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Prostate Cancer Screening Intention Among African American Males Ages 40 to 65 Years

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Walden University

College of Health Sciences

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Paul L. Johnson

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Walden University
2020

Abstract

Prostate Cancer Screening Intention Among African American Males Ages 40 to 65 Years

by

Paul L. Johnson

MA, Kaplan University, 2014

BS, Kaplan University, 2012

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Education and Promotion

Walden University

August 2020

Abstract

African American men are at a higher risk of developing and dying from prostate cancer (PCa) compared with any other race or ethnic group. Despite prostate cancer screening (PCS) recommendations, African American men are less likely to be screened for PCa compared with any other race or ethnic group. The purpose of this study was to identify factors that influence the intentions of African American men to obtain a PCS. A nonexperimental cross-sectional research design was used to identify factors associated with the intention to obtain PCS. The theoretical framework for the study was the social-ecological model which posits that a relationship exists between individuals, their social networks, society, and the environment. African American males ages 40 to 65 years completed a 15-item questionnaire that included questions regarding various factors that might influence PCS. The final analysis contained 765 records. Descriptive statistics and logistic regression were used to analyze the data. Of the factors investigated, having a recommendation from a doctor or other health care worker to obtain a PCS had the greatest influence on intention to get a PCS. The results of the study have implications for positive social change at the individual and societal/policy levels. Health educators can collaborate with trusted community organizations and family members to develop interventions that promote PCa awareness and testing that incorporate the factors identified as having the most influence on intention to obtain a PCS. Furthermore, health educators can work with physician professional organizations to develop standardized, culturally appropriate curricula that emphasize and support PCS recommendations.

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Dedication

I dedicate this dissertation to my beautiful, loving, and supportive wife, Joann and my outstanding children, Jada, and Jamal for allowing me the privilege to go after my dream of getting my PhD. I am also dedicating this dissertation to my mother, Margaret S. Nash, and her siblings for guiding me as a youth to become the person I am today. Finally, to everyone that helped and for those who doubted me during this process I would like to say Thank You, we made it!

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I would like to extend my deepest gratitude and appreciation to my committee members for their support with this journey. Dr. Long White, thank you for agreeing to be my committee chair member and all that came with it. I cannot express enough thanks for your continued support, encouragement, and reassurance throughout the entire dissertation process. Dr. Summers-Karn, thank you for your thorough review of content as well as the context of my work. Dr. Graf, thank you for the wisdom you shared with me as I navigated through this experience.

I would also like to thank my family and friends for their inspirational words when I did not see the light at the end of the tunnel and their encouragement throughout this endeavor. This path was not easy, and it took numerous hours and sleepless nights to strive for success and join the 2% that finished.

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Chapter 1: Introduction to the Study

Background

Prostate cancer (PCa), which is characterized by the uncontrolled proliferation of cells of the prostate gland, is the most common cancer type in the male population (Smith et al., 2019). Approximately 1.6 million new PCa incidents occurred in the United States in 2015, and approximately half a million of these were predicted to cause death in the same year (Siegel, Miller, & Jemal, 2015). Despite the high incidence of PCa, the overall prevalence of the disease has decreased significantly by 22% from 1997 to 2011 (Siegel et al., 2015). Hence, in 2012, the United States Preventative Services Task Force (USPSTF) issued a set of guidelines that recommends that the disease should no longer be screened, irrespective of race (Moyer, 2012). This recommendation has been questioned by some experts in the field of medicine and research (Kim & Andriole, 2015; Peres, 2013). They emphasized that the rates of PCa occurrence remain relatively high in some races, such as among African Americans. Furthermore, the Centers for Disease Control and Prevention (CDC, 2017) noted that African American men are at a higher risk of developing and dying from PCa compared with any other racial or ethnic group of men in the United States. Due to the disparity in the rates of occurrence of PCa among different races, scientists have explained that one of the major predictors of PCa is race and that the African American race is one of the most high-risk populations (Xin, 2017). Other predictors of PCa include body mass index, diet, smoking, family history, age, lack of insurance, and lack of routine prostate-

specific antigen (PSA) testing (Farmer, 2008; Paller, Cole, Partin, Carducci, & Kanarek, 2017).

In addition to the predictors of PCa development, early detection through screening is important because it has implications for treatment options. The American Cancer Society (ACS) recommends that African American men have a discussion with their health care providers regarding PCa screening (PCS) at the age of 45 years (Smith et al., 2019). Currently, insufficient data exist to recommend for or against routine screening for PCa with a digital rectal examination (DRE) or PSA test for men at average risk. Since 2010, the ACS has recommended that asymptomatic men who have at least a 10-year life expectancy have an opportunity to make an informed decision with their health care provider about whether to be screened for PCa after receiving information about the uncertainties, risks, and potential benefits associated with PCS.

Interestingly, the number of African American men undergoing PCS remains low, prompting studies that determine the possible reasons for such low numbers (Lee, Consedine, & Spencer, 2011). Shenoy, Packianathan, Chen, and Vijayakumar (2016) found that one of the major reasons for low screening rates was that PCa was not perceived to be as deadly as other types of cancers. Lee et al. (2011) pointed to low socioeconomic status, less PCa knowledge, the lack of insurance, and weaker physician recommendations as some of the reasons for the low number of PCS among African American men. Generally, the decision to receive a PCS can cause African American males to consider facing a possible diagnosis of PCa and risk feelings of fear and shame (Dickey, Cormier, Whyte, & Ralston, 2016; Oliver, 2007). Despite an exhaustive

examination of the factors that influence PCS among African American men, no recently published work has examined factors that influence the intent to be screened. The intention to obtain PCS and the actual action of obtaining PCS are separate issues. One speaks to the attainment of PCS, and the other is related to motivation.

Unfortunately, after an exhaustive review of the literature, no recently published work was found on the influence of the intention to undergo PCS among African American men. This study seeks to update research in this area. Identifying factors that influence the intention to undergo PCS among African American men ages 40 to 65 years may assist health educators to develop culturally appropriate interventions that consider these factors. In addition, it may present an opportunity for health educators to collaborate with clinicians in the development of materials that include these factors.

Problem Statement

African American men have a 60% higher incidence rate compared with Caucasian men for PCa (Shenoy et al., 2016). Research has shown that Caucasian men are more likely to have a PCS test done (Siegel et al., 2015). Several factors have been found to influence PCS among African American men. Such factors include the knowledge of PCS, the screening as a threat to their manhood, and misunderstanding of screening convenience (Patel et al., 2013). Although these factors have been shown to influence obtaining PCS among African American men, no published work has extensively investigated factors that influence the intent to obtain PCS from a social-

ecological perspective or the degree or level of influence of each of these factors on intent.

Jones, Steeves, and Williams (2009) found that African Americans who have high cultural mistrust tend to have more negative views and expectations of Caucasian health care providers than others who visit the same health care providers. The low participation in PCS and general screening of African Americans may be related to feelings of distrust and fear in the African American community (Oliver, 2007). To increase health-seeking behaviors among African Americans, Eisler and Hersen (2000) suggested that more attention must be focused on cultural differences and that public agencies must develop an atmosphere that is more open to diversity.

Knowledge of the factors that influence the intent to obtain PCS among African American males is valuable in the development of outreach activities and in addressing health disparities in this area. In this study, I attempt to update previous research in this area. I used a socioecological approach to identify individual (intrapersonal), interpersonal, community, or environmental and societal factors that influence the intent to obtain a PCS test among African American men.

Nature of the Study

I used a quantitative nonexperimental design to answer the research questions. I recruited African American men ages 40 to 65 years for the study. Participant recruitment took place at various community-based sites including African American fraternities, Masonic temples, churches, and doctor offices. I developed a questionnaire that collected

information on factors that influence the intent to obtain PCS among African American males (Appendix E). The questionnaire covers all levels of the social-ecological model (SEM), the theoretical underpinning for this study. Selected factors are included in the logistic regression model, which identifies the factors that most influence the intent to obtain a PCS test. Logistic regression analysis is appropriate as the outcome variable (dependent variable), and intent is measured as a dichotomous variable.

Research Questions and Hypothesis

This research is guided by the SEM, which posits that a relationship exists between individuals, their social networks, society, and the environment (Sallis & Owens, 2015). Specifically, the model recognizes that several layers of influence exist regarding an individual's behavior. The layers of the SEM include interpersonal, intrapersonal, community/environment, and societal/public policy (Sallis et al., 2015). The following specific aims and hypotheses are proposed for the current study.

Specific Aim 1: Identify which factors most influence the intent to obtain PCS among African American males ages 40 to 65 years. The research question associated with specific Aim 1 is, "Which factors are associated with the intention to obtain PCS among African American males ages 40 to 65 years?" The following hypotheses are tested to identify which factors influence the intention to obtain PCS when controlling for all other independent variables.

- Hypothesis 1.1: The marital status of an African American male significantly increases the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.
- Hypothesis 1.2: Self-knowledge about PCS significantly increases the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.
- Hypothesis 1.3: The desire of the family for an African American male to obtain PCS significantly increases the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.
- Hypothesis 1.4: The desire of a friend for an African American male to obtain PCS significantly increases the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.
- Hypothesis 1.5: Belonging to a men's group or organization significantly increases the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.
- Hypothesis 1.6: The desire of the men's group or organization for an African American male to obtain PCS significantly increases the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.
- Hypothesis 1.7: The desire of the church or health ministry for members to obtain PCS significantly increases the likelihood of the intention to obtain PCS among African American males age 40 to 65 years.

- Hypothesis 1.8: The recommendation from a doctor or other health care provider to obtain PCS significantly increases the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.

Specific Aim 2: Identify which level of influence in the SEM that most influences the intent to obtain PCS among African American males ages 40 to 65 years. The research question associated with specific Aim 2 is, "Which level of influence (intrapersonal, interpersonal, community/environment, or societal/policy) is associated with the intention to obtain PCS among African American males ages 40 to 65 years?" The following hypotheses are tested to identify which level most influences the intention to obtain PCS among African American males ages 40 to 65 years.

- Hypothesis 2.1: Factors contained in the intrapersonal layer of the SEM significantly increase the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.
- Hypothesis 2.2: Factors contained in the interpersonal layer of the SEM significantly increase the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.
- Hypothesis 2.3: Factors contained in the community/environment layer of the SEM significantly increase the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.

- Hypothesis 2.4: Factors contained in the societal (policy) layer of the SEM significantly increase the likelihood of the intention to obtain PCS among African American males ages 40 to 65 years.

Purpose of the Study

The purpose of this quantitative study was to identify factors that influence African American men's intentions to obtain a PCS test. The specific examined factors are insurance status, access to health care, influences of family, friends, and church or health ministry, family history of PCa, membership in a men's organization, marital status, and provider discussions and recommendations. These factors can be grouped into the four layers of the social-ecological theory. The social effect indicated by the differences in comparison with other races demonstrates that African American males experience a health disparity to their detriment. Identifying the factors that influence the intent to be screened may help health care professionals and health educators develop interventions that leverage such factors to make behavioral changes among African American males ages 40 to 65 years.

Theoretical Base

The theoretical framework for this study is the SEM, which consists of four layers of influence on health behavior (Glanz & Rimer, 1997). The first layer is the individual or intrapersonal layer. This layer consists of factors dealing directly with the individual's personal characteristics, including attitudes, motivation, knowledge, and beliefs. In this study, the attitudes, knowledge, and beliefs of the sample toward the intention to obtain

PCS are assessed. Personal characteristics, such as attitudes, self-efficacy, knowledge, and skills, are important for influencing behavioral change. Health educators spend most of their time providing one-on-one education, such as in-patient diabetes management education (Glanz et al., 1997). Furthermore, Glanz et al. (1997) noted that individuals comprise groups, and changing society requires educating individuals within the groups.

The second level of influence is the interpersonal level (Glanz et al., 1997), which recognizes the influence of family and peers on health behavior. Factors within this level include the perceptions of a person's immediate social group in the desire to undergo a PCS test.

The next level, community/environment, identifies factors such as the presence of a doctor in the community or a place to obtain PCS. This layer also includes formal and informal norms of the group or organization. The accessibility of PCS tests and the available methods are other factors within this level.

The final layer of influence is the societal (policy) level. Factors of influence at the societal level include policies and laws that may affect access to care (Glanz et al., 1997). A key advantage of using the SEM to guide this study is that it considers multiple levels of influence in behavior change. Specifically, the use of this model considers the multifaceted influences on the intent to obtain PCS.

According to Hodges and Videto (2011), health education has five philosophies/goals: cognitive-based, decision making, freeing, and functioning, decision-based, and social change goals. Cognitive-based goals seek to provide information and increase a participant's knowledge base (Hodges et al., 2011). Freeing and functioning

goals focus on assisting participants to make self-directed behavioral change decisions (Hodges et al., 2011). Behavioral change goals concentrate on helping participants modify their behaviors (Hodges et al., 2011). Decision-based health education goals help participants in health education programs develop problem-solving skills, whereas social change health education program goals aim for social and environmental change through political and educational strategies (Hodges et al., 2011). All five of the health education philosophies can be linked to one or more layers of the SEM. For example, cognitive-based and behavioral change philosophies are causally related to individual/personal characteristics, which are encompassed in the individual layer or intrapersonal layer of the SEM.

Moreover, Hodges et al. (2011) further suggested that the field of health education should consider an integrated ecological behavioral philosophy. This approach includes not only personal characteristics (increasing knowledge, enhancing skills, etc.) but also enhancing the environment in a way that is supportive of behavioral change. An application of this philosophy to the current study is identifying factors that influence the intention to obtain PCS at all levels and developing a health education program that incorporates these factors in the strategies or activities of the program.

Operational Definitions

The following are definitions of key terms in this research:

- *Prostate gland*: A gland that is responsible for storing and releasing fluid that helps carry sperm in men (Romero et al., 2012).

- *Prostate cancer* (*PCa*): Prostate cancer is a type of cancer that occurs when cells begin to grow uncontrollably in the prostate gland (Carter et al., 2018).
- *Prostate cancer screening* (*PCS*): Prostate cancer screening comprises tests that can help in the early detection of PCa. Two types of these tests are the DRE and PSA blood test (Carter et al., 2018).
- *Digital rectal exam* (*DRE*): A type of early detection PCS exam that involves a physician inserting a gloved finger into the rectum of a male and feeling for bumps or hard areas on the prostate (Romero et al., 2012).
- *Prostate-specific antigen* (*PSA*): A type of early detection PCS that assesses the amount of PSA in the blood (Schröder, 2012). The higher the PSA level, the greater the chance of having PCa (Schröder, 2012).
- *African American*: The United States Census Bureau defines African American as a person having origins in any of the black racial groups of Africa (Rastogi, Johnson, Hoeffel, & Drewery, 2011). The definition includes sub-Saharan Africans, such as Kenyans and Nigerians, and Afro-Caribbean individuals, such as Haitians and Jamaicans.
- *Intrapersonal level:* The level of the SEM that consists of factors that are causally related to the individual. Factors in this layer may include a person's knowledge, beliefs, attitudes, education, gender, age, and marital status (Glanz et al., 1997).
- *Interpersonal level:* The level of the SEM that acknowledges the influence of family and peers on an individual's actions (Glanz et al., 1997).

- *Community/environment level*: The level of the SEM that consists of factors such as the presence of a doctor in the community or a place to obtain PCS. The layer also includes formal and informal norms of a group or organization (Glanz et al., 1997).
- *Societal/policy level*: The outermost layer of the SEM. This level consists of policies and laws that may affect access to care (Glanz et al., 1997). For this study, recommendations for when an African American male should receive PCS, whether PCS is covered in an insurance plan, and whether a health care provider has discussed PCS with a study participant are included in this level.
- *Intent:* Intent refers to the motivation to make a behavioral change (Ajzen, 1985). For this study, it is the intention to undergo a PCS test.

Assumptions

This research assumes neutrality or equality regarding the level of influence each factor has on the intent to undergo PCS among African American men ages 40 to 65 years. In addition, I assumed that participants provided honest answers to the questions and not answers that they perceive to be socially acceptable. Finally, I assumed that the sampled individuals participated willingly of their own free will and were not subjected to any pressure by the researcher or by their peers to participate in the study.

Limitations of the Study

This study has several limitations. First, the results of the analysis may not be generalizable to all African American males ages 40 to 65 years in the United States

because the sample is not taken from the entire U.S. population of African American males ages 40 to 65 years. Another limitation of this study is that the collected data from the survey are self-reported. Thus, an answer provided by a respondent may be biased and subject to what the respondent feels is socially acceptable. In addition, the study was administered via the online database SurveyMonkey. This method of data collection assumes that everyone has access to the internet. However, according to a Pew Research Center report, 11% of the adult population in the United States does not use the internet (Anderson, Perrin, & Jiang, 2018). Older individuals, males, African Americans, and individuals with less than high school education, lower income, and a rural residence were more likely to be among this non-internet user group (Anderson et al., 2018).

Delimitations of the Study

This study is limited to African American men ages 40 to 65 years. The considered factors are those that are within the SEM only, which does not include the biological and psychological aspects of intent. Moreover, due to time and resource constraints, this study is limited to African American men ages 40 to 65 years who choose to participate after seeing the flyer posted in various community-based organizations within a specific geographical area on the eastern side of the United States. Therefore, the study cannot assess whether African American men who saw the flyer and chose not to participate would answer in the same manner as the respondents. In addition, the study cannot assess whether African American men ages 40 to 65 years who reside in other geographical

regions of the United States would answer in the same manner as those who responded to the survey.

Significance of the Study

Significant disparities in PCa morbidity and mortality rates exist between African American and Caucasian men. The CDC (2017) has reported that African American men are at a higher risk of developing and dying from PCa compared with any other race or ethnic group. The study aims to identify factors that influence the intent to obtain PCS among African American men ages 40 years and older.

The literature has identified several factors that have influenced obtaining PCS (Joseph, 2006; Sanchez, Bowen, Hart, & Spigner, 2007; Sellers & Ross, 2003). These factors can be grouped into the intrapersonal, interpersonal, community, and policy constructs of the SEM. Several studies have recognized multilevel influences for obtaining PCS (Dean et al., 2015; Dickey et al., 2016; Mitchell, 2011). However, the intention to have PCS and the actual action of obtaining PCS are separate issues. One relates to the attainment of PCS, and the other is related to motivation (an individual-level characteristic). Unfortunately, after an exhaustive review of the literature, no published work was found on the influence of the intention to obtain PCS among men or African American men. This study seeks to address that gap in the literature.

The proposed factors for analysis may be factors that influence the intention to obtain PCS among African American men ages 40 to 65 years and can serve as the initial starting point for investigating the phenomena. The identification of factors, specifically

those that most influence intent, can be used to develop health education interventions that may encourage African American men to follow through on obtaining PCS as recommended by the ACS and other health care associations, such as the American Urological Association (Carter et al., 2018; Smith et al., 2019). Persuading African American men ages 40 years and older to be screened early may decrease the rate of death due to PCa in this population. Reducing this rate may, in turn, reduce the morbidity and mortality disparity in PCa that exists between African American and Caucasian men.

In addition to the potential contribution to the field, the study is significant in that it has the potential for social change. Hodges and Videto (2011) noted that one philosophy of health education is social change. This is achieved by pulling together education and political forces to bring about social and environmental change (Hodges et al., 2011). The identification of factors that influence obtaining PCS can be used to educate and advocate for a variety of issues, including implementing a process for ensuring that all physicians who provide health services to males discuss obtaining PCS with all male patients. This suggestion may also be an excellent opportunity to encourage closer collaboration between health educators and clinicians.

Summary and Transition

Among the race and ethnic groups in the United States, African American men have the highest risk of acquiring PCa (CDC, 2017). African American males also have a higher death rate compared with other ethnic groups. Men at age 45 years and older have more than double the mortality rate from PCa than their counterparts (DeSantis et al.,

2016). Moreover, 1 in 6 African American males compared with 1 in 8 Caucasian males are diagnosed with PCa but 44% of African American males compared with 32% of Caucasian men have not received PCS (DeSantis et al., 2016). Therefore, it is recommended that African American men older than 40 years undergo PCS (DeSantis et al., 2016). The reasons for this disparity are unclear, but factors may include race, nutrition, family history of cancer, fear, and screening (Jones et al., 2009).

The intention to be screened is the first step in being screened. However, despite an exhaustive examination of the factors that influence PCS among African American men, no recently published work has examined factors that influence the intent to be screened. This study seeks to update the historical research and identify other factors that may influence African American men's intention to obtain a PCS test and thus fill the gap in the literature.

The dissertation is organized into five chapters. Chapter 1 provides a brief discussion of the background of the subject, including the research previously conducted, problem statement, research questions, related hypotheses, theoretical framework, and significance of the study. Chapter 2 presents a review of the literature on the dependent and independent variables and a discussion of the gaps in the literature. Chapter 3 reviews the methodology used to conduct the study. It details the data collection methods, including the selection of subjects, information on the measurement of each variable, and the data analysis plan. Chapter 4 of the dissertation describes the results from the data analysis, providing the results from the descriptive and logistic regression analyses. Finally, Chapter 5 provides a summary of the results, revisits the literature to compare the results

of the current study to previous studies, and presents the conclusions and recommendations for future studies.

Chapter 2: Literature Review

Introduction

This chapter is a review of the literature on PCS among African American men. The purpose of the study is to identify factors that influence African American men's intentions to obtain PCS. The literature suggests that numerous factors influence obtaining PCS (Blocker et al., 2006; Dean et al., 2015; Jones et al., 2010; Sanchez et al., 2007; Shenoy et al., 2016). These factors represent various dimensions of an individual's environment: the individual/intrapersonal (e.g., race or ethnicity, knowledge, threats to manhood, and mistrust), interpersonal (e.g., friends and family), community (e.g., churches and men's organizations), and policy levels (e.g., recommendations from the USPSTF).

Recognizing that various factors influence obtaining PCS, the use of the SEM presents a comprehensive framework for assessing individual influences, as described below. The SEM was derived from the work of urban sociology researchers including Robert Park, Ernest W. Burgess, Luis Wirth, Roderick McKenzie, and William Julius Wilson at the University of Chicago. They became known as the Chicago School and focused on the influence of the environment on human behavior (Ritzer & Stepnisky, 2018; Berberoglu, 2017).

Urie Bronfenbrenner's seminal work (1977, 1979) built on the work of the Chicago School and laid the contemporary foundation for SEM. Specifically, Bronfenbrenner's (1977, 1979) ecological model not only recognized the influence of the

built environment, as laid out by the Chicago School researchers, but also the influence of the characteristics of the individual intrapersonal level (e.g., knowledge and skills beliefs), interpersonal level (e.g., influence of family and peers), community/environment level (e.g., structures within the environment), and policy/societal level (e.g., processes of the structures). Bronfenbrenner's (1977) theory is typically represented as a series of concentric circles with the individual or intrapersonal (or microsystem) level in the center of the model. Figure 1 illustrates the basic SEM for explaining behavior.

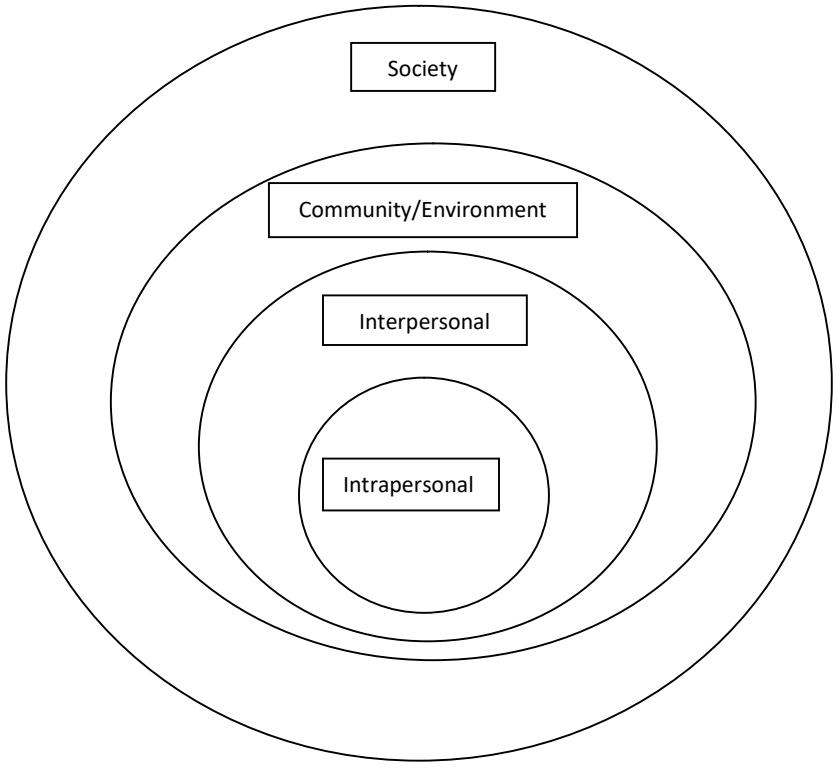

Figure 1. Basic social-ecological layers of influence on behavior (author's original work).

Several sections of this chapter provide a discussion on the SEM constructs used in this study. The chapter is organized into seven major parts. The first section details the

literature search strategy used to inform this chapter. The second section provides an overview of PCa and PCS. The third section provides a discussion of the historical research on the intention to obtain PCS, including the identification of key factors. The fourth section examines the intrapersonal factors that influence PCS among African American men. Section 5 discusses interpersonal influences on obtaining PCS, whereas the sixth and seventh sections consider the influence of the community and policy, respectively, on obtaining PCS. The chapter ends with a summary of the literature review and its effect on the current study.

Literature Search Strategy

Several online research databases were sought out to obtain peer-reviewed articles to inform the study. These databases include ERIC, Google Scholar, PsycINFO, Medline, PubMed, EBSCOhost, Science Digest, CINAHL, and ProQuest Dissertation and Theses. Although the focus was on research published between the years 2013 and 2019, several articles were examined that were published prior to 2013 to inform how seminal work influenced more recent research. Key search terms included *PCS, factors influencing obtaining PCS, factors influencing the intention to obtain PCS, the influence of the church on PCS, the influence of wives and family on the intention to obtain PCS,* and *the influence of health insurance on the intention to obtain PCS*. After an exhaustive review of the literature, no recently published work was found on the influence of the intention to obtain PCS among African American men.

A brief discussion of the historical work on intention will be presented in this chapter. However, the factors examined in this review are focused on the factors that influenced obtaining PCS. The factors examined in this review may be factors that influence the intention to obtain PCS among this population and serve as a starting point for investigating the phenomena.

Prostate Cancer and Prostate Cancer Screening

According to the Prostate Cancer Foundation (PCF, 2019), the prostate gland, which is approximately the size of a ping-pong ball, is a male reproductive organ located by the base of the penis and scrotum. The gland is responsible for providing seminal fluid, which helps mobilize sperm (Romero et al., 2012). The prostate gland typically grows larger as men age (Romero et al., 2012). PCa is the uncontrollable growth of cells within the prostate gland (Carter et al., 2018). Several types of PCa exist; however, the most common are adenocarcinomas (Romero et al., 2012). PCa typically grows slowly. Apart from skin cancer, PCa is the most common cancer type among men (Smith et al., 2019). The ACS estimated that, in 2019, there would be approximately 174,650 new PCa cases and 31,620 deaths due to PCa in the United States (Siegel et al., 2019).

Unfortunately, health disparities exist in both PCa morbidity and mortality. According to the CDC (2017), African American men are at higher risk for both developing and dying from PCa when compared with other racial and ethnic groups (DeSantis et al., 2016). In 2015, the rate of death due to PCa was 37.5 per 100,000 men for African Americans, 17.7 per 100,000 for Caucasians, 16.0 per 100,000 for Hispanics,

14.2 per 100,000 for American Indian/Alaska Natives, and 9.0 per 100,000 for Asian/Pacific Islanders (CDC, 2017). The overall rate of death due to PCa was 18.9 per 100,000 men, making African American men more than twice as likely to die from PCa compared to the national rate (CDC, 2017). Moreover, in 2015, the overall incidence rate for PCa was 99.1 per 100,000 men (CDC, 2017). The incidence rate for PCa for African American men was almost twice the rate of other racial or ethnic groups, at 158.3 per 100,000, compared to 90.2 per 100,000 for Caucasians, 78.8 per 100,000 for Hispanics, 51.0 per 100,000 for Asian/Pacific Islanders, and 49.6 per 100,000 for American Indian/Alaska Natives (CDC, 2017).

The exact cause of PCa is unknown. However, several risk factors have been identified for PCa. These include age, race or ethnicity, family history, living in a specific geographic area, diet, obesity, chemical exposure, gene changes, inflammation of the prostate, smoking, sexually transmitted infections, and having a vasectomy (Farmer, 2008; Paller et al., 2017). Early detection through screening is considered a method of reducing poor outcomes for PCa. Two primary screenings are used to detect PCa. The first is the PSA test, which determines the level of PSA in a man's blood (Carter et al., 2018; Romero et al., 2012). The PSA levels vary based on age and other demographic factors (PCF, 2019). For example, for men in their 40s, the normal PSA range is 0 to 2.5 ng/mL, whereas, for men in their 60s, the normal PSA range is 0 to 4.5 ng/mL (PCF, 2019). Higher PSA levels mean that a problem that requires additional testing may exist with the prostate gland (PCF, 2019). The DRE is the second type of screening and involves a physician inserting a gloved finger into the rectum to feel for bumps or hard

areas on the prostate (Romero et al., 2012). The brief test is conducted in a physician's office and can be uncomfortable (PCF, 2019).

Historical Research on the Intention to Obtain Prostate Cancer Screening

Factors identified in the early research on the intention to obtain PCS among African American men have helped to inform the direction of the current study. Specifically, Myers et al. (1996, 2000) and Ford, Vernon, Havstad, Thomas, and Davis (2006) found that age, knowledge of PCa and PCS, fear of cancer, embarrassment or shame of having a PCa diagnosis, and the influence of family, friends, or a trusted health care provider influenced the intention to obtain PCS among African American men. Ford et al. (2006) also found that health insurance coverage for the procedure was also an influencing factor in the intention to obtain PCS. Furthermore, Odedina, Campbell, LaRose-Pierre, and Scrivens (2008) found that attitude, perceived behavioral control, past behavior, and perceived susceptibility were key factors that influenced the intention to obtain PCS among African American men. Attitude was the primary influencer among the group (Odedina et al., 2008). All the factors identified by Ford et al. (2006) and Myers et al. (1996, 2000) can be grouped within the levels of the SEM as influencers of the intention to obtain PCS. For example, age, having health insurance and fear fall within the intrapersonal level, and having friends and family encourage testing falls within the interpersonal level, whereas having a trusted health care provider falls within the community level. None of these studies (Ford et al., 2006; Myers et al., 1996, 2000; Odedina et al., 2008) examined the influence of belonging to a men's group or

organization and the desire of a church, health ministry, or a men's group or organization for their membership to obtain PCS on the intention to obtain PCS. The current study seeks to fill this gap in the research.

Intrapersonal Influences on Obtaining Prostate Cancer Screening

Intrapersonal influences are factors that are dependent on an individual's personal characteristics. Interpersonal factors may include age, gender, race or ethnicity, knowledge, skills, educational attainment, socioeconomic status, income, fear, and beliefs. These personal characteristics may affect an individual's ability to address their health care needs, including obtaining PCS.

The ACS (Smith et al., 2019) has three recommendations regarding the age at which men should be screened for PCa. Each recommendation is linked to the man's risk of PCa. According to the ACS, PCS should take place at the following ages:

- age 50 years for men at average risk who are expected to live for at least 10 more years.
- age 45 for men at high risk, including African American men and those who have close relatives (i.e., father, brothers, or sons) who were diagnosed with PCa before the age of 65 years old; and
- age 40 for men at even higher risk (i.e., men who have had more than one close relative diagnosed with PCa before the age of 65 years old (Smith et al., 2019).

Several studies have examined age as a factor for obtaining PCS (Dean et al., 2015; Mitchell, 2011; Moses et al., 2017). Moses et al. (2017) found that, among both

Caucasian and African American men with low income, individuals under the age of 45 were less likely to obtain PCS. This phenomenon was more pronounced among younger African American males in the sample (Moses et al., 2017). In an analysis of the Southeastern Pennsylvania Household Survey, Dean et al. (2015) found that, among a sample of 829 African American males ages 45 years and older, individuals ages 62 and older were more likely to obtain PCS (*OR* = 1.06 confidence interval (CI) [1.04, 1.08], *p* <.0001).

Educational attainment is considered a social determinant of health (Klebanoff, Cohen, & Syme, 2013). It not only predicts social class standing but also is intricately linked to morbidity and mortality rates (Klebanoff et al., 2013). Several studies have identified a link between obtaining PCS and educational attainment (Guerra, Jacobs, Holmes, & Shea, 2007; Hararah et al., 2015; Mitchell, 2011; Moses et al., 2017). Specifically, when individuals have lower levels of education, they were less likely to obtain PCS (Guerra, et al., 2007; Hararah et al., 2015). Moses et al. (2017) noted that African American men who had lower educational levels were less likely to obtain a PSA screening.

Mitchell (2011) examined the influence of several intrapersonal factors on obtaining PCS among African American men. Using the social-ecological theory as a basis for the study, Mitchell (2011) investigated the influence of age, the usual source of care, educational attainment, marital status, income, health insurance status, employment status, and the sum of delays in medical care on PCS. The results of the regression analysis revealed that educational attainment ($\beta = 0.737$, $p < .01$), age ($\beta = 2.609$, $p <$

.001), and the usual source of care ($\beta = 2.063$, $p < .001$) were significant predictors for obtaining PCS (Mitchell, 2011). However, delays in medical care and having health insurance were not statistically significant for obtaining PCS among the sample (Mitchell, 2011). Mitchell's (2011) results, specifically education, age, and marital status, supported other research (Guerra et al., 2007; Klebanoff et al., 2013; Moses et al., 2017).

Knowledge about the prevention of PCa and PCS can affect whether men are willing to obtain PCS (Dickey, Whitmore, & Campbell, 2017; Owens, Jackson, Thomas, Friedman, & Hebert, 2015). During focus group sessions conducted by Owens et al. (2015), male and female African American participants demonstrated their limited knowledge about the symptoms of PCa (Owens et al., 2015). Women were more likely to report having limited knowledge about PCa, including the risk factors and appropriate screening periods for men (Owens et al., 2015). Dickey et al. (2017), using a quasi-experimental study with a six-month follow-up, also examined the relationship between PCa knowledge and screening among African American males ages 40 and over who had never had PCS or who had received screening over a year prior. The study found that individuals in the control group were less likely to have received PCS at the six-month follow-up (Dickey et al., 2017).

Odedina et al. (2011) examined individual-level factors related to PCS. The investigated factors included knowledge about PCa, educational attainment, marital status, insurance, physician recommendation for a DRE, participation in PCa forums, reading materials about PCa, and acculturation (Odedina et al., 2011). Moreover, PCS was strongly associated with knowledge ($\beta = 0.0250$, $p = .008$), reading or receiving

information about PCa ($\beta = 0.210$, $p < .001$), knowing someone who was diagnosed with PCa ($\beta = 0.114$, $p < .001$), physician recommendation in a PCa forum ($\beta = 0.145$, $p < .001$), and physician recommendation for a DRE ($\beta = 0.099$, $p = .018$). The study concluded that these factors may be important to consider when developing programs that address increasing African American male participation in early detection PCS (Odedina et al., 2011). Similar results were found in a study conducted by Ukoli, Patel, Hargreaves et al. (2013).

Having health insurance can influence access to health care, including preventive health services. This may be due to health insurance providing individuals with the financial ability to pay for preventive health services, including PCS. Halbert et al. (2015) examined several factors including having insurance, knowledge about recommendations for PCS, income, and educational attainment. The results of the study revealed that men who had health insurance were more likely to have an annual PSA screening compared to men with no health insurance (Halbert et al., 2015). However, as previously noted, an earlier study conducted by Williams & Sallar (2014) did not support having health insurance as a predictor for obtaining a PCS among African American men.

Dean et al. (2015) investigated the relationship between social capital and PCS of African American men. Both individual and ecological factors were examined (Dean et al., 2015). Individual factors included age, health insurance status, educational level, and income at 200% below the federal poverty level. Ecological factors included high school graduation rates in the different census track areas, social cohesion based on a score, and community participation (Dean et al., 2015). Community participation was measured by

participation in organizations in the neighborhood, such as the parent-teacher associations and religious, social, or athletic organizations (Dean et al., 2015). Analysis of the data revealed that being older (*OR* = 1.06 CI[1.04, 1.08], $p < .0001$), having health insurance (*OR* = 2.70 CI[1.66, 4.39], $p < .0001$), and having a higher income (*OR* = 1.08 CI[1.04, 1.12], $p < .0001$) were significantly associated with obtaining PCS (Dean et al., 2015). Furthermore, participation in community organizations was also associated with PCS (*OR* = 2.63 CI [1.34, 5.15], $p = .005$; Dean et al., 2015). However, having health insurance had the strongest association with obtaining PCS (Dean et al., 2015).

Similarly, Kangmennaang, Mkandawire, and Luginaah (2016) examined the influence of health insurance coverage, access to knowledge, and information on the decision to screen for PCa among 3,272 Afro-Caribbean men ages 40 to 60 years. The results from the study showed that men who had health insurance (*OR* = 2.12, $p = .01$) and men who had received information on PCa prevention (*OR* = 1.38, $p = .01$) were more likely to have had PCS (Kangmennaang et al., 2016). Furthermore, men who were married (*OR* = 3.10, $p = .01$) or were separated (*OR* = 2.37, $p = .01$) were more likely to obtain PCS compared to men who were never married (Kangmennaang et al., 2016).

Interpersonal Influences on Obtaining Prostate Cancer Screening

Interpersonal influences refer to the effects that family members, friends, and peers may have on health behaviors. Previous studies have examined the link between these groups and changes in health behaviors (Drake et al., 2010; Griffith, Allen, & Gunter, 2011; Oliver et al., 2011; Owens et al., 2015). Of specific note was the role of

wives and family in men's health and their health-related decision-making. Women tend to be the gatekeepers of health in their families (Saunders et al., 2015). For example, Hunter, Vines, and Carlisle (2015) found that women were key to helping men make informed decisions about PCS. This finding supported earlier research by Gash and McIntosh (2013) and was later supported by Holt et al. (2017).

In addition to their spouses, African American men have other family members and friends who can influence their choice of whether to undergo PCS. Research by Jones et al. (2010) identified three themes: the importance of family member involvement in the decision-making process, trust in the doctor, and knowing a family member or friend with PCa. Family member involvement in the decision-making process was most influential in obtaining PCS (Jones et al., 2010). In fact, some of the participants mentioned that their daughters constantly encouraged them to undergo PCS (Jones et al., 2010). Jones et al. (2010) recommended family, social, and marital support as an intervention to increase the possibility of African American men obtaining PCS. Similarly, Parker, Hunte, Ohmit, and Thorpe (2017) found that daughters were highly influential in motivating, supporting, and advising their fathers, making them essential in giving informal generational support to African American men to undergo PCS.

Influence of The Community on Obtaining Prostate Cancer Screening

Membership in organizations may also be influential in making behavioral changes. Of note is the important role that the church plays in the lives of many African Americans as a motivator for health behavioral change. Several studies have documented

the use of the church to educate African American men about PCa, PCS, and decision-making through culturally appropriate lenses (Drake et al., 2010; Holt et al., 2015; Howard et al., 2018; Jackson, Owens, Friedman, & Dubose-Morris, 2015). Lumpkins et al. (2016) found that the influence that the pastor had in conveying and promoting information regarding cancer screening, and faith in God in healing cancer and/or faith in God that the screening would be satisfactory were influential in obtaining PCS in African American men. However, the findings by Dickey et al. (2016) differed from those of Lumpkins et al. (2016). Dickey et al. (2016) found that church attendance was associated with obtaining a DRE for Caucasian men only.

Influence of Policy on Obtaining Prostate Cancer Screening

The USPSTF (2018) recommended that men between the ages of 55 and 69 years old make informed decisions about PCS based on discussions with their health care providers that include a balance of the risks and benefits of undergoing PCS, including risk factors such as family history, race or ethnicity, and treatment options. The USPSTF (2018) is against PSA-based screening for men over the age of 70 years old. The USPSTF also does not support physicians screening men who do not want to be screened.

Similarly, the ACS (Smith et al., 2019) recommended that men discuss the features recommended by the USPSTF with their health care providers (2018). The ACS recommended that these discussions take place at three points based on age and risk (Smith et al., 2019). Specifically, PCS should take place at age 50 years old for men with low or average risk; at age 45 for men at high risk; and at age 40 for men at very high

risk, which is defined as men having multiple first-degree relatives (brother, father, uncle) who had developed PCa at an earlier age (Smith et al., 2019).

Shared decision-making is a key concept in the fight against PCa and the promotion of PCS. As previously noted, both the USPSTF and the ACS recommend the process of shared decision-making between men and their health care providers (USPSTF, 2018; Smith et al., 2019). The shared decision-making process entails providing information about the benefits and risks of PCS and treatment (Sandiford & D'Errico, 2016). The benefits of PCS include early detection of PCa, enabling early treatment of PCa, and increased chances of positive outcomes (Sandiford et al., 2016; Howard, Salkeld, Patel, Mann, & Pignone, 2014). The risks of PCS include overdiagnosis of asymptomatic PCa, impotence, and incontinence from PCa treatment (Howard et al., 2014).

Woods, Montgomery, Herring, Gardner, and Stokols (2006) identified direct PCa communication messages from physicians as a significant predictor of obtaining a PSA or DRE ($p < .010$). Significant correlations were found in PSA and DRE outcomes based on the following: communication engagement style of physicians ($p < .012$); encouragement to screen ($p < .001$); sharing PCa information ($p < .001$); men's understanding of the serious risk of PCa ($p < .001$); culture ($p < .004$); positive interactions with health care staff, significant others, and providers ($p < .001$); and environmental dimensions ($p < .006$; Woods et al., 2006). A profile of four major self-reported barriers to screening, which are fear, internal locus of health, comfort level, and external locus of health, were identified by Woods et al. (2006). Lastly, a high percentage of men who used health

systems with a PCS policy obtained a PSA and DRE (63.3%), PSA only (70.9%), and DRE only (81.7%; Woods et al., 2006). Woods et al. (2006) concluded that aggressive, positive engagement of physicians in shared decision-making, tailored social influences promoting PCa prevention among African American men, and institutional screening policy had the potential to increase early detection and reduce morbidity among the study participants.

Summary of the Literature Review

Historical research on the intention to obtain PCS among African American men found several factors, such as age; knowledge of PCa; diagnosis of PCa; family, friends, or a trusted provider; and attitudes, to be influencers of the intention to obtain PCS (Ford et al., 2006; Myers et al., 1996, 2009; Odedina et al., 2008). None of the historical research examined the influence of belonging to a men's group or organization or the desire of a church, health ministry, or men's group or organization for their membership to obtain PCS on the intention to obtain PCS. The current study seeks to fill this gap in the research.

Moreover, the current research has indicated that whether African American men undergo PCS depends on various factors. Several studies support the influence of age, educational attainment, knowledge about PCS and treatment, family and friends, and shared decision-making with a physician as key to obtaining PCS among African American men (Dean et al., 2015; Dickey et al., 2017; Holt et al., 2017; Moses et al., 2017; Parker et al., 2017; Saunders et al., 2015; Woods et al., 2006). However, some of

the research on factors predicting obtaining PCS among African American men presented conflicting results. For example, Williams et al. (2014) found that having health insurance was not a predictor of obtaining PCS, whereas Halbert et al. (2015) and Kangmennaang et al. (2016) found that having health insurance was a predictor for PCS. Similarly, Lumpkins et al. (2016) found that the influence of the church was a predictor for PCS. However, Dickey et al. (2016) found that church attendance was only a predictor for DRE in Caucasian men. None of the reviewed current literature on factors that influence obtaining PCS investigated the influence of belonging to a men's group or organization or the desire of a men's group or organization for their membership to obtain PCS on obtaining PCS. These gaps potentially provide an opportunity to learn more about influencers regarding the intention to obtain PCS.

Effect of the Literature on the Present Study

The literature has identified several factors that have influenced obtaining a PCS (Dean et al., 2015; Guerra et al., 2007; Halbert et al., 2015; Hararah et al., 2015; Holt et al., 2015; Howard et al., 2018; Moses et al., 2017; Owens et al., 2015). These factors can be grouped into the intrapersonal, interpersonal, community, and policy constructs of the SEM. Several studies have recognized multilevel influences for obtaining a PCS (Dickey et al., 2016; Dean et al., 2015; Mitchell, 2011). However, the intention to have a PCS and the actual action of obtaining a PCS are separate issues. One speaks to the attainment of a PCS, and the other is related to motivation. Unfortunately, after an exhaustive review of the literature, no recently published work was found on the influence of intention to have

a PCS among African American men. Furthermore, among the historical research on intention to obtain a PCS, none examined the influence of belonging to a men's group/organization, a church or health ministry's desire for members to get a PCS, or a men's group/organization's desire for their membership to get a PCS on intention to obtain a PCS (Ford et al., 2006; Myers et al., 1996; Myers et al., 2009; Odedina et al., 2008). The current study seeks to fill this gap in the research. The factors examined in this review may be factors that influence intention to have a PCS among this population and can serve as the initial starting point for investigating the phenomena. This study seeks to address the gap in the literature in this area. Identifying factors which influence intention to have a PSC among African American men ages 40-65 may assist health educators to develop culturally appropriate interventions which consider these factors. In addition, it may present an opportunity for health educators to collaborate with clinicians and community-based organizations in the development of materials that include these factors

Chapter 3 outlines the methodology used in this study. Specifically, the chapter discusses the research design, sample size, data collection instrument, and proposed analysis. Furthermore, a discussion of the protection of human subjects is presented.

Chapter 3: Research Methodology

Introduction

This chapter presents the methodology that I used to conduct this study. I sought to identify factors that influence African American men's intentions to obtain PCS. I used a quantitative research design to identify factors that influence African American men's intentions to obtain a PCS test. Chapter 3 is divided into six parts. The first section provides a discussion of the research design for the study. The second section provides a description of the participants and the process for the protection of human subjects. In Section 3, I discuss the sampling, sample size, and justification for the sample size. In Section 4, I outline the data collection procedures and the instrument used in the research, including sources for the items in the instrument. In Section 5, I discuss the independent and dependent variables in the study. In the final section of Chapter 3, I discuss the data analysis procedures.

Research Design

I used a nonexperimental cross-sectional research design. Cross-sectional studies take a snapshot of the current status of a particular outcome (Friis, 2018), in this case, whether or not an individual intends to undergo PCS. In addition, cross-sectional studies can also examine the relationship between an outcome and other variables of interest (Friis, 2018). Cross-sectional study designs fall under the general category of quantitative research (Friis, 2018). A quantitative research design is suitable for studies involving measurable parameters or variables using numerical data (Friis, 2018). Furthermore, in

cross-sectional study designs, the outcome variable of interest is not manipulated by the investigators (Friis, 2018).

Cross-sectional studies have strengths and weaknesses. According to Sedgwick (2014), Setia (2016), and Friis (2018), one strength of cross-sectional studies is that they can be done in a relatively short period compared with a cohort or other study design. A weakness of cross-sectional studies is that they are not longitudinal by design and only provide a snapshot of the investigated phenomena (Sedgwick, 2014; Setia, 2016). For the current study, both the dependent (outcome) and independent variables are quantifiable, and the outcome variable is not manipulated. In addition, the study does not seek to establish a causal relationship. Thus, the use of a nonexperimental, cross-sectional study design is appropriate for this study.

Participants and Protection of Human Subjects

Selection of Participants

I aimed to identify factors that influence the intention to undergo PCS among African American men ages 40 to 65 years. Therefore, I reached out to community-based organizations, such as African American churches and fraternities (e.g., Omega Psi Phi, Kappa Alpha Psi, Alpha Phi Alpha, Concerned Black Men, and Black Free Masons), local physician offices, and community centers to recruit participants for the study. I sent a recruitment letter to the organizations asking permission to access their membership database including the email addresses of their members (Appendix A). Upon receipt of the membership list, I sent an invitation email to the individuals on the membership list

(Appendix B). The invitation email outlined the purpose of the study, the length of time it would take to complete the survey, that participation is voluntary, where to go online to complete the survey, and how the data would be protected. In addition, a recruitment flyer (Appendix C) was posted in churches, physician offices, and other community-based organizations.

Protection of Human Subjects

The protection of human subjects in research is important. The Belmont Report (United States, 1978) details the basic ethical principles for research with human subjects. Specifically, the report provides guidelines on the fair selection of participants, working with vulnerable populations, such as prisoners, minimizing risks and maximizing the benefits of participation in research, and obtaining informed consent (United States, 1978).

Following the recommendations of the Belmont Report (United States, 1978), I used several measures to protect human subjects participating in the study. First, I informed participants not to write their names on the survey. Each questionnaire is allocated a unique ID number to ensure that the participant's identity is anonymous and confidential. Second, I told participants that their participation was voluntary and that they could refuse to answer any question without penalty. Third, all results of the study were reported in aggregate form and no individual names would be reported. Fourth, all data was housed on a password-protected laptop. Only the student investigator and dissertation committee chair had access to the data. Fifth, the online survey website (SurveyMonkey) was password protected and only the student investigator had access to

the password. Finally, I stored hard copies of the statistical output in a locked cabinet located in the home of the student investigator and only the student investigator had the key to the cabinet. Moreover, prior to implementing recruitment and data collection procedures, the student researcher obtained Walden University Institutional Review Board approval for human subject research.

Sampling, Sample Size, and Justification of the Sample Size

I used convenience sampling to recruit participants for the study. Convenience sampling is fast and inexpensive, and the ready availability of subjects enables an investigator to collect data in a brief period (Aday & Cornelius, 2006). Participants were recruited from African American churches and organizations that have large memberships of African American males, such as fraternities, and from community-based organizations that provide services to African American males ages 40 to 65 years.

An *a priori* power analysis was performed to determine the minimum sample size required to evaluate the hypotheses considered in the current study. Power analysis was carried out using G*POWER (v. 3.19.2), a program that performs power analysis for a variety of social and behavioral research statistics including general linear regression, logistic regression, Poisson regression, *t*-tests, and chi-square tests (Faul, Erdfelder, Buchner, & Lang, 2009). Using Cohen's (1988) approach, a power of .80 and an alpha level of .05 were selected for logistic regression. The power analysis showed that a minimum sample size of 753 was adequate to test the hypotheses. Therefore, the proposed sample size of 760 appeared sufficient for the proposed analyses. The student

investigator continued to recruit participants until at least the minimum sample size was reached.

Data Collection Procedures and the Instrument

Data Collection Procedures

Email invitations (Appendix B) to participate in the study were sent to African American males ages 40 to 65 years who are members of organizations that have large African American male membership. In addition, I stationed recruitment flyers in African American churches, physician offices, and community-based organization buildings. Participants who responded to the recruitment flyer (Appendix C) and/or recruitment email (Appendix B) were sent a link to complete the survey online via SurveyMonkey. Once at the SurveyMonkey website, they were asked to complete a consent form (Appendix D) that explained the purpose of the study, the benefits of participation, the minimal risks involved, the time required to complete the survey, and the procedures to protect both the confidentiality of the data and the participant's anonymity. Once the survey was finished, no further contact was made with the participant.

Data Collection Instrument

The survey instrument (Appendix E) used in this study collected data from the four constructs of the SEM. The constructs or levels of the SEM are intrapersonal, interpersonal, community, and policy/society (Glanz et al., 1997; Sallis et al., 2015). The intrapersonal level included factors that are causally related to the individual (Glanz et al., 1997; Sallis et al., 2015). Intrapersonal variables included age, gender, education,

marital status, and attitudes about a topic (Glanz et al., 1997; Sallis et al., 2015). The interpersonal level included factors involving the family and friends and their influence on behavior (Glanz et al., 1997; Sallis et al., 2015). The community level of the SEM contained environmental factors, such as the presence of a doctor in the community, a place to undergo PCS, or organizations within a community that influence health behaviors (Glanz et al., 1997; Sallis et al., 2015). This layer also included formal and informal norms of a group or organization (Glanz et al., 1997). The final layer of the SEM is the society/policy level (Glanz et al., 1997; Sallis et al., 2015). The society/policy level consisted of policies and laws that may affect access to care (Glanz et al., 1997). For this study, recommendations for when an African American male should receive PCS, whether PCS is covered by an insurance plan, and whether a health care provider has discussed undergoing PCS with a study participant are included in the society/policy level. Table 1 displays the factors measured by the survey instrument (Appendix E) by construct.

Table 1. Social-Ecological Constructs in the Questionnaire

Construct levels	Variables (Q = question)
Intrapersonal	Age (Q1)
	Education (Q2)
	Marital status (Q3)
	Health insurance (Q5, Q15e)
	Primary care provider (Q7)
	I read information about obtaining screening (Q15c)
	I do not know where to go for PCS (Q15g)
	I am afraid of what might come from PCS (Q15h)
	I mistrust the health system (Q15m)

Interpersonal	Family history of PCa (Q13) Family wants me to obtain PCS (Q15a) Friends want me to obtain PCS (Q15b)
Community	Member of men's organization (Q4) My church wants me to obtain PCS (Q15j) No place in my community provides PCS (Q15k) My men's organization wants me to obtain PCS (Q15l)
Policy	Discussions with a provider about PCS (Q8-Q10, Q15d) Health insurance does not cover PCS (Q15i)

Source of Questions

The literature and existing survey instruments helped inform the development of the questionnaire. The first source of questions for the study's instrument was taken from the CDC Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is an annual state-based cross-sectional telephone survey that collects prevalence data on health status, risk behaviors, and health practices among adults living in the United States including US territories (CDC, 2013). The surveillance system has been in existence since 1984 (CDC, 2013). Survey questions on demographics (e.g., marital status, education level, insurance, and health provider status) and PCS discussions with a health professional were extracted from the BRFSS (CDC, 2013). Specifically, Questions 2–3 and 5–11 were taken from the 2016 BRFSS questionnaire.

The second source that informed the development of the questionnaire was the existing literature from the field. Articles on the influence of family, friends, and the church; African American men's perceptions about PCa; health insurance access; discussions on PCS with health care providers; and other potential influencing factors were considered for inclusion in the data collection instrument (Allen, Kennedy, Wilson-

Glover, & Gilligan, 2007; Dickey et al., 2016; Ford et al., 2006; Gash et al., 2013; Hunter et al., 2015; Husaini et al., 2008; Kangmennaang et al., 2016; Myers et al., 1996, 2000; Odedina et al., 2008; Oliver, 2007; Parchment, 2004; Tataw & Ekundayo, 2012). Of the 15 questions on the questionnaire, only three (Questions 4, 14, and 15) were developed by the student investigator. These questions were pretested for readability and comprehension among a group of six African American men ages 50 to 70. No modifications in the wording, structure, or order of the questions on the instrument were required.

Dependent and Independent Variables

Independent Variables

This section presents a brief description of the independent variables whose effects on the intention to obtain PCS were assessed. The questionnaire (Appendix E) developed for the study contains 15 questions and a total of 27 variables. Of the 27 variables, one is the dependent variable. The 26 remaining variables include marital status, age, education, the influence of friends, family, church, and men's groups, recommendations by a health care provider, self-knowledge, family history of PCa, and other variables. All the questions on the survey were analyzed, whereas a core set of eight variables were used for the logistic regression. These variables are linked to the two research questions and the associated hypotheses for the study. Table 2 provides a summary of the eight core variables used for the logistic regression analysis.

Table 2. Summary of Independent Variables for the Logistic Regression Analysis

Label	Variable name	Variable type	Values and comments
Marital status	Married	Character	1 = married 0 = not married
Member of a men's group	Member	Character	1 = Yes 0 = No
Health care provider recommended a PSA test	PSA 1	Character	1 = Yes 0 = No
Family wants me to be screened	Family	Character	1 = Yes 0 = No
Friends want me to be screened	Friends	Character	1 = Yes 0 = No
Church/health ministry wants me to be screened	Church	Character	1 = Yes 0 = No
Read information about being screened	Self-knowledge	Character	1 = Yes 0 = No
Men's organization wants me to be screened	Group	Character	1 = Yes 0 = No

Dependent Variable

The outcome variable in this study was Question 12: "Do you plan to get a PSA test (PCa screen)?" The question was measured as a dichotomous variable for logistic regression. The possible response was either yes (1) or no (0).

Statistical Analysis

The following specific aims and hypotheses were proposed for the current study:

Specific aim #1: Identify which factors most influence intent to get a PCa screen among African American males ages 40 to 65 years. The research question associated with specific aim #1 was: Which factors are associated with intention to get a PCa screen among African American males ages 40 to 65 years? The following

hypotheses were tested to identify which factors influence intention to get a PCa screen when controlling for all other independent variables:

Hypothesis 1.1: Marital status of an African American male will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

Hypothesis 1.2: Self-knowledge about PCS will significantly increase the likelihood of intention to get a PCa screen among obtain PCS among African American males ages 40 to 65 years.

Hypothesis 1.3: Family's desire for an African American male to get a PCa screen will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

Hypothesis 1.4: Friend's desire for an African American male to get a PCa screen will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

Hypothesis 1.5: Belonging to a men's group/organization will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

Hypothesis 1.6: Men's group/organization's desire for an African American male to get a PCa screen will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

Hypothesis 1.7: Church or health ministry's desire for members to get a PCa screen will significantly increase the likelihood of intention to get a PCa screen among African American males age 40 to 65 years.

Hypothesis 1.8: Having a recommendation from a doctor or other health care provider to get a PCa screen will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

Specific aim #2: Identify which level of influence in the Social Ecological Model that most influences intent to get a PCa screen among African American males ages 40 to 65 years. The research question associated with specific aim #2 was: Which level of influence (intrapersonal, interpersonal, community/environment, and societal/policy) was associated with intention to get a PCa screen among African American males ages 40 to 65 years? The following hypotheses were tested to identify which levels of most influence intention to get a PCa screen among African American males ages 40 to 65 years:

Hypothesis 2.1: Factors contained in the intrapersonal layer of the Social Ecological Model will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

Hypothesis 2.2: Factors contained in the interpersonal layer of the Social Ecological Model will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

Hypothesis 2.3: Factors contained in the community/environment layer of the Social Ecological Model will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

Hypothesis 2.4: Factors contained in the societal (policy) layer of the Social Ecological Model will significantly increase the likelihood of intention to get a PCa screen among African American males ages 40 to 65 years.

The study used a range of data analyses to describe the characteristics of the sample, to test the hypotheses, and to answer the research questions. First, univariate statistics (means, standard deviations, rates, and percentages) were used to organize and describe the data quantitatively. Bivariate and multivariate analyses were conducted to describe the associations between independent variables (marital status, the desire of family, friends, church or health ministry, or men's organizations for the respondent to undergo PCS, membership in men's organizations, recommendations by health care providers, and self-knowledge of PCS) and the dependent variable (intention to obtain PCS). Multiple regression analysis using backward elimination and stepwise regression procedures was used to determine the best model for predicting the intention to undergo PCS (dependent variable) and the contributions of the independent variables (listed above) in the model. Analyses were performed with the use of the statistical software package SPSS (v. 24). The significance was measured with $\alpha = .05$.

Summary and Transition

Chapter 3 discussed the methodology for the study, which used a nonexperimental cross-sectional research design. A total of 760 African American men ages 40 to 65 years were recruited to complete a survey using an online password-protected database on the Survey Monkey website. Once the dataset was cleaned, univariate, bivariate, and logistic regressions were used to analyze the data and answer the research questions. Chapter 4 presents the results of the analysis. In addition to a discussion on the results, data are displayed in the form of tables and charts. Finally, Chapter 5 provides a discussion of the results related to social change, compares the results of the study to previous research, discusses the limitations of the study, and makes recommendations for future research.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to identify factors that influence African American men's intention to obtain a PCS test. The study was guided by two specific aims and associated hypotheses. Specifically, specific aim #1 was: Identify which factors most influence intent to get a PCS among African American males ages 40 to 65 years. The research question associated with specific aim #1 was: Which factors are associated with intention to get a PCS among African American males ages 40 to 65 years? The following hypotheses were tested to identify which factors influence intention to get a PCS when controlling for all other independent variables:

Hypothesis 1.1: Marital status of an African American male will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Hypothesis 1.2: Self-knowledge about PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Hypothesis 1.3: Family's desire for an African American male to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Hypothesis 1.4: Friend's desire for an African American male to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Hypothesis 1.5: Belonging to a men's group/organization will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Hypothesis 1.6: Men's group/organization's desire for an African American male to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Hypothesis 1.7: Church or health ministry's desire for members to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males age 40 to 65 years.

Hypothesis 1.8: Having a recommendation from a doctor or other health care provider to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Specific aim #2: Identify which level of influence in the Social Ecological Model that most influences intent to get a PCS among African American males ages 40 to 65 years. The research question associated with specific aim #2 was: Which level of influence (intrapersonal, interpersonal, community/environment, and societal/policy) are associated with intention to get a PCS among African American males ages 40 to 65 years? The following hypotheses were tested to identify which levels of most influence intention to get a PCa screen among African American males ages 40 to 65 years:

Hypothesis 2.1: Factors contained in the intrapersonal layer of the Social Ecological Model will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Hypothesis 2.2: Factors contained in the interpersonal layer of the Social Ecological Model will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Hypothesis 2.3: Factors contained in the community/environment layer of the Social Ecological Model will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Hypothesis 2.4: Factors contained in the societal (policy) layer of the Social Ecological Model will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

Chapter 4 describes the data collection activities including discrepancies in data collection from the plan presented in chapter 3 and the timeframe of when data were collected along with response rates. Next, the results of basic univariate analysis are presented. The third section of this chapter describes the results of the logistic regression as well as the statistical assumptions related to the regression analysis. The chapter ends with a summary of the answers to the research questions and transition to chapter 5.

Data Collection

Discrepancies in Data Collection from The Original Plan

Prior to beginning data collection activities, approval was obtained from the Walden University Institutional Review Board (IRB). To protect the identities of participants, the IRB required that instead of having the names of potential participants sent to the Student Researcher, the recruitment flyer be revised and list the link to the

online survey. A copy of the final recruitment flyer is included in Appendix C. IRB approval, 10-16-19-0600087, was obtained on October 16, 2019 with an expected expiration of October 15, 2020. Actual data collection was conducted over a 12-week period, from October 16, 2019 to January 12, 2020.

Recruitment and Response Rates

The power analysis showed that a minimum sample size of 753 was adequate to test the hypotheses of the study. Therefore, the proposed sample size for the study was 760. Surveys were received from 779 African American males. The study employed posting recruitment flyers in doctor's offices, community centers, and churches, as well as sending emails to organizations asking them to send the recruitment email to their members. Potential respondents were sent directly to the survey site and asked to complete the survey. Therefore, I not able to determine the denominator to assess the overall response rate for the study. However, as previously noted, the target sample size was 760 and 779 individuals responded.

Regarding the completeness of the data, several records were missing data required for the analysis. These records were removed from the final analysis file. Specifically, 2 records were for individuals who were over the age of 65, 3 records were missing age, 6 records were missing marital status, 1 record was missing a response for the independent variable "My family wants me to get a PCa screen", 1 record was missing a response to the independent variable "I am a member of a men's group", responses for, and 1 record was missing a response for the dependent variable. After removing ineligible records the final analysis file contained 765 records.

Representativeness and External Validity

As previously mentioned, the study used purposive nonprobability sampling to recruit African American males ages 40 to 65 years. Specifically, email invitations were sent to organizations that had large African American male membership. In addition, recruitment flyers were posted in African American churches, physician offices, and the buildings of community-based organizations. Potential respondents were directed to click on a link to complete the online survey. While the study sought to specifically identify members of the target group, the Researcher acknowledges that one of the caveats of non-probability sampling is the ability to generalize results to the larger population.

The study utilized a quantitative non-experimental design to answer the research questions. The questionnaire covered all levels of the SEM, the theoretical underpinning for this study. The SEM posits that a relationship exists between the individual, their social networks, society, and the environment. This study used a point-in-time survey which did not involve any treatment and/or intervention. Therefore, conducting intervention fidelity was not appropriate.

Results

Descriptive Statistics Results

The age of participants ranged from 40 to 65 years with a mean age of 50. Over 75% of the respondents had some college or were college graduates. Thirty-one percent of the sample were married. While 45% of the respondents had a family history of PCa, only 28% stated that they planned to get a PCa screen. Thirty-five percent of the sample

reported that they were afraid of what they might find out from the PCa screen. Among the men who reported that they were afraid of what they might find out from the PCS, 38% did not plan to get a PCS. Seventeen percent of the respondents stated that they did not trust the health care system. Among those that reported that they did not trust the health care system, 14% stated that they did not plan to get a PCS. A summary of the characteristics of the sample are presented in Table 3.

Table 3. Summary of the Characteristics of the Sample

Variable	Frequency	Percentage
Marital status		
Not married	527	68.90
Married	238	31.10
Education		
Never attended	5	0.70
High school graduate or GED	81	10.60
Trade/vocational school	104	13.60
Some college	377	49.30
College graduate	198	25.90
Plan to have a PSA test		
No	555	72.50
Yes	210	27.50
Family history of PCS		
No	421	55.00
Yes	344	45.00
Member of a men's group/organization		
No	473	61.80
Yes	292	38.20
Family wants me to have a PCS		
No	490	64.10
Yes	275	35.90
Friends wants me to have a PCS		
No	458	59.90

Yes	307	40.10
Self-knowledge		
No	495	64.70
Yes	270	35.30
Health care provider recommended a PCS		
No	259	33.90
Yes	506	66.10
My church/health ministry wants me to have a PCS		
No	247	32.30
Yes	518	67.70
Men's group/organization wants me to have a PCS		
No	409	53.50
Yes	356	46.50

Logistic Regression Results

The current study utilized a non-experimental cross-sectional research design. Cross-sectional studies examine the relationship between an outcome and other variables of interest. The study used logistic regression to identify factors which were associated with intention to obtain a PCS. Logistic regression was an appropriate type of analyses to employ for this study as the dependent variable was binary/dichotomous (Meyers et al., 2006). Logistic regression allows for independent variables in the model to serve as covariates. These covariates hold constant the variables in the model which then allow the researcher to assess the effects the independent variables have on each other (Meyers et al., 2006). Furthermore, logistic regression allows the researcher to assess the direction of the relationship between the dependent and independent variables (Meyers et al., 2006).

As previously noted, logistic regression was conducted to answer the two specific aims of the study, namely, specific aim #1 was identify which factors were associated with intention to get a PCS among African American males 40 to 65 years and specific aim #2 was identify which level of influence in the SEM had the most influence with intention to obtain a PSC among African American males. Specific aim #1 had eight hypotheses. Specific aim #2 had 4 associated hypotheses. The dependent, or outcome variable, was planning to get PCS. The variable was binary where no = 0 and yes = 1. Yes, was the desired outcome. The independent, predictor, variables for the model were marital status, read information about getting a PCS (self-knowledge), my family (spouse, children) want me to get a PCS, my friends want to get a PCS, I belong to a men's group, my men's group want me to get a PCS, my church or health ministry want me to get a PCS, and my doctor or other health care provider want me to get a PCS. Each of these variables were dichotomous, where 1 = no and 2 =yes. Below are the results of the logistic regression analyses.

Hypothesis 1.1: Marital status of an African American male will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years.

The influence of marital status in predicting intention to get a PCS was significant (95% *CI* = .250, .695, *p* = .001). Married men were less than 1 times more likely than unmarried men to report that they planned to get a PCS when adjusting for the other variables in the model (*Exp (B)* = .417, *B* = -.874). This hypothesis is not rejected.

Hypothesis 1.2: Self-knowledge about PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. Self-knowledge, defined as reading information about getting a PCS, influence in predicting intention to get a PCS was statistically significant (95% *CI* = .012, .042, $p <$ .001). However, the difference between reading and not reading information about a PCS was exceedingly small when controlling for the other variables in the model (*Exp (B)* = .023, *B* = -3.783). This hypothesis is not rejected.

Hypothesis 1.3: Family's desire for an African American male to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. Family's desire for an African American male to get a PCS was predictive of intention to get a PCS among African American men (95% *CI* = 1.666, 4.507, $p <$ .001). Specifically, having a family member (e.g. spouse, children, or other relative) who wanted an African American male to get a PCS was almost 3 times more likely to get a PCS compared those males who did not have a family member have this desire (*Exp (B)* = 2.740, *B* = 1.008). This hypothesis is not rejected.

Hypothesis 1.4: Friend's desire for an African American male to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. Having a friend want you to have a PCS was not statistically significant (95% *CI* = .572, 1.748, $p =$ .999). This hypothesis is rejected.

Hypothesis 1.5: Belonging to a men's group/organization will significantly increase the likelihood of intention to get a PCS among African American males

ages 40 to 65 years. Belonging to a men's group/organization was not statistically significant (95% *CI* = .893, 2.357, *p* = .999). This hypothesis is rejected.

Hypothesis 1.6: Men's group/organization's desire for an African American male to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males 40 to 65 years. Having a men's group/organization wanting you to have a PCS was statistically significant (95% *CI* = 1.432, 4.209, *p* =.001). Having a men's group/organization who wanted you to get a PCS was almost 3 times more likely to influence one get a PCS compared those males who did not have a men's group/organization have this desire (*Exp (B)* = 2.455, *B* = .898). This hypothesis is not rejected.

Hypothesis 1.7: Church or health ministry's desire for members to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. The influence of the church or health ministry in the predictive model was strong and statistically significant (95% *CI* = 2.968, 9.729, *p* < .001). Males who reported that having one's church or health ministry want them to have a PCS were 5 times more likely males who did not (*Exp (B)* = 5.373, *B* = 1.681). This hypothesis is not rejected.

Hypothesis 1.8: Having a recommendation from a doctor or other health care provider to get a PCS will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. Having a recommendation from a doctor or other health care worker to obtain a PCS had the greatest statistically

significant influence in the predictive model (95% *CI* = 11.123, 40.677, $p < .001$). Regression coefficients indicate that African American males who had a recommendation from their doctor or other health care worker were 21 times more likely to plan to get a PCS (*Exp (B)* = 21.270, *B* = 3.057). This hypothesis is not rejected. Table 4 provides a summary of the regression model.

Table 4. Summary Regression Model Analysis

							95% C.I.for EXP(B)	
Variables in the Equation	*B*	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B)*	*Lower*	*Upper*
Marital Status	-.874	.261	11.260	1	.001	.417	.250	.695
Are you a member of a men's group/organization (i.e. fraternity, Masons, etc.)?	.372	.248	2.257	1	.133	1.451	.893	2.357
My family (spouse, children, or other relatives) want me to get a PCa screen.	1.008	.254	15.764	1	.000	2.740	1.666	4.507
My friends want me to get a PCa screen.	.000	.285	.000	1	.999	1.000	.572	1.748
I read information about getting a PCa screen. (Self-Knowledge)	-3.783	.315	144.144	1	.000	.023	.012	.042
My doctor or other health care provider recommended that I get a PCa screen.	3.057	.331	85.423	1	.000	21.270	11.123	40.677
My church or health ministry wants me to get a PCa screen.	1.681	.303	30.822	1	.000	5.373	2.968	9.729
My men's group/organization wants me to get a PCa screen.	.898	.275	10.668	1	.001	2.455	1.432	4.209

Constant	-7.434	.979	57.648	1	.000	.001

Hypothesis 2.1: Factors contained in the intrapersonal layer of the SEM will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. Two factors in the regression model fell within the intrapersonal layer of the SEM. These factors were marital status and self-knowledge. The influence of marital status and self- knowledge were statistically significant, (95% *CI* = .250, .695, $p = .001$) and (95% *CI* = .012, .042, $p < .001$), respectively. However, when compared to the other layers of the SEM that were in the regression model, these variables did not significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. This hypothesis is rejected.

Hypothesis 2.2: Factors contained in the interpersonal layer of the SEM will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. Two factors in the regression model fell within the interpersonal level of the SEM. These factors were family's desire to have a PCS and friend's desire to have a PCS. Family's desire for an African American male to get a PCS was statistically significant in predicting intention to get a PCS among African American men (95% *CI* = 1.666, 4.507, $p < .001$). Having a family member (e.g. spouse, children, or other relative) who wanted an African American male to get a PCS was almost 3 times more likely to get a PCS compared those males who did not have a family member have this desire (*Exp (B)* = 2.740, *B* = 1.008). However, having a friend want you to have a

PCS was not statistically significant (95% *CI* = .572, 1.748, *p* = .999). Compared to the other layers of the SEM that were in the regression model, these variables did increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. This hypothesis is not rejected.

Hypothesis 2.3: Factors contained in the community/environment layer of the SEM will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. The regression model included 3 factors from the community/environment layer of the SEM. These factors were belonging to a men's group/organization, men's group/organization's desire for member to get a PCS, and church or health ministry's desire for the individual to get a PCS. Belonging to a men's group/organization was not statistically significant (95% *CI* = .893, 2.357, *p* = .999). Having a men's group/organization wanting you to have a PCS was statistically significant (95% *CI* = 1.432, 4.209, *p* =.001). Having a men's group/organization who wanted you to get a PCS was almost 3 times more likely to influence one get a PCS compared those males who did not have a men's group/organization have this desire (*Exp (B)* = 2.455, *B* = .898). Furthermore, thee influence of the church or health ministry in the predictive model was extraordinarily strong and statistically significant (95% *CI* = 2.968, 9.729, *p* < .001). Males who reported that having one's church or health ministry want them to have a PCS were 5 times more likely males who did not (*Exp (B)* = 5.373, *B* = 1.681). Compared to the other layers of the SEM that were in the regression model, these variables did increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. This hypothesis is not rejected.

Hypothesis 2.4: Factors contained in the societal (policy) layer of the SEM will significantly increase the likelihood of intention to get a PCS among African American males ages 40 to 65 years. The regression model included only 1factor from the societal (policy) layer of the SEM. This factor was having a recommendation from a doctor or other health care provider. Having a recommendation from a doctor or other health care worker to obtain a PCS had the greatest statistically significant influence in predicting intention to getting a PCS among African American men ages 40 to 65 years (95% *CI* = 11.123, 40.677, $p < .001$). African American males who had a recommendation from their doctor or other health care worker were 21 times more likely to plan to get a PCS (*Exp (B)* = 21.270, *B* = 3.057). Compared to the other layers of the SEM included in the model, the societal (policy) layer had the greatest increase to the likelihood of intention to get a PCS Among African American males ages 40 to 65 years. This hypothesis is not rejected.

Statistical Assumptions

Logistic regression has several assumptions. Specifically, logistic regression assumes that (1) each observation is independent with little or no multicollinearity; (2) the dependent variable is binary, not continuous; (3) independent variables can be measured either on continuous or categorical variables but there must be linearity in the logit for any continuous independent variables; (4) independence of errors; and (5) lack of strongly influential outliers (Stoltzfus, 2011). This study considers the assumptions for logistic regression. To assess multicollinearity, a series of analyses were conducted in

SPSS to identify the extent to which inter correlations between independent variables existed. The variance inflation factors (VIF) were reviewed to identify high VIF scores (5 or higher). VIF scores were less than 2 for each independent variable, indicating that there was no correlation or multicollinearity among the 8 independent variables. In regard to the other assumptions, the model's dependent variable was measured at the binary level and there were very few outliers. Furthermore, none of the independent variables were continuous.

Summary

The study sought to address two specific aims (1) Identify which factors most influence intent to get a PCS among African American males ages 40 to 65 years; and (2) Identify which level of influence in the Social Ecological Model that most influences intent to get a PCS among African American males ages 40 to 65 years. Logistic regression was used to assess which of 8 independent variables most influenced intent to get a PCS. Six of these variables (marital status, family's desire for male to get a PCS, self-knowledge, doctor or health care provider recommended getting a PCS, church or health ministry's desire for the male to get a PCS, and men's group/organizations desire for the male to get a PCS) were statistically significant predictors for intention to get a PCS among African American males ages 40 to 65 years. Among these, having a doctor or health care providers recommend that one gets a PCS had the greatest influence. Specifically, African American males who had a recommendation from their doctor or

other health care worker were 21 times more likely to plan to get a PCS (*Exp (B)* = 21.270, *B* = 3.057).

Each of the 8 variables in the model fell into one of the 4 levels of the SEM – intrapersonal, interpersonal, community, societal (policy). Of the four levels, the community and societal (policy) levels had the most influence on intention to get a PCS. However, among the two, community and societal, societal had the greatest influence of getting a PCS among African American males ages 40 to 65 years.

Chapter 5 will discuss the results in detail within the context of other previous studies and the theoretical framework. Furthermore, the chapter will describe the limitations of the study and recommendations for further research. Chapter 5 will close with a discussion of the implications for social change.

Chapter 5: Summary of Results, Conclusions, and Recommendations

Introduction

Significant disparities in PCa morbidity and mortality rates exist between African American and white men. The CDC reported that African American men are at a higher risk of developing PCa and dying from PCa compared with any other race/ethnic group (CDC, 2017). Scientists explain that one of the major predictors of PCa is race, and that the African American race is one of the most high-risk populations (Xin, 2017).

The literature has identified several factors that have influenced obtaining a PCS (Dean et al., 2015; Guerra et al., 2007; Halbert et al., 2015; Hararah et al., 2015; Holt et al., 2015; Howard et al., 2018; Moses et al., 2017; Owens et al., 2015). These factors can be grouped into the intrapersonal, interpersonal, community, and policy constructs of the SEM. However, the intention to have a PCS and the actual action of obtaining a PCS are separate issues. One speaks to the attainment of a PCS, and the other is related to motivation. Unfortunately, no recently published work is available on the influence of intention to have a PCS among African American men ages 40 to 65 years. Furthermore, among the historical research on intention to obtain a PCS, none have examined the influence of belonging to a men's group/organization, a church or health ministry's desire for members to get a PCS, or a men's group/organization's desire for their membership to get a PCS on intention to obtain a PCS (Ford et al., 2006; Myers et al., 1996; Myers et al., 2009; Odedina et al., 2008).

The purpose of this quantitative study was to identify factors that influence African American men's intention to obtain a PCS test. The specific factors that I examined were marital status, self-knowledge about PCS, family' desire for men to get a PCS, friend's desire for men to get a PCS, membership in a men's organization, men's group/organization's desire for an African American male to get a PCS, church/health ministry's desire for men to obtain a PCS, and provider discussions and recommendations. These factors were also grouped into the four layers of the SEM. Identifying the factors that influence intent to get screened may help health care professionals and health educators develop interventions that leverage factors to make behavioral changes among African American males ages 40 to 65 years.

The results of this study revealed that among the eight factors investigated, having a recommendation from a doctor or other health care worker to obtain a PCS had the greatest influence on intention to get a PCS. Specifically, African American males ages 40 to 65 years who had a recommendation from their doctor or other health care worker were 21 times more likely to plan to get a PCS (*Exp (B)* = 21.270, *B* = 3.057). Furthermore, of the four levels, the community and societal (policy) levels had the most influence on intention to get a PCS, with the societal level having the greatest influence in intention to get a PCS among African American males ages 40 to 65 years.

In Chapter 5, I will discuss the interpretation of the findings and limitations of the study. I will also provide recommendations for future research. Finally, I will present the potential effects for positive social change.

Interpretation of Findings

The selection of the eight factors used in the study was informed by historical and present studies as well as policies regarding PCS (Dean et al., 2015; Dickey et al., 2016; Guerra et al., 2007; Halbert et al., 2015; Hararah et al., 2015; Holt et al., 2015; Howard et al., 2018; Moses et al., 2017; Owens et al., 2015; Smith et al., 2019; USPSTF, 2018). Although some of the articles examined intention to obtain a PCS, many focused-on factors associated with actually obtaining a PCS. As previously noted, intention to have a PCS and obtaining a PCS are different. One speaks to the attainment of a PCS, and the other, intention, is related to motivation. During the literature review, I concluded that factors that influenced obtaining a PCS that were selected for the study (church or health ministry's desire for men to obtain a PCS, recommendation from a doctor of health care provider, and marital status) might be factors that influenced intention to have a PCS among this population.

Findings from the current study supported previous research (Dickey et al., 20017; Ford et al., 2006; Holt et al., 2017; Kangmennaag et al., 2016; Myers et al., 1996; Myers et al., 2000; Parker et l., 2017; Dickey, S., Whitmore, A., & Campbell, E. (2017)). Specifically, marital status, family's desire for the male to get a PCS, self-knowledge, and doctor or health care provider recommendation to get a PCS were found to be statistically significant factors for intention to get a PCS. Of note, a recommendation from a doctor or health care provider and marital status had been researched as factors in obtaining a PCS and found to be significant influencers in intent to get a PCS in this study.

Furthermore, this study brings current the historical research (Ford et al., 2006; Myers et al., 1996; Myers et al., 2000; Odedina, 2011) that identified self-knowledge, and family's desire for the male to obtain a PCS, as factors associated with intention to obtain a PCS among African American men. The study found that African American men who had a family member (e.g. spouse, children, or other relative) who wanted them to get a PCS were almost three times more likely to intend to get a PCS compared with those males who did not have a family member with this desire (*Exp (B)* = 2.740, *B* = 1.008). The findings from the study did not support Myers et al., (1996), Myers et al., (2000), and Ford et al., (2006) for the desire of a friend wanting one to have a PCS as an influencer for intention among African American men ages 40 to 65 years.

In addition to bringing the historical research up to date, the current study included factors which had not been previously examined as it related to intention to obtain a PCS. None of the historical research examined the influence of belonging to a men's group/organization, a church or health ministry's desire for members to get a PCS, or a men's group/organization's desire for their membership to get a PCS on intention to obtain a PCS (Ford et al., 2006; Myers et al., 1996; Myers et al., 2009; Odedina et al., 2008). The current study filled this gap in the research. The findings of the study identified belonging to a men's group/organization, a church or health ministry's desire for members to get a PCS, and a men's group/organization's desire for their membership to get a PCS as factors influencing intention to obtain a PCS.

Theoretical Considerations

The theoretical framework used for this study was the SEM. The SEM consists of four layers of influence on health behavior (Glanz & Rimer, 1997). These factors represent various dimensions of an individual's environment – individual/intrapersonal level (e.g., race/ethnicity, knowledge), interpersonal (e.g., friends and family), community level (e.g., churches and men's organizations), and policy (e.g., recommendations from the U.S. Preventive Services Task Force). A key advantage of using the SEM to guide this study was that it considers the multiple levels of influence in behavior change. Specifically, the use of this model considered the multifaceted influences on intention to obtain a PCS. Each of the eight variables in the logistic regression model fell into one of the four levels of the SEM: intrapersonal, interpersonal, community, societal (policy).

Findings from the current study support the use of the SEM in identifying factors which influence intention to obtain a PCS among African American men ages 40 to 65 years. Of the four levels, the community and societal (policy) levels had the most influence on intention to get a PCS. However, among the two, community and societal, societal had the greatest influence of getting a PCS among the target group.

Moreover, the use of the SEM supports the philosophies of health education. Hodges et al. (2011), identified five philosophies/goals of health education: cognitive-based, decision making, freeing, and functioning, decision-based, and social change. All five of the health education philosophies are connected to one or more layers of the SEM.

For example, cognitive based are encompassed within the intrapersonal layer of SEM. Hodges et al. (2011) further suggested that the field of health education should consider an integrated/ecological behavioral philosophy. The application of this philosophy combined with the SEM to the current study helped to not only identify factors that influence intention to have a PCS at all levels but also serves as a guide to developing potential health education programs which incorporates these factors in the strategies/activities of the programs.

Limitations of the Study

This study had several limitations. First, the results of the analysis cannot be generalized to all African American males ages 40 to 65 years in the United States as the sample was not taken from the total United States population of African American males ages 40 to 65 years. Another limitation of this study was that data collected from the survey was self-reported. Thus, an answer provided by a respondent may have been biased and subject to what the respondent felt was socially acceptable. In addition, the study was administered via an online database, SurveyMonkey. This method of data collection assumes that everyone in the target population had access to the internet. However, according to a Pew Research Center (Anderson et al., 2018) 11% of the adult population in the United States does not use the internet. Older individuals, males, African Americans, individuals with less than a high school education, individuals with a lower income, and persons living in rural areas are more likely to be among this non-internet user group (Anderson et al., 2018). Furthermore, the study was not able to assess if

African American men ages 40-65 who reside in other geographical regions of the United States would answer in the same manner as those who respond to the survey. Finally, the study collapsed the marriage variable into two groups – married and unmarried. The unmarried group included separated, single, unmarried couples, divorced, never married, and widowed individuals. It is possible that individuals who are a part of an unmarried couple may respond similar to those in a marriage. By collapsing that group into the unmarried group, one is unable to ascertain if there is difference.

Recommendations

There are two proposed recommendations for future research from this study. First, this quantitative study examined eight potential factors that influence intention to obtain a PCS among African American males ages 40 to 65 years. Each of these factors were grouped by the level of the SEM in which they fell. However, there may be other factors within these levels that have a greater influence than those that were selected for the current study. These factors may include but are not limited to fear of the health care system, culture, having health insurance, separating out unmarried couples (those individuals who are together but not married), and spirituality. Identifying these additional factors may further help in developing health education/health promotion interventions related to PCS.

The current study found that having a health care provider recommend the patient get a PCS had the most influence on intention to get a PCS among African American men ages 40 to 65 years. Therefore, a second recommendation for future research is to

conduct a qualitative study using focus groups to identify and help understand specific aspects of the physician/health care provider and patient relationship that might influence intention to get a PCS. Identifying and understanding the nuances of this relationship may be a topic which could be included in the training of future health care providers.

Implications

Six of the variables (marital status, family's desire for male to get a PCS, self-knowledge, doctor or health care provider recommended getting a PCS, church or health ministry's desire for the male to get a PCS, and men's group/organizations desire for the male to get a PCS) were statistically significant predictors for intention to get a PCS among African American males ages 40 to 65 years. Among these, having a doctor or health care providers recommend that one gets a PCS had the greatest influence. Specifically, African American males who had a recommendation from their doctor or other health care worker were 21 times more likely to plan to get a PCS (*Exp (B)* = 21.270, *B* = 3.057). Furthermore, of the four levels represented by the six variables, the community and societal (policy) levels had the most influence on intention to get a PCS, with societal having the greatest influence of intention to get a PCS among African American males ages 40 to 65 years.

The results of the study have implications for positive social change in two areas. These areas are at the individual and societal/policy levels. First, at the individual level, the CDC has noted that African American men are at a higher risk of developing PCa as well as dying from PCa compared with any other racial/ethnic group of men in the United

States (CDC, 2017). The current study identified several individual and community level characteristics, e.g., marital status, family members, self-knowledge, men's group/organizations desire for the male to get a PCS, and church or health ministry's desire for the male to get a PCS, as influencers on African American men's intention to obtain a PCS. As health educators develop interventions that promote PCa awareness and testing, these factors can be included in those intervention strategies. For example, health educators can work with church health ministries to develop a PCa awareness and screening intervention which includes testimonies from family members that encourage African American men to get a PCS. In time, these collaborations between health educators, trusted community organizations, and family members may lead to a reduction in PCa morbidity and mortality among African American males.

Second, in relation to societal change, Hodges and Videto (2011) noted that one philosophy of health education is social change. This is achieved by pulling together education and political forces to bring about social and environmental change (Hodges et al., 2011). The study found that the factor that most influenced intention to get a PCS was having a recommendation from a health care provider to get a PCS. Both the USPSTF (2018) and ACS (Smith et al., 2019) recommend that men have conversations with their health care providers that include discussions on the risks and benefits of having PCS, risk factors such as family history and race or ethnicity, and treatment options. Unfortunately, according to the CDC Behavior Risk Factor Surveillance System (BRFSS), in 2018, 58% of African American men ages 40 years and older stated that their health care provider did not have a conversation with them to recommend having a

PSA (CDC, 2020). The results of this study present an excellent opportunity for health educators to collaborate with clinicians in the development of materials that can help facilitate the conversation about PCa and screening with their patients. In addition, health educators can share the results of the study with physician professional organizations and work with them to develop standardized, culturally appropriate curricula which emphasizes and supports the USPSTF and ACS recommendations.

Conclusion

The purpose of this quantitative research study was to examine the factors that influence intention to get a PCS among African American males ages 40 to 65 years. The study sought to bring historical research current and to fill the gap in the literature on new factors which had not previously been investigated. This is important because despite PCS recommendations (Smith et al., 2019; USPSTF, 2018), African American men are less likely to get screened for PCa compared to any other race/ethnic group and more likely to die from PCa (CDC, 2017).

Out of the eight factors investigated, 6 (marital status, family's desire for male to get a PCS, self-knowledge, doctor or health care provider recommended getting a PCS, church or health ministry's desire for the male to get a PCS, and men's group/organizations desire for the male to get a PCS) were statistically significant predictors for intention to get a PCS among African American men ages 40 to 65 years. Among these, having a recommendation from a doctor or other health care worker to

obtain a PCS had the greatest influence on intention to get a PCS. This factor fell within the outermost layer of the SEM.

The results of the study have practical application for the field of health education and promotion. Namely, heath educators can collaborate with trusted community organizations, and family members to develop interventions that promote PCa awareness and testing that incorporate the factors identified as having the most influence on intention to obtain a PCS. Second, health educators can work in partnership with clinicians in the development of materials that can help facilitate the conversation about PCa and screening with their patients. In addition, health educators can share the results of the study with physician professional organizations and work with them to develop standardized, culturally appropriate curricula which emphasizes and supports the USPSTF and ACS recommendations. This action has the potential to bring about systemic change. Ultimately, the combined actions may lead to a reduction in the morbidity and mortality rate disparities in PCa that exists between African American and Caucasian men.

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Appendix A: Organization Recruitment Letter

ORGANIZATION RECRUITMENT LETTER

Research Title: Prostate Cancer Screening Intent Among African American Men

Dear……..,

My name is Paul Johnson and I am a PhD student at Walden University focusing on Health Education and Promotion. I am conducting research on factors that influence intention to get a prostate cancer screening among African American males between the age of 40 to 65. As part of my research, I am recruiting African American males ages 40-65 to complete a short survey. I am reaching out to organizations that serve African American males ages 40-65, such as yours, to ask if they will allow me access to their membership for participation in the survey.

The questionnaire should take approximately 10-15 minutes to complete and is completed online. Responses to the questions will be kept confidential. Each questionnaire will be assigned a number code to help ensure that the identity and personal information are not revealed during the analysis and write up of findings. All results will be reported in aggregate.

There is no compensation for participating in this study. However, the information gained from the study can help develop programs that may increase the number of African American males obtaining a prostate cancer screen.

I hope that I can obtain your support in this research. Please do not hesitate to contact me at 919-791-7209 or by email at paul.johnson5@waldenu.edu.

Thank you in advance for your help.

Paul Johnson

Appendix B: Letter of Invitation to Participate

LETTER OF INVITATION TO PARTICIPATE IN A RESEARCH STUDY ON PROSTATE CANCER SCREENING INTENT

Dear……..,

My name is Paul Johnson and I am a PhD student at Walden University focusing on Health Education and Promotion. I am conducting a research study entitled *Prostate Cancer Screening Intent Among African American Men* that seeks to identify factors that influence intention to get a prostate cancer screening among African American males between the age of 40 to 65 years. As an African American man between the age of 40 to 65 years you are in an ideal position to give me valuable first-hand information about this topic.

Participants will be asked to complete a short questionnaire. The questionnaire will take approximately 10-15 minutes to complete and will be given either online or in person. Responses to the questions will be kept confidential. Each questionnaire will be assigned a number code to help ensure that your identity and personal information are not revealed during the analysis and write up of findings. All results will be reported in aggregate. Your participation is voluntary, and you can refuse to answer any questions. All data from the questionnaires will be kept on a password protected laptop in a password protected database.

There is no compensation for participating in this study. However, the information gained from the study will help develop programs that may increase the number of African American males obtaining a prostate cancer screen.

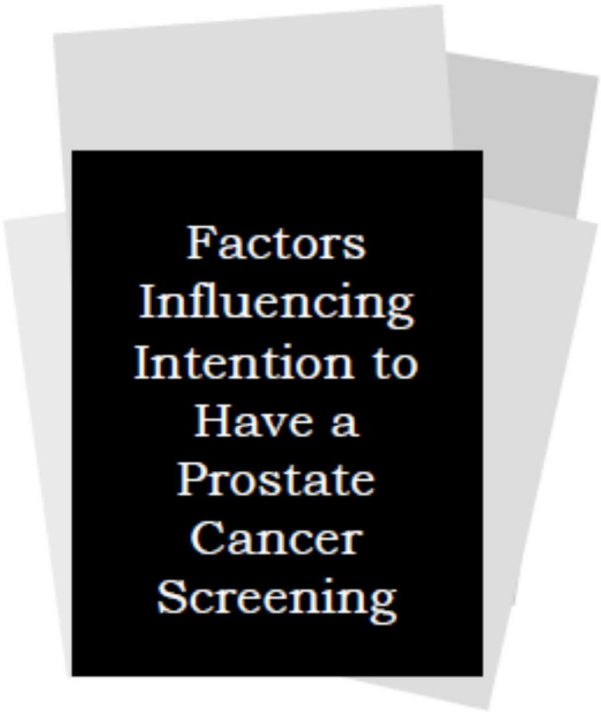
If you would like to participate in the study, please contact me at 919-791-7209 or by email at paul.johnson5@waldenu.edu and I will send you a link to the online survey.

Thank you in advance for helping me in this important research.

Sincerely, Paul Johnson

Appendix C: Recruitment Flyer

Volunteers Needed for a Research Study on Prostate Cancer Screening Intentions



Are you an African American man between the ages of 40-65?

You are invited to participate in a study looking at factors that influence a man's intention to get a prostate cancer screen.

The study is being conducted by Paul Johnson a PhD student at Walden University.

Volunteers are asked to complete a short online questionnaire. The survey contains 15 questions and will take approximately 15 minutes to complete.

If you would like to volunteer for the study please go to the following link to complete the survey: **www.surveymonkey.com/r/92VF65H**
Please respond by February 1, 2020

If you have questions about the study please contact:
Paul Johnson
Telephone: 919-791-7209
Email: paul.johnson5@waldenu.edu

Appendix D: Participant Consent Form

CONSENT FORM

You are invited to take part in a research study about factors that influence an African American male's intention to have a prostate cancer screening. The researcher is inviting African American men ages 40 to 65 years to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Paul Johnson a doctoral student at Walden University.

Background Information:
The purpose of this study is to identify factors that influence an African American male's intention to have a prostate cancer screening.

Procedures:
If you agree to be in this study, you will be asked to:

- Complete a one-time online survey that will take 10-15 minutes to complete.

Here are some sample questions:

- Have you EVER HAD a PSA test?
- Do you plan to get a PSA test (prostate cancer screen)?
- Do you have a family history of prostate cancer? (includes father, brother, uncle, grandfather, etc.)
- A Prostate-Specific Antigen Test, also called a PSA test, is a blood test used to check men for prostate cancer. Has a doctor, nurse or other health professional EVER talked to you about the advantages of the PSA test?
- Has a doctor, nurse or other health professional EVER recommended that you have a PSA test?

Voluntary Nature of the Study:
This study is voluntary. You are free to accept or turn down the invitation. No one at Walden University will treat you differently if you decide not to be in the study. If you decide to be in the study now, you can still change your mind later. You may stop at any time

Risks and Benefits of Being in the Study:
Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as personal time inconvenience for completing the survey, feeling uncomfortable about disclosing family history of cancer or factors that might influence your intention to get a prostate cancer screen, and possibly feeling

uncomfortable if you have lost a loved one to cancer. Being in this study would not pose risk to your safety or wellbeing.

There is no direct benefit to you for completing the survey. However, you may feel pride in knowing that the information you provide will be used to better understand attitudes towards prostrate screening.

Payment:
No compensation will be provided for participation in the survey.

Privacy:
Reports coming out of this study will not share the identities of individual participants. All data will be reported in aggregate. Details that might identify participants, such as the location of the study, also will not be shared. The researcher will not use your personal information for any purpose outside of this research project. Data will be stored in a locked file cabinet in the Student Investigator's home on a laptop which is password protected. In addition, the online survey is password protected. Only the Student Investigator and Dissertation Committee Chair will have access to the laptop. There are no hard copies of the questionnaires. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher, Paul Johnson at (919) 791-7209 or by email at paul.johnson5@waldenu.edu If you want to talk privately about your rights as a participant, you can call the Research Participant Advocate at my university at 612-312-1210. Walden University's approval number for this study is 10-16-19-0600087 and it expires on October 16, 2020.

Please print or save this consent form for your records.

Obtaining Your Consent

If you feel you understand the study well enough and want to participant, please click **NEXT** to move to the next page.


This has been approved by the
Institutional Review Board of
WALDEN UNIVERSITY
as acceptable documentation of the
informed consent process and is valid
for one year after the stamped date.
Date:
2019.10.16
14:11:58 -05'00'

Appendix E: Data Collection Instrument

Intention to Get a Prostate Cancer Screen Survey

This survey asks questions about prostate cancer screening. The information you give us will help us understand factors that may influence a man's intention to get a prostate cancer screening. **DO NOT** write your name on the survey. Your answers will be anonymous and confidential. The answers you give will be kept confidential. Completing the survey is voluntary. Whether or not you answer the questions will not affect any services that you are currently receiving. If you feel uncomfortable about answering a question just leave it blank. Thank you very much for your help.

The first section of the questionnaire asks questions about your description of you.

1. How old are you? _____

2. What is the highest grade or year of school you completed? (**please check only one answer**)
   □ Never attended school
   □ Less than high school
   □ High School Graduate or GED
   □ Trade/Vocational school
   □ Some college
   □ College graduate (4 years or more)

3. What is your marital status? (**please check only one answer**)
   □ Married
   □ Divorced
   □ Widowed
   □ Separated
   □ Never Married
   □ A member of an unmarried couple

4. Are you a member of a men's group/organization (i.e. fraternity, Masons, etc.)?
   □ Yes
   □ No

5. Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, government plans such as Medicare, or Indian Health Service??
   □ Yes
   □ No

6. What is the **primary** source of your health care coverage? (**check only one**)
   □ A plan purchased through an employer or union (this includes plans purchased through another person's employer)
   □ A plan that you or your family member buys on your own
   □ Medicare

□ Medicaid or other state program
□ TRICARE (formerly CHAMPUS), VA, or Military
□ Other source
□ None (I do not have a primary source of health care)

7. Do you have one person you think of as your personal doctor or health care provider?
□ Yes
□ No

This section of the questionnaire asks questions about prostate cancer screening and your family history of cancer.

8. A Prostate-Specific Antigen Test, also called a PSA test, is a blood test used to check men for prostate cancer. Has a doctor, nurse or other health professional EVER talked to you about the advantages of the PSA test?
□ Yes
□ No

9. Has a doctor, nurse or other health professional EVER talked to you about the disadvantages of the PSA test?
□ Yes
□ No

10. Has a doctor, nurse or other health professional EVER recommended that you have a PSA test?
□ Yes
□ No

11. Have you EVER HAD a PSA test?
□ Yes
□ No

12. Do you plan to get a PSA test (prostate cancer screen)?
□ Yes
□ No

13. Do you have a family history of prostate cancer? (**includes father, brother, uncle, grandfather, etc.)**
□ Yes
□ No

14. Have you ever been told by your doctor or other healthcare provider that you have an enlarged prostate or BPH (benign prostate hyperplasia)?
□ Yes
□ No

The last section of the questionnaire asks about what might influence your intention to get a prostate cancer screen. For each statement, please let us know if it would influence you getting a prostate cancer screen. If you feel the statement would not influence your intention to get a prostate cancer screen circle No (No influence). If you feel the statement would influence your intention to get a prostate cancer screen circle Yes (Yes Influence).

15.

Statement	No Influence	Yes Influence
a. My family (spouse, children, or other relatives) want me to get a prostate cancer screen	No	Yes
b. My friends want me to get a prostate cancer screen.	No	Yes
c. I read information about getting a prostate cancer screen.	No	Yes
d. My doctor or other health care provider recommended that I get a prostate cancer screen.	No	Yes
e. I cannot afford health insurance to pay for getting a prostate cancer screen.	No	Yes
f. I do not have a way to get to the prostate cancer screen.	No	Yes
g. I do not know where to go to get a prostate cancer screen	No	Yes
h. I am afraid of what I might find out from the prostate cancer screen.	No	Yes
i. My health insurance does not cover getting a prostate cancer screen	No	Yes
j. My church or health ministry wants me to get a prostate cancer screen	No	Yes
k. There is no place in my community that provides prostate cancer screenings	No	Yes
l. My men's group/organization wants me to get a prostate cancer screen	No	Yes
m. I do not trust the healthcare system	No	Yes

Thank you for answering the survey.

Appendix F: Letters/Emails of Commitment

12/10/2018

Dr. Lucas B. Romine MD
Triangle Orthopedic Associates PA
540 North St.
Smithfield, NC 27577

Paul L. Johnson MPH
Clayton, NC 27520
Paul.johnson5@waldenu.edu

RE: Prostate Cancer Screening Intention Among African American Male

Dear Paul L. Johnson MPH

I Dr. Lucas B. Romine of Triangle Orthopedic Associates will participate in your research study pertaining to Prostate Cancer Screening Intention Among African American Males. I will allow you to put your flyer up at my three locations in Clayton NC, Erwin NC, and Smithfield NC. I have read your information and I'm satisfied that you will keep my patients' information confidential under the guidelines of HIPPA.

If theirs anything else I can do to help during this process, PLEASE don't hesitate to ask.

Sincerely,

Dr. Lucas B. Romine MD