 5 X 3 ANOVA conducted to determine if the effect of ethnicity on PCa screening Benefits depended on the age of ethnic black men was of statistical significance, $F(8, 152) = 2.08$, $MSE = .180$, $p = .041$, $\eta_p^2 = .099$. With $\eta_p^2 = .099$, ethnicity contributed 10% of the variation in PCa screening Benefits when examined in conjunction with age.

The interaction effect of the factorial 5 X 6 ANOVA conducted to determine if the effect of ethnicity on PCa screening Benefits depended on the education of ethnic black men was not of statistical significance [$F(17, 139) = 1.32$, $MSE = .183$, $p = .189$, $\eta_p^2 = .139$]. The interaction effect of the factorial 5 X 3 ANOVA conducted to determine if the effect of ethnicity on PCa screening Benefits depended on the marital status of ethnic black men was not of statistical significance [$F(7, 153) = 1.19$, $MSE = .188$, $p = .311$, $\eta_p^2 = .052$]. The interaction effect of the factorial 5 X 2 ANOVA conducted to determine if the effect of ethnicity on PCa screening Benefits depended on the health insurance status of ethnic black men was not of statistical significance [$F(4, 157) = .751$, $MSE = .189$, $p = .559$, $\eta_p^2 = .019$].

Finally, a factorial 5 X 5 ANOVA was conducted to determine if the effect of ethnicity on PCa screening Benefits depended on income level of ethnic black men. Interestingly, the interaction effect was of statistical significance [$F(14, 142) = 1.79$, $MSE = .177$, $p = .045$, $\eta_p^2 = .150$]. With $\eta_p^2 = .150$, ethnicity contributed 15% of the variation in PCa screening Benefits when examined in conjunction with income.

With some of the interaction effect lacking statistical significance for some demographic factors, the main effects of ethnicity and each demographic factor was further examined for statistical significance. As anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined with respect to age group was not of statistical significance [$F(4, 152) = 1.88$, $MSE = .180$, $p = .116$, $\eta_p^2 = .047$]. As anticipated per the previous one-way ANOVA analysis of differences in PCa screening Benefits with respect to Age Group, the main effects of age group when examined in conjunction with ethnicity was [$F(2, 152) = 1.65$, $MSE = .180$, $p = .196$, $\eta_p^2 = .021$].

As anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with education level was not of statistical significance was [$F(4, 139) = .702$, $MSE = .183$, $p = .592$, $\eta_p^2 = .020$]. .As further anticipated per the previous one-way ANOVA analysis of differences in PCa screening Benefits with respect to Education Level, the main effects of Education Level when examined in conjunction with ethnicity was [$F(5, 139) = 1.24$, $MSE = .183$, $p = .294$, $\eta_p^2 = .043$].

As also anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with marital status was also not of statistical significance [$F(4, 153) = .250$, $MSE = .188$, $p = .909$, $\eta_p^2 = .006$]. As anticipated per the previous one-way ANOVA analysis of differences in PCa screening Benefits with respect to Marital Status, the main effects of Marital Status when examined in conjunction with ethnicity was [$F(2, 153) = .128$, $MSE = .188$, $p = .880$, $\eta_p^2 = .002$].

As also anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with health insurance status was also not of statistical significance [$F(4, 157) = .629$, $MSE = .189$, $p = .643$, $\eta_p^2 = .016$]. As anticipated per the previous

one-way ANOVA analysis of differences in PCa screening Benefits with respect to Health Insurance Status, the main effects of Health Insurance Status when examined in conjunction with ethnicity was [$F(1, 157) = .951$, $MSE = .189$, $p = .331$, $\eta_p^2 = .006$].

As also anticipated per the previous one-way ANOVA analysis, the main effect of ethnicity when examined in conjunction with income was also not of statistical significance [$F(4, 142) = 2.24$, $MSE = .177$, $p = .068$, $\eta_p^2 = .059$]. As anticipated per the previous one-way ANOVA analysis of differences in PCa screening Benefits with respect to Income Level, the main effects of Income Level when examined in conjunction with ethnicity was [$F(4, 142) = 1.83$, $MSE = .177$, $p = .126$, $\eta_p^2 = .049$]. The first part of the hypothesis can be rejected for Hypothesis 3, and the later part of this hypothesis can be rejected; PCa Benefits does statistically significantly differ based on ethnic identity. The extent and manner in which PCa Barriers differs with respect to ethnicity does vary with respect to the demographic variables of age and income group.

Tables 13 and 14 provide measures of dispersion and Table 15 provides the Univariate results for the interaction effect of age and income group. Results will be further elaborated upon in the next chapter.

Table 13

Univariate Analysis of Variance Descriptive Statistics for Perceived PCa Benefits of Screening for Age Group and Ethnicity

Respondents Ethnicity	*Respondents Age Group*	*N*	*M*	*SD*
African American	40 – 49 years old	17	3.71	0.14
	50 – 59 years old	14	3.62	0.45
	60 – 80 years old	4	3.00	1.25
	Total	35	3.59	0.52
Bahamian	40 – 49 years old	5	3.60	0.37
	50 – 59 years old	5	3.69	0.43
	60 – 80 years old	7	3.88	0.22
	Total	17	3.74	0.34
Haitian	40 – 49 years old	10	3.60	0.47
	50 – 59 years old	7	3.96	0.34
	60 – 80 years old	1	3.14	.
	Total	18	3.71	0.45
Jamaican	40 – 49 years old	25	3.72	0.43
	50 – 59 years old	26	3.73	0.22
	60 – 80 years old	10	3.70	0.20
	Total	61	3.72	0.32
Trinidadian & Tobagonian	40 – 49 years old	17	3.53	0.33
	50 – 59 years old	17	3.62	0.76
	60 – 80 years old	7	3.80	0.49
	Total	36	3.61	0.53
Total	40 – 49 years old	74	3.65	0.36
	50 – 59 years old	64	3.71	0.44
	60 – 80 years old	29	3.65	0.57
	Total	167	3.67	0.43

Notes. N = sample, M = mean, SD = standard deviation.
Descriptive statistics of univariate analysis of variance represents the sample, mean, and standard deviation. PCa Benefits of Screening interaction effect between ethnicity and age group.

Table 14

Descriptive Statistics for Univariate Analysis of Variance for Perceived PCa Benefits of Screening for Income Group and Ethnicity

Respondents Ethnicity	*Respondents Income*	*N*	*M*	*SD*
African American	$0 - $19,999	3	2.76	1.41
	$20,000 - $39,999	6	3.76	0.12
	$40,000 - $59,999	10	3.86	0.19
	$60,000 - $79,999	8	3.59	0.12
	$80,000 and above	8	3.45	0.49
	Total	35	3.59	0.52
Bahamian	$0 - $19,999	4	3.68	0.47
	$20,000 - $39,999	1	4.00	.
	$40,000 - $59,999	2	4.21	0.30
	$60,000 - $79,999	6	3.64	0.22
	$80,000 and above	4	3.64	0.27
	Total	17	3.74	0.34
Haitian	$0 - $19,999	8	3.71	0.62
	$20,000 - $39,999	6	3.74	0.34
	$40,000 - $59,999	3	3.62	0.33
	Total	17	3.71	0.47
Jamaican	$0 - $19,999	14	3.74	0.20
	$20,000 - $39,999	14	3.67	0.27
	$40,000 - $59,999	15	3.72	0.45
	$60,000 - $79,999	7	3.73	0.33
	$80,000 and above	10	3.73	0.35
	Total	60	3.72	0.32
Trinidadian & Tobagonian	$0 - $19,999	6	3.88	0.45
	$20,000 - $39,999	2	3.43	0.00
	$40,000 - $59,999	10	3.61	0.27
	$60,000 - $79,999	10	3.74	0.52
	$80,000 and above	8	3.29	0.77
	Total	36	3.61	0.53
Total	$0 - $19,999	35	3.67	0.58
	$20,000 - $39,999	29	3.70	0.26
	$40,000 - $59,999	40	3.75	0.35
	$60,000 - $79,999	31	3.68	0.35
	$80,000 and above	30	3.52	0.53
	Total	165	3.67	0.43

Notes. N = sample, M = mean, SD = standard deviation.
Descriptive statistics of univariate analysis of variance represents the sample, mean, and standard deviation. PCa Benefits of Screening interaction effect between ethnicity and income group (total income group of 165 missing 2 income response items).

Table 15

*Univariate Analysis of Variance for Effect of Ethnicity*Age and Ethnicity*Income on Perceived Benefits of PCa Screening*

PCa Benefits	*df*	*SS*	*MS*	*F*	*p*	η_p^2
Ethnicity	4	1.35	.34	1.88	.116	.047
AgeRecoded	2	0.59	.30	1.65	.196	.021
Ethnicity * AgeRecoded	8	3.00	.37	2.08	.041	.099
Error	152	27.33	.180			
Ethnicity	4	1.58	.40	2.24	.068	.059
Income	4	1.29	.32	1.83	.126	.049
Ethnicity * Income	14	4.44	.32	1.79	.045	.150
Error	142	25.09	.177			

*Note. The mean difference is significant at the *p<0.05 = α level. Df = degrees of freedom, SS = sums of squares, MS = mean square, F = F-ratio, p = p-value,* η_p^2 *= partial eta square. [AgeRecoded =* a*. R Squared = .120 (Adjusted R Squared = .039); Income = a. R Squared = .191 (Adjusted R Squared = .066)].*

Evaluation of Findings

The purpose of this quantitative non-experimental comparative study was to examine the extent and manner in which perceptions of PCa Seriousness, perceived PCa Screening Barriers, and perceived PCa Screening Benefits among Black men differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (d) Trinidadian & Tobagonian. This study also examined whether the extent and manner in which ethnic identity contributes to differences in perceptions of PCa seriousness, perceived PCa benefits, and perceived PCa screening barriers varied with respect to (a) age group, (b) education level, (c) marital status, (d) income, and (e) health insurance coverage.

In light of the theoretical framework identified (HBM-PCS), there were some of the inquiries proposed in this study that were of statistical significance while others were lacking in statistical significance. However, all findings met the criteria of the conceptual framework identified with regards to the subscales being used in the study. The one way (ANOVA) analysis per demographic factors indicated that perceived PCa Seriousness and PCa Benefits did not statistically significantly differ with respect to the individual demographic factors of age group, level of education, income level, marital status, or health insurance coverage. However, there was a statistically significant difference in Perceived PCa Screening Barriers with respect to the demographic factors of education level, income level, and health insurance coverage.

To further elaborate on these differences, ethnic Black men who reported having “some high school” education perceived greater levels of impediments or barriers to PCa screening than men who had “some college” or a “graduate level of education”. Additionally, men in the lowest income bracket perceived greater levels of impediments or barriers to PCa screening than the

three top income groups; and, men without health insurance coverage perceived greater levels of PCa screening barriers than men who reported having health insurance coverage.

With regards to the one way ANOVA analysis of differences per ethnic identity, there was a statistically significant difference in Perceived PCa Seriousness with respect to ethnic identity. The findings indicated that Jamaican men perceived greater positive outcome on the PCa Seriousness subscale than Haitian men. The results of the analysis on PCa screening Barriers and differences per ethnic identity indicated that Haitian men perceived greater levels of PCa barriers to screening when compared to African American and Bahamian men. Perceived PCa Screening Benefits did not statistically significantly differ per ethnic group.

Regarding the GLM-Univariate analysis, ethnicity was of statistical significance for each analysis on the PCa Seriousness subscale; however, each demographic factor was lacking statistical significance in each analysis. In sum, the extent and manner in which PCa Seriousness differs with respect to ethnicity did not vary with respect age, education, income, marital status, or health insurance. Ethnic identity on PCa Screening Barriers continued to be of statistical significance when examined in combination with the demographic factors of age, marital status, and health insurance coverage. Ethnic identity was not of statistical significance when examined in conjunction with level of education and income level; however, the univariate analysis of the estimated marginal means was of statistical significance for each. Perceived PCa Benefits continued to lack statistical significance with ethnicity; unexpectedly, however, ethnicity and income level indicated a statistically significant interaction on Perceived Benefits of PCa Screening. Additionally, ethnicity and age group also showed a statistically significant interaction effect between ethnicity and age group on Perceived Benefits of PCa Screening.

There have been only a minimal amount of studies that have examined ethnic identity of Black men, as essential to understanding PCa behaviors, screening intentions, and the relationship between demographic factors when considering unique ethno-cultural identities of some Black groups (Kleier, 2003, 2010; Parchment, 2004; Pedersen, Armes, & Ream, 2012). As such, most findings supporting results in this study will be based on broader generalizations of African Americans, Caribbean men, and Blacks as a single homogeneous, rather than a heterogeneous population. However, there will also be a handful of studies where the ethnic identities of ethnic Black men were examined as important factors to study on PCa research and disparity regarding the high incidences and mortality within those populations that are not in the African American groupings (Kleier, 2004, 2010; Lee et al., 2011; Morris, James, Laws, & Eldemire-Shearer, 2011).

These findings are supported by previous research that has demonstrated that health status, health insurance and socioeconomic factors do impact personal health care decision-making. Hammond et al. (2011) found among other findings, that participants were more likely to report a usual source of care (USOC) when there was health insurance coverage, with men who had health insurance reporting less PCa barriers than those without coverage (p. 168). It was also revealed that individuals with less income report less access to care (Hammond et al., 2011, p. 168). Hammond et al. (2011) has also established that there was a difference between Caribbean and African American men who have or did not health insurance (p. 168). They found that not only did having health insurance coverage resulted in meaningfully greater probabilities of African American men declaring a USOC, Caribbean men with health insurance coverage were less likely to declare a USOC (Hammond et al., 2011, p. 168).

Odedina et al. (2004) conducted a study to determine factors that influence prostate cancer screening behaviors of African American men, and found that education awareness and health insurance were barriers to PCa screening (p. 786). Odedina et al. (2011) also found that Black men's PCa prevention behavior was dependent on perceived PCa seriousness / severity and ethnicity, age and income were correlated with perceived PCa seriousness / severity (*Suppl. 10*). The researchers also found that Caribbean-born Black men reported lower perceived PCa seriousness / severity when compared to African-born and US-born Black men; and, perceived PCa seriousness / severity was also greater among individuals who earn less income (Odedina et al., 2011). Shelton et al. (1999) have found that low socioeconomic status, lack of access to healthcare, and lack of information or awareness have been reported as PCa barriers to screening (p. 14).

Blocker et al. (2006) found that health insurance was a cited reason for lack of screening among men, and though fear was a barrier to screening in the study, it was not due to a lack of proper education on what the screening process involves (p. 1289). In the current study, the level of education that a participant had was associated with the levels of perceived PCa barriers experienced with participants having some high school education perceiving greater levels of PCa barriers to screening than some college or graduate education. Lee et al. (2011) have found that compared to white men, African-American, Jamaican, and Trinidadian / Tobagonian men had considerably greater levels of prostate cancer worry, but Trinidadian / Tobagonian had the greatest levels of worry, which the authors believe can aid in screening (p. 894). The authors also found that the ethnic groups of African-American, Jamaican, and Trinidadian / Tobagonian men were far less likely to screen using a DRE method of screening (Lee et al., 2011, p. 895). Kleier (2004) also found that linguistic and ethnic variances seem to adversely influence PCa

knowledge level of Haitian men and their perception of PCa seriousness / severity and outcomes, thereby reducing the chances of access to Haitian participants for study purposes.

Regarding PCa and screening, most studies on PCa screening in African Americans and Blacks have focused on the knowledge, health beliefs, and perceptions of PCa screening in African American populations (Blocker et al., 2006; Odedina et al., 2008; Weinrich et al., 2000). Other research studies exploring these same factors in addition to other demographic factors have generally used broad racial categorizations (i.e. African American, Caribbean / Caribbean Blacks / Afro-Caribbean, and Blacks) to represent study participants without delineating who is whom in research findings, thereby preventing specific findings relating to ethnic Black men of diverse cultures in the different Caribbean countries (Hammond et al., 2011; Pedersen et al., 2012). Some researchers have long contended that it is important for ethnicity to be considered in health research since ethnic cultures approach health and well-being differently and broad categorization does not tell the distinctness of health practices and how to develop appropriate interventions (Arthur & Katkin, 2006; Consedine et al., 2007; Kleier, 2003, 2004, 2006; Odedina et al., 2011).

Base on the findings of these studies on the important of ethnicity in research and diversity in culture beliefs and health practices, it was expected that there would be similarities and variations between ethnic Black groups. Nevertheless, it was important to understand the extent and manner in which those differences occur.

Summary

The purpose of this quantitative non-experimental comparative study was to examine the extent and manner in which perceptions of PCa Seriousness, perceived PCa Screening Barriers, and perceived Screening PCa Benefits among Black men differ with respect to specific ethnic

identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (d) Trinidadian & Tobagonian. This study also examined whether the extent and manner in which ethnic identity contributes to these differences in perceptions of PCa seriousness, perceived PCa benefits, and perceived PCa screening barriers varied with respect to (a) age group, (b) education level, (c) marital status, (d) income, and (e) health insurance coverage.

Three of the five HBM-PCS subscales (PCA Seriousness, PCa Barriers to Screening, and PCa Benefits of Screening), and a demographic data form were used to collect data from respondents, which were then analyzed using ANOVA and GLM-Univariate statistical methods. Research on the PCa perceptions of Blacks as a racial group has received some attention since the research studies found that Blacks are at the highest risk of becoming diagnosed and succumbing to PCa disease (Colvin, & Smith, 1993; Odedina et al., 2004; Price, Woods et al., 2004). However, there has been less research and documentation on the PCa perceptions of diverse cultures of ethnic Black men of Caribbean descent in the United States, where an ever increasing Caribbean presence have continued to provide ample opportunities to explore these high PCa risk groups (Archibald, 2011; Arthur & Katkin, 2006; Camarota, 2012; Kleier, 2006).

There were statistically significant differences between ethnicity and PCa seriousness and PCa Barriers to screening, including statistical significance among some demographic factors examined. For PCa Barriers, ethnicity was of statistical significance in the one way ANOVA when examined with education, health, and income, while with the GLM-univariate analysis; ethnicity was of statistical significance when examined with age, health, and marital status. PCa Benefits were also of statistical significance when age and income were considered alongside ethnicity. It is hoped that the findings, both significant and non-significant will contribute to PCa research for ethnic Black men of diverse cultures in order to assists with understanding

these groups while facilitating the development of appropriate screening and treatment initiatives that may reduce PCa disparity in these at-risk populations. It is also hoped that researchers will begin to appropriately identify their study participants correctly in their studies, to facilitate and improve research findings on high PCa risk groups and other disease states.

Chapter 5: Implications, Recommendations, and Conclusions

Prostate Cancer (PCa) continues to disproportionately affect ethnic Black men in the United States and currently, there are no consensuses on a surefire manner in which to reduce the disparity that exists in ethnic Black communities (ACS, 2012, 2013, 2014; Odedina et al., 2011). The disproportionate burden of prostate cancer in ethnic Black men, especially African American men and ethnic Black Caribbean immigrants, have yet to be understood outside of ostensibly limited research and speculative associations of the incidences and mortalities being linked to a variety of factors including biological, social, and psychological determinants (Haiman et al., 2011; Odedina et al., 2009; Schwartz et al., 2009).

While these assumptions hold some merit, it is imperatively noteworthy to emphasize that ethnic Black men are of diverse ethno-cultural groups; requiring interventions (screening or otherwise) designed to complement any ethnic, demographic, and or socio-cultural differences that might impact perceptions of PCa and PCa screening (Archibald, 2011; Odedina et al., 2004; Ryann & Lauver, 2002). Being an ethnically heterogeneous group (Camarota, 2007, 2012; Consedine, 2012) reflecting distinct cultures and belief systems (Arthur & Katkin, 2006; Magnus, 2004; Wheeler & Mahoney, 2008), improvements in PCa screening among at risk ethnic Black populations may be improved through tailored health interventions (Gans et al., 2009).

The purpose of this quantitative non-experimental comparative study was to examine the extent and manner in which perceptions of PCa screening differed with respect to the ethnic identity of black males within the following ethnic populations: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian / Tobagonian. Also being examined was the extent and manner in which ethnic identity contributes to these differences in perceptions

and varied with respect to (a) age group, (b) education level, (c) marital status, (d) income, and (e) health insurance coverage. A quantitative method was used in this study, and participants' data were converted to numerical format after obtaining Likert scale designed responses from participant in order to answer the research questions and hypotheses. The participant sample was based on a convenience sampling recruitment process aimed at securing data over a brief timeframe. The use of the quantitative method allows for the gathering and analysis of the data acquired to clarify occurrences and answer proposed hypotheses in the study (Aliaga & Gunderson, 2000).

Using a quantitative method also facilitated answering the study purpose and problem statement through the numerical gathering of research data to explain the precise questions being asked and that are hypothesized in the study. The study surveys were converted to numerical data format and was analyzed statistically using the Statistical Package for the Social Sciences software (SPSS). Descriptive data were analyzed through SPSS, and the research hypotheses were examined via a series of one-way ANOVA analyses and factorial ANOVA analyses using GLM-univariate procedures (Kao & Green, 2008; Northouse et al., 2007). The ANOVA and factorial ANOVA assisted with comparing means and understanding whether differences existed among the groups in the study and their response to HBM-PCS subscales (PCa Seriousness, Barriers to Screening, and Benefits of Screening). Along with Descriptive analyses, the aforementioned statistical procedures (ANOVA and factorial ANOVA) assisted in pinpointing important findings beyond the ANOVA, through Post Hoc comparisons of ANOVA and factorial ANOVA findings.

This research study was not without its limitations. The primary shortcomings were intrinsic in the participants' representation including the system of the study design. The study

participants were conveniently sampled, which restrict the generalizability of the study results to all ethnic Black men. Though an overall response rate of 100% was achieved ($N = 167$) for the sample during data collection, another shortcoming of the study lies with the unequal size distribution of the study samples, with some groups having two to three times the amount of participants than others had. Another limitation lies with language barrier (Consedine et al., 2006; Gany et al., 2006; Kleier, 2003, 2004). Since Haitian participants predominantly speak Creole, only Haitian participants who were bilingual with English could participate in the research study.

The data collection process for filling out the surveys was the result of three different approaches: (1) some participants read the surveys and filled out the forms independently, (2) the researcher read the survey items and respondents filled out the response on the forms independently, and (3) the researcher read the surveys to the respondents, obtained their responses, and then checked off the responses to the items provided by the respondent. The manner of data collection that was most successful was the last two processes where the researcher assisted respondents. An advantage derived from assisting respondents was that the surveys were filled out within five to ten minutes, which resulted in some respondents referring their friends to assists with the research study. However, the expectation during data collection was for the participants to complete their own surveys by reading and checking off their own responses to survey items, with minimal assistance from the researcher, except for clarifying anything not understood throughout the process. Therefore, this act of assisting beyond what was originally intended could be considered a limitation on the strictest of scales.

Another shortcoming is that since self-administered surveys were the instruments used to acquire the study data, there remain the possibility that data acquired may include biased

responses by participants due to acquiescence (tendency to agree), extremity (tendency to use extreme ratings) , and social desirability (lying to look good) during the process (Holbrook, Green, & Krosnick, 2003). Finally, the data collection was restricted to Broward County, Florida for the all ethnic groups involved in the study because of costs associated with conducting the study, and limited funds to finance the study outside of the area. This shortcoming resulted in not being able to work with ethnic Black groups residing in communities outside of Broward County that are heavily populated by a particular group that may not be concentrated in Broward vicinity, which again would affect results generalization.

Notwithstanding the prior outlined limitations, the results of this study can facilitate and add to the limited literature on the between group differences or similarities that exist among ethnic Black groups at high risk for prostate cancer. These results can also help to guide the development of PCa screening interventions that take into consideration the ethno-cultural differences and similarities of ethnic Black groups in the United States.

The Ethical Principles of Psychologists and Code of Conduct of the American Psychological Association (APA, 2002) govern the current research and all data collection process and interaction with study participants. The collection of data was also governed by the IRB Committee requirements for engaging in research at Northcentral University. The research study data collection process did not commence until formal approval and authorization was granted by the IRB committee at Northcentral University. None of the participants in the study was exposed to any type of deception or manipulations of any type before, during, or after data collection. Consequently, ethical concerns and harm to participants were of minimal risk. Participants were provided a description of the study which included the purpose and nature of the study. All study participants were assured that participating in the research study was

completely voluntary and confidential, as no identifying markers would be collected and recorded outside of their ethnic identity.

Prior to all study criteria being satisfied and permission being granted to participate in the study, participants reviewed the informed consent form, acknowledge their understanding of the document, and then signed it. They were informed once more before commencing the surveys that all responses were tagged anonymous, they were free to withdraw from the study at any time without penalty or duress, and they have the right to refuse to answer any items they did not feel comfortable answering. Participants were also offered and reminded of the contact information for the primary researcher and dissertation chairperson written on the Informed Consent form. Contact information was provided for Northcentral University as an additional source to provide information to participants who wanted to verify that the study was legitimate.

All data collected and research study materials involving participants were been password protected through the use of separate folders restricted in a personal computer owned by the primary researcher. Participants were offered a thank you incentive in the form of a five dollar gift card and a National Cancer Institute "All you need to know about PCa" booklet. Regarding the dissemination of the study results, all study participants were instructed to contact the researcher should they be interested in the study findings.

This chapter began with a brief outline of the statement of the problem, purpose of this research study, and the research method, and statistical analysis used to analyze the data collected. The limitations of the study and ethical concerns were also briefly reviewed. This chapter will progress with the discussion of each of the research questions and hypothesis, research study findings as those findings compare to the literature that already exists on the topic,

study implications, and researcher recommendations for future research. Finally, a summary of the chapter will conclude with the presentation of all key points of this chapter.

Implications

The ethnic identity of "African American" has been, and continues to be used as a broad categorization for all Blacks in the United States (Magnus, 2004; Parchment, 2004). However, the focus of ethnic identity and cultural distinctness should be instrumental in PCa research in order to include or exclude factors that affect prostate cancer rates in ethnic Black men (Kleier, 2004). Much can be learned about the similarities and differences that exist between and within ethnic Black cultures including their approach to health and illness (Archibald, 2011).

The focus of this study was to examine the extent and manner in which perceptions of PCa screening differed with respect to the ethnic identity of black males within the following ethnic populations: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (e) Trinidadian / Tobagonian. Also being examined was the extent and manner in which perceptions of PCa screening differed with respect to the demographic variables of the study cohorts (age, marital status, education level, health insurance and income) through the use of three subscales of the Health Belief Model-Prostate Cancer Scale (seriousness, barriers, and benefits).

Three research questions, each consisting of a two part inquiry will be presented, emphasizing the implications of the findings and any possible influences on the study findings, as a result of any occurring study limitations. Practical applications and contribution to the literature will be discussed along with the significance of the study. All three research questions were measured with the HBM-PCS, with research question one being measured with the perceived PCa Seriousness subscale, question two measured with the perceived PCa Screening Barriers, and question three measured with the perceived PCa Screening Benefits subscale

(Capik & Gozum, 2011). The first part of each research question was analyzed via a one way ANOVA, while the second part of each research question was analyzed via GLM-Univariate analysis (Kao & Green, 2008; Sherry & Henson, 2005).

Research Question 1. To what extent and in what manner do Perceptions of PCa Seriousness among Black men differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (d) Trinidadian & Tobagonian? Does the extent and manner in which ethnic identity contributes to differences in perceived PCa seriousness vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level?

The results of the first part of research question one analyzed via one way ANOVA indicated that there was a statistically significant difference in perceived PCa Seriousness with respect to ethnic identity. The statistically significant difference in perceived PCa Seriousness was found between Haitian and Jamaican men, with Jamaican men perceiving greater positive outcome on the PCa seriousness subscale than Haitian men. The results of the second part of research question one analyzed via GLM-Univariate analysis indicated that there continues to be statistically significant differences between ethnicity and perception of PCa Seriousness; however, the results revealed no statistical significance among the demographic factors. The extent and manner in which PCa Seriousness differed with respect to ethnicity, however, did not vary with respect age, education, income, marital status, or health insurance.

These findings resulted in the null hypothesis being rejected for Hypothesis one; however, the later part of this hypothesis could not be rejected as PCa Seriousness does statistically significantly differ based on ethnic identity. According to Gelman and Stern (2006), when interpreting a finding of "significant or not significant", the difference between both "is not

itself statistically significant". A finding of "no statistically significant difference" for an analysis simply indicate that in order to amend conclusions and or recommendations previously stated, additional data might be required, (Gelman & Stern, 2006, p. 328). That being said, the PCa seriousness (severity) subscale measures people's perception of the seriousness or severity of an illness, and this perception may be influenced by medical information or personal belief of the complications that may ensue from being afflicted by said illness (McCormick, 1999; Rosenstock, Strecher, & Becker, 1994).

Though there are limited research studies dedicated to understanding the differences of ethnic Black men PCa perception including their perceptions of health and illness, a few researchers have investigated and continue to emphasize the importance of considering ethnic differences and the heterogeneity of ethnic Black men in PCa research studies (Consedine et al., 2014; Kleier, 2003, 2004, 2006, 2010; Odedina et al., 2011; Parchment, 2006). Odedina et al. (2011) conducted a study on the health beliefs and cultural beliefs of US-born and Caribbean Black men on a sample of 2864 men between the ages of 40 and 70 years in Florida. The researchers found that perceived PCa seriousness (severity) was correlated with ethnicity, age and income of the ethnic Black men in the study (p. 7). In this study, Jamaican men had a greater PCa Seriousness mean score than Haitian men (M = 3.68, SD = .71 and M = 3.06, SD = .78), respectively. The greater PCa Seriousness mean score indicated that Jamaica men perceived greater positive outcome on the PCa seriousness subscale.

Consistent with these findings, there are some researchers who believe that greater PCa worry in Black men may result in a not only the recognition of the seriousness of prostate cancer, but also the ability to understand the importance of screening, medical assessments, positive treatment outcome, and the potential consequences of leaving prostate cancer untreated (Kleier,

2004; Odedina et al., 2004). Odedina et al. (2004) found that perceived PCa seriousness (severity) influences African-American men's willingness to participate in PCa screening, with participants understanding the fatality of PCa if not diagnosed and treated early (p. 786).

In the current study, Haitian men were less likely to perceive greater positive outcome on the PCa seriousness subscale. These findings are similar to findings in the literature regarding PCa perception in Haitian and Jamaican men (Kleier, 2003; 2004; Lee et al., 2011; Parchment, 2004). Kleier (2010) conducted a study to determine predictors of PCa screening in Haitian-American men and found that Haitian-American men are unaware that they are a high PCa risk group, making it more probable than not that this group will avoid PCa screening (p. 180). Studies have found that Haitian men do in fact consider themselves less likely to be affected by PCa when compared to other ethnic groups, which is likely due to the average lifespan of Haitian men being among the lowest in the world (Kleier, 2003, 2010; Parchment, 2006). Additionally, and consistent with previous research findings, researchers have established that ethnicity does influence outcome, health outlook, and illness, which are perceived differently by ethnic groups based on their unique experiences and culture (Consedine et al., 2007; Kleier, 2003, 2004; Parchment, 2004).

Researchers have also found that both Jamaican and Haitian men reported efforts to avoid knowing their PCa health status because of fear, and associating the possible outcome with negative findings they would prefer to ignore (Kudadjie-Gyamfi et al, 2006; Parchment, 2004; Pedersen et al., 2012). Archibald (2011) conducted a study to in order to identify ways that healthcare interventions could be designed to accommodate the cultural identity of Caribbean groups in order to reduce healthy disparity. The researcher found that respondents in the study were extremely apprehensive at being misidentified as African American, or any other ethnic

Black groups from the different Caribbean islands, excepting their own home country (Archibald, 2011, p. 119). These findings are important because in addressing PCa seriousness and PCa screening in ethnic groups, providers need to be able to identify with cultural differences that may offend or prevent individuals from participating in health research and or seeking healthcare services. Some researchers found that even though Jamaican men recognized the seriousness of prostate cancer, knowledge alone was insufficient to convince men to screen for PCa disease (McNaughton et al., 2011).

McNaughton et al. (2011) conducted a study to determine perception, knowledge, and prostate cancer screening behavior among medical consultants at three Jamaican hospitals and found that 97% of respondents were aware that prostate cancer in the Jamaican populace was responsible for Jamaican being a high risk PCa group (p. 1203). The Jamaican study participants were well aware of the seriousness of PCa and 97% agreed with the PSA and DRE methods as being most effective to discover PCa during screening (McNaughton et al., 2011, p. 1203). Other researchers have also established that understanding the severity or seriousness of PCa does not always translate into the participation by an ethnic group in PCa screening programs despite known PCa risks (Archibald, 2011, Pedersen et al., 2012).

The literature did conflict with the findings of the second part of research question one, as the literature showed that ethnicity, age and income were found to be correlated with perceived PCa seriousness (severity) in a group of African American and Caribbean men (Odedina et al., 2011). They also found that ethnicity, education, marital status, income and insurance were also correlated with participants' outcome beliefs, and outcome is an influential factor in screening for African American men (Odedina et al., 2011). These findings may have contradicted the findings of the second part of research question one because of the extremely large sample size

and the approach used to confirm the key socio-demographic correlates in the study (Odedina et al., 2011). It is important to reiterate that research studies on how Caribbean populations in the United States approach health and illness are extremely limited due to being grouped in studies and being identified as "African Americans / Blacks" (Arthur & Katkin, 2006; Consedine et al., 2006; Kleier, 2010; Magnus, 2004). Additionally, PCa research studies examining most PCa beliefs and perceptions remain limited to PCa research on African Americans samples with some inclusion of Caribbean-born samples until researchers start acknowledging the importance of ethnicity in research (Arthur & Katkin, 2006; Odedina et al., 2011; Price et al., 1993).

Research Question 2. To what extent and in what manner do PCa Screening Barriers perceived by Black men differ with respect to specific ethnic identity: (a) African American, (b) Bahamian, (c) Haitian, (d) Jamaican, and (d) Trinidadian & Tobagonian? To what extent and in what manner do Perceived Barriers toward PCa Screening differ with respect to specific ethnic identity among Black men and vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level?

The results of the first part of research question two examined via one way ANOVA indicated that there was a statistically significant difference between ethnicity and Perceived PCa Screening Barriers with respect to (a) education level, (b) income level, and (c) health insurance coverage. The second part of research question two examined via GLM-Univariate analysis indicated that there continued to be statistically significant differences between ethnicity and perceived PCa Screening Barriers when examined with the demographic factorial analysis of age group, health insurance, and marital status. Ethnic differences noted to be statistically significantly different in the current study were among Haitian men and African American, Bahamian, and Trinidadian / Tobagonian men. However, there were no demographic factors that

were of statistical significance upon examining the extent and manner in which ethnic identity contributes to differences in perceived PCa Barriers, varying with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level.

As such, the first part of the null hypothesis cannot be rejected for Hypothesis 2, and the later part of this hypothesis can be rejected; PCa Barriers does statistically significantly differ based on ethnic identity. The extent and manner in which PCa Barriers differs with respect to ethnicity does vary with respect to the demographic variables of education, income, and health insurance. Ethnic differences noted to be statistically significantly different on the perceived PCa Barriers subscale were between Haitian men and African Americans, and Haitian men and Bahamian men. Haitian men had lower educational attainment that African American and Bahamian men. Haitian men also had lower health insurance coverage and were in the lower income brackets than African American and Bahamian men.

Perceived PCa Screening Barriers were statistically significantly different between ethnic Black men with some high school, some college and a graduate level of education. These findings indicated that men with some high school education perceived greater levels of PCa Barriers to screening when compared to those with some college or a graduate education level. Also, ethnic Black men with an annual income of less than $20,000 statistically significantly differed from those with annual incomes of $40,000-$59,999, 60,000-$79,999 and $80,000 and above with respect to perceived PCa Barriers to screening. Ethnic Black men with an annual income of less than $20,000 perceived greater levels of PCa Barriers to screening when compared to ethnic Black men with annual income of $40,000-$59,999, $60,000-$79,999, and $80,000 and above.

Additionally, the findings in this study indicated that ethnic Black men without health insurance coverage were statistically significantly different from those with health insurance coverage. These findings indicated that ethnic Black men without health insurance coverage had perceived greater levels of PCa Barriers to screening than those with health insurance of coverage. These findings are consistent with the literature having established the importance of ethnicity and demographic factors and their influence on PCa screening barriers (Blocker et al., 2006; Ross et al., 2011). Ethnic differences noted to be statistically significantly different in the current study were among Haitian men and African Americans, Bahamians, and Trinidadians / Tobagonians men. Magnus (2004) found that among African Americans, Haitian-Americans, English-speaking Caribbean men, and African men, though there was no significant difference in their PCa knowledge levels, income and education were significantly correlated with participants PCa knowledge with lower educational levels and lower income resulting in lesser PCa knowledge among respondents (p. 653).

Gany et al. (2006) found that Haitian men encounter immigrant-specific barriers such as linguistic, immigrant documentation status, and health insurance eligibility that are barriers to screening for PCa (p. 26). Wray et al. (2009) examined impediments to, and likelihood of enhancing communication regarding prostate cancer within African American populations. They found that participants seeking PCa screening and treatment are least likely among men with poor educational attainment and low socioeconomic status (Wray et al., 2009, p. 36). Lee et al. (2011) conducted a study to examining influence of race / ethnicity and fear physiognomies on the commencement and upkeep of Digital Rectal Examination screening with US-born whites, US-born African-American, Jamaican, and Trinidadian / Tobagonian men and revealed ethnically-varying obstacles and enablers to PCa screening. The researchers found that

culturally-sensitive education and patient navigation are intervention strategies that could be positive to screening, as barriers such as access to health care providers and higher levels of screening fears and worry impact screening in African American and Afro-Caribbean groups more so than they do their Caucasian counterparts (p. 895).

Dressler (1993) conducted a study on the health inequalities experience in African American communities and found that among barriers experienced, health literacy and financial hurdles result in substantial impediments traversing the healthcare environment, making more complex proper and appropriately timed receipt of care (p. 334). Reyes-Ortiz et al. (2007) found that education in the Caribbean and Latin American countries, there is less PCa screening by older men who encounter more barriers to screening due to low literacy levels, lower income, and lack of health insurance (p. 389). Albano et al. (2007) conducted a study to determine cancer mortality based on education attainment and race within the United States, and found that rates of cancer deaths differ significantly by an individual's education level, and that prostate cancer rates in Black men were higher in all six education groups that were used in their study (p. 1387). Though the researchers were looking at racial groups, which in and of themselves comprise broad categorizations of ethnic groups, the findings for Blacks are consistent with many studies that have demonstrated that educational attainment not only precedes willingness to screen, but is also a barrier to screening in African Americans and Caribbean populations (Aiken & Eldemire-Sheare, 2012; Lee et al. 2011).

As stated prior, many of the studies on PCa perceptions and PCa in minority populations have been conducted with African American populations, with a few with men of Caribbean descent (Blocker et al., 2006; Hemmerich, Ahmad, Meltzer, & William, 2013; Wu & Modlin, 2013). Though many of the studies that are compared and contrasted with the current study are

predominantly based on broad categorizations of Blacks rather than distinct ethno-cultural groups, these results emphasize the need for more studies within the ethnic Black groups that have low PCa screening and high PCa incidences and mortality rates. They also point to the need for culturally appropriate strategies aimed at addressing the PCa disparities in screening, incidences, and mortalities among some groups and not others.

The drawbacks to comparatively using literature to find commonalities or lack thereof with the current study is that there will not be adequate literature on the Caribbean populations examining the current propositions, since the ethnic Black groups in the study are generally categorized as Blacks or African Americans. Additionally, some ethnic Black men encounter unique linguistic challenges when communicating outside their ethnic groups, especially those with low educational attainment and are less acculturated (Archibald, 2011; Kleier, 2010). However, the results of this study contribute significantly and widens the knowledge of what little is known about ethnic Black men and their perceptions of PCa and PCa screening. This is further beneficial to PCa research with these ethnic Black groups especially when considering these diverse ethnic groups from the perspective of a specific native population rather than from a categorical database with pre-constructed data from a single group when developing intervention strategies for better healthcare delivery.

Research Question 3. To what extent and in what manner does ethnic identity among multiethnic Black males contribute to differences in perceived PCa screening benefits? Does the extent and manner in which ethnic identity contributes to differences in perceived PCa screening benefits vary with respect to (a) age, (b) education, (c) marital status (d) health insurance coverage, and (e) income level?

The results of the first part of research question three examined via one way ANOVA indicated that there was no statistically significant difference between ethnicity and Perceived PCa Screening Benefits. The second part of research question three examined via GLM-Univariate analysis indicated that there was a statistically significant interaction between ethnicity and perceived PCa Screening Barriers when examined with the demographic factors of age and income group. As such, the first part of the null hypothesis can be rejected for Hypothesis 3, and the later part of this hypothesis can be rejected; PCa Benefits does statistically significantly differ based on ethnic identity. The extent and manner in which PCa Barriers differs with respect to ethnicity does vary with respect to the demographic variables of age and income group.

A simple effects analysis indicated statistically significantly difference among Haitian, African Americans, Bahamians, and Trinidadians / Tobagonians men. There were statistical significant differences among African American, Bahamian, Jamaican, and Trinidadian / Tobagonian men within age group 60-80 years. With respect to PCa screening benefits, African American perceived the least positive outcome from PCa screening while Bahamian men perceived the greatest positive outcome of PCa screening benefits. Jamaican and Trinidadian / Tobagonian men within age group 60-80 years also perceived greater positive outcome from PCa screening Benefits than African American men. Income group $0-$19,999 was of statistically significance among all ethnic groups. There was a statistical significant difference between ethnicity and income group $0-$19,999, among African Americans, Bahamians, Haitians, Jamaicans, and Trinidadians / Tobagonians. Men within income group $0-$19,999 had the second lowest PCa Benefits mean.

African American men perceived the least positive outcome from PCa screening benefits within income group $0-$19,999. Bahamian, Haitian, and Jamaican men perceived similar positive outcomes from PCa screening benefits; however their perceptions of PCa screening benefits outcome were significantly more positive than African American men. Trinidadian / Tobagonian men within income group $0-$19,999 also perceived significantly greater positive outcome on the PCa screening Benefits subscale than African American men. Finally of interest, was income group $80,000 and above that revealed statistically significant difference between Jamaican and Trinidadian men. Though not of significant in the simple effects univariate tests on income, pairwise comparisons revealed that within the $80,000 and above income group, Jamaican men perceived greater positive outcome on the PCa screening benefits subscale.

It is widely known that the benefits of early PCa screening are and continue to be controversial among the different authorities on PCa screening (ACS, 2013; AUA, 2013; Moyer, 2012). However, there have been some researchers who have found consistently that perception of PCa screening benefits can be dependent on an individual's health belief demographic factors that can vary among different ethnic groups (Lee et al., 2011; Odedina et al., 2011; Weinrich, 1998). Lepore et al. (2012) conducted a study with mostly immigrant Black men, assessing the effectiveness of a decision support intervention with prostate cancer and found that men in the study usually concur on the risks and benefits of PCa screening being similarly significant in a decision to screen for prostate cancer (p. 330). Eisen et al. (1999) and Myers et al. (2000) have found that screening for prostate cancer was associated with older age. Steele et al. (2000) also found that prostate cancer screening was associated with higher income, which is similar to findings by Albano et al. (2007). Cantor, Volk, Cass, Gilani, and Spann (2002) found that the

psychological benefits of prostate cancer screening especially for those at high risks of the disease include a reassurance that is a part of the screening process for men (p. 108).

A potential limitation in the interpretation of the study results in comparison to the literature stems from lack of adequate data and studies examining the perceptions of PCa screening benefits in the current study population. Due to the extremely limited studies on perceptions of PCa screening benefits in ethnic Blacks, there were no noted studies that explored the perceived PCa screening benefits with regards to age and income of the ethnic Black men or African Americans in the current study. The demographic factors in this study are typically examined in research on PCa barriers to screening. As such, there was no literature that could readily be a comparative medium for the perception of screening benefits on age and income findings in this study. The results of these findings will provide a foundation to assists with further research into factors that are most important in encouraging PCa screening, approaches to screening interventions in ethnic Black groups based on age, income level, and ethnicity.

Recommendations

Though the findings in this study represents a worthwhile clarification in developing and comprehending the perception of PCa and PCa screening in ethnic Black populations of diverse cultural background and the demographic factors influencing those perceptions, it is imperative to understand that there are several considerations that should be noted. Most noticeably, it is important to recollect that the current study sample has been solely comprised of a convenience sample of ethnic Black men from five different groups, which restricts generalizability to the ethnic groups in the study. The replication of these results in a rigorously sampled population is undoubtedly acceptable, especially because of the unequal distribution of the sample sizes among the groups and demographic factors involved in the study.

Additionally, the independent variables (demographic factors) were self-reported, thus possibly including deception for those who responded based on what they thought was expected or would make them look good. Future studies should consider additional ethnic Black groups and PCa trajectories upon immigration, larger sample more equally weighted among study groups, and investigate the same or similar variables with much emphasis on understanding the importance of perceived PCa screening benefits on decision to screen in Caribbean ethnic Black men and African American men. Despite the shortcomings delineated in this study, the findings make available preliminary data that can assist in facilitating and developing intervention strategies that are operational and culturally appropriate, in educating the continued growing number of ethnic Black men in the United States who are at high risk for prostate cancer disease.

Conclusions

The focus of this study was to understand perceptions of PCa and PCa screening differences in ethnic Black men including how PCa screening perceptions are influenced by ethnicity and vary according to the demographic factors of age, education, marital status, income, and health insurance coverage. In the sample studied, results indicated that there were statistically significant differences between ethnicity and PCa seriousness and PCa barriers to screening. There were also statistical significant differences with demographic factors health, income, and education on the PCa barriers to screening scale. Regarding PCa benefits to screening, there are statistically significant differences between ethnicity and income and ethnicity and age group. These findings can further emphasize the need to develop culturally appropriate PCa screening interventions and PCa treatment approaches for ethnic Black men who from different cultures with less emphasis on a one size fit all model of treatment for Blacks as a racially classified group.

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Appendices

Appendix A

Original Health Belief Model – Prostate Cancer Scale (Capik & Gozum, 2011**)**
Subscales, n of items, Minimum and Maximum scores of HBM-PCS

Items [a]	Subscale	n of Items	Min. Point	Max. Point
Items 1-5	**Susceptibility**	5	5	25
Items 6-9	**Seriousness**	4	4	20
Items 10-19	**Motivation**	10	10	50
Items 20-34	**Barriers**	15	15	75
Items 35-41	**Benefits**	7	7	35

[a] **Susceptibility**
1- I have a high probability of having prostate cancer.
2- I have a high probability of having prostate cancer in the next few years.
3- I have a feeling that I will have prostate cancer at some time in my life.
4- I fear that I may die because of prostate cancer.
5- I have a high probability of having prostate cancer when compared to other men of my age.
Seriousness
6- It frightens me to think of prostate cancer.
7- I will experience several problems for a long time if I have prostate cancer.
8- Prostate cancer will have a negative effect on my relationship with my wife or partner.
9- My whole life will change in a negative way if I have prostate cancer.
Motivation
10- I follow new information and developments in order to improve my health.
11- I believe that it is important to perform activities to improve my health.
12- I keep a balanced diet.
13- I do sports at least 3 times a week.
14- I have my medical check-ups regularly even if I am not sick.
15- It is easy for me to plan participating in prostate cancer screenings (rectal examination and blood test performed by taking blood sample, PSA measurement).
16- Participating in prostate cancer screenings will contribute to my health.
17- I want to have blood test [PSA] for prostate cancer in the next 6 months.
18- I want to have prostate examination in the next 6 months.
19- If I have prostate cancer; I want to know it as soon as possible.
Barriers
20- I fear prostate cancer screenings because I do not know how it is performed.
21- I do not know where and how to go for prostate cancer screenings.
22- It takes a lot of time to participate in prostate cancer screenings.
23- I forget to participate in prostate cancer screenings.
24- I have more important problems than participating in prostate cancer screenings.

25- I do not know whether the health insurance covers prostate cancer screenings.
26- I do not know which specialist to see for prostate cancer screenings.
27- I fear participating in prostate cancer screenings because I feel that something is wrong.
28- If I am diagnosed with prostate cancer after prostate cancer screenings; there will be nothing to do for its treatment.
29- I do not need to participate in prostate cancer screenings, since I am not experiencing any problems.
30- I fear that the results of prostate cancer screening will be bad.
31- Prostate examination is very unsettling.
32- Prostate examination is very painful.
33- Doctors who perform the prostate examination treat patients impolite.
34- Sexual ability declines after prostate cancer treatment.
Benefits
35- I will be doing something good for myself if I participate in prostate cancer screenings.
36- If I participate in prostate cancer screenings and if I do not receive any diagnosis, I won't have to worry about prostate cancer.
37- Participating in prostate cancer screenings will help an early diagnosis of cancer.
38- If prostate cancer is diagnosed early and if it is treated successfully, I will have a chance to live a long life.
39- If prostate cancer screenings do not reveal any negative results; I will know that I am healthy.
40- If prostate cancer is diagnosed early; the growth of cancer may be prevented by treatment.
41- If I participate in prostate cancer screenings; I will know the truth about my health condition.

Appendix B

Permission to Use Questionnaire

HBM-PCS: Adapted HBM-PCS Subscales in the Current Study (Capik & Gozum, 2011**).**

from: **Debrah Antonette** <debrahantonette@gmail.com>

to: c_capik36@hotmail.com, sgozum_25@hotmail.com, sgozum@akdeniz.edu.tr

date: Tue, Apr 29, 2014 at 5:35 AM

subject: Permission to use Questionnaire

mailed-by: gmail.com

Debrah Antonette **<debrahantonette@gmail.com>** Apr 29 (1 day ago)

to c_capik36, sgozum_25, sgozum

Good morning,

My name is Debrah McFarlane, and I currently attend Northcentral University in Prescott Valley, Arizona, which is located in the United States. I am currently conducting a study on Prostate Cancer, and found your Health Belief Model-Prostate Cancer Scale invaluable.

Though you have encouraged use of the scale in your work "Çapık, C., Gözüm, S. (2011) Development and validation of health beliefs model scale for prostate cancer screenings (HBM-PCS): Evidence from exploratory and confirmatory factor analyses, European Journal of Oncology Nursing, doi:10.1016/j.ejon.2010.12.003, I would like to formally request your permission to use the HBM-PCS instrument in my current research study.

I thank you on behalf of myself and Northcentral University, and look forward to receiving your approval to use the instrument.

Respectfully,

Debrah McFarlane, Northcentral Doctoral Candidate.

Permission Granted

from: **Cantürk ÇAPIK** <c_capik36@hotmail.com>

to: Debrah Antonette <debrahantonette@gmail.com>

date: Tue, Apr 29, 2014 at 7:23 AM

subject: RE: Permission to use Questionnaire

mailed-by: hotmail.com

Cantürk ÇAPIK 7:23 AM (23 hours ago)

to me

Dear McFarlane
Thank you for interest in my article. You can use the scale.

Debrah Antonette <debrahantonette@gmail.com> 4:19 AM (2 hours ago)

to Cantürk

Good morning Cantürk,

Thank you sincerely for permitting me to use your HBM-PCS instrument. It has been a great pleasure reading your work.
The instrument was well needed in the field and is extremely invaluable. Congratulations on your invaluable contributions to the field of Prostate Cancer and to my matriculation.

Sincerely,

Debrah McFarlane

Appendix C

HBM-PCS: Adapted HBM-PCS Subscales in the Current Study (Capik & Gozum, 2011**).**

Items	***Subscale***	***n of Items***	***Min. Point/Scores***	***Max. Point/Scores***
Items 1-4	*Seriousness*	4	4	20
Items 5-20	*Barriers*	15	15	75
Items 20-26	*Benefits*	7	7	35

SERIOUSNESS	**Strongly Disagree (1)**	**Disagree (2)**	**Neither Agree nor Disagree (3)**	**Agree (4)**	**Strongly Agree (5)**
1. It frightens me to think of prostate cancer.					
2. I will experience several problems for a long time if I have prostate cancer.					
3. Prostate cancer will have a negative effect on my relationship with my wife or partner.					
4. My whole life will change in a negative way if I have prostate cancer.					
BARRIERS					
5. I fear prostate cancer screenings because I do not know how it is performed.					
6. I do not know where and how to go for prostate cancer screenings.					
7. It takes a lot of time to participate in prostate cancer screenings.					
8. I forget to participate in prostate cancer screenings.					
9. I have more important problems than participating in prostate cancer screenings.					
10. I do not know whether the health insurance covers prostate cancer screenings.					
11. I do not know which specialist to see for prostate cancer screenings.					
12. I fear participating in prostate cancer screenings because I feel that something is wrong.					

13. If I am diagnosed with prostate cancer after prostate cancer screenings; there will be nothing to do for its treatment.					
14. I do not need to participate in prostate cancer screenings, since I am not experiencing any problems.					
15. I fear that the results of prostate cancer screening will be bad.					
16. Prostate examination is very unsettling.					
17. Prostate examination is very painful.					
18. Doctors who perform the prostate examination treat patients impolite.					
19. Sexual ability declines after prostate cancer treatment.					
BENEFITS					
20. I will be doing something good for myself if I participate in prostate cancer screenings.					
21. If I participate in prostate cancer screenings and if I do not receive any diagnosis, I won't have to worry about prostate cancer.					
22. Participating in prostate cancer screenings will help an early diagnosis of cancer.					
23. If prostate cancer is diagnosed early and if it is treated successfully, I will have a chance to live a long life.					
24. If prostate cancer screenings do not reveal any negative results; I will know that I am healthy.					
25. If prostate cancer is diagnosed early; the growth of cancer may be prevented by treatment.					
26. If I participate in prostate cancer screenings; I will know the truth about my health condition.					

Appendix D

Demographic / Background Instrument

The following information is being collected as a part of this research study. Please DO NOT write your name on the form, as no identifying information is required.

Please fill in your Ethnic Identification and **CIRCLE** your responses to the questions below.

1. **How would you Ethnically Identify yourself:** _____
2. **Age:**

   (a) 40-49 years old
   (b) 50-59 years old
   (c) 60-69 years old
   (d) 70 to 80 years old

3. **Marital Status:**

   (a) Single
   (b) Married
   (c) Divorced / Separated
   (d) Widowed
   (e) Cohabitating

4. **Education Level:**

   (a) No Education (never attended school)
   (b) Some High School
   (c) High School
   (d) Trade School
   (e) Some College
   (f) College Degree
   (g) Graduate Education

5. **Health Insurance Coverage:**
   (a) No Health Insurance Coverage
   (b) Health Insurance Coverage

6. **Household Income:**
   (a) $0-$19,999
   (b) $20,000-$39,999
   (c) $40,000-$59,999
   (d) $60,000-$79,999
   (e) ≥ $80,000

Appendix E

Informed Consent Form

Differences in Perceptions of Prostate Cancer Screening Among Ethnic Black Men

What is the study about? You are invited to participate in this research study, which is being conducted for a dissertation at Northcentral University in Prescott, Arizona. This study is interested in examining the extent and manner in which perceptions toward prostate cancer screening among Black men differ with respect to specific ethnic groups within the Black male population. You were selected for this study because you responded to a flyer posted about the study, or because you were directly approached and voluntarily agreed to participate in the study. This research study involves no deception.

What will be asked of me? You will be asked to answer some questions where your response involves using rating scales to determine knowledge of prostate cancer and prostate cancer screening perception. There will be two brief surveys and a demographic background form that you will need to be complete. The questionnaires will be completed within 30 minutes.

Who is involved? The following individuals are involved in this research study, and they may be contacted at any time: Debrah McFarlane and Dr. Melanie Shaw.

Are there any risks? Though there are no known inherent risks in this research study. Some of the questions posed may be personally sensitive, which may result in unease in some individuals. You can end your participation in the research study at any point throughout the process. You can also choose not to answer any question/s that you do not feel comfortable answering.

What are some benefits? There will be no direct benefits to you for participating in this study. However, the results will scientifically benefit ethnic Black men in Broward County, who are at high prostate cancer risk by creating a dialogue to encourage more research attention to the high risk PCa population in South Florida. The study results may also help to shape policymaking regarding how to address the prostate cancer and screening needs of the ever-growing ethnic Black population in South Florida.

Is the study anonymity / confidentiality? This study is confidential. There will be no personal information collected that could be associated with any participants. Anonymity and confidentiality will be maintained throughout and upon completion of this project. The only individuals that will see the research data are the researchers involved in this project.

Can I stop participating in the study? Participation in this study is completely voluntary. You have the right to withdraw from this research study, and can exercise that right at any time throughout the process without fear or penalties.

What if I have questions about my rights as a research participant or complaints?

If you have questions about your rights as a research participant, any complaints about your participation in the research study, or any problems that occurred in the study, please contact the researchers identified in the consent form. Or if you prefer to talk to someone outside the study team, you can contact Northcentral University's Institutional Review Board at irb@ncu.edu or 1-888-327-2877 ex 8014.

We would be happy to answer any question that may arise about the study. Please direct your questions or comments to: Dr. Melanie Shaw at (618) 698-3280 / mshaw@ncu.edu and Debrah McFarlane at (503) 309-0934 / D.McFarlane7883@email.ncu.edu.

Signatures

I have read the above description for the study "Differences in Perceptions of Prostate Cancer Screening among Ethnic Black Men". I understand what the study is about and what is being asked of me. My signature indicates that I agree to participate in the study.

Participant's Name: _____ Researcher's Name: _____

Participant's Signature: _____ Researcher's Signature: _____

Date: _____

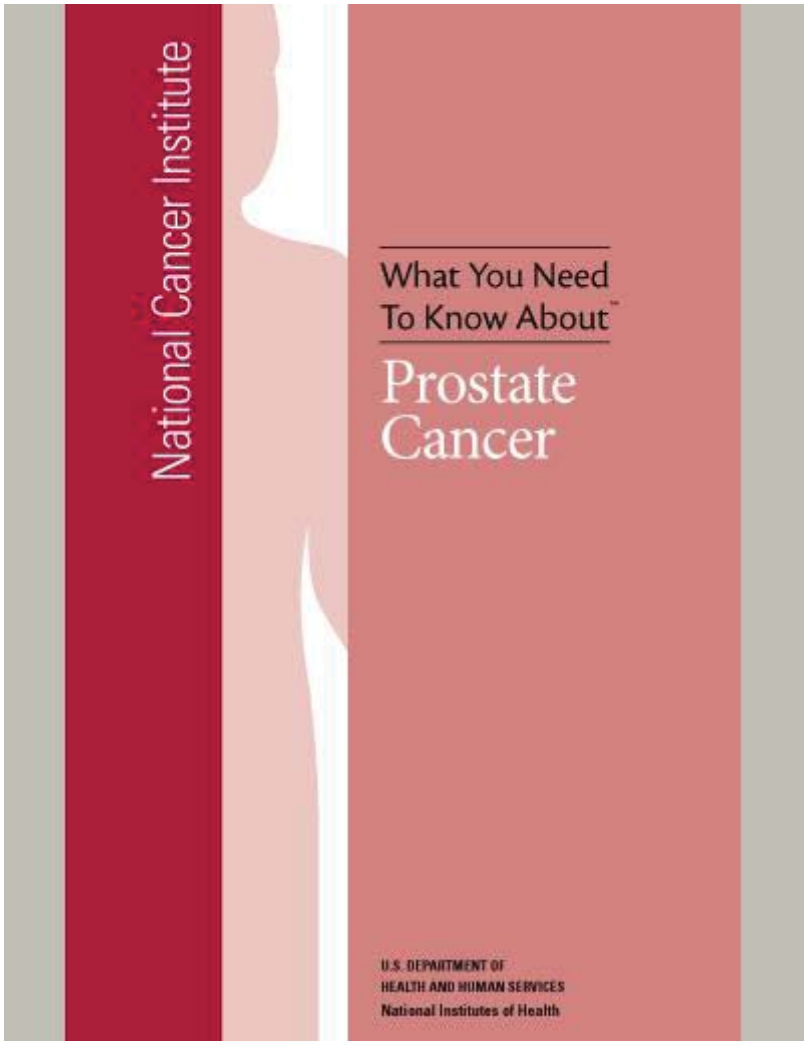
Accept: _____

Reject: _____

Appendix F

Recruitment Flyer / Advertisement

PROSTATE CANCER RESEARCH



Study Participant Eligibility Criteria

*Duration of Study: 10-15 minutes

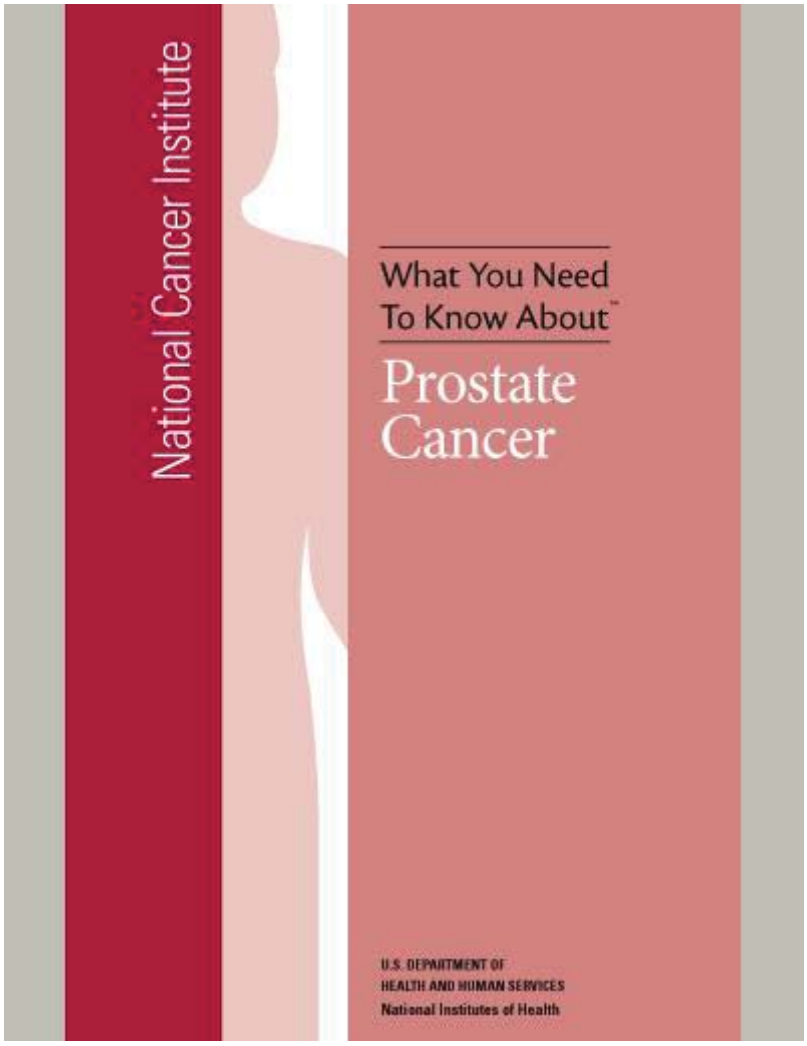
- Ages 40 to 80 years old and able to give consent to participate in the study.
- Speak, Read, and Write English,
- Have no current or prior prostate cancer (PCa) diagnosis, have participated in, or have never participated in PCa screening.
- Participants need to be African Americans and ethnic Black men from Jamaica, Bahamas, Trinidad & Tobago, and Haiti.

Researcher: Debrah McFarlane, *B.A.Psy, B.S.SSc., M.A.Psy, PhD Candidate.*

Please call (503) 309.0934 to schedule an appointment & feel free to bring along any relatives or friends that meet the eligibility requirements.

Appendix G

Participant PCa Resources Booklet: What You Need to Know About Prostate Cancer



Publication #: P035, NIH #: 12-1576

Booklets provided by:

U.S. Department of Health and Human Services, National Institute of Health, & National Cancer Institute.

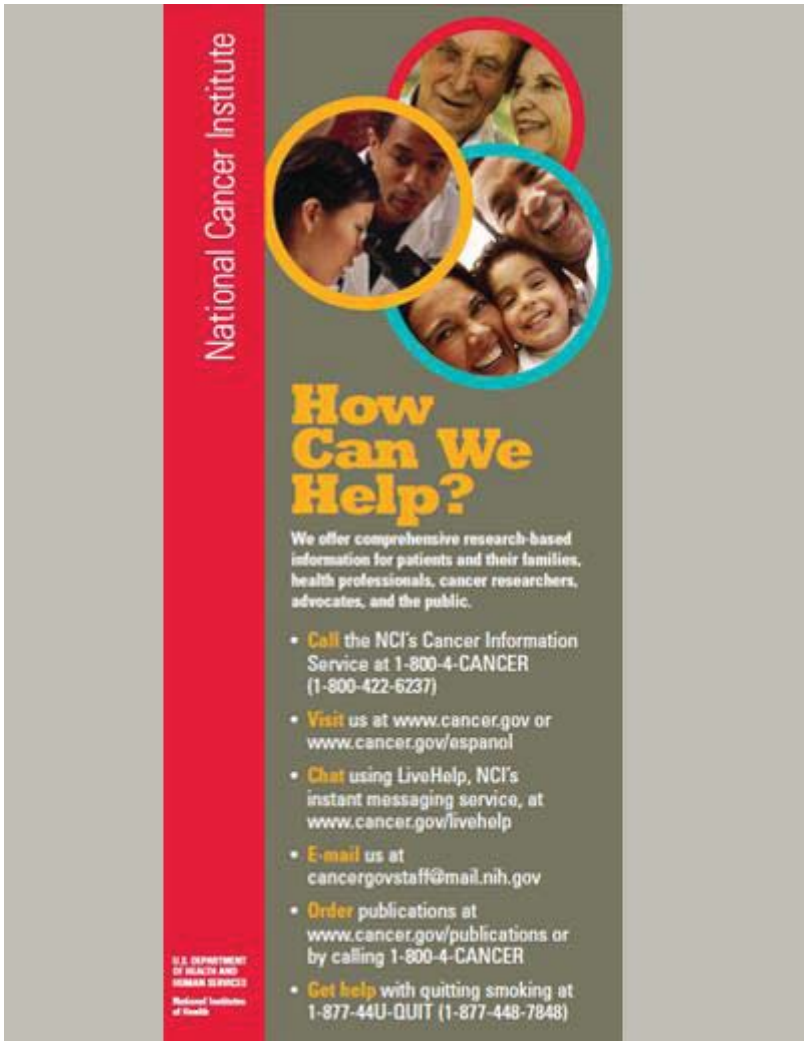
National Cancer Institute, NIH, DHHS,

1000 Haverhill Road,

Baltimore, Maryland 21229

Appendix H

Participant PCa Resources Bookmark: How Can We Help?



Publication #: Z207

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U.S. Department of Health and Human Services, National Institute of Health, & National Cancer Institute.

National Cancer Institute, NIH, DHHS,

1000 Haverhill Road,

Baltimore, Maryland 21229