

2008

Prostate cancer screening intention among African American men: An instrument development study

Susan Anita Baker
University of South Florida

Follow this and additional works at: <http://scholarcommons.usf.edu/etd>

 Part of the [American Studies Commons](#)

Scholar Commons Citation

Baker, Susan Anita, "Prostate cancer screening intention among African American men: An instrument development study" (2008).
Graduate Theses and Dissertations.
<http://scholarcommons.usf.edu/etd/128>

This Dissertation is brought to you for free and open access by the Graduate School at Scholar Commons. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Scholar Commons. For more information, please contact scholarcommons@usf.edu.

Prostate Cancer Screening Intention Among African American Men:
An Instrument Development Study

by

Susan Anita Baker, MS, RN

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
College of Nursing
University of South Florida

Major Professor: Susan McMillan, Ph.D, ARNP
Janine Overcash, Ph.D, ARNP
Cathy Meade, Ph.D, RN
Brent Small, Ph.D

Date of Approval:
November 12, 2008

Keywords: health beliefs, fatalism, health promotion, planned behavior, knowledge

©Copyright 2008, Susan A. Baker

Dedication

This work is dedicated to my parents, Earl and Lucy Baker. Thank you for your never-ending faith in me and in my work. You have been an invaluable support to me. Your love and prayers have kept me throughout this journey and I will be eternally grateful for that.

Acknowledgements

I would like to thank the following individuals for their guidance and direction along this dissertation journey:

My Lord and Savior Jesus Christ who makes all things possible and whom I am nothing without.

My family for their many prayers, unconditional love, and constant support.

The Elizabeth Popular Spring P. B. Church family for their participation and prayers.

The Tabernacle M.B. Church family for their participation and prayers.

The St. John Progressive M.B. Church Brotherhood for their participation and prayers.

Dr. Janine Overcash for participating on my dissertation committee.

Dr. Cathy Meade for participating on my dissertation committee.

Dr. Brent Small for participating on my dissertation committee.

Dr. Susan McMillan for her expert guidance, continued patience, never-ending support, and unwavering friendship throughout this learning experience.

Table of Contents

List of Tables	iv
List of Figures	vi
Abstract	vii
Chapter One- Introduction	1
Statement of the Problem	4
Research Questions	5
Definition of Terms	5
Significance of the Study to Nursing	6
Chapter Two- Review of Literature	7
Prostate Cancer Knowledge, Informed Decision-Making, and Screening	7
Health Belief Model	18
Health Belief Model and Prostate Cancer Screening	19
Fatalism	30
Fatalism, Cancer, and African Americans	30
Health Promotion	40
Health Promotion and Cancer	41
Theory of Planned Behavior	43
Theory of Planned Behavior and Health Behaviors	44
Theory of Planned Behavior and Cancer Risk Reduction	51
Summary	55
Chapter Three- Methods	
Phase One	60
Purpose	60
Sample	60
Procedures	61
Data Analysis	63
Phase Two	63
Purpose	63
Sample	64
Instrument	65
Content Validity	66
Procedures	66

Data Analysis	67
Phase Three	67
Purpose	67
Sample	68
Instruments	68
Demographic Questionnaire	68
Prostate Cancer Knowledge Scale	68
Cancer Screening Intention Scale-Prostate	69
Prostate Cancer Belief Scale	69
Powe Cancer Fatalism Index	70
Health Promoting Lifestyle II	70
Procedures	71
Data Analysis	71
Chapter Four- Results	73
Phase One	73
Sample	73
Data Analysis	74
Results	74
Phase Two	79
Sample	79
Data Analysis	79
Results	80
Phase Three	81
Sample	81
Instruments	83
CSIS-P	83
Prostate Cancer Knowledge Questionnaire	83
Prostate Cancer Belief Scale	84
Powe Cancer Fatalism Index	85
HPLP II	85
Construct Validity: Correlation with Other Measures	87
Construct Validity: Factor Analysis	90
Reliability	96
Chapter Five- Discussion	98
Phase One	98
Sample	99
Data Analysis	99
Results	99
Phase Two	100

Sample	101
Data Analysis	101
Results	101
Phase Three	102
Sample	102
Instruments	103
CSIS-P	103
Prostate Cancer Knowledge Questionnaire	103
Prostate Cancer Belief Scale	103
Powe Cancer Fatalism Index	104
HPLP II	104
Construct Validity: Correlation with Other Measures	105
Construct Validity: Factor Analysis	106
Summary	107
Implications for Nursing	107
Recommendations for Future Research	108
References	109
Appendices	120
Appendix A: Letter of Support	121
Appendix A: Letter of Support	122
Appendix B: Institutional Review Board Approval	123
Appendix C: Demographic Questionnaire	124
Appendix D: Focus Group Questions	125
Appendix E: Cancer Screening Intention Scale: Prostate	126
Appendix F: Prostate Cancer Knowledge Questionnaire	131
Appendix G: Prostate Cancer Belief Scale	132
Appendix H: Powe Fatalism Index	134
Appendix I: Health Promoting Lifestyle Profile II	135
About the Author	End Page

List of Tables

Table 1	Number and Percent of Men by Age and Education	74
Table 2	Focus Group Themes by Frequency	75
Table 3	Number and Percent of Men by Age, Marital Status, and Education	82
Table 4	Number and Percent of Men Reporting Previous Prostate Cancer Screening	82
Table 5	Prostate Cancer Screening Intention Scores	83
Table 6	Frequency and Percent of Correct Responses to Prostate Cancer Knowledge Questions	84
Table 7	Prostate Cancer Belief Scores by Number and Percent	84
Table 8	Frequency and Percent of Prostate Cancer Fatalism Scores	85
Table 9	HPLP II Subscale Means and Standard Deviations	85
Table 10	Correlations Among Demographics, Knowledge, Healthy Lifestyle, and Fatalism	87
Table 11	Health Promotion Correlations	89
Table 12	Correlations between Independent Variables and Intention	89
Table 13	Variance Explained by Extracted Factors	90
Table 14	Factor Loadings	91
Table 15	CSIS-P Items and Corresponding Factor Loadings	92
Table 16	Means and Standard Deviations of Reduced CSIS-P	93
Table 17	Factor Loadings of Reduced CSIS-P	94
Table 18	Correlations between Independent Variables and Revised Intention Scale	96

Table 19	Factor Coefficient Alphas	96
Table 20	Reliability Results with Reassigning Multiple-Loading Items	97

List of Figures

Figure 1.	Prostate Cancer Screening Intention Model	56
-----------	---	----

Prostate Cancer Screening Intention Among African American Men: An Instrument
Development Study

Susan Anita Baker

ABSTRACT

Cancer is the second leading cause of death in the United States. Prostate cancer is the leading cause of cancer deaths among African American men, and African American men have the highest incidence of prostate cancer in the world. Limited studies have been conducted that address this critical issue. Existing literature reveals that the primary cause of increased mortality rates of prostate cancer in African American men is lack of participation in prostate cancer screening activities. The purpose of this three-phase study was to develop a valid and reliable instrument to measure prostate cancer screening intention among African American men.

Three gender-specific focus groups were conducted in the first phase of the study. Twenty men from two north Florida churches participated in the focus groups. Eight dominant themes emerged from the focus groups and were utilized to develop the items for the intention instrument: fear, healthy lifestyle, hopelessness/helplessness, machismo, mistrust of healthcare providers, social/familial support, job requirements and transportation barriers.

The second and third phases of the study consisted of development of the instrument and assessment of the instrument for validity and reliability. The Cancer Screening Intention Scale-Prostate (CSIS-P) consists of 43 items and was developed

utilizing the results of the focus groups. The reading level of the CSIS-P was 5.6 utilizing the Flesch-Kincaid index and 7.0 utilizing the SMOG Readability Formula. The CSIS-P was assessed for content validity by a panel of oncology experts. The content validity index for the scale was .90 and internal consistency was found to be .92. The CSIS-P was evaluated for construct validity utilizing factor analysis techniques. Test-retest procedures were also conducted to assess stability of the CSIS-P and the reliability coefficient was .93.

Factor analysis techniques demonstrated a three-structure model. The factors that emerged were benefits to prostate cancer screening, barriers to prostate cancer screening, and health promotion. The internal consistency of the three factors were found to be .88, .81, and .86 respectively. Factor analysis procedures reduced the CSIS-P to a 17-item scale.

The CSIS-P is a parsimonious, culturally sensitive instrument that is valid and reliable in assessing prostate cancer screening intention. Recommendations for future study of the instrument include replication of the study with a more heterogeneous sample and utilization of the scale with other cancers.

Chapter One

Introduction

Cancer is the second leading cause of death in the United States. More than 1,437,180 new cases develop annually (American Cancer Society, 2008) and nearly 152,900 of these new cases are in African Americans. Approximately 62,780 African Americans die from cancer each year (American Cancer Society, 2007). Overall, the cancer mortality rate is 30% higher in African Americans than in Caucasians (American Cancer Society, 2005). These alarming statistics have initiated many research programs related to cancer incidence and mortality in African Americans.

The statistics related to incidence and mortality rates of prostate cancer are equally alarming. Approximately 186,320 new cases of prostate cancer are expected to develop annually (American Cancer Society, 2008). The incidence and mortality rates of prostate cancer among African American men are even more disturbing. Prostate cancer is the most commonly diagnosed cancer in African American males (American Cancer Society, 2007), and cancer statistics show that African American men have the highest incidence of prostate cancer in the world at 272.0 per 100,000. This is compared to an incidence rate of 169.0 per 100,000 among Caucasian men (American Cancer Society, 2006). It also has been reported that African American men are at least 50% more likely to develop prostate cancer than men of any other racial and ethnic group.

Reports of survival rates also indicate a disparity when African American men are compared to Caucasian men. Cancer mortality rates among African American men (68.1 per 100,000) have been reported to be more than twice as high as those among Caucasian men (27.7 per 100,000) (American Cancer Society, 2005).

Consistent screening for cancer has been shown to improve cancer incidence and mortality rates. However, only small percentages of the general population participate in cancer screening. For example, among a group of 6,895 women, only 30.2 percent reported recent use of available cancer screenings. Also, among a group of 4,784 men, only 37.1 percent reported recent use of available cancer screenings. When ethnicity is delineated, rates of cancer screening participation among African Americans remain lower than among Caucasians (Breen, Wagener, Brown, Davis, and Ballard-Barbash, 2001).

Weinrich, Weinrich, Boyd, and Atkinson (1998) maintain that one explanation for the racial differences in mortality is lack of knowledge regarding prostate cancer screening and lack of participation in the screening procedures. These investigators found that among 319 African American men who participated in the study, only 14 percent of the participants reported a high level of knowledge about prostate cancer. Eighty-two percent of the men reported that they had never heard of prostate specific antigen (PSA) and digital rectal examination (DRE), the diagnostic tests for early detection of prostate cancer.

Implications also have been found regarding the relationship between literacy levels and health seeking behaviors. Nearly 44 million people in the United States (U.S.) have insufficient basic reading skills (Kirsch, Jungeblut, Jenkins, and Kolstad, 1993).

Follow-up studies done in 2003 with a smaller database show no significant improvement in literacy levels. A report by the National Center for Education Statistics (www.nces.ed.gov) estimates that 46 to 51% of adults in the United States have poor reading skills. When exploring the association between literacy levels and health in African Americans, it was reported that more than 80 percent of African Americans have difficulty reading and understanding health-related materials, a concept termed health literacy. Research conducted by Bennett et al. (1998) discovered that low levels of literacy were a barrier to early prostate cancer screening. In this study, men who had been diagnosed with advanced prostate cancer were found to have literacy levels below sixth grade. Consequently, instruments and written materials related to health promotion behaviors and health screening activities must be developed at a reading level that is appropriate for the targeted population.

Few studies exist that examine the reasons for lack of knowledge and lack of participation of African American men in prostate cancer screening procedures. In order for the National Cancer Institute to reach its' goal of decreasing cancer incidence by 50 percent by the year 2010 (www.healthypeople.gov), the disturbing prostate cancer incidence and mortality rates in African American men as well as the underlying causes of these rates must be addressed. Health care related disciplines must discover the factors that influence participation of African American men in prostate cancer screening procedures and develop interventions that incorporate these factors. These measures may in turn lead to increased participation in screening activities in this high-risk group. Also, the current position of many health care providers regarding informed decision-making

and the effectiveness of prostate cancer screening methods (Lim, Sherin, ACPM Prevention Practice Committee, 2008) adds to the complexity of this issue.

Statement of the Problem

Although prostate cancer knowledge and participation in screening procedures is disproportionately low in African American men, limited studies exist that examine the reasons for this phenomenon. Though instruments have been developed to assess screening intention (Ajzen and Fishbein, 1980; Ajzen, 1991), few of these instruments utilized African American men as study participants. Studies also have been conducted that examine screening behaviors (Godin and Kok, 1996; Dozier, 1999; Weinrich, Weinrich, Priest, and Fodi, 2003). However, few of these studies have included African American men as primary study participants. The primary purpose of this study was to develop and assessment designed to increase understanding of the behavioral intentions of African American men to participate in prostate cancer screening so that later studies may test interventions to improve screening rates in this group. This purpose was achieved in three phases. The first phase was to examine attitudes and beliefs of African American men toward prostate cancer screening procedures as well as explore the perceived factors that influence prostate cancer screening intention in African American men. The second phase was to develop a culturally sensitive, valid and reliable instrument for the measurement of prostate cancer screening intention in African American men. The third phase was to estimate the validity and reliability of the newly developed instrument. A concurrent aim of the study was to identify the sociodemographic variables that are most related to prostate cancer screening intention.

Research Questions

The following questions were addressed in this study:

Phase I

1. What are the attitudes of African American men toward prostate cancer screening?
2. What are the perceived factors that influence prostate cancer screening in African American men?

Phase II

1. Does the Cancer Screening Intention Scale-Prostate (CSIS-P) demonstrate evidence of content validity?
2. Is the CSIS-P a culturally sensitive instrument?
3. Is the reading level of the CSIS-P appropriate for African American men?
4. Does the CSIS-P demonstrate evidence of internal consistency?

Phase III

1. Does the CSIS-P demonstrate evidence of construct validity?
2. Does the CSIS-P reliably measure prostate cancer screening intention in African American men?

Definition of Terms

For the purposes of this study, the following terms are defined:

Digital Rectal Examination (DRE). Palpation of the prostate gland through digital manipulation of the rectum (Groenwald, 2005).

Prostate Specific Antigen (PSA). A blood test that measures a protein made by the prostate cells. The concentration of this protein is high in the presence of prostate cancer (American Cancer Society, 2008).

Prostate Cancer Screening. Digital rectal examination (DRE) by a health care provider and laboratory testing for prostate specific antigen (PSA) (Groenwald, 2005).

Intention. Attitude toward a particular behavior plus the subjective norms in relation to the behavior (Ajzen and Fishbein, 1980).

Significance of the Study to Nursing

Prostate cancer incidence and mortality rates are increasing among African American men. Currently, African American men have the highest incidence of prostate cancer in the world and cancer death rates among African American men are twice as high as those among Caucasian men. Limited participation in prostate cancer screening activities by African American men has been the most frequent explanation for increased incidence and mortality rates of prostate cancer in this population. However, few studies exist that explore the reasons for this limited level of participation. Discovering the factors that influence intent to screen among African American men may positively impact their participation in prostate cancer screening activities.

Chapter Two

Review of Literature

This chapter reviews research literature relevant to this study. Several models have been used to develop studies related to cancer screening. This review of literature is organized according to the models and theoretical frameworks that are believed to have the greatest effect on intent to participate in cancer screening procedures. The first section reviews studies linking prostate cancer knowledge and participation in prostate cancer screening. This section also will include studies linking knowledge to informed decision making and prostate cancer screening. Second, the theoretical frameworks that serve as the foundation for the study are summarized. Third, research outlining the application of these theories to cancer and cancer screening is discussed. The final section summarizes the literature review and describes a newly developed model based on a combination of the aforementioned models and theoretical frameworks. This model will be used as the guide for development of the CSIS-P.

Prostate Cancer Knowledge, Informed Decision-Making, and Screening

Research related to prostate cancer knowledge among African American men has revealed very low levels of knowledge in this very high-risk group. This lack of knowledge among African American men is believed to be one explanation for the decreased participation in screening procedures. Also, the controversy surrounding prostate cancer screening and the lack of consistent guidelines has resulted in researchers studying prostate cancer education and informed decision-making (Gwede and

McDermott, 2006; Watson et al., 2006; Weinrich, 2001). This controversy has also required healthcare providers to tailor educational interventions so that men can make clear informed choices about participation in prostate cancer screening.

Price, Colvin, and Smith (1993) assessed prostate cancer knowledge among African American men. The subjects were asked to respond to seven statements regarding prostate cancer risk factors and possible signs of prostate cancer. One-third of the respondents could not correctly identify signs of prostate cancer and approximately 20 percent incorrectly identified the risk factors. Also, nearly 60 percent of the sample did not believe that African American men were more at risk for developing prostate cancer and as a result stated that they would not undergo prostate cancer screening.

Prostate cancer knowledge among African American men and Caucasian men was also studied by Demark-Wahnefried et al. (1995). The subjects were selected from a sample of men participating in a prostate cancer screening program. The researchers discovered that 68 percent of the men studied felt that their risk of getting prostate cancer was not any higher than the risk of other men. Equal numbers of African American men and Caucasian men reported this response.

Collins (1997) surveyed 75 African American men to determine their knowledge of prostate cancer and prostate cancer screening procedures. Only 21 percent of the subjects answered all questions correctly. One of the most significant incorrect responses was a negative response to the question related to African American men being at higher risk for getting prostate cancer than Caucasian men.

Weinrich, Weinrich, Boyd, and Atkinson (1998) agree that one explanation for the racial differences in incidence and mortality of prostate cancer is lack of knowledge

regarding prostate cancer screening. These investigators found that only 14 percent of the African Americans studied had a high level of knowledge about prostate cancer and that more Caucasian men in the study reported intention to participate in prostate cancer screening.

Differences among African American men and Caucasian men participating in prostate screening were assessed by Barber et al. (1999). African American men scored significantly lower than Caucasian men on the prostate cancer knowledge test. Also, African American men were less likely to correctly identify the early signs and symptoms of prostate cancer, and they also were less likely to correctly identify family history as a risk factor.

Agho and Lewis (2001) evaluated actual and perceived knowledge of prostate cancer in African American men. The purpose of the study was to explore the relationship between age, income, and education on perceived and actual knowledge of prostate cancer. A secondary purpose was to examine the correlation between knowledge of prostate cancer screening and participation in prostate cancer screening activities. The sample consisted of 108 African American men recruited from churches, adult day care centers, and barbershops. Eighty-six percent of the sample was below 50 years of age, 57% reported yearly incomes of less than \$40,000, and 39% reported educational levels higher than high school. The instrument for data collection consisted of a 31-item questionnaire developed by the researchers. The questionnaire measured perceived knowledge of prostate cancer, actual knowledge of prostate cancer, and participation in prostate cancer screening activities. Demographic information also was collected from the research subjects. The results of the study revealed low levels of knowledge of

prostate cancer. All of the respondents scored less than 70% on 15 of the 21 knowledge statements. Statistically significant differences were found between respondents less than 40 years old and those more than 40 years old in terms of actual knowledge ($p = .047$). Overall, perceived and actual knowledge of prostate cancer were negatively correlated with age, income, and education. Correlations between prostate cancer knowledge and participation in prostate cancer screening activities revealed a moderately positive relationship between actual knowledge of prostate cancer and participation in screening activities ($r = 0.47, p < .001$). Finally, a statistically significant relationship was found between perceived knowledge of prostate cancer and participation in screening activities ($r = 0.55, p < .001$).

Taylor, Shelby, Kerner, Redd, and Lynch (2002) carried out a study to assess the prostate cancer knowledge and prostate cancer screening distress of Caucasian and African American men. The purpose of the study was to determine whether participation in prostate cancer screening affected prostate cancer knowledge and distress. One hundred thirty-six men participated in the study. Forty-six of the subjects were African American men. Seventy percent of the sample was married and more than half of the participants reported educational levels of college degree. Prior to screening, an eleven-item knowledge questionnaire was administered to each participant. The items on the questionnaire were related to identifying the risk factors for prostate cancer. The questionnaire was readministered at the conclusion of each screening. The results of the study indicated that the men had an understanding of the risk factors for prostate cancer ($M = 3.3, SD = .64$). However, knowledge levels did not significantly increase after prostate cancer screening.

The impact of education on prostate cancer knowledge and awareness was the focus of a study conducted by Wilkinson, List, Sinner, Dai, and Chodak (2003). The purpose of the study was to determine if an educational program about prostate cancer would affect knowledge and prostate cancer awareness among African American men. The sample consisted of 835 African American men. Thirty percent of the sample was less than 40 years of age, and 9% of the sample was 60 and older. Seventeen percent of the sample reported educational levels less than high school and 31% reported that they graduated from high school. Each participant was given an electronic keyboard containing twelve multiple-choice prostate cancer knowledge questions. After completing the questionnaire, participants attended a one-hour culturally relevant educational program on prostate cancer given by an African American health educator. The preseminar knowledge scores ranged from seven to 56 percent with a mean score of 26%. The postseminar scores ranged from 53 to 89 percent with a mean score of 73%. Significant correlations were found between higher preseminar and postseminar scores and increased levels of education. The study concluded that prostate cancer knowledge levels among African American men are low and that a culturally relevant educational program can dramatically improve prostate cancer knowledge and awareness.

Cultural sensitivity and informed decision making related to prostate cancer screening was the focus of a study by Chan, Haynes, O'Donnell, Bachino, and Vernon (2003). The purpose of the study was to explore the methods by which African American, Hispanic, and Caucasian couples would want prostate cancer screening information presented in order to make decisions about participating in the screening. Five couples from each ethnic group were presented with a videotape and educational

brochures about prostate cancer screening. They were asked to review the brochures for content and design. They also were asked to make comments about how the brochures should be revised to target their respective ethnic groups. The study results indicated both content and graphic differences among the three ethnic groups. Both African American and Hispanic couples thought relating the size of the prostate gland to a walnut was not a good comparison because walnuts are uncommon in the Hispanic and African American diet. Also, the Hispanic couples felt that the brochure should have more content outlining the advanced symptoms of prostate cancer. They felt that Hispanic men would be more likely to seek out screening if they knew that pain was an advanced symptom. All three groups felt that the colors used in the brochures should be more specific to each ethnic group. For example, the African American couples felt that a Kente cloth theme (red, green, black, and yellow) would be more appropriate for them. The study concluded that healthcare providers should consider cultural sensitivity when promoting informed decision making about controversial screening tests such as the PSA and DRE.

Assessing prostate cancer knowledge among multiethnic men of African descent was the focus of a study conducted by Magnus (2004). The purpose of the study was to examine prostate cancer knowledge levels in African American, Haitian-American, African, and Afro-Caribbeans. Five hundred twenty-eight men were recruited from barbershops and served as the sample for the study. The sample ranged in age from less than 30 years of age to more than 50 years of age. Forty-five percent of the sample was age 31 to 49. Sixty percent of the sample obtained college degrees while 38% reported educational level at high school. A ten-item questionnaire was administered to each

participant to assess prostate cancer knowledge. Demographic data also was collected regarding age, income, ethnicity, education, and family history of prostate cancer. The results revealed no significant differences in knowledge levels based on ethnicity. The mean for correct responses across all ethnicities was 71.2 percent. Increased levels of knowledge were found to have significant positive correlations to income and family history of prostate cancer. Men who earned more than \$50,000 per year scored higher on the knowledge test than those who earned less. Also, men who reported a family history of prostate cancer scored higher (81.9%) than those with no family history (65.4%). The study concluded that prostate cancer educational programs should be targeted to African American men with lower incomes levels and those who have no family history of prostate cancer.

Developing an instrument to measure men's knowledge of the benefits and limitations of prostate cancer screening was the focus of a study conducted by Weinrich et al. (2004). The purpose of the study was to develop and test an instrument to measure the risks and benefits of prostate cancer screening in low-income African American and Caucasian men. Eighty-one men participated in the study. The mean age of the sample was 52 years. Seventy-four percent of the men were African-American, more than half of the men were married (53%), and nearly 60% of the sample reported educational levels higher than high school. The Knowledge About Prostate Cancer Screening Questionnaire was developed by the researchers and contained twelve questions. The concepts measured by the questionnaire included limitations, symptoms, risk factors, side effects from treatment, and screening age guidelines. Content validity of the instrument was assessed by five cancer health professionals, but no content validity index was

reported. Internal consistency of the instrument was reported to be .77. The scores on the knowledge scale ranged from zero to twelve, with a mean knowledge score of 6.6. Men with lower incomes had lower levels of knowledge of the risks and benefits of prostate cancer screening than men with higher levels of knowledge (44% versus 72%). Also, men who were married had significantly lower scores than men who were unmarried (49% versus 74%). There were no significant relationships found between knowledge and ethnicity. The study concluded that both African American and Caucasian men had low levels of knowledge of the benefits and risks of prostate cancer screening and that tailored educational interventions are needed to allow men to make informed choices about prostate cancer screening procedures.

Forrester-Anderson (2005) explored the knowledge and attitudes of African-American men regarding prostate cancer and prostate cancer screening. The purpose of the study was to qualitatively examine the knowledge, attitudes, perceptions, and behavior of African-American men relative to prostate cancer and prostate cancer screening. The sample consisted of 104 men distributed among fourteen focus groups. Each focus group contained six to twelve participants. Sixty-five percent of the sample was married and approximately half of the sample had at least a high school diploma. Fifty-eight percent of the sample had never been screened for prostate cancer. A fourteen-item open-ended questionnaire developed by the researcher guided the focus group discussions. Six negative-based themes and one positive-based theme were identified from the focus groups: lack of knowledge and awareness of prostate cancer screening guidelines, fear of prostate cancer and prostate cancer screening, negative beliefs regarding screening, embarrassment, distrust of healthcare professionals, and lack

of access to services. The positive-based theme was focused on the power of knowledge regarding prostate cancer and the benefits of early detection. Of the six negative-based themes, lack of knowledge emerged as most important among the participants. For example, many of the participants reported that they knew nothing about the DRE or PSA as diagnostic tools for early detection of prostate cancer.

Educating African American men about prostate cancer screening was the focus of a study by Taylor, et al. (2006). The purpose of the study was to determine the effect of educational interventions on knowledge, decisional conflict, satisfaction with screening decision, and self-reported prostate cancer screening among African American men. The study was conducted in order to address informed decision making about prostate cancer screening among African American men. The sample consisted of 238 African American men from Prince Hall Mason's groups. Half of the sample was given print-based prostate cancer information and the other half were presented with a video providing prostate cancer education. The sample also completed demographic scales, a prostate cancer knowledge scale, and an instrument with items related to prostate cancer screening behaviors and satisfaction with prostate cancer screening decision. Nearly 80% of the sample reported that they intended to have a DRE within the next year, while only 50% had actually had a DRE within the past year. Eighty-eight percent of the sample reported that they intended to have a PSA within the next year, while only 44% of the sample had actually had a PSA within the past year. Results of the study also revealed increased prostate cancer knowledge scores after the interventions and reduced decisional conflict about prostate cancer screening. The sample also reported that they were highly

satisfied with their decision about prostate cancer screening, even before the educational intervention.

Plowden (2006) conducted a qualitative study to explore factors that influence African American men's decision to participate in prostate cancer screening. The sample consisted of twelve African American men. The participants ranged in age from 40 to 79. Half of the men in the sample were married and 50% reported past participation in prostate cancer screening. Semi-structured interviews revealed three themes as motivators of prostate cancer screening: learning from others, increasing knowledge, and getting the message out. The men in the sample reported that significant others (relatives, peers, prostate cancer survivors) were a strong influence on whether or not they would participate in prostate cancer screening. Lack of information about options related to prostate cancer screening was the second factor identified from the study. The men reported that knowledge of screening options served as both a motivator and barrier to prostate cancer screening. The third factor identified from the study was the method by which prostate cancer screening messages were delivered to African American men. Many of the men reported that negative information received from the media made it difficult to make decisions regarding prostate cancer screening. Television and radio were viewed as the method most African American men used to get information about prostate cancer and prostate cancer screening.

Examination of education and awareness of prostate cancer and prostate cancer screening was the focus of a study by Hughes, Sellers, Fraser, Teague, and Knight (2007). The purpose of the study was to investigate health behavior, education, and awareness as they relate to prostate cancer; explore the factors that influence decisions to

participate in prostate cancer screening; and assess the barriers and benefits associated with prostate cancer screening. The sample consisted of 54 African American males and 37 African American females. Ten focus groups were conducted and eight themes emerged from the focus groups: education levels, support groups, prostate cancer stigma, effect on sexual performance, mistrust of healthcare system, importance of family support, participation in clinical trials, and importance of culturally sensitive health information. Understanding clinical trials and culturally sensitive information materials were two themes that were consistently discussed throughout all the focus groups. The study concluded that healthcare professional must consistently that African Americans are unique ethnic groups that require targeted educational strategies to increase their participation in early detection procedures.

Health information styles of men participating in a prostate cancer screening informed decision-making intervention was assessed by Williams-Piehot, McCormack, Treiman, and Bann (2008). The purpose of this study was to examine health information styles in terms of a person's demographic characteristics, knowledge about prostate cancer, and attitudes toward prostate cancer and prostate cancer screening. Health information styles were classified as independent active (IA) and doctor-dependent active (DDA). Two types of informed decision-making interventions were given to 319 men: a video that presented prostate cancer information only and a video that presented prostate cancer information along with other men's health issues. The sample ranged in age from 40 to 80 and 30% of the sample was African American. The results of the study indicated that IAs tended to be Caucasian, younger, have higher educational levels, and higher levels of prostate cancer knowledge. The men that were more dependent on their

healthcare provider for decision-making tended to be African American, older, have lower educational levels, and lower levels of prostate cancer knowledge.

Increasing prostate cancer knowledge among African American men and providing men with the appropriate information to make an informed decision continues to be an important element in improving prostate cancer screening in this group. Tailoring educational interventions to this vulnerable group of men may be an integral part of reducing the disparities in prostate cancer and African American men.

Health Belief Model

Components of the Health Belief Model have been linked to participation in health promoting behaviors and serves as a theoretical framework for many studies related to intention of African American men to participate in prostate cancer screenings. The model grew out of a set of independent research problems that confronted investigators in the Public Health Service between 1950 and 1960 (Rosenstock, 1974). There was concern that healthy people were not participating in screening programs. Thus, these investigators determined that a theory was needed to explain preventive health behavior. The people who originally contributed to the development of the model were trained social psychologists. The model is oriented around the belief that it is the world of the perceiver that determines what an individual will do, not the physical environment. The exception to this is when the physical environment becomes a part of the perceptual world in the mind of the behaving individual. It was ordained that a major component of the theory would include motivation and that the model would focus on the present circumstances confronting individuals and not on their past experiences (Rosenstock, 1974).

The earliest characteristics of the Model indicated that in order for an individual to act to avoid disease he or she would need to believe: (1) that the occurrence of the disease would at least have moderate severity on some component of his or her life (2) that he or she was personally susceptible to it (3) that taking a particular action would be beneficial by reducing the susceptibility to that disease and (4) that the act to avoid disease would not involve overcoming important psychological barriers (Rosenstock, 1974). In addition to the beliefs previously outlined, an additional variable was included to complete the study. The original contributors felt that an event or cue would be necessary to initiate the process. These cues may be internal such as the perceptions of one's body, or external such as interpersonal interactions. Later, the concept of health motivation was added to the Model. Health motivation refers to the varying degrees of an individual's readiness to undertake health actions (Rosenstock, 1974).

In summary, the Health Belief Model consists of the following elements: (a) perceived seriousness; (b) perceived susceptibility; (c) perceived barriers; (d) perceived benefits; and (e) health motivation. While all constructs of the Health Belief Model cannot comprehensively explain health behavior, numerous studies (Fowler, 1998; Plowden, 1999; Barroso, 2000; Rutledge, 2001; Gasalberti, 2002; Clarke-Tasker, 2002; Champion, 2003; Pierce, 2003) have shown that a relationship exists between one or more of the constructs and health behavior.

Health Belief Model and Prostate Cancer Screening

Price, Colvin, and Smith (1993) examined perceptions of African American males regarding prostate cancer screening. They found that 40 percent of the sample surveyed did not believe they were susceptible to prostate cancer, even though 57 percent believed

that prostate cancer was a serious disease. Sixty-six to 75 percent of the sample did not perceive any barriers to prostate cancer screening. Ten to 20 percent of the sample reported that they did not perceive any benefits to prostate cancer screening.

Watts (1994) examined health beliefs of African American men regarding prostate cancer. The results of the study indicated a high correlation between perceived seriousness of prostate cancer and intention to undergo screening. There also was a significant relationship between perceived benefits of prostate cancer screening and intention to participate in prostate cancer screening. Even though there were high correlations with perceived seriousness of disease and perceived benefits of screening, there also were significant barriers revealed. The subjects indicated that the discomfort of the rectal examination and concerns about sexual complications if disease was found were serious barriers to screening.

Positive correlations between elements of the Health Belief Model and intention to undergo prostate cancer screening were found by Myers, Wolf, Balshem, Ross, and Chodak (1994). Men who felt that they were susceptible to prostate cancer were more likely to participate in screening. There also were positive relationships between seriousness of prostate cancer, benefits of prostate cancer screening, and intention to undergo screening. The only significant barriers to screening were cost and fear of abnormal examination.

Attitudes of African American men toward prostate cancer screening methods were examined by Gelfand, Parzuchowski, Cort, and Powell (1995). The purpose of the study was to identify the positive and negative feelings of African American men related to prostate cancer screening. Three hundred fifty men were surveyed regarding their

attitudes about digital rectal examination (DRE) and prostate specific antigen (PSA). A survey was administered that asked the following questions: 1) Are you offended by DRE? 2) Are you embarrassed by DRE? 3) Do you perceive the DRE as a violation of your masculinity? 4) Do you link DRE to homosexuality? The results indicated that 60 percent of the respondents had a positive attitude toward DRE, although only 24 percent of the men had ever had a rectal examination.

Myers et al. (1996) studied factors related to intention to undergo annual prostate cancer screening. The purpose of the study was to assess the variables related to prostate cancer screening intention among African American men. The sample consisted of 154 African American men recruited from a large primary care practice in the northeastern United States. A telephone survey was conducted by the researchers utilizing a researcher-developed questionnaire that addressed susceptibility to prostate cancer, belief in the value and efficacy of prostate cancer screening, and the impact of social influences in encouraging participation in prostate cancer screening. Sixty-four percent of the sample felt that they were susceptible to prostate cancer, 58 percent felt that prostate cancer was a serious disease, 59 percent felt that prostate cancer screening was beneficial, and 63 percent believed in the long-term value of screening. All of these variables were positively related to screening intention. Forty-one percent of the sample said that a barrier to screening would be embarrassment, while 18 percent said they would not participate in screening because they believed it would cause “sexual problems” (p. 474).

Myers, Chodak et al. (1999) explored adherence by African American men to prostate cancer early detection. The purpose of the study was to identify the factors that predict compliance by African American men as it relates to prostate cancer screening.

The sample consisted of 413 men recruited from a university health services center in a metropolitan northeastern city. In this study, only 14 percent of the sample felt that they were susceptible to prostate cancer and only 19 percent perceived prostate cancer to be a serious disease. However, 89 percent of the participants believed prostate cancer screening was beneficial. Finally, only 38 percent of the sample indicated that they would be willing to undergo prostate cancer screening.

Identifying barriers to prostate cancer screening was the focus of a study conducted by Shelton, Weinrich, and Reynolds (1999). The purpose of the study was to investigate the relationship between perceived barriers and participation in prostate cancer screening. The sample included 1,395 African American men from the southern United States. The men were recruited from barbershops, car dealerships, work sites, civic organizations, subsidized housing areas, and meal sites. The mean age of the sample was 50.0 years and the educational levels were equally distributed among less than high school, high school graduate, and some college. The theory of planned behavior served as the conceptual framework for this descriptive correlational study. Perceived barriers were linked to the perceived behavioral control element of the theory of planned behavior. A 44-item prostate cancer questionnaire developed by the researchers was utilized for data collection. Content validity of the instrument was reported at 80 percent while Cronbach alpha ranged from 0.82 to 0.90. Five barriers were identified as those most frequently reported by the sample. These barriers included lack of knowledge about the need for screening, cost of screening, lack of insurance, not knowing where to go for screening, and being unaware about what type of health care provider to contact for screening. Of all the barriers reported, embarrassment was the

only significant predictor of participation in prostate cancer screening. In spite of these barriers, 60% of the sample participated in the free screening offered after the study was completed.

Plowden (1999) utilized the Health Belief Model to understand prostate cancer in African American men. The study results indicated that African American men were more likely to participate in prostate screening if they perceived themselves to be personally susceptible to disease and if they perceived a personal benefit to the early detection of the disease. The study also revealed that African American men were more likely to present with more advanced prostate cancer than Caucasian men, implying their disbelief in the seriousness of the disease.

Steele, Miller, Maylahn, Uhler, and Baker (2000) examined prostate cancer screening practices of older African American men. The purpose of the study was to assess their attitudes, knowledge, and screening practices as they related to prostate cancer. The sample included 742 African American men selected through random telephone interviews. The men ranged in age from 50 to 74 with 85% of the men between the ages of 50 and 69. Nearly two-thirds of the sample reported educational levels at high school or less. A thirteen-question survey developed by the New York State Department of Health was administered over the phone. Only 30% of the men surveyed had ever heard of a PSA and only 7% perceived that they were at high risk for developing prostate cancer. Physician recommendation was a significant predictor of participation in prostate cancer screening. Men who received physician recommendation were 28.5 times more likely to participate in prostate cancer screening than those who

didn't. Income also approached significance in that men who had income levels above \$25,000 were more likely to get screened.

Plowden and Miller (2000) examined health seeking behaviors of African American men. The purpose of the study was to explore the factors that motivate African American men to participate in health seeking and health promotion activities. The sample consisted of 38 African American men ranging in age from 24 to 94. The lowest educational level of the sample was 5th grade while the highest was graduate degree. Men were recruited from churches, community centers, and service organizations. The health belief model served as the theoretical model for this study. Four focus groups were held to collect data regarding health seeking behavior. The following questions were asked during the focus groups: 1) What are the benefits of seeking health care; 2) Identify potential barriers to seeking health care; 3) Identify perceived severity of illness in the community; 4) What diseases/illnesses are you prone to; 5) What motivates you to seek health care. Comparative analysis was done on the results of the focus groups. Cost, inconvenient office hours, lack of transportation, feelings of powerlessness, and fatalism were expressed as barriers to health seeking behaviors. Lack of sensitivity by health care providers was also expressed as a barrier. Some of the benefits of seeking health care included prevention of illness and a feeling of comfort. Relieving symptoms of illness and avoidance of death were listed as motivators in seeking out health promotion activities.

Examining prostate cancer health beliefs and practices was the focus of a descriptive non-experimental study conducted by Fearing, Bell, Newton, and Lambert (2000). The purpose of the research was to explore the health beliefs and health practices

of African American men as they relate to prostate cancer. A convenience sample of 59 African American men was recruited from churches, fraternal organizations, and health fairs in the midwestern United States. The instrument was developed by the researchers, and Pender's health promotion model was the framework used in its' development. The questionnaire assessed prostate cancer knowledge, prostate health screening behaviors, and health beliefs. The results of the study revealed that almost three-fourths of the sample had undergone both PSA and DRE. Fifty percent of the sample believed that they were at high risk for developing prostate cancer. Second, 50% of the sample believed that there was nothing that they could do to prevent prostate cancer. Two-thirds of the sample reported sexual dysfunction as the most disturbing concern about prostate cancer treatment. Finally, 91% of the sample reported their intent to obtain future testing for prostate cancer.

Boyd, Weinrich, Weinrich, and Norton (2001) examined barriers to prostate cancer screening in African American men. The purpose of the study was to identify the structural obstacles to prostate cancer screening among African American men. Structural obstacles were defined as those barriers that focused on the social system and the health care delivery system. The sample consisted of 549 men from the southern United States. Sixty-nine percent of the men were African American. A correlational survey was designed to assess structural obstacles. The study results revealed that Caucasian men were more likely to participate in prostate cancer screening than African American men. Married men also were more likely to participate in screening than unmarried men. Some of the structural barriers that were identified in the study included lack of access to a phone to make screening appointments, lack of transportation, lack of

knowledge in finding the proper physician, and inability to read the pre-appointment information.

Clarke-Tasker and Wade (2002) conducted a qualitative study to identify attitudes and behaviors of African American men related to prostate cancer screening. The purpose of the study was to assess African American men's knowledge about prostate cancer and prostate cancer screening as well as examine their attitudes and behaviors regarding participation in prostate cancer screening activities. The health belief model served as the framework for this study. The sample consisted of twelve African American men. Seven of the men ranged in age from 38 to 49 while the other five ranged in age from 51 to 80. Two focus groups were conducted and open-ended questions were asked regarding prostate cancer screening behaviors. Results of the focus groups indicated that older men were more knowledgeable about prostate cancer than younger men. The younger men in the study expressed more fear about DRE than the older men. None of the participants were aware of the increased risk of prostate cancer among African American men. Also, the men in the sample who had undergone DRE incorrectly believed that the physician had inserted the entire hand into the rectum.

Lambert, Fearing, Bell and Newton (2002) compared the prostate cancer health beliefs and screening practices of African American and Caucasian men. The purpose of the study was to investigate the prostate cancer screening practices of men over the age of 45. Fifty-five African American and 49 Caucasian men served as the sample. A self-administered questionnaire was developed using Pender's health promotion model as the theoretical framework. The study results indicated that African American men were less likely to have had a DRE than Caucasian men (75% versus

82%). A second finding in the study was that Caucasian men were more likely to believe that family history of prostate cancer was an important factor in prostate cancer development. Also, significant differences were found between the two groups on the factor of faith. African American men were more likely to rely on faith to stay healthy than Caucasian men ($t = 2.819$, $df = 96$, $p < .01$).

Odedina, Scrivens, Emanuel, LaRose-Pierre, Brown, and Nash (2004) explored factors that influence prostate cancer screening behavior in African American men utilizing qualitative methods. The purpose of the study was to identify predisposing factors that affect African American men's decisions to participate in prostate cancer screening. Forty-nine African American men participated in one of ten focus group sessions. Nearly half of the participants were married (41%) and nearly a quarter of the participants (24%) had college degrees. Focus group sessions lasted from 44 to 165 minutes. The researchers utilized ethnography to complete the data analysis. Eleven themes were identified from the focus groups and were as follows: impediments to prostate cancer screening, positive outcome beliefs connected with prostate cancer screening, negative outcome beliefs connected with prostate cancer screening, social influence, prostate cancer knowledge, resources or opportunities that facilitate prostate cancer screening, perceived susceptibility to prostate cancer, perceived severity of prostate cancer, perceived threat of prostate cancer, positive health activities, and experiences with illness. Impediments to prostate cancer screening were identified by the subjects as the most significant factors affecting screening participation. These impediments included lack of access to healthcare, discomfort associated with DRE, mistrust of the healthcare system, illiteracy, feelings of powerlessness, and lack of

information from healthcare provider. The study concluded that identifying factors that impact African American men's participation in prostate cancer screening can be important in that they can be used to develop culturally sensitive and relevant interventions that may in turn increase screening participation in a very vulnerable population.

Attitudes and beliefs about prostate cancer screening among African American men were qualitatively explored by Oliver (2007). The purpose of the study was to describe the personal beliefs and attitudes about prostate cancer and prostate cancer screening among rural African American men. The sample consisted of nine African American men who participated in semi-structured interviews. The participants ranged in age from 43 to 72 and 78% of the participants were married. Interviews were conducted for sixty minutes utilizing a pre-established interview guide. Content analysis was used to categorize the qualitative data. Six themes were gleaned from the data analysis: disparity, lack of understanding, mistrust of the system, fear, traditions, and threats to manhood. The study findings concluded that efforts to promote prostate cancer screening among African American men must first address their fears and distrust of the healthcare system in order to positively impact the participation of this high-risk group.

Identifying personal factors that affect prostate cancer screening behavior among African American men was the focal point of a study conducted by Odedina, Campbell, LaRose-Pierre, Scrivens, and Hill (2008). The study sought to test three hypotheses: 1) behavioral, psychological, and social factors determine an African American man's intention to participate in prostate cancer screening 2) psychological, behavioral, and social factors as well as behavioral intention will determine an African American man's

participation in prostate cancer screening 3) instrumental beliefs, affect toward means, and self-efficacy is significantly related to prostate cancer screening behavior. The Attitude-Social Influence-Efficacy (ASE) model served as the theoretical framework for the study. The sample consisted of 191 African American men. The sample ranged in age from less than 40 years of age to more than 80 years of age. The majority of the sample (95%) was between 40 and 79 years of age. Most of the respondents reported an educational level of “some college” and most of the men were married. The study instrument was the African-American Men Prostate Cancer Screening Behavior Scale. The scale assessed the following variables: past prostate cancer behavior, social influence, attitude toward prostate cancer screening, perceived efficacy, perceived severity of prostate cancer; perceived susceptibility to prostate cancer, intention to participate in prostate cancer screening, instrumental beliefs, affect toward means relative to prostate cancer screening, prostate cancer knowledge, and demographic variables. The study results revealed that attitudes, social influences, perceived efficacies, instrumental beliefs, and behavioral intentions were high among African American men while perceived susceptibility, perceived severity, and knowledge about prostate cancer was low.

There are a variety of attitudes and beliefs about prostate cancer and prostate cancer screening that can inhibit African American men from participating in screening procedures. Identifying and examining these attitudes and beliefs is imperative in order to positively impact screening participation.

Fatalism

Studies have revealed that fatalism may be a deterrent to participation in health-promoting behaviors. Fatalism involves the concept of predestination. It is the belief that there are some things in life that would occur despite any preventive actions that might be taken by an individual or group of individuals. It is believed to be characterized by perceptions of hopelessness, worthlessness, meaninglessness, powerlessness, and social despair (West, 1993). Fatalism as it relates to health is the belief that there are some health issues that people cannot control (Straughan and Seow, 1998). Fatalism is believed to vary along a continuum, which ranges from very fatalistic on one end of the continuum to a very strong belief in one's ability to control outcomes on the other end of the continuum.

Fatalism, Cancer, and African Americans

Fatalism in African Americans is viewed as a significant reason for decreased participation in health-promoting activities. It is believed that perceptions of fatalism evolve over time as African Americans face the challenges of the racial divide in health care. Underwood (1992) suggests that fatalism is more common among African American men. Vetter, Lewis, and Charny (1991) suggest that fatalism is more prevalent among elderly African Americans regardless of gender. Cancer fatalism is the perception that cancer is inevitable regardless of a person's actions to prevent it (Wilkes, Freeman, & Prout, 1994). Freeman (1989) focused on poverty as the primary reason for cancer fatalism among African Americans. Powe and Johnson (1995) suggested that other factors such as substandard health care and health care discrimination also may contribute to the degree of cancer fatalism among African Americans.

Fatalism among African American men was studied as the concept of learned helplessness by Underwood (1992). This concept supports the belief that nothing can be done about the status of a person's health. This belief leads a person to avoid participation in health promotion activities. The purpose of the study was to evaluate the degree to which learned helplessness affected cancer risk reduction and early detection behaviors in African American men. A sample of 236 African American men participated in the study. A five-part instrument was developed by the researcher to assess perceptions of learned helplessness and examine understanding of and participation in cancer early detection activities. Thirty-six percent of the sample perceived themselves to be helpless regarding control of their health. Seventy-five percent of the sample believed that cancer deaths would not be reduced even if screening recommendations were consistently followed. Also, men who perceived themselves as helpless in regard to health status were less likely to participate in cancer risk reduction and early detection activities. Overall, men within the group consistently expressed a belief that they had little or no control over their health status and that good health was a matter of chance.

Powe (1995a) conducted a descriptive, correlational study to assess perceptions of cancer fatalism among older Americans. The purpose of the study was to identify predictors of cancer fatalism based on knowledge of colorectal cancer, educational level, and income. The sample consisted of 192 older Americans recruited from congregate meal sites (strategically placed city-wide sites that provide free meals to the elderly) in the southeastern region of the country. Sixty-two percent of the sample was African American and 24% were men. The instruments in the study consisted of a demographic

questionnaire and the Powe Fatalism Index developed by the researcher. The third instrument was the Colorectal Cancer Knowledge Questionnaire. The results of the study indicated that African American men were more fatalistic (mean= 10.9) than Caucasian men (mean=8.8). This difference was found to be statistically significant ($p = 0.0001$). African American men also were less likely to participate in colorectal screening than Caucasian men. Only 29 percent of the African American men in the sample participated in the screening compared to almost 50 percent of the Caucasian men in the study. Also, significant negative relationships were found between cancer fatalism and education, income and cancer fatalism, and knowledge of colorectal cancer and cancer fatalism. These results suggest that cancer fatalism is likely to be present in African Americans with lower educational levels, lower income levels, and a decreased knowledge of cancer.

Powe (1995b) studied the degree of cancer fatalism among elderly Caucasians and elderly African Americans. The purpose of the study was to determine the relationship between several demographic factors (age, gender, income, education) and cancer fatalism. The sample consisted of 192 Caucasian and African American elders from randomly selected senior citizen centers. A demographic questionnaire and the Powe Fatalism Index served as the study instruments. The mean age of the sample was 76 years. Seventy-eight percent of the sample was female. The mean yearly income was \$6500 and the mean educational level was eight years. Pearson correlation coefficients were calculated to determine the relationship between each demographic factor and cancer fatalism. African Americans were found to be significantly more fatalistic than Caucasians and females were found to be more fatalistic than males. Significant negative

relationships were found between education and fatalism and between income and fatalism. There was no relationship between age and fatalism. Among all the demographic variables, education provided the greatest degree of variability.

Fatalism among elderly African Americans was studied by Powe (1995c). The purpose of this study was to assess the relationship between fecal occult blood testing and cancer fatalism. The sample was selected from seven congregate meal sites (N=118). The average age of the sample was 73 years. More than 50% of the sample reported educational levels less than 8th grade and income levels below poverty. A demographic questionnaire, the Powe Fatalism Index, and Hemocult II kits served as the instruments in the study. Hemocult II kits were distributed after videotape instruction, written instruction, and demonstrations were conducted. After instruction, only 29% (n=34) of the sample actually participated in fecal occult blood testing. This finding seems to suggest that fatalism may be related to decreased participation in fecal occult blood testing by African Americans. Study results also indicated that fatalism was the only significant predictor of fecal occult blood testing ($p = 0.0006$) among the factors of age, income, education, and fatalism. These results support the belief that fatalism is a vital factor in cancer screening behaviors among elderly African Americans.

Fatalism and breast cancer in African American women was the focus of a study conducted by Conrad, Brown, and Conrad (1996). The sample consisted of 600 people randomly selected from malls and marketplaces. A demographic questionnaire was administered along with a 10-item instrument to measure fatalism. African Americans were found to be more fatalistic than Caucasians. The demographic variables of age, education, and income were found to be statistically significant. Pairing of African

Americans and Caucasians with similar educational backgrounds and income levels resulted in a decrease in the differences of the fatalism scores. This finding suggests that persons with lower income levels and lower educational levels are highly fatalistic and as a result fail to seek medical care at early stages of disease and may not seek out cancer prevention/risk reduction activities.

Fear and fatalism among African American women was studied by Phillips, Cohen, and Moses (1999). The purpose of the study was to explore attitudes, beliefs, and practices of African American women as they relate to breast cancer and breast cancer screening. The study design was qualitative and used the focus group methodology. Twenty-six women of diverse educational and income levels served as the sample. The women ranged in age from 40 to 66. Twenty-seven percent of the sample reported less than high school as their educational level, while 73% reported at least a high school education. Sixteen of the women reported annual incomes between \$10,000 and \$39,999, while eight of the women reported annual incomes greater than \$39,999. Two of the women refused to report their annual income. Three focus groups were conducted. Semi-structured interviews were developed utilizing the Health Belief Model as the framework. All of the members of the groups stated that fear was the first thing that came to mind when hearing the word breast cancer. Another significant finding from the focus groups was the notion that avoiding discussions about breast cancer and refraining from participation in screening practices may make the breast cancer “go away”. Additionally, all the groups in this study linked breast cancer with death or the possibility of death. The study concludes that in order to counterbalance the fatalism and negative attitudes that African American women have associated with breast cancer, African

American communities need to continue to be presented with culturally relevant programs related to breast cancer and breast cancer screening. In addition, these programs need to be evaluated regarding their effectiveness.

Powe and Weinrich (1999) investigated an intervention to decrease cancer fatalism among rural socioeconomically disadvantaged elders. The purpose of the study was to assess the effectiveness of a video intervention designed to decrease cancer fatalism and increase participation in fecal occult blood testing. The intervention for this study was a 20-minute video (*Telling the Story...To Live is God's Will*) that was developed to provide information related to colorectal screening and address the concept of fatalism. The video was developed based on the premise that persons with less knowledge tend to be more fatalistic. The sample consisted of 70 persons selected randomly from senior citizen centers. The mean age of the subjects was 75 years and their mean level of education was approximately 7 years. Ninety percent of the sample was African American and nearly 90% female. Eighty percent of the sample reported an annual income less than \$5,000. A repeated measure, pretest/post-test design was used. Forty-two people were in the intervention group, while 28 made up the control group. The pretest instruments included the Powe Fatalism Index developed by the primary author, the Colorectal Cancer Knowledge Questionnaire developed by the secondary author and others, and a demographic questionnaire developed by the researchers. The intervention group viewed the *Telling the Story* video. This video reflected the cultural values, attitudes, and belief systems inherent in the African American culture. The video contained several scenes involving colorectal cancer and colorectal cancer screening. Fecal occult blood testing was demonstrated in the video and gospel music was used as

transition between the scenes. The majority of the persons in the interventional video were African American. The control group viewed a 13-minute video developed by the American Cancer Society. This video provided a summary of colorectal cancer and outlined the procedure and purposes of fecal occult blood testing. The majority of the people in the control video were Caucasian. Seven days after the pretest, fecal occult blood testing kits were distributed. The Powe Fatalism Index and the Colorectal Cancer Knowledge Questionnaire were also readministered. The results of the study indicated that cancer fatalism was significantly decreased in the intervention group at post-test. The mean pretest cancer fatalism score of the intervention group was 9.90, while the mean post-test score was 8.50. The mean pretest cancer fatalism score of the control group was 9.89, while the post-test mean score was 9.79. Knowledge scores also increased significantly in the intervention group when compared to the control group. Sixty percent of the intervention group and 68% of the control group participated in fecal occult blood testing. These findings suggest that cancer fatalism is a variable that can be affected by culturally sensitive and culturally relevant educational material. It also seems to suggest that culturally relevant cancer education can increase knowledge and may increase participation in cancer risk-reduction activities.

Plowden and Miller (2000) examined motivators of health seeking behaviors in African American men. The purpose of the study was to explore factors that motivate African American men to participate in health promotion activities. The Health Belief Model served as the framework for the study. The sample for the study consisted of 38 African American men from a northeastern urban city. The men ranged in age from 24-94. The mean income was \$10,000-\$20,000 and the educational levels ranged from 5th

grade to graduate degrees. The men were recruited from community organizations such as community centers and churches. Four focus groups were conducted to collect data related to health-seeking behaviors. Demographic information also was collected. Descriptive statistics were utilized to analyze the demographic data. Leininger's qualitative data analysis model was used to analyze the focus group transcripts. Themes from the focus group interviews were developed by the researcher and reviewed by experts in focus group methodology and patterns of African American health behavior. The subjects reported that some barriers to health promotion activities included cost, lack of transportation, limited knowledge about health issues, and lack of sensitivity of health care providers. Fear and inevitability of death also were listed as barriers to participating in health-promotion screenings. Men who expressed these fatalistic attitudes also expressed that they would be less likely to seek out health-promoting activities. These findings again confirm the need for culturally appropriate educational materials in order to dispel myths in the African American community regarding health promotion screenings and activities.

Powe (2001) examined cancer fatalism among elderly African American women. The purpose of this study was to identify the strength of perceptions of cancer fatalism and describe the predictors of high cancer fatalism levels among elderly African American women. The sample consisted of 204 African American women who ranged in age from 50-99 who were recruited from senior citizen centers. Almost 90% of the women reported annual incomes less than \$10,000. The mean educational level of the sample was 7.9 years. The instruments of data collection included the Powe Fatalism Index, the Colorectal Cancer Knowledge Questionnaire and a demographic instrument.

The mean score for women with high levels of cancer fatalism was 12.79 (range 0-15), while the mean score for women with low levels of cancer fatalism was 6.08. The differences between the two groups of women were found to be statistically significant ($df = 202, t = 21, p = .0001$). One hundred twenty-nine of the women reported high levels of cancer fatalism. These women also were found to have lower levels of knowledge about colorectal cancer, were older, and had lower educational levels. Also, women with lower income levels tended to report higher levels of cancer fatalism. However, income was not identified definitively as a predictor of high cancer fatalism. These findings suggest that older women with lower educational levels tend to have higher degrees of fatalism.

Cancer fatalism among African American patients and their providers was the focus of a study conducted by Powe, Daniels, and Finnie (2005). The purpose of the study was to examine perceptions of cancer fatalism in African American patients and the healthcare providers that offer services to those patients. A secondary purpose was to explore the relationship between specified demographic variables and cancer fatalism. A descriptive comparative design was used to guide the data collection for the study. The sample consisted of 52 patients and 35 providers. The sample was recruited from primary care centers in a large southeastern city. Seventy-five percent of the patients were women and 90% were African American. Eighty-eight percent of the providers were women and 71% were African American. The average of the patients was 39 and the average educational level was 12 years. The average of the providers was 41 and the average years within the cancer discipline was 9.8 years. The instruments of data collection included the Powe Fatalism Inventory (PFI), the Perceived Patient Fatalism

Inventory (PPFI), and a demographic questionnaire. The PPFI is a modified version of the PFI developed by the researcher to assess providers' perceptions of their patients' cancer fatalism. The study results revealed a statistical difference between patients' cancer fatalism scores and the scores that the providers' perceived fatalism scores. Also, there was a significant negative correlation between cancer fatalism and the patient's educational level. There were no statistically significant relationships between cancer fatalism and age, income, or marital status. The findings of this study suggest the need for increased communication between patients and their health care providers regarding cancer and cancer fatalism so that participation in cancer screening activities may be increased.

Spurlock and Cullins (2006) examined by cancer fatalism and breast cancer screening in African American women. The study used a descriptive correlational design to explore the relationship between cancer fatalism and breast cancer screening. The researchers also sought to examine the degree to which income, age, and education influence perceptions of cancer fatalism. The convenience sample consisted of 71 African American women recruited from senior citizen housing centers, low-income housing developments, churches, and community centers. The participants ranged in age from 20 to 73 and the mean educational level was 13.4 years. Thirty-six percent of the respondents reported annual incomes less than \$10,000 and 34% indicated that they had no health insurance. Study results revealed a higher degree of fatalism among older women, women who were unemployed and women who had no health insurance. Higher degrees of fatalism also were reported among women who did not practice monthly breast self-examination and those who had not received a clinical breast examination

from their health care provider. Correlations between demographic variables and cancer fatalism revealed significant negative correlations between age, income, education and cancer fatalism. The results of this study reaffirm the need for more cancer educational programs for older, low-income African Americans.

Research regarding cancer fatalism in African Americans reveals that it is a viable reason for lack of participation in illness prevention and early detection activities. This is especially true among elderly, low-income African Americans. Also, culturally relevant educational interventions have proven to be beneficial in helping to decrease the degree of fatalism among Africans, especially African American men.

Health Promotion

Healthy lifestyles have been studied as a factor to explain health behavior. Healthy lifestyle is a component of the Health Promotion Model. The Health Promotion Model serves as the framework for explaining and predicting healthy lifestyles. The premise of the Health Promotion Model is that there are seven perceptual/cognitive dimensions that directly affect healthy lifestyle: perception of importance of health, perceived control of health, perceived self-efficacy, one's definition of health, perceived health status, perceived benefits of health-promoting behaviors, and perceived barriers to health-promoting behaviors (Pender and Pender, 1996). These dimensions were captured quantitatively in the Health Promotion Lifestyle Profile (HPLP) by Walker and Pender (1990) and the Health Promotion Lifestyle Profile II (HPLP II) by Walker and Hill-Polerecky (1996).

Zhan, Cloutterbuck, Keshian, and Lombardi (1998) investigated health-promoting measures used by ethnic elderly women. The sample consisted of African American

women, Chinese American women, and European women. The study results indicated that the perception of health status was positively correlated with a healthy lifestyle. Analysis also revealed that each ethnic group identified significantly different measures to promote health implying that definition of health is also an important indicator of healthy lifestyle.

Gender differences in the health-promoting lifestyles of African Americans were the focus of a study conducted by Johnson (2005). The purpose of the study was to explore the overall health-promoting lifestyles of African American men and women and to examine whether sociodemographic factors (gender, age, highest educational level obtained, marital status, and income) influence the degree of health-promoting behavior among this group. The sample consisted of 223 African Americans, with 108 being African American men. The mean age of the sample was 37 years and 23% of the sample reported educational levels of 12th grade or less. The instruments of measure included a demographic questionnaire and the Health-Promoting Lifestyle Profile II developed by Walker, Sechrist, and Pender (1987). There were no statistically significant gender differences in health-promoting lifestyles. However, participants with higher income and educational levels had higher health-promoting lifestyle scores. Also, African Americans who were married or living with a significant other scored higher on the Health-Promoting Lifestyle Profile II.

Health Promotion and Cancer

Frank-Stromborg, Pender, Walker, and Sechrist (1990) tested the Health Promotion Model as a framework for explaining healthy lifestyle in a sample of 385 ambulatory cancer patients. The purpose of the study was to determine the degree to

which cognitive/perceptual variables and modifying variables are able to explain health-promoting behaviors in cancer patients. Results from this study demonstrated that 15.8 percent of the variance was explained by control of health, 11.7 percent of the variance was explained by definition of health, and 7.4 percent of the variance was explained by health status.

Underwood and Sanders (1990) studied the factors that contribute to health promotion behaviors in African American men. It was specifically focused on behaviors that lead to the reduction of cancer risk or that involved early detection of cancer. The sample consisted of 177 African American men. Results of the study indicated that attitudes toward cancer screening, attitudes related to cancer risk and decreasing exposure to carcinogens, attitudes related to motivation to reduce cancer risk, and attitudes related to influence of health professionals were the strongest predictors for participation in health promoting behaviors, explaining 72 percent of the variance. However, further analysis of the results indicated that the men did not consider themselves very health conscious. Only 56 percent of the sample reported that they paid attention to their bodies and only 42 percent stated that they made conscious attempts to involve themselves in activities of physical fitness. Less than a third of the men in the study reported that their diet contained an adequate amount of vitamins, minerals, and fiber. Also, only 12 percent of the men reported having a physical examination within the past three years. Stepwise regression analysis revealed attitude as the strongest predictor of health promoting behaviors.

Underwood (1991) analyzed determinants of early cancer detection in African American men. Study results revealed that men with a strong health consciousness were

more likely to participate in cancer risk-reduction behaviors such as screening. In addition, men who perceived themselves to be in control of their health also were more likely to participate in cancer screening and employ cancer risk-reduction behaviors.

Attitudes toward prostate cancer screening were studied by Cowen, Kattan, and Miles (1996). They determined that men who participated in other health-promoting behaviors were significantly more likely to participate in prostate cancer screening. For example, men who had their serum cholesterol checked annually were twice as likely to complete prostate cancer screening. Also, men who had been tested for colorectal cancer were twice as likely to undergo prostate cancer screening.

Though limited studies exist that examine the relationship between health promotion and cancer risk-reduction behaviors, it remains a significant part of cancer prevention and early detection. Future studies focusing on health-promoting behaviors and prostate cancer screening in African American men need to be conducted in order to impact the wellness of this susceptible group.

Theory of Planned Behavior

The theory of planned behavior (TPB) was developed from the social cognitive theory. It was developed to explain the role of beliefs and attitudes in determining behavior. It is based on the premise that behavior is a function of intention (Ajzen and Fishbein, 1980). They developed a model that states “intention is equal to attitude toward the behavior plus the subjective norms in relation to the behavior”. It serves as the theoretical framework for describing the intentions of individuals to perform behaviors.

The theory postulates that there are three basic factors that determine a person's behavioral intentions: a personal or attitudinal factor, a social or normative factor and perceived behavioral control. The personal or attitudinal factor refers to the person's attitude toward participating in the behavior. It defines whether the person has a favorable or unfavorable feeling toward performing the behavior (Ajzen and Fishbein, 1980). For example, in cancer screening, the attitudinal factor refers to whether an individual feels that there are benefits to participating in cancer screening or negative consequences associated with participating in cancer screening. The social or normative component involves the influence of the environment on intentions and behavior. It deals with an individual's perception that important others desire the performance or nonperformance of the behavior. The premise is that the greater the perceptions of important others to perform the behavior, the higher the level of intention to perform the behavior (Ajzen and Fishbein, 1980). Perceived behavioral control was added to the model by Ajzen (1991). Perceived behavioral control is the belief that most behaviors are located along a continuum that moves from total control to complete lack of control. Perceived behavioral control is a product of control belief and perceived power. Control belief is a person's perception that there are benefits and barriers to performing the behavior. Perceived power is the person's perception that the benefits and/or barriers will make performing the behavior easier or more difficult (Redding, Rossi, Velicer, and Prochaska, 2000).

Theory of Planned Behavior and Health Behaviors

Brubaker and Wickersham (1990) applied the theory of planned behavior (TPB) to testicular self-examination. The purpose of the study was to examine the relationship

between the components of the theory of planned behavior and the performance of testicular self-examination. The sample consisted of 232 male students in an undergraduate health class. The researchers did not report a racial breakdown of the subjects in the study. The instruments for the study included a theory of reasoned action (TRA) questionnaire and a demographic questionnaire. The results of the study indicated that attitude toward the behavior and subjective norm accounted for 39 percent of the variance in intention. It was also noted that attitude made a greater contribution to intention than subjective norm.

McCaul, Sandgren, O'Neill, and Hinsz (1993) examined the value of the theory of planned behavior in forecasting health-protective behaviors. The purpose of the study was to explore the predictive ability of the TPB in determining intentions to participate in breast self-examination (BSE) and testicular self-examination (TSE). The relationship between intention and actual performance of the behavior also was explored. The sample consisted of 138 undergraduate college students. Forty-eight percent of the sample (n=66) were women while 52% of the sample (n=72) were men. The researchers reported no other demographic characteristics of the sample. The instruments for the study included a BSE and TSE knowledge pretest and a researcher-developed tool based on the variables of the TPB. The TPB instrument consisted of a ten-item attitude subscale, a single item subscale to measure subjective norm, two items to assess perceived behavioral control, and a single item subscale to measure intention. The study results found that there were significant correlations between attitude and intention ($r=0.58$ for BSE, $r=0.65$ for TSE; $p<.05$), subjective norms and intention ($r=0.38$ for BSE, $r=0.31$ for TSE; $p<.05$), and perceived behavioral control and intention ($r=0.63$ for

BSE, $r=0.89$ for TSE; $p<.05$). Perceived behavioral control was found to be the strongest predictor of BSE and TSE intention. Intention also predicted actual BSE and TSE performance accounting for nine and eleven percent of the variance, respectively. This study concluded that the TPB is an appropriate model to explain cancer screening intention and behavior in young adults. It also concluded that perceived behavioral control is a very strong predictive variable among young adult men.

Compliance with breast cancer screening behaviors was the focus of a study conducted by Friedman, Woodruff, Lane, Weinberg, Cooper, and Webb (1995). The purpose of the study was to explore predictive ability of the theory of planned behavior in obtaining yearly mammograms and yearly clinical breast examinations. The sample consisted of 312 women age 50 and older. The mean age was 55.9 and the mean educational level was 14.8 years. Fifty-seven percent ($n=179$) of the sample was Caucasian and 43% ($n=133$) were non-Caucasian. Seventy-nine of the non-Caucasian subsample was African-American and 23 were Hispanic. Subjects were recruited from female employees of a hospital in the midwestern U.S. Two questionnaires were mailed to the subjects. The first was a demographic tool developed by the researchers. Study participants also were asked to report if they had received a mammogram or clinical breast examination within twelve months prior to the study. The second instrument was related to intention. Intention was measured by a single item related to the likelihood that the subject would get a mammogram in the next year. Responses to this item were rated on a five-point Likert-type scale that ranged from “not at all” to “extremely”. Approximately 80% of the study participants reported that they had received a clinical breast examination and mammogram at least twelve months prior to the study. Eighty-

eight percent reported that they were “very likely” or “extremely likely” to get a mammogram in the following year while 87% responded in the same manner when asked about the likelihood of getting a clinical breast examination in the following year. The study results also indicated that efficacy of mammogram and clinical breast examination was significantly related to intention ($p \leq .05$). Significant relationships also were found between intention and barriers to mammography and clinical breast examination ($p \leq .001$) as well as between intention and physician recommendation for mammogram and clinical breast examination ($p \leq .001$). In relation to the TPB model, efficacy in this study is most closely related to perceived behavioral control. Barriers are related to the attitude component of the model while physician recommendation is related to subjective norms. Conclusions from the study indicated that perceived barriers to mammography and physician recommendation were the strongest predictors of breast cancer screening intentions and behaviors.

Van Ryn, Lytle, and Kirscht (1996) explored the relationship between breast self-examination (BSE) and the theory of planned behavior. The purpose of the study was to test the usefulness of the theory in predicting performance of BSE. The sample consisted of 185 telephone company employees in a midwestern state. The participants ranged in age from 26 to 61. Fifty-five percent of the sample was female and 89% were Caucasian, while 11% were from other ethnic groups. The authors did not report a more specific breakdown of the other ethnic groups. The instruments used to evaluate the relationship between BSE and the TPB included a self-reported health risk appraisal and an interview containing questions derived from the elements of the theory of planned behavior. The interview included questions related to attitude toward BSE, frequency of BSE, and

whether the subjects had intention to change their personal behavior. The interview was repeated 6 months later to determine if the participants had moved from intending to complete the behavior (BSE) to actually performing the behavior. The results of the study indicated that attitude and subjective norms had a direct effect on intention to perform BSE. When age and education were added as controls, there was no change in the effect pattern.

Identifying factors that influence participation in mammography screening and BSE performance was the focus of a study by Savage and Clarke (1996). The purpose of the study was to investigate the predictability of attitudes and subjective norms in intention to execute BSE and intention to obtain mammogram. One hundred seventy women aged 50 to 70 served as the sample. The sample was recruited from a large city in Australia. Educational levels of the women ranged from 5 to 21 years with a mean educational level of 10.7 years. Seventy-eight percent of the women were housewives. Telephone interviews were conducted and each study participant was asked 35 questions. The following variables were measured: demographic, social influence (related to social norm), previous health behaviors, access to screening, perceived self-efficacy of BSE (related to perceived behavioral control), attitude toward BSE, and knowledge of mammography and BSE. The study found that 87% of the women reported favorable attitudes toward mammography and BSE. Forty-eight percent of the sample reported that they were either “extremely” or “quite” likely to acquire a mammogram within the next two years and practice BSE every month during the twelve months following the study. The conclusions of this study indicated that women were favorable towards BSE and mammography, but that less than half of the sample was actually willing to participate in

these cancer screening behaviors. A second important finding from this study was that the strongest predictor of BSE intention was prior performance of BSE ($r=0.76$). This finding supports the importance of self-efficacy and perceived behavioral control in motivating behavior.

Jennings-Dozier (1999) tested the theory of planned behavior to predict intentions to obtain a Pap smear in African American and Latino women. The purpose of the study was to determine the empirical adequacy of the theory in predicting Pap smear intention in African American and Latino women. The sample consisted of 108 African American women and 96 Latino women. The sample was obtained from nonprofit agencies in the mid-Atlantic area of the United States. The participants ranged in age from 18 to 83. The instruments for the study included the Pap Smear Questionnaire and the Demographic Assessment Survey. The Pap Smear Questionnaire was a 75-item questionnaire created to determine the relationship between Pap smear intentions and the variables of the theory of planned behavior. The Demographic Assessment Survey collected information related to socioeconomic status, ethnicity, and age. The results of the study indicated that attitude toward Pap smear ($\beta = 0.58$; $p < .001$) and perceived behavioral control ($\beta = 0.30$; $p < .001$) were significantly related to intention to obtain Pap smear in African American women. The same results held true for Latino women, but to a lesser degree. Among Latino women, both attitude ($\beta = 0.40$; $p < .001$) and perceived behavioral control ($\beta = 0.35$; $p < .001$) weighed similarly.

Sheeran and Orbell (2000) tested attitude, subjective norms, and perceived behavioral control in predicting attendance at cervical cancer screenings. The sample consisted of 114 women who were scheduled for routine gynecological examinations

within a three-month period. These women were recruited from a single medical practice in England. The subjects ranged in age from 20 to 67. There were no racial or educational descriptors given in the study. A questionnaire that assessed attitude toward cervical cancer screening was mailed to the women prior to their office visit. All the items on the questionnaire were measured on a 5-point Likert type scale. Ninety-two of the 114 participants received screening within 3 months from when the questionnaire was administered. The results of the study revealed that elements of the theory of planned behavior were able to differentiate between 89% of attendees versus nonattendees. Subjective norm and perceived behavioral control were stronger predictors than attitude in terms of obtaining a cervical cancer exam within the allotted 3-month period.

A prospective longitudinal study testing the predictive ability of the TPB was conducted by Rutter (2000). The purpose of the study was to test the ability of the TPB to predict attendance at a mammography screening and then predict reattendance three years later. The first sample consisted of 1215 women who had never had a mammogram. The second sample included 638 women from the first sample. These women were part of the initial sample and were those who returned for mammography screening three years after the initial screening. Questionnaires were mailed to the study participants. Subscales for attitude ($\alpha=0.76$), subjective norm ($\alpha=0.86$), and perceived behavioral control ($\alpha=0.77$) were developed by the researchers. Intention was measured by a single item asking if the subjects intended to attend the mammography screening. Study results exhibited positive correlations between attitude and intention ($r=0.45$), subjective norm and intention ($r=0.36$), and perceived behavioral control and intention ($r=0.40$). The TPB components explained 29% of the variance in mammography

screening intention. Additionally, the correlation between attendance and reattendance was 0.37, while the correlation between intention and attendance also was 0.37. Finally, the correlation between intention and reattendance was 0.21. Conclusions drawn from the study suggested that intention was the strongest predictor of attendance. Second, subjective norm appeared to have the greatest effect on intention. This seems to suggest that the opinion of important others may have greater value than the individual's own opinion with regard to attendance at mammography screening. Finally, the study concluded that prior attendance at mammography was the only significant factor related to reattendance at mammography screening.

Theory of Planned Behavior and Cancer Risk Reduction

Hillhouse, Adler, Drinnon, and Turrisi (1997) applied the TPB to predict tanning salon use, sunbathing, and use of sunscreen intention and behavior. The purpose of the study was to explore the relationship between the components of the TPB and behaviors that affect exposure to ultraviolet light. These behaviors included intentions related to tanning salon use, sunbathing, and sunscreen use. The sample included 131 undergraduate and graduate students from a southern university. The measurement instruments included a demographic questionnaire and a researcher-developed instrument to measure the three elements of the TPB. The researchers did not report the number of questions contained in the instrument. Reliability coefficients were reported between 0.76-0.96. The instrument was administered in three sections over a 2-week period. Finally, the subjects were asked to report their sun exposure behaviors. The results of the study denoted that the variables of the TPB explained nearly 60% of the variance overall

in relation to ultraviolet light exposure ($R^2=0.59$). Conclusions from the study support the use of the TPB to explain intention related to these three high-risk cancer behaviors.

Hillhouse, Turrisi, and Kastner (2000) applied the theory of planned behavior to assess intentions to use tanning salons. The purpose of the study was to explore the predictive ability of the TPB to describe tanning salon use. One hundred ninety-seven students from freshman and sophomore classes at a university in the southeastern US served as the sample. The sample was 60% female and the mean age was 22.4 years. Only students with skin types that have been shown to be associated with increased cancer risk were selected as participants. A researcher-developed questionnaire patterned after guidelines from Ajzen and Fishbein served as the primary instrument for data collection. Attitude was assessed using a seven-point semantic differential scale ($\alpha=0.94$). Subjective norm was measured by a single item dealing with whether those important to the subjects thought they should or should not utilize a tanning salon. They also were asked about their level of motivation to comply with the opinion of important others. Perceived behavioral control was assessed by a single item related to the ease or difficulty associated with using a tanning salon. Intention was evaluated with a single item asking about the likelihood of attending a tanning salon. Behavior also was assessed by a single item that asked the subjects to report the frequency of tanning salon use in the 12 months prior to the study. The results of the study revealed that intention and perceived behavioral control accounted for 41% of the variance in tanning salon use. It also was determined that as perceived behavioral control increased, the relationship between intention and actual tanning salon use became more positive. Third, the study indicated that the variables of the TPB accounted for 49% of the variance in tanning

salon use. Finally, the study results disclosed that as perceived behavioral control increased, the relationship between attitude and intention became more positive. A significant conclusion from the study suggests that focusing on variables related to attitude may be the best strategy to change intention, and subsequently behavior.

Describing the social and psychological factors associated with early detection of cancer was the focus of a study conducted by deNooijer, Lechner, and deVries (2003). The purpose of the study was to identify factors that explained intention to pay attention to cancer symptoms and intentions to seek medical intervention for possible cancer symptoms within an appropriate time frame. A convenience sample of 534 people recruited from local Dutch newspapers served as the study participants. Seventy-seven percent of the sample was female and the mean age was 48 years. Ninety-two percent reported that someone in their household had a prior experience with cancer, while nine percent reported a personal experience with cancer. The first part of the questionnaire was a 67-item questionnaire developed by the researchers. This questionnaire included items related to the components of the TPB as well as questions related to self-efficacy, moral obligation to seek help, and modeling. Part two of the questionnaire included questions related to knowledge of cancer symptomatology (n=15). Study results revealed that attitude and perceived behavioral control were significantly related to attentiveness to cancer symptoms, accounting for 16% of the variance. Social norm and perceived behavioral control were significantly related to seeking help for possible cancer symptoms, accounting for 20% of the variance. Conclusions from this study supported the predictive ability of the TPB with regard to paying attention to possible cancer

symptoms and seeking help for cancer symptoms. However, the low variances reflect the need for numerous replications of studies of this type.

Parchment (2004) studied the health beliefs about prostate health among African American men. The purpose of the study was to investigate the beliefs about prostate early detection in a sample of African American men. The sample consisted of 37 African American men recruited from three churches in the southern United States. The men ranged in age from 37-89. The instruments for data collection included a “Cancer Awareness” survey. The survey included questions related to prostate health, questions concerning reasons for delayed screening, and demographic questions. Eighty percent of the men reported the dislike for the digital rectal exam as the reason for not participating in prostate cancer screening. Also, 75 percent of the men in the sample reported that the information they received from their physicians about prostate cancer had no effect on their participation or nonparticipation in prostate cancer screening.

Understanding factors that influence the intention to participate in prostate cancer screening was the focus of a study conducted by Ford, Vernon, Havstad, Thomas, and Davis (2006). The purpose of the study was to evaluate the factors related to prostate cancer screening perceptions among African American men. The sample consisted of 21 African American men recruited from a large, mid-western nonprofit health system. The men in the sample were divided into two groups. The men in group one ranged in age from 55-87 years and the men in group two ranged in age from 55-81 years. Focus groups served as the method for data collection and the Preventive Health Model served as the conceptual framework in the development of the focus group questions. Five recurrent themes were identified from the focus groups: knowledge of prostate cancer

and prostate cancer screening, background factors of race and gender, cognitive/psychological factors, social support and influence factors, and programmatic/systematic factors. The results indicated that the participants had a lack of knowledge about the PSA test, but were aware of the increased incidence and mortality rates of prostate cancer in African American men. Participants in the group also reported fear of cancer and a degree of “shame” if others knew they had developed cancer. A third finding from the study was the wide range of people that were influential in the men’s participation in prostate cancer screening. These influences included spouses, children, medical personnel, media, and the church.

Summary

Lack of participation in prostate cancer screening activities by African American men has been the most significant justification for increased incidence and escalating mortality rates of prostate cancer in this population. Limited studies exist that examine the reasons for low levels of participation of African American men in prostate cancer screening procedures.

An investigation of the literature reveals that knowledge of prostate cancer and attitude toward prostate cancer screening procedures may be related to intention to participate in screening. Cancer fatalism is also believed to be related to prostate cancer screening such that it helps explain the level of belief in predestination that a person possesses (Powe, 1995; Straughn and Seow, 1998). Healthy lifestyle also has been shown to be a strong indicator of prostate cancer screening intention in that persons who perceive health to be important and perceive themselves to be in control of their health are more likely to participate in health promoting activities (Pender, 1996). Also,

sociodemographic variables such as age, income, and educational levels have been shown to negatively impact wellness and decrease health-seeking behaviors.

Though several instruments exist that examine these variables individually, no instrument has been developed to examine them concurrently. In addition, few of these individual instruments have been utilized exclusively with African American men. Development of a valid and reliable measure of prostate cancer screening intention that is both culturally sensitive and reading level appropriate is critical if we intend to positively impact the health and wellness of African American men.

Based on the foregoing review of literature, the following conceptual model is proposed (Figure 1).

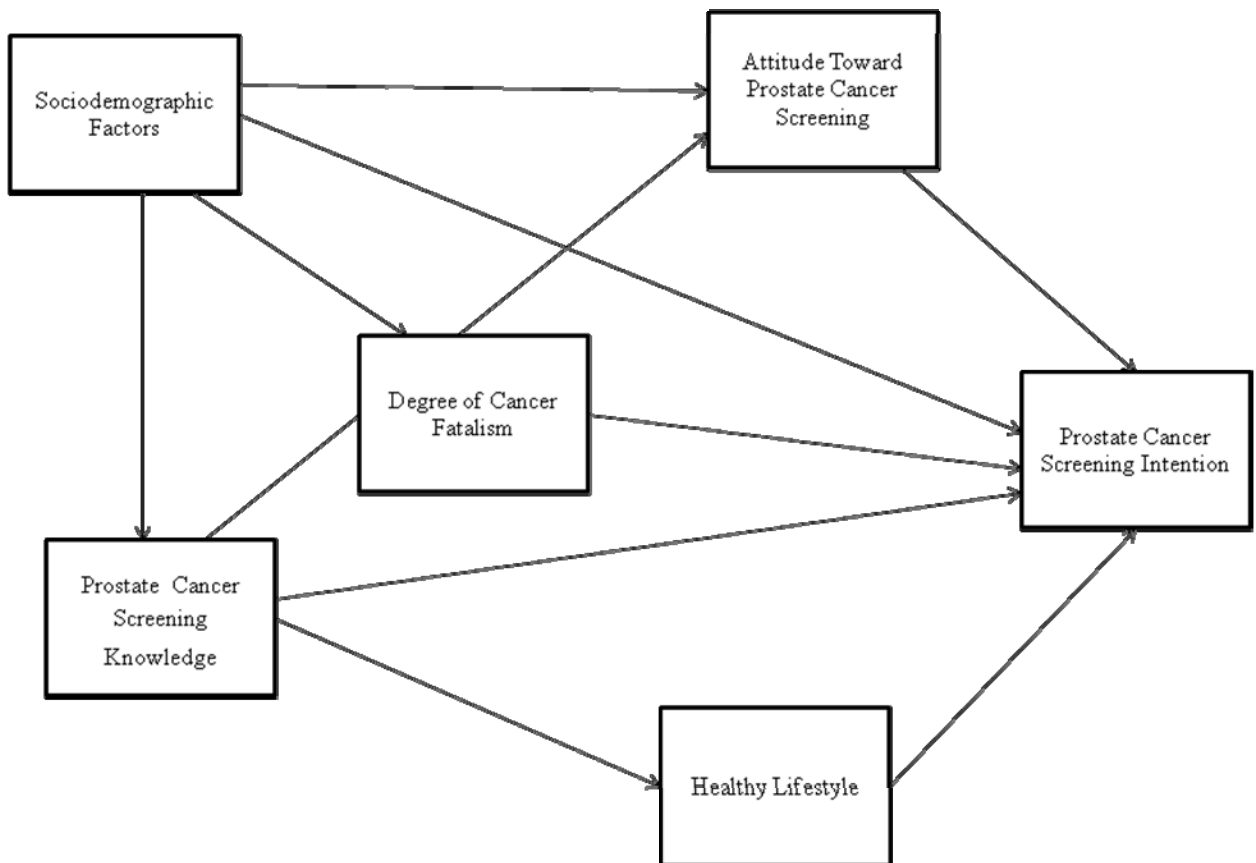


Figure 1. Prostate Cancer Screening Intention Model

Intention

The concept of intention is based on the Theory of Planned Behavior (Ajzen and Fishbein, 1980). The theory of planned behavior was developed from the social cognitive theory. It was developed to explain the role of beliefs and attitudes in determining behavior. The theory was developed by Ajzen and Fishbein (1980) and is based on the premise that behavior is a function of intention. They developed a model that states that "intention is equal to attitude toward the behavior plus the subjective norms in relation to the behavior". It serves as the theoretical framework for describing the intentions of individuals to perform behaviors.

The theory postulates that there are three basic factors that determine a person's behavioral intentions: a personal or attitudinal factor, a social or normative factor and perceived behavioral control. The personal or attitudinal factor refers to the person's attitude toward participating in the behavior. It defines whether the person has a favorable or unfavorable feeling toward performing the behavior. The social or normative component involves the influence of the environment on intentions and behavior. It deals with an individual's perception that important others desire the performance or nonperformance of the behavior. The premise is that the greater the perceptions of important others to perform the behavior, the higher the level of intention to perform the behavior (Ajzen and Fishbein, 1980). Perceived behavioral control was added to the model by Ajzen (1991). Perceived behavioral control is the belief that most behaviors are located along a continuum that moves from total control to complete lack of control.

Sociodemographic Factors

Sociodemographic factors in this model include age, educational level, and income. They also include the subject's previous medical history and previous exposure to prostate cancer screening. Finally, influence of family and important others are included in the background factors that are believed to be related to prostate cancer screening intention. It has been reported that age is negatively related to prostate cancer screening intention. Educational level and income are believed to be positively related to prostate cancer screening intention. Previous medical history, prior exposure to prostate cancer screening, and influence of family and important others have also been noted to be positively related to prostate cancer screening intention. Background factors are related to the social-normative component of the Theory of Planned Behavior.

Prostate Cancer Screening Knowledge

Knowledge of prostate cancer screening refers to whether the subject is aware that a screening for early detection of prostate cancer exists and what that screening entails. It has been proposed that increased levels of knowledge increase intent to participate in prostate cancer screening. Prostate cancer screening knowledge is related to the personal-attitudinal component of the Theory of Planned Behavior.

Attitude Toward Prostate Cancer Screening

Attitude toward prostate cancer screening includes elements of the Health Belief Model (Rosenstock, 1974). This variable refers to the subject's perceived susceptibility to prostate cancer, perceived seriousness of prostate cancer, perceived benefits of prostate cancer screening, and perceived barriers to prostate cancer screening. Perceived susceptibility, perceived seriousness, and perceived benefits are reported to be positively

related to prostate cancer screening intention. Perceived barriers are believed to be negatively related to intent to participate in prostate cancer screening. Attitude toward prostate cancer screening is related to the personal-attitudinal component of the Theory of Planned Behavior.

Degree of Cancer Fatalism

Fatalism refers to the belief that there are some things in life that would occur despite any action that might be taken by an individual. Fatalism is believed to vary along a continuum, which ranges from very fatalistic on one end of the continuum to a very strong belief in one's ability to control outcomes. In this model, cancer fatalism is believed to be negatively related to prostate cancer screening intention. Cancer fatalism is related to the perceived behavioral control component of the Theory of Planned Behavior.

Healthy Lifestyle

Healthy lifestyle is related to the subject's participation in other health-promoting activities. These activities include cholesterol screening, annual physical exams, healthy diets, and exercise. Healthy lifestyle is reported to be positively related to intent to participate in prostate cancer screening. Healthy lifestyle is related to the personal-attitudinal component of the Theory of Planned Behavior.

Chapter Three

Methods

The research methods and procedures used in this study are reviewed and presented in this section. First, the overall focus of the CSIS-P is described. Second, the purposes of each phase of the study are stated. Third, the methods of each phase of the study are outlined. This includes identification of the sample, description of the sample criteria, details of the outline for the process of ensuring the protection of human subjects, explanation of the data collection methods, and the procedures for data analysis.

Phase One

Purpose

The purpose of Phase I of this study was to explore the attitudes and beliefs of African American men toward prostate cancer. A second purpose was to identify and understand the perceived factors that influence the intention of African American men to participate in prostate cancer screening activities. A qualitative approach was used in Phase I.

Sample

The sample consisted of twenty African American men divided into three focus groups. The following inclusion criteria were used: 1) over the age of 35; 2) African American; 3) able to understand written and spoken English. African American men

under 35 were excluded due to the decreased incidence of prostate cancer in this age group. Africans, Caribbean Africans, and Hispanics with African heritage also were excluded from the study because multiple ethnicities and cultural heritages may confound the study. The ethnicity of the subjects was identified by the investigator. There were no income or educational restrictions. Subjects were obtained from local African American churches. The homogeneous phenomenal variation of purposeful sampling was the technique used in this study. Phenomenal variation sampling allows the researcher to examine differences among the men in the group about a target phenomenon. Homogeneous phenomenal variation sampling focuses on the variation of the phenomenon (attitude toward prostate cancer screening, for example) among a relatively homogeneous sample (African American men). This sampling method is appropriate for this study because it allows for identification of the variables most likely to be important in understanding attitudes of African American men toward prostate cancer screening (Sandelowski, 1995).

Procedures

Authorization to conduct the study was obtained from the pastors at the target churches (Appendix A). Following their approval, application was made to the University of South Florida Institutional Review Board for Protection of Human Subjects (Appendix B). The pastor identified the appropriate subject groups. The investigator then contacted the potential subjects by phone. The purpose of the study was explained. The potential subjects were then asked to read a consent form further explaining the study and were given an opportunity to ask questions related to the study. Subjects were assured that the data would be used for research purposes only, all information would remain

confidential, identifying codes would appear on the data forms rather than names, and that all data would remain in a locked cabinet in a locked office. Consent from each participant was then obtained and a copy of the consent was given to each study participant. Prior to the interviews, a demographic questionnaire was administered to each potential subject (Appendix C).

The exploratory qualitative descriptive method was used to guide data collection from the focus groups. Qualitative descriptive method is utilized to discover themes and patterns about a particular phenomenon. The exploratory approach to qualitative descriptive method allows the researcher to explore the meaning of some life event for a group of individuals. Data collection in this method may include interviews, observations, or questionnaires (Parse, 2001). For the purposes of this study, interviews were conducted.

The interviews were conducted via structured focus groups. Focus groups are a beneficial tool to use when gathering information from a target population about some phenomenon. They have been proven to be a successful method for assessing behavior that is influenced by attitudes. They also promote self-disclosure when group members have common characteristics (Krueger & King, 1997). An interview schedule was developed to guide the focus group session (Appendix D), and the principal investigator served as the moderator of the focus groups. Data collectors included the principal investigator and a master's prepared individual who served as the assistant moderator and recorder and was trained in focus group methodology by the principal investigator. The sessions were audiotaped and the assistant moderator took fieldnotes consisting of observations during the interview sessions. The focus groups were 60-120 minutes in

length. The audiotapes and fieldnotes were transcribed by the principal investigator and the assistant moderator.

Data Analysis

The principal investigator and qualitative research expert reviewed the data utilizing the content analysis method in order to identify emerging themes related to prostate cancer screening. Content analysis method has been identified as an efficient and objective way to describe phenomena in qualitative research. It provides a method by which qualitative data can be organized into categories that reflect similar content, allowing themes to be more easily identified (Downe-Wamboldt, 1992). Weber's approach for conducting content analysis (1995) was followed in analyzing data from this study. First, the categories were created and defined; this was accomplished by frequency counts of common words and phrases throughout the transcript. Second, a pre-testing of the category definitions was done by a thorough review of the transcripts and a category creation by a second qualitative researcher. Reliability was then assessed. The second coder independently classified the transcript and compared it with the coding of the principal investigator in order to assess inter-coder reliability. The resulting themes were then used to begin Phase II of the study.

Phase Two

Purpose

The purpose of Phase II was to utilize the themes identified in Phase I of the study as well as the review of literature to develop a valid and reliable instrument to measure prostate cancer screening intention in African American men. A second purpose was to evaluate the cultural sensitivity of the instrument.

The focus of the development of the CSIS-P was to determine the subjective probability (intention) that African American men will participate in prostate cancer screening activities by identifying what variables may increase or decrease that probability. This subjective probability is believed to be related to a person's attitude toward the behavior (prostate cancer screening), the degree to which a person believes in and participates in other illness-preventive behaviors, the extent to which a person believes that prostate cancer screening will reduce the risk of getting prostate cancer, and pertinent participant background factors (age, educational level, income, past medical history, previous exposure to prostate cancer screening).

Intention is believed to be equal to the sum of three basic factors: attitudinal factor, normative factor, and perceived behavioral control. Items related to these three factors as well as direct questions related to intention will be asked (example: I plan to have a prostate cancer screening examination within the next year). The responses to these questions were scored based on 4-point Likert-type scaling. The items were then correlated within and between each factor as well as with the direct intention questions. The direct intention questions were also correlated with the responses on the measures for fatalism, healthy lifestyle, health beliefs, and with the sociodemographic variables. The expectation is that all these items will correlate highly (positively or negatively) with the aim being to utilize the results to focus on future educational interventions.

Sample

The sample for Phase II consisted of the twenty African American men from the focus groups who reviewed the items of the instrument for content and clarity. All men for this phase met the following inclusion criteria: 1) over the age of 35; 2) African

American; 3) able to understand written and spoken English. African American men under 35 were excluded due to the low incidence of prostate cancer in this age group. Africans, Caribbean Africans, and Hispanics with African heritage also were excluded from the study because multiple ethnicities and cultural heritages may confound the study. There was no income or educational restriction. Subjects were obtained from local African American churches.

Instrument

Items for each subscale of the CSIS-P (Appendix E) were developed utilizing the themes identified from Phase I of the study and the corresponding variables from the literature review. The items were then formatted and scoring criteria were developed. The definitions associated with the scores on each subscale were then outlined.

As the instrument was being developed, the “Guidelines for Cultural Competency in Oncology Nursing Research” developed by the Oncology Nursing Society (Oncology Nursing Society, 2000) were used to evaluate the cultural sensitivity of the instrument. These guidelines state that if an instrument is to be deemed culturally sensitive, it must meet the following criteria: 1) the questions to be studied must reflect the researcher’s awareness of the culture; 2) the problem to be studied must be significant to the group to be studied; 3) the theoretical framework supporting the instrument must be appropriate for use with the cultural group; 4) the theoretical framework must incorporate the concepts of ethnicity and race; 5) the health beliefs and values of the target group must be incorporated into the tool; and 6) members of the targeted cultural group must be involved in the development of the instrument. The instrument was then presented to the men from Phase I of the study for theme confirmation.

Content validity from experts. One African American urologist, two African American oncology nurses (one male), one African American nurse educator, and one Caucasian oncology nurse educator made up the panel of experts that evaluated the instrument for content validity. Each item was presented to the panel and they were asked to assess each item by responding to the following questions: 1) Does this item measure prostate cancer screening intention? 2) Is this item appropriate for African American men? The panel responded “yes” (+1), “no” (-1), or “uncertain” (0) to each question. A content validity index (CVI) was generated for each item and for the total instrument.

Content validity from sample. The CSIS-P was given to the sample of African American men in Phase II of the study to evaluate the accuracy of the content of the items based on the information obtained from the focus groups. They also were asked to assess the length and clarity of the tool. Refinement of the CSIS-P was completed based on the evaluations of the experts and the assessment of the African American men from Phase I. The CSIS-P was then administered to the final sample in Phase III.

Procedures

Permission to conduct the study was acquired from the pastors of the local churches. Authorization to conduct this phase of the study was obtained from the University of South Florida Institutional Review Board for Protection of Human Subjects. The purpose of the study was explained to the men. Next, the potential subjects were asked to read a consent form further explaining the study and were given an opportunity to ask questions related to the study. Subjects were assured that the data would be used for research purposes only, all information would remain confidential,

identifying codes would appear on the data forms rather than names, and that all data would remain in a locked cabinet in a locked office. Consent from each participant was obtained and a copy of the consent was given to each study participant. The CSIS-P was then given to each of the men from Phase I of the study for review.

Data Analysis

The results of the CVI were used to answer the first research question from Phase II of the study. The CSIS-P was presented to an expert panel for content validity analysis. The CVI was analyzed assessing both the index of each item and the average index of the entire instrument. Content validity indices for each item ranged from .40 to 1.0. Items with correlations less than .70 were revised, replaced, or deleted. A content validity index of .90 was estimated by the panel. Guidelines from the Oncology Nursing Society's criteria for ensuring cultural competency in instruments were used to analyze the CSIS-P (Oncology Nursing Society, 2000) and answered the second research question from Phase II of the study. Assessment of the reading level was completed using the Flesch-Kincaid Reading Ease test and SMOG formula to answer the third research question from Phase II of the study. Final revision of the CSIS-P was then done based on the above data.

Phase Three

Purpose

The purpose of Phase III of the study was to estimate the validity and reliability of the Prostate CSIS-P. A second purpose was to identify the sociodemographic factors that influence prostate cancer screening intention in African American men.

Sample

The sample in the final phase of the study consisted of 203 African American men. Inclusion criteria for the sample included the following: 1) must be over the age of 35; 2) must be African American; 3) must be able to understand written and spoken English. African American men under 35 were excluded due to the low incidence of prostate cancer in this age group. Africans, Caribbean Africans, and Hispanics with African heritage also were excluded from the study because multiple ethnicities and cultural heritages may confound the study. The ethnicity of the sample was identified by the investigator. There were no income or educational restrictions. African American subjects were obtained from African American churches.

Instruments

Six instruments were administered to the sample of 203 African American men. All instruments are appended.

Demographic Questionnaire. The first instrument administered was a demographic questionnaire developed by the principal researcher. This questionnaire included items related to age, educational level, and previous exposure to prostate cancer education and prostate cancer screening (Appendix C).

Prostate Cancer Knowledge Questionnaire. The second instrument was an amended version of a prostate cancer screening knowledge scale developed by Maliski (2007). The amended scale consists of seven questions related to risk factors for prostate cancer, symptoms of prostate cancer, treatment for prostate cancer, and risk reduction measures related to prostate cancer (Appendix F). There was no validity or reliability data reported by the author. However, this researcher submitted the questionnaire to a

panel of experts to assess the scale for content validity. Each item was presented to the panel and they were asked to assess each item by responding to the following questions: 1) Does this item measure prostate cancer screening knowledge? 2) Is this item appropriate for African American men? The panel was asked to respond with “yes” (+1), “no” (-1), or “uncertain” (0) to each question. A content validity index (CVI) was generated for each item and for the total instrument. Content validity for the instrument was estimated at .80. The possible knowledge scores ranged from zero to seven with a mean score of five.

Cancer Screening Intention Scale-Prostate. The final version of the CSIS-P was a 43-item tool that was designed to measure prostate cancer screening intention (Appendix E). Responses to items were scored using a 4-point Likert-type scale. Responses included strongly agree, agree, disagree, and strongly disagree and were numerically scored from four to one. Negative items were reverse scored. Higher scores on the CSIS-P reflected higher intentions to participate in prostate cancer screening.

Prostate Cancer Belief Scale. The Prostate Cancer Belief Scale (Appendix G) is a 10-item scale modified from Gibson’s Prostate Cancer Belief Instrument (Gibson, 1995). There was no recorded validity or reliability data on the instrument developed by Gibson. However, this researcher submitted the modified scale to a panel of experts for assessment of content validity. Each item was presented to the panel and they were asked to assess each item by responding to the following questions: 1) Does this item measure health motivation, benefits of prostate cancer screening, barriers to prostate cancer screening, susceptibility to prostate cancer, and seriousness of prostate cancer? 2) Is this item appropriate for African American men? The panel was asked to respond with

“yes” (+1), “no” (-1), or “uncertain” (0) to each question. A content validity index (CVI) was generated for each item and for the total instrument. Item CVIs ranged from .20 to 1.0. Content validity for the instrument was estimated at .80. The possible scores ranged from ten to forty.

Powe Cancer Fatalism Index. The Powe Cancer Fatalism Index (Powe, 1995) is a 15-item scale that was developed to assess degrees of cancer fatalism (Appendix H). Content validity estimates were reported obtained from pilot testing. Reliability testing reported a Cronbach alpha of .84. Higher scores on the index reflect higher degrees of fatalism. A score of zero to five indicates a low degree of fatalism, scores from six to ten indicate a moderate degree of fatalism, and scores from eleven to fifteen reflect a high degree of fatalism.

Health Promoting Lifestyle Profile II. The final instrument was the Health Promoting Lifestyle Profile II (HPLP II) (Pender, Walker, and Sechrist, 1990; Pender, 1996). The HPLP II is a revision of the original HPLP developed by Walker and Pender (1990). Psychometric evaluation of the HPLP II was detailed by Walker and Hill-Polerecky (1996). The HPLP II contains six subscales: spiritual growth, interpersonal relations, nutrition, physical activity, health responsibility, and stress management. For this study, the subscales of nutrition, physical activity, and health responsibility were used (Appendix I). Scores for each item range from one to four with higher scores indicating higher levels of health promotion. Content validity was estimated by literature review and content experts. Construct validity was evaluated by factor analysis which confirmed the six factors. Internal consistency for the HPLP II was .94 and alpha coefficients for the subscales ranged from .79 to .87 (Walker & Hill-Polerecky, 1996).

Procedures

Permission to conduct the study was acquired from the pastors of the local churches. Authorization to conduct this phase of the study was obtained from the University of South Florida Institutional Review Board for Protection of Human Subjects. The men were approached in groups. The purpose of the study was explained. The potential subjects were then asked to read a consent form further explaining the study and were given an opportunity to ask questions related to the study. Subjects were assured that the data would be used for research purposes only, all information would remain confidential, identifying codes would appear on the data forms rather than names, and that all data would remain in a locked cabinet in a locked office. Consent from each participant was then obtained and a copy of the consent was given to each study participant. The subjects were then asked to complete and return the instruments. A subset of 21 men was asked to complete the CSIS-P a second time two weeks after the first administration of the instrument.

Data Analysis

Descriptive statistics were used to analyze the demographic data. Correlational analyses were conducted between the CSIS-P and the established instruments (Powe Fatalism Index, Prostate Cancer Knowledge Scale, Prostate Cancer Belief Scale and Health Promoting Lifestyle Profile) in order to estimate construct-related validity. Factor analyses were completed to determine whether there are subscales in the CSIS-P and whether the items are a good fit. Factor analysis is frequently utilized in scale development. It is primarily used to determine intercorrelation among the items in a scale (Whitley, 1996). Cronbach's alpha coefficients were calculated to estimate the

internal consistency of the CSIS-P. Cronbach's alpha is a common approach to assess the consistency among items when multiple items are used to assess a trait (Whitley, 1996). Pearson's correlation coefficients utilizing the test-retest procedures with a two-week delay also were conducted to determine the stability of the CSIS-P (Tabachnick & Fidell, 1990). Test-retest reliability evaluates consistency across time and is an appropriate method to assess the stability of an instrument (Tabachnick & Fidell, 1990).

Chapter Four

Results

The results of the research study are reviewed in this section. First, the results of the qualitative phase of the study are reported. Next, the results from the second phase of the study are reviewed. Finally, results from the third phase of the study are detailed.

Phase One

Qualitative methods were used to answer the following research questions in phase one of this study: 1) What are the attitudes of African American men toward prostate cancer screening? 2) What are the perceived factors that influence prostate cancer screening in African American men? Focus groups were used as the method of data collection and the results are presented below.

Sample

The sample consisted of twenty African American men in three focus groups. There were nine men in the first focus group, five men in the second group, and six men in the third group. The men ranged in age from 35 to 72 with a mean age of 50. Educational level ranged from eighth grade to master's degree, with a mean of 14.1 years. None of the sample reported a history of prostate cancer and only 25% (n = 5) reported having a family history of prostate cancer. Eighty percent of the sample reported that they had received a PSA, while 60% reported receiving a DRE. The detailed demographic data is outlined below (Table 1).

Table 1. Number and Percent of Men by Age and Education

	Number	Percent
Age Group		
35-44	4	20
45-54	11	55
55-64	3	15
65-72	2	10
Education		
Less than high school	2	10
High school graduate	4	20
Some college and above	14	70
Totals	20	100

Data Analysis

All the audiotapes were transcribed by the principal investigator. The transcribed tapes were reviewed by the principal investigator, and recurrent themes were identified using content analysis. The notes from the assistant moderator also were reviewed. The transcriptions also were reviewed by an independent coder and a qualitative expert in order to estimate inter-rater reliability.

Results

Ten themes emerged from the focus group analysis by the principal investigator. Eight of the ten themes identified by the principal investigator also were identified by an independent coder and supported by a qualitative expert. These eight dominant themes along with their frequency counts are summarized (Table 2).

Table 2. Focus Group Themes by Frequency

Theme	Frequency Count
Health promotion	10
Fear	10
Lack of knowledge/education	9
Hopelessness/helplessness	5
Social/familial support	5
Machismo	2
Barriers (job, transportation)	2
Mistrust of healthcare providers	1

Health Promotion. When asked about the things they did to stay healthy, most of the men reported consistent exercise and nutritious eating as methods utilized to maintain good health. However, most of the men in the sample also reported that they did not get regular annual physical exams or regularly participate in screening activities for prevention or early detection of disease.

Fear. Fear was a very frequent and forceful theme among the men in the focus groups. It was reported as the most significant reason for the lack of participation in prostate cancer screening procedures. Responses to the question “What gets in the way of people getting tested for prostate cancer” included:

“As for myself, I think for me, it’s a scary disease. It can sneak up on you”

“Fear. You know fear of knowing, fear of thinking you got it or something like that”

“And I think it’s because they’re scared of finding out they actually do have it because there have been cases where men have found out they had it and

they didn't do any follow-up"

"And I think it's because they're afraid of it. You know, thinking that they might have it"

When the men spoke of fear of prostate cancer and fear of the screening, they also voiced a dislike for the test itself, particularly the DRE. During this exchange, the assistant moderator noted fidgeting and nervous facial expressions. This behavior was exhibited in all three groups.

Lack of knowledge/education. Cancer awareness and education was identified by the focus groups as the single most important way to increase participation in prostate cancer screening. Some of the responses related to lack of knowledge included:

"I don't think a lot of men are educated on it, so they don't know what the test is really about"

"Basically, if we get some type of education program, you know, started in the church, you know, and coordinate it with a church function. So I think education is the key because if you don't know about it, you tend to overlook it"

"I think also too, it needs to start in the home. The men who know about it have to tell their sons that at a certain age you need to get tested for prostate cancer"

"Education, the knowledge of and understanding of what the test is, what it's about. The education just hasn't filtered like it should into that neighborhood, you know what I mean, into the black neighborhoods"

"The awareness again, if you hold one of these seminars on a men's meeting or hold one of these seminars in church five minutes, just the awareness. Because a lot of young black men are not aware, so it goes on"

Hopelessness/Helplessness. Twenty-five percent of the sample voiced attitudes of hopelessness when referring to prostate cancer and prostate cancer treatment. They felt that a diagnosis of prostate cancer meant terminality and that the treatment of prostate

cancer resulted in the end of sexuality. Though only five men made verbal statements that reflected a fatalistic attitude, many nods of affirmation were noted by the assistant moderator. One of the focus group participants made this comment related to fatalism:

“When your equipment through working, you through working”

This was the general sentiment throughout all of the focus groups and has emerged as a common theme among African American men when discussing prostate cancer and prostate cancer treatment.

Social support. Twenty-five percent of the sample stated that encouragement from significant others was an influential factor in participating in prostate cancer screening. Several men reported that they would not see a doctor if their family members had not urged them to go. Responses relevant to social support from focus group members included:

“Thank God for my wife, because she was really encouraging me, having me go back for this test or that test”

“I also think having wives or girlfriends pressure their husbands or boyfriends to tested”

When asked whether they received appropriate health screenings, one of the men responded: “I get them, but I probably wouldn’t if my wife didn’t stay on me”.

Machismo. Two of the men from the focus groups (10%) made direct references to machismo as the reason for nonparticipation in prostate cancer screening. When asked about things that prevent African American men from participating in prostate cancer screening, one man responded: “The process itself, you know, the machismo of a man”.

Barriers. Lack of transportation and work conditions were identified as barriers to prostate cancer screening by two of the men in the focus groups. In regards to work conditions, one of the men stated:

“I can take off, but then I run the risk of being harassed when I get back because my load of the work had to be shifted because I had to go do this. I think a big thing, you know, that if it was made mandatory that employers, you know not harass or put any added pressure on the person that’s got to go and have check-ups”

Mistrust. Only one man in the focus groups cited mistrust of healthcare providers as a reason for lack of participation in prostate cancer screening. When the men were speaking about how often they received physical examinations, one of the men responded with this comment:

“Me myself, I dislike doctors and don’t trust them. I don’t know why, but even growing up, I didn’t have a good relationship with the hospital, period”

There were several important findings from the focus groups. The first significant finding was that even though half of the men in the focus group reported that they maintained a healthy lifestyle, few of them reported that they participated in prostate cancer screening activities. Secondly, fear emerged as the principal factor that influenced participation in prostate cancer screening procedures by African American men. The men reported fear of the screening as well as fear of the disease itself. Finally, the third noteworthy finding from the groups reaffirmed the belief that education of African American men about prostate cancer and prostate cancer screening is an integral component of successful participation in prostate cancer screening activities. Proper education and information about prostate cancer and prostate cancer screening resonated consistently from all three focus groups.

Phase Two

Quantitative methods were used to answer the following research questions in phase two of this study: 1) Does the CSIS-P demonstrate evidence of content validity? 2) Is the CSIS-P a culturally sensitive instrument? 3) Is the reading level appropriate for African American men? 4) Does the CSIS-P demonstrate evidence of internal consistency? The methods for development and refinement of the CSIS-P are outlined in this section.

Sample

The sample consisted of the twenty African American men from the focus groups. The men ranged in age from 35 to 72 with a mean age of 50. Educational level ranged from eighth grade to master's degree, with a mean of 14.1 years. Eighty percent of the sample reported that they has received a PSA, while 60% reported receiving a DRE.

Data Analysis

Utilizing the results of the qualitative study and relevant literature review, the CSIS-P was developed. Guidelines for cultural sensitivity set forth by the Oncology Nursing Society in 2000 were used in the development of the CSIS-P. These guidelines state that if an instrument is to be deemed culturally sensitive, it must meet the following criteria: 1) the questions to be studied must reflect the researcher's awareness of the culture; 2) the problem to be studied must be significant to the group to be studied; 3) the theoretical framework supporting the instrument must be appropriate for use with the cultural group; 4) the theoretical framework must incorporate the concepts of ethnicity and race; 5) the health beliefs and values of the target group must be incorporated into the tool; 6) members of the targeted cultural group must be involved in the development of

the instrument. Criterion one was met in that the researcher is African American and has worked extensively with African Americans in the areas of health promotion and illness prevention. Criterion two was met because of the increased incidence and mortality rates of prostate cancer among African American men. Criterion three was met in that planned behavior theories are appropriate for use in African Americans. Criterion four was met in that one component of the theoretical framework guiding this study includes research by Powe (1995, 1995a, 1996, 2001) where African Americans were utilized exclusively as study participants. Criterion five was met because results of the focus groups were used in the development of the CSIS-P. Finally, the sixth criterion was met in that feedback from the men in the focus groups was used to revise and refine the CSIS-P.

After development of the CSIS-P, the instrument was given to the twenty men from the focus groups to assess the scale for content accuracy and clarity. Each man was asked to indicate whether the scale reflected their thoughts and responses during the focus groups. They also were asked if they understood the content of the questions. The instrument also was presented to five experts to estimate content validity.

Results

The original CSIS-P contained 80 questions. The men from the focus groups reported that they felt seven of the items could be combined and that nineteen of the items could be deleted because they were repetitive and would glean the same information as other items in the instrument. They were then asked to choose the clearest of the repetitive items.

The content validity index (CVI) from the experts for the total instrument was .90. Item CVIs ranged from .40-1.0. Items with indices of less than .70 were revised or

deleted. Twenty-six items from the CSIS-P were deleted or combined based on the recommendations from the focus groups. Six of the items assessed by the content experts had indices less than .70 and were deleted. Six additional items were combined to include both DRE and PSA instead of asking the same question about each test individually. Deletions, revisions, and combination of items were done based on the recommendations from the three focus groups and the content experts. The revised instrument consisted of 43 items. The scale was organized by domains. The reading level of the CSIS-P was assessed utilizing the Flesch-Kincaid grade level and SMOG readability formulas. The Flesch-Kincaid grade level of the final 43-item instrument was 5.6 and the SMOG formula determined grade level to be 7.0. Internal consistency of the newly revised CSIS-P was assessed by Cronbach's alpha and found to be .92.

Phase Three

Quantitative methods were used to answer the following questions in phase three of this study: 1) Does the CSIS-P demonstrate evidence of construct validity? 2) Does the CSIS-P reliably measure prostate cancer screening intention in African American men? First, descriptions of the sample and instruments are outlined. Next, correlational analyses are detailed. Next, factor analysis results are reviewed. Finally, reliability estimates are described.

Sample

The sample consisted of 203 African American men from local churches in Florida. The men ranged in age from 40 to 96. Nearly 40% of the participants were age 40 to 49 and 90% of the subjects were less than 70 years of age. Most of the men were

married, and educational levels ranged from third grade to doctoral degree. More than half of the men reported educational levels above high school graduate (Table 3).

Table 3. Number and Percent of Men by Age, Marital Status, and Education

	Number	Percent
Age group		
40-49	81	39.0
50-59	71	34.0
60-69	32	17.0
70-79	14	7.0
80-89	4	2.0
90-99	1	1.0
Totals	203	100.0
Marital status		
Single	23	11.3
Married	122	60.1
Divorced	38	18.7
Widowed	20	9.9
Totals	203	100.0
Education		
Less than high school	16	8.0
High school graduate	57	28.0
Some college and above	130	64.0
Totals	203	100.0

Table 4. Number and Percent of Men Reporting Previous Prostate Cancer Screening

Previous Screening	Number	Percent
Ever had DRE	139	68.5
DRE within previous year	83	40.9
Ever had PSA	128	63.1
PSA within previous year	87	42.9

More than two-thirds of the sample reported that they had received a DRE while 63% reported receiving a PSA test. When asked if they had received a DRE or PSA

within the past year, more than half of the sample indicated that they had not received either screening test in the previous year (Table 4).

Instruments

Cancer Screening Intention Scale- Prostate (CSIS-P). More than three-quarters of the men in the study reported that they intended to get a DRE within a year. However, only 45% of the men reported that they had already scheduled an appointment for the DRE. Nearly 80% of the men reported that they intended to get a PSA within a year, while only 45% reported that they had already scheduled an appointment for the PSA. Most of the study participants reported moderate to high degrees of intention to participate in prostate cancer screening based on CSIS-P scores (Table 5). It is interesting to note that there were no low intention scores, though 57 percent of the men reported that they had not had a PSA done within the previous year and 59 percent reported that they had not had a DRE within the previous year.

Table 5. Prostate Cancer Screening Intention Scores

Intention Scores	Number	Percent
43-85 (Low intention)	0	0
86-129 (Moderate intention)	141	69
130-172 (High intention)	62	31
Totals	203	100

Prostate Cancer Knowledge Questionnaire. Nearly three-quarters of the sample responded correctly to six of the seven knowledge questions. Less than one-half of the sample responded correctly to the question “If you have brothers or sons, they are at higher risk for prostate cancer”. Also, only half of the participants recognized that soy products reduced the risk of prostate cancer (Table 6).

Table 6. Frequency and Percent of Correct Responses to Prostate Cancer Knowledge

Question	Frequency	Percent
Treatment	173	85.2
Prostate location	172	84.7
Side effects	170	83.7
Treatment	151	74.4
Symptom	151	74.4
Risk reduction	115	56.7
Risk factors	100	49.3

Prostate Cancer Belief Scale. Scores for the belief scale ranged from ten to forty with a mean score of 32. Half of the sample felt that prostate cancer was a serious disease and nearly two-thirds of the men felt that they were susceptible to prostate cancer and that they were motivated to participate in prostate cancer screening. More than 60% of the sample reported that they felt that there were benefits and barriers to prostate cancer screening (Table 7).

Table 7. Prostate Cancer Belief Scores by Number and Percent

Component	Number	Percent
Barriers to prostate cancer screening	138	68
Prostate cancer screening motivation	125	62
Seriousness of prostate cancer	124	61
Benefits to prostate cancer screening	122	60
Susceptibility to prostate cancer	102	50

Powe Cancer Fatalism Index. Fatalism scores for this sample ranged from zero to fifteen with a mean score of five. Most of the sample reported low degrees of fatalism (Table 8).

Table 8. Frequency and Percent of Prostate Cancer Fatalism Scores

	Frequency	Percent
0-5 (Low fatalism)	79	55.6
6-10 (Moderate fatalism)	45	31.7
11-15 (High fatalism)	18	12.7
Totals	142	100.0

Health Promoting Lifestyle Profile II (HPLP II). In the present study, mean scores for the nutrition subscale ranged from 2.08-2.84. Mean scores on the physical activity subscale ranged from 1.85-2.52. The lowest score from this subscale came from responses to the statement “check my pulse rate when exercising”. The mean scores on the health responsibility subscale ranged from 1.94-2.66. The lowest score in this subscale came from responses to the statement “attend educational programs on personal health care” (Table 9).

Table 9. HPLP II Subscale Means and Standard Deviations

Question	Mean	SD
Nutrition		
Eat breakfast	2.84	.98
Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day	2.61	.86
Eat 2-4 servings of fruit each day	2.53	.91
Limit use of sugars and food containing sugar (sweets)	2.44	.94

Table 9 (continued). HPLP II Subscale Means and Standard Deviations

Question	Mean	SD
Choose a diet low in fat, saturated fat, and cholesterol	2.38	.96
Read labels to identify nutrients, fats, and sodium content in packaged food	2.32	1.10
Eat 3-5 servings of vegetables each day	2.27	.94
Eat 2-3 servings of milk, yogurt or cheese each day	2.27	.91
Eat 6-11 servings of bread, cereal, rice and pasta each day	2.08	.97
Physical activity		
Get exercise during usual daily activities	2.52	.90
Exercise vigorously for 20 or more minutes at least three times a week	2.32	1.08
Take part in light to moderate physical activity	2.31	.91
Take part in leisure-time (recreational) physical activities	2.31	1.04
Follow a planned exercise program	2.29	.97
Do stretching exercises at least 3 times per week	2.25	.99
Reach my target heart rate when exercising	2.00	.99
Check my pulse when exercising	1.85	.97
Health responsibility		
Report any unusual signs or symptoms to a physician or other health professional	2.66	.96
Discuss my health concerns with health professionals	2.63	.96
Question health professionals in order to understand their instructions	2.60	.93
Ask for information from health professionals about how to take good care of myself	2.54	.90

Table 9 (continued). HPLP II Subscale Means and Standard Deviations

Question	Mean	SD
Seek guidance or counseling when necessary	2.53	.94
Inspect my body at least monthly for physical changes	2.52	.99
Get a second opinion when I question my health care provider's advice	2.40	.96
Read or watch TV programs about improving health	2.31	.97
Attend educational programs on personal health care	1.94	.95

Construct Validity: Correlation with other measures

Several relationships were found between the variables within the study. First, relationships between the demographic data and the remaining model independent variables are reviewed. Next, relationships between specific items within the CSIS-P and established instruments are reviewed in order to support construct validity of the CSIS-P (Polit and Hungler, 1995). Finally, correlational analyses between model variables and intention is presented.

Demographic variables, Knowledge, Attitude, Healthy Lifestyle, and Fatalism. A significant negative correlation was found between age and education. Positive correlations were found between education and knowledge as well as between healthy lifestyle and education. A weak positive correlation was found between educational level and attitude toward prostate cancer screening as well as between knowledge about prostate cancer and attitude toward prostate cancer screening. Negative correlations were found between fatalism and all other independent variables (Table 10).

Table 10. Correlations Among Demographics, Knowledge, Healthy Lifestyle, and Fatalism

Variables	Know.	Att.	Ed.	H. Life	Fat.	Age
Knowledge (Know.)	1.0					
Attitude (Att.)	.35 .01	1.0				
Education (Ed.)	.30 .01	.15 .05	1.0			
Healthy Lifestyle (H. Life)	.18 .05	.21 .05	.29 .01	1.0		
Fatalism (Fat.)	-.32 .01	-.28 .01	-.24 .01	-.36 .01	1.0	
Age (Age)	-.04 NS	.06 NS	-.37 .01	-.02 NS	.11 NS	1.0

Health Promotion in CSIS-P and HPLP II. Moderate positive correlations were found between each health promotion item in the CSIS-P (CSIS-PHP) and the total scores on the HPLP II. A strong positive correlation of .68 ($p = .01$) also was found when summing the health promotion items in the CSIS-P and correlating them with the total scores on the HPLP II (Table 11).

Fatalism in CSIS-P and PFI. An unexpected finding occurred when analyzing the relationships between the fatalism items in the CSIS-P and the PFI. Only one of the fatalism items in the CSIS-P significantly correlated with the PFI. The item stated “there is nothing I can do to prevent me from getting prostate cancer” and there was a weak correlation at .34 ($p = .01$). A weak positive correlation of .31 ($p = .01$) also was found

when summing the fatalism items in the CSIS-P and correlating them with the total scores on the PFI.

Table 11. Health Promotion Correlations

Variables	N	r	p
CSIS-PHP item 1 and HPLP II	203	.58	.01
CSIS-PHP item 3 and HPLP II	203	.58	.01
CSIS-PHP item 5 and HPLP II	203	.53	.01
CSIS-PHP item 2 and HPLP II	203	.49	.01
CSIS-PHP item 4 and HPLP II	203	.48	.01

Independent Variables and Intention. Several positive significant correlations were found between prostate cancer screening intention and other independent variables. The strongest positive correlation was with attitude toward prostate cancer screening from the Prostate Cancer Belief Scale, while the weakest was with knowledge scores. A moderate correlation was found with healthy lifestyle total scores. Also, a weak negative correlation was found with fatalism scores (Table 12).

Table 12. Correlations Between Independent Variables and Intention

Variable	N	r	p
Attitude toward prostate cancer screening	203	.61	.01
Healthy lifestyle	131	.43	.01
Knowledge	203	.38	.01
Education	203	.14	.05
Age	203	.11	NS
Fatalism	143	-.33	.01

Multiple weak and moderate correlations were found between the independent variables and intention. A strong positive correlation was found between attitude toward prostate cancer screening and intention. There were moderate positive correlations noted between the health promotion items on the CSIS-P and the HPLP II. An unexpected finding was that only one of the fatalism items on the CSIS-P correlated with the PFI.

Construct Validity: Factor Analysis

The 43-item CSIS-P was subjected to an exploratory factor analysis in order to further support construct validity. Factor analysis was used for two primary purposes: to identify the interrelatedness of the data and to delineate patterns within the data and to reduce the data in order to define a parsimonious set of factors. Identifying clusters of related items in a scale is a valuable tool in construct validation (Polit and Beck, 2006). Principal component analysis (PCA) was the method used for factor extraction. The scree plot of the eigenvalues demonstrated a three-factor structure. Determining the point at which the factors curve above the straight line on the scree plot identifies the number of factors (Pett, Lackey, and Sullivan, 2003).

A review of the proportion of variance in the items explained by the factors also was utilized to extract the factors and revealed a three-factor structure (Table 13).

Table 13. Variance Explained by Extracted Factors

Factor	Total Variance	Percentage of Variance
I	12.171	28.306
II	3.200	7.441
III	2.990	6.971

Pett, Lackey, and Sullivan (2003) suggest that one should only retain those factors that explain greater than five percent of the variance. This suggestion was used to determine the three-factor structure.

Three factors were retained and rotated for final interpretation. Factor loadings greater than .40 were retained using the guideline set forth by Straub, Boudreau, and Gefen (2004). Factor loadings with corresponding factors and item numbers are presented (Table 14).

Table 14. Factor Loadings

Item Number	Factor I	Factor II	Factor III
13	.82	.04	.20
12	.78	-.02	.14
22	.76	.10	.03
21	.69	.12	.08
24	.67	.19	.15
23	.65	.18	.15
26	.64	.08	.12
15	.62	-.03	.28
25	.59	.18	.37
27	.57	.06	-.01
30	.55	.03	-.03
1	.49	.16	.18
7	.48	.06	.39
43	.43	.42	.27
38	.17	.72	.09
39	.39	.56	.24
40	.06	.75	.21
41	.29	.65	.09
42	-.07	.82	-.05
8	.27	.08	.70
9	.10	.17	.71
10	.32	.29	.51
36	.19	.04	.67

Factors were analyzed for common themes among the item loadings and were named accordingly. After examining the items within each factor, the factors that emerged were benefits to prostate cancer screening, barriers to prostate cancer screening, and health promotion.

Table 15. CSIS-P Items and Corresponding Factor Loadings

Factor	Item Number	Item Content
I	1	DRE Intention
	7	DRE barrier
	12	DRE/PSA barrier
	13	DRE/PSA barrier
	15	DRE benefit
	21	PSA benefit
	22	PSA barrier
	23	PSA barrier
	24	PSA barrier
	25	PSA barrier
	26	PSA benefit
	27	PSA barrier
	30	Seriousness of prostate cancer
43	Informed decision-making	
II	38	Healthy lifestyle
	39	Healthy lifestyle
	40	Healthy lifestyle
	41	Healthy lifestyle
	42	Healthy lifestyle
III	8	DRE barrier
	9	DRE barrier
	10	DRE barrier
	36	Fatalism

Benefits to prostate cancer screening reflect the belief that participating in prostate cancer screening would be advantageous in that it would reduce the

susceptibility to the disease. Barriers to prostate cancer screening are related to those issues or circumstances (internal or external) that would prevent a man from participating in prostate cancer screening. Health promotion is reflective of the multidimensional pattern of actions and/or perceptions that retain a person's current level of wellness or enhance a person's level of wellness. Table 15 illustrates the content of the CSIS-P items with their corresponding factors.

The reduced scale consisted of 23 items, and these items were subjected to a second factor analysis in order to further refine the instrument. The scree plot from this analysis again demonstrated the three-factor structure with 17 items retained (Table 16). Items that loaded greater than .40 were retained (Table 17).

Table 16. Means and Standard Deviations of Reduced CSIS-P

Item Content	Item Number	Mean	SD
DRE intention	1	3.08	.74
DRE barrier	7	3.15	.61
DRE benefit	15	3.11	.64
PSA benefit	21	3.14	.61
PSA barrier	22	3.15	.61
PSA barrier	23	3.04	.65
PSA barrier	24	3.10	.63
PSA barrier	25	3.05	.67
PSA benefit	26	3.08	.62
PSA barrier	27	3.08	.68
Serious prostate cancer	30	3.37	.61

Table 16. Means and Standard Deviations of Reduced CSIS-P

Item Content	Item Number	Mean	SD
Healthy lifestyle	38	2.75	.69
Healthy lifestyle	39	2.94	.75
Healthy lifestyle	40	2.57	.79
Healthy lifestyle	41	2.67	.78
Healthy lifestyle	42	2.43	.72
Decision making	43	3.10	.65

Table 17. Factor Loadings of Reduced CSIS-P

Item Number	Factor	Factor Loading
7	I	.48
21	I	.47
22	I	.81
23	I	.74
24	I	.74
25	I	.71
27	I	.61
1	II	.65
15	II	.69
21	II	.58
26	II	.43
27	II	.42
30	II	.55
42	II	.51
43	II	.61
38	III	.85
39	III	.78
40	III	.71
41	III	.69
42	III	.60
43	III	.43

Examining the items in factor one revealed a cluster around items related to barriers to prostate cancer screening. The items in factor three clustered around health promotion. However, the items in factor two did not reveal a clear clustering. Two of the items that loaded on factor two were related to benefits of prostate cancer screening, one was related to fatalism, one was related to motivation to participate in prostate cancer screening, one was related to seriousness of prostate cancer, one was related to health promotion, and one was related to making an informed decision about prostate cancer screening. Several items loaded on multiple factors and are addressed in the subsequent section which addresses the internal consistency of the items.

Reliability

Internal consistency of the CSIS-P was assessed by Cronbach's alpha and an alpha coefficient of .92 was obtained. Stability of the CSIS-P was evaluated using the test-retest approach to reliability. The CSIS-P was readministered with a two-week delay to 21 men. A reliability coefficient of .93 was obtained demonstrating the stability of intention.

The revised 17-item CSIS-P was correlated with the independent variables in the model and several positive correlations were found. The strongest correlation was between attitude toward prostate cancer screening and intention in the revised scale. A moderately positive correlation was found between healthy lifestyle and intention. A weak positive correlation was found between education and intention in the revised model. A very weak correlation between educational level and intention was found and there was no correlation between age and intention (Table 18).

Table 18. Correlations Between Independent Variables and Revised Intention Scale

Variable	N	r	p
Attitude toward prostate cancer screening	203	.65	.01
Healthy lifestyle	131	.47	.01
Knowledge	203	.36	.01
Education	203	.18	.05
Age	203	.07	NS
Fatalism	143	-.34	.01

Internal consistency of the items that loaded on each factor was assessed by using Cronbach's alpha. Strong internal consistency among the items indicates that the items are homogeneous. Strong alpha coefficients were found for each factor (Table 19). This leads to the conclusion that the variance of the total scores for each factor can be attributed to reliable variance.

Table 19. Factor Coefficient Alphas

Factor	N	α
I	7	.88
II	8	.81
III	6	.86

Several items loaded on multiple factors. Pett, Lackey, and Sullivan (2003) suggest these items be examined to determine if they should be reassigned to only one factor or eliminated from the scale. Items were examined to assess the need for additional item reduction. Items 21 and 27 loaded on factors one and two. Item 42 and

43 loaded on factors two and three. Item 21 loaded higher on factor two than factor one. Though the coefficient alpha for either factor did not increase if item 21 is removed, the item fit better with factor two than factor one. Item 27 loaded higher on factor one than factor two. Again, removing this item from either factor did not increase the coefficient alpha, but item 27 appeared to fit better with factor one. Item 42 loaded higher on factor three than factor two. Removing item 42 from factor two increased the coefficient alpha to .84 so it was assigned to factor three. Item 43 loaded higher on factor two than on three. Removing item 43 from either factor did not increase the coefficient alpha, but item 43 fit better with factor two and was placed there (Table 20).

Table 20. Reliability Results with Reassigning Multiple-Loading Items

Factor		Coefficient Alpha		
		Before	After	Change
		α	α	
I	Item 21	.88	.86	-0.2
	Item 27	.88	.88	None
II	Item 27	.81	.79	-0.2
	Item 42	.81	.84	+0.3
III	Item 42	.86	.84	-0.2
	Item 43	.86	.84	-0.2

Factor refinement and examination of the consistency of the items within the factor loadings reduced the 43-item CSIS-P to a 17-item parsimonious scale. Clear definition of the internal structure of the items and factor grouping lend support to the construct validity of the CSIS-P. Also, the strong reliability coefficients that were obtained for each factor prior to and after item reassignment support the internal consistency of the items.

Chapter Five

Discussion

The study results are summarized in this section. First, a synthesis of the study results within each phase is discussed along with the conclusions that were drawn. Limitations of the study also are detailed. Finally, implications and recommendations for future research are outlined.

The purpose of this three-phase study was to develop a valid and reliable measurement of prostate cancer screening intention. The following research questions were addressed in this study: 1) What are the attitudes of African American men toward prostate cancer screening? 2) What are the perceived factors that influence prostate cancer screening in African American men? 3) Does the Cancer Screening Intention Scale-Prostate (CSIS-P) demonstrate evidence of content validity? 4) Is the CSIS-P a culturally sensitive instrument? 5) Is the reading level of the CSIS-P appropriate for African American men? 6) Does the CSIS-P demonstrate evidence of construct validity? 7) Does the CSIS-P reliably measure prostate cancer screening intention in African American men? This study utilized qualitative and quantitative methods of study.

Phase One

The first phase of this study utilized qualitative methods to explore the attitudes of African American men toward prostate cancer screening. Focus groups were the method of data collection.

Sample

The sample of 20 men was large enough to provide sufficient qualitative data. The age range of the men in the groups was 35-72. One of the limitations of this phase of the study was the age of the men in the focus groups. Most of the men were less than 55 years of age. Also, a majority of the sample reported educational levels of at least “some college”. The limited number of elderly men and men with lower educational levels did not allow for the opinions of the men that are especially vulnerable to prostate cancer. This might have occurred because all of the men in the sample were accrued from a city with two large universities.

Data Analysis

Content analysis was the method used to analyze the transcripts from the focus groups. This is an appropriate method when seeking to explore some phenomenon about a unique population. This method also allows the researcher to assess validity and reliability of qualitative data, which can be difficult when analyzing qualitative data.

Results

Eight dominant themes resulted from the qualitative study. Health promotion emerged as the primary theme from this study. A majority of the men in this phase reported that they exercised regularly and prescribed to a balanced diet. However, most of the men reported that they only sought healthcare when they “felt sick” and that they rarely participated in illness prevention or early detection screening activities.

Fear and lack of knowledge and information also were reported as important factors in influencing prostate cancer screening. The fears about prostate cancer expressed by the men included fear of side effects of treatment, namely impotence and

incontinence. Fear of the unknown also was expressed by several men in the focus groups. There also was a fear of the screening examinations expressed by the men, particularly the DRE. Lack of knowledge about prostate cancer and prostate cancer screening was a constant theme among the three groups. The men reported that information about prostate cancer and screening should begin within the family and then move to the church and the community. They also reported that there are limited educational seminars or forums about prostate cancer directed to African American men. Suggestions were made by the men for mobile prostate cancer education and intervention in communities with large African American populations.

Familial and social support from friends also emerged as important factors that influence prostate cancer screening behaviors. Twenty-five percent of the sample stated that their spouses, family members, and friends were instrumental in maintaining their health status. One surprising result from this phase of the study was the limited number of men who expressed mistrust of the healthcare system. In other qualitative studies (Weinrich, 2001; Clarke-Tasker and Wade, 2002; Plowden, 2006), this was a consistent theme and the results of the Tuskegee Experiment were frequently mentioned. The results from this phase of the study provided the foundation for developing the CSIS-P and beginning the second phase of the study.

Phase Two

The second phase of the study utilized the data from the first phase to develop a valid and reliable measurement of prostate cancer screening intention. Cultural sensitivity and reading level of the instruments also were assessed during this phase.

Sample

The sample in phase two of the study were the men from phase one. Again, the age of the men in the sample was a limitation of this phase of the study. Assessment of the instrument by elderly African American men with lower educational levels would have allowed for a more generalized evaluation of the CSIS-P. This would have been especially helpful because prostate cancer occurs most often in older African American men.

Data Analysis

The CSIS-P was developed using guidelines for cultural sensitivity and cultural competence developed by the Oncology Nursing Society (ONS) (2000) and felt to be culturally sensitive to the African American population. Cultural competence and cultural sensitivity is important when working with diverse ethnic groups. In order to develop tools to measure health behaviors in a particular ethnic group, one must be aware of the group's culture and have an understanding of the beliefs and values of that target group. The ONS guidelines provided a standard by which to measure the cultural sensitivity of the CSIS-P.

Results

Examination of the CSIS-P by the men from the focus groups and a group of five experts resulted in reduction of the items in the original instrument by half. The content validity index (CVI) from the experts for the total instrument was .90. Instruments with CVIs of .80 or greater are deemed acceptable according to Polit and Beck (2006). The internal consistency of the CSIS-P was assessed at .92. Reliability coefficients are

deemed especially appropriate when they are to be used to make decisions about individuals (Polit & Hungler, 1995).

Phase Three

Sample

The sample in this phase of the study consisted of 203 African American men from local churches in Florida. One of the limitations of this study relative to the sample is the lack of heterogeneity within the sample. All of the men in the sample regularly attended worship service which implies that spirituality is important to them. Often, attitudes toward illness among people with high degrees of spirituality differ greatly from those among people who do not have high levels of spirituality. The homogeneity of the sample as it relates to spirituality makes it difficult to generalize the results to the African American male population. Also, many of the study participants were familiar with the researcher. This raises the limitation of social desirability response in that the men may have responded in a manner that they felt the researcher would see as favorable. Third, the fact that the study was carried out in two university towns decreased the number of men with lower educational levels.

Another concern regarding the sample was the age of the group. Seventy-five percent of the men in phase three were less than 60 years of age. This limited the number of assessments from elderly African American men and may have impacted the positive findings related to intention.

More than 60% of the sample reported that they had received a DRE and/or PSA, while less than 50% reported that they had received either test in the past year. It is interesting to note that although nearly two-thirds of the sample had participated in

prostate cancer screening procedures, most of the men in the sample did not get other annual screenings or participate in illness-prevention activities.

Instruments

Cancer Screening Intention Scale-Prostate (CSIS-P). Sixty-nine percent of the men in the sample reported moderate intentions to participate in prostate cancer screening and 31% reported high intentions to participate in prostate cancer screening. It is important to note that there were no low intention scores. This raises the concern of social desirability response. Many of the men know that participation in prostate cancer screening is socially acceptable and may have adjusted their responses accordingly.

Prostate Cancer Knowledge Questionnaire. The results of this questionnaire revealed that African American men had high levels of knowledge relative to prostate cancer and prostate cancer screening. This is in contradiction to many of the other studies that have examined prostate cancer knowledge among African American men (Weinrich, Weinrich, Boyd, and Atkinson, 1998; Barber et al. 1999; Agho and Lewis, 2001). This may have been due to the limited validity evidence of the Prostate Cancer Knowledge Questionnaire, or may be a reflection of bias contributed by age and education.

Prostate Cancer Belief Scale. Most of the participants in the study felt that prostate cancer was a serious disease and that they were susceptible to prostate cancer. However, many of the men did not believe that they were at greater risk than men from other ethnic groups. This finding reaffirms the need for continued education among African American men regarding risks of prostate cancer. Also, though many of the men reported that they believed there were benefits to prostate cancer screening, there were

equal numbers of them who reported that there were a multitude of barriers that prevented them from engaging in prostate cancer screening. This again reaffirms the need for tailored prostate cancer educational programs for African American men that will address the barriers and methods to reduce or remove the barriers.

Powe Cancer Fatalism Index. Most of the men in the sample reported low degrees of fatalism. This finding does not align with results obtained by Powe (Powe, 1995; Powe, 1995a; Powe, 1995b; Powe, 1995c) who reports that African American elderly men have high degrees of fatalism. One reason for this finding may be that the sample in this study did not include a large number of elderly African American males. A second reason may be that much of Powe's work has been with fatalism relative to colorectal cancer among African Americans, and that her research was begun more than a decade ago.

Health Promoting Lifestyle Profile II (HPLP II). Most of the low scores on the HPLP II were related to exercise and receipt of health information. Item scores ranged from zero to four with higher scores reflecting higher degrees of health promotion. Several scores on the physical activity subscale were lower than two. This is a confirmation of the decreased levels of exercise that were reported by the men in phase one of this study. Low scores also were noted when referencing attendance at educational programs promoting health. This is also reflective of comments made by the men in phase one who stated that they only attended these types of programs if motivated by a significant other.

Construct Validity: Correlation with other measures

Correlation of the CSIS-P with other established measures is an appropriate method for assessing construct validity (Pett, Lackey, and Sullivan, 2003). A strong positive correlation was found between health promoting items on the 43-item version of the CSIS-P and the HPLP II. Strong correlations also were found between the health belief items on the CSIS-P and the Prostate Cancer Belief Scale. However, the health belief items on the CSIS-P and the Prostate Cancer Belief Scale were worded so similarly that they were almost equivalent items. Only one of the fatalism items in the CSIS-P correlated significantly with the PFI. Also, the summed fatalism items in the CSIS-P correlated weakly (.31) ($p = .01$) with the total scores on the PFI. This is an unexpected finding and may be due to the fact that there were only four fatalism items on the CSIS-P.

A very strong correlation was found between attitude toward prostate cancer screening and intention to participate in prostate cancer screening. This finding leads one to believe that perceptions of the seriousness of prostate cancer, the susceptibility one feels to the disease, the benefits believed to be associated with prostate cancer screening, and the motivation one feels toward participating in prostate cancer screening are essential to intention to participate in prostate cancer screening. There was also a moderate positive correlation between healthy lifestyle and intention to participate in prostate cancer screening. This is due to the fact that men who participate in other illness prevention activities such as getting regular annual physical exams, maintaining a healthy weight, and participating in regular exercise are likely to participate in prostate cancer screening as well.

Construct Validity: Factor Analysis

Factor analyses were conducted to further support the construct validity of the CSIS-P. Factor analysis is an appropriate and reliable tool in instrument development (Pett, Lackey, and Sullivan, 2003). Principal component analysis was used to extract the factors. The first run revealed a three-factor structure. The three factors were rotated and factor loadings greater than .40 were retained. This reduced the 43-item scale to 23 items. The common themes among the item loadings were determined to be benefits to prostate cancer screening, barriers to prostate cancer screening, and health promotion. It is interesting to note that health promotion was the theme discussed most frequently among the men in the focus group in phase one of this study.

The 23-item scale was then subjected to a second factor analysis run in order to continue refinement of the instrument. After rotating the factors and retaining items with loadings greater than .40, the scale was reduced to 17 items. Items in factor one clustered around barriers to prostate cancer and items in factor three clustered around health promotion. However, the items in factor two did not definitively cluster around a theme and were placed where they theoretically fit best.

Internal consistency among the items was assessed by Cronbach's alpha. Strong alpha coefficients were obtained on all factors illustrating the homogeneity of the items. This is also strong evidence that the variance among the items is attributed to reliable variance. A strong alpha coefficient from the test- retest also illustrates stability of the CSIS-P over time.

Summary

Refining the factors in the CSIS-P and examining the internal consistency of the retained items provides clear internal structure of the scale. The CSIS-P was reduced from a 43-item scale to a 17-item parsimonious scale that can now undergo further testing and reduce subject burden when administering the tool to future study participants.

Implications for Nursing

This study has several implications for nursing practice and nursing education within community settings. Despite less than reliable methods for prostate cancer screening and the recent controversies surrounding the benefits of screening, it still remains the best available method for early detection of prostate cancer. African American men have one of the lowest participation rates in prostate cancer screening among all other ethnic groups. Thus, an important intervention for nursing practice is to develop tailor-made prostate cancer education programs for African American males. These programs must be developed with an awareness of the variety of cultural and health values of African Americans. These programs must be developed with the assistance of African American healthcare professionals and must be carried out in settings where large numbers of African Americans frequent.

Healthcare professionals must also be aware of the barriers that African American men face that prevent them from taking part in prostate cancer screening. These barriers must be identified, addressed, and removed when attempting to schedule prostate cancer screening in the African American community. Lack of clear, precise information is one of the barriers African American men discussed. Decision guides about prostate cancer screening, such as the one developed by the Department of Health and Human Services,

should be used when presenting educational programs to African Americans. Careful, step-by-step outlines of prostate cancer screening procedures should be given. This is especially true when instructions regarding the DRE are given.

Implications for nursing education from this study include better training of healthcare professionals to deal with culturally diverse populations. Nursing and medical education programs should offer more courses in cultural sensitivity and cultural competence. Information related to prostate cancer and prostate cancer screening among African Americans should be integrated into healthcare curricula since prostate cancer is such a significant health concern in this population.

Recommendations for Future Research

The following recommendations for future research are made:

1. Replicate the study using a more heterogeneous African American sample
2. Replicate the study using a knowledge scale with psychometric evidence
3. Further refinement and testing of the CSIS-P
4. Test the CSIS with other cancers in males
5. Conduct comparison studies using the CSIS-P in men from multiple ethnic groups
6. Test the CSIS with breast cancer in women
7. Conduct an intervention study to determine differences in intention based on different types of educational interventions

References

- Agho, A.O. and Lewis, M.A. (2001). Correlates of actual and perceived knowledge of prostate cancer among African Americans. *Cancer Nursing*, 24(3), 165-171.
- Ajzen, I. (2002). Perceived behavior control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(4), 665-683.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Ajzen I. and Fishbein, M. (1980) *Understanding Attitudes and Predicting Social Behavior*. Prentice Hall Publishing: Englewood Cliffs, NJ.
- American Cancer Society (1994). *Cancer Facts and Figures, 1994*. Atlanta: American Cancer Society.
- American Cancer Society (2000). *Cancer Facts and Figures, 2000*. Atlanta: American Cancer Society.
- American Cancer Society. (2002). *Cancer Facts and Figures, 2002*. Atlanta: American Cancer Society.
- American Cancer Society (2005). *Cancer Facts and Figures, 2005*. Atlanta: American Cancer Society.
- American Cancer Society (2006). *Cancer Facts and Figures, 2006*. Atlanta: American Cancer Society.
- American Cancer Society (2007). *Cancer Facts and Figures, 2007*. Atlanta: American Cancer Society.
- Barber, K.R., Shaw, R., Folts, M., Taylor, D.K., Ryan, A., Hughes, M., Scott, V., and Abbott, R.R. (1998). Differences between African American and Caucasian men participating in a community based prostate cancer screening program. *Journal of Community Health*, 25(6), 441-451.
- Barroso, J. (2000). Comparison between African American and white women in their beliefs about breast cancer and their health locus of control. *Cancer Nursing*, 23(4), 268-276.

- Bastani, R., Maxwell, A.E., Carbonari, J., Rozelle, R., Baxter, J., and Vernon, S., (1994). Breast cancer knowledge, attitudes, and behaviors: A comparison of rural health and non-health workers. *Cancer Epidemiology Biomarkers Prevention*, 3(1), 77-84.
- Beeker, C., Kraft, J.M., Goldman, R. and Jorgensen, C. (2001). Strategies for increasing colorectal cancer screening among African Americans. *Journal of Psychosocial Oncology*, 19(3/4), 113-123.
- Bennett, C.L., Ferreira, R., Davis, T.C., Kaplan, J., Weinberger, M., Kuzel, T., Seday, M.A., and Oliver, S. (1998). Relation between literacy, race, and stage of presentation among low-income patients with prostate cancer. *Journal of Clinical Oncology*, 16, 3101-3104.
- Bloom, J., Hayes, W., Saunders, F., and Flatt, S. (1987). Cancer awareness and secondary prevention practices in black Americans: Implications for intervention. *Family and Community Health*, 10(3), 19-30.
- Boehm, S., Schlenk, E.A., Funnell, M.M., Parzuchowski, J., and Powell, L.J. (1995). Prostate cancer in African American men: Increasing knowledge and self-efficacy. *Journal of Community Health Nursing*, 12(3), 161-169.
- Boyd, M.D., Weinrich, S.P., Weinrich, M., and Norton, A. (2001). Obstacles to prostate cancer screening in African American men. *Journal of National Black Nurses' Association*, 12(2), 1-5.
- Breen, N., Wagner, D.K., Brown, M.L., Davis, W.W., and Ballard-Barbash, R. (2001). Progress in cancer screening over a decade: Results of cancer screening from the 1987, 1992, and 1998 national health interview surveys. *Journal of the National Cancer Institute*, 93(22), 1704-1713.
- Brubaker, R.G. and Wickersham, D. (1990). Encouraging the practice of testicular self-examination: A field application of the theory of reasoned action. *Health Psychology*, 9(2), 154-163.
- Burks, D.A. and Littleton, R.H. (1992). The epidemiology of prostate cancer in black men. *Henry Ford Hospital Medical Journal*, 40, 89-92.
- Catalano, W., Richie, J., Ahmann, F., Hudson, M., Scardino, P., Flanigan, R., DeKernion, J., Ratliff, T., Kavoussi, L., Dalkin, B., Waters, B., MacFarlane, M., and Southwick, P. (1994). Comparison of digital rectal examination and serum prostate-specific antigen in the early detection of prostate cancer: Results of a multi-center clinical trial of 6,630 men. *Journal of Urology*, 151, 1283-1290.

- Chan, E.C., Haynes, M.C., O'Donnell, F.T., Bachino, C., and Vernon, S.W. (2003). Cultural sensitivity and informed decision making about prostate cancer screening. *Journal of Community Health, 28*(6), 393-405.
- Clarke-Tasker, V.A. and Wade, R. (2002). What we thought we knew: African American males' perception of prostate cancer and screening methods. *The American Black Nursing Faculty Journal 13*(3), 56-60.
- Collins, M. (1997). Increasing prostate cancer awareness in African American men. *Oncology Nursing Forum, 24*(1), 91-95.
- Conrad, M.E., Brown, P., and Conrad, M.G. (1996). Fatalism and breast cancer in Black women. *Annals of Internal Medicine, 125*(11), 941-942.
- Cowen, M.E., Kattan, M.W., and Miles, B.J. (1996). A national survey of attitudes regarding participation in prostate carcinoma testing. *Cancer, 78*(9), 1952-1957.
- Crocker, L. and Algina, J. (1986). *Introduction to Classical & Modern Test Theory*: Riehardt & Winston Publishers: New York, NY.
- Davison, B.J. and Degner, L.F. (1997). Empowerment of men newly diagnosed with prostate cancer. *Cancer Nursing, 20*(3), 187-196.
- Demark-Wahnefried, W., Catoe, K., Paskett, E., Robertson, C., and Rimer, B. (1993) Characteristics of men reporting for prostate cancer screening. *Urology, 42*, 269-273.
- Demark-Wahnefried, W., Strigo, T., Catoe, K., Conaway, M., Brunetti, M., Rimer, B.K., and Robertson, C.N. (1995). Knowledge, beliefs, and prior screening behavior among blacks and whites reporting prostate cancer screening. *Urology, 4*(3), 346-351.
- Deibert, C., Malishi, S., Kwan, L., Fink, A., Connor, S., and Litwin, M. (2007). Prostate cancer knowledge among low income minority men. *Journal of Urology, 177*(5), 1851-1855.
- Downe-Wamboldt, B. (1992). Content analysis: Method, applications and issues. *Health Care for Women International, 13*(3), 313-321.
- Fearing, A., Bell, D., Newton, M., and Lambert, S. (2000). Prostate screening health beliefs and practices of African American men. *The American Black Nursing Faculty Journal, 11*(6), 141-144.

- Ford, M.E., Vernon, S.W., Havstad, S.L., Thomas, S.A., and Davis, S.D. (2006). Factors influencing behavioral intention regarding prostate cancer screening among older African American men. *Journal of the National Medical Association*, 98(4), 505-514.
- Forrester-Anderson, I.T. (2005). Prostate cancer perceptions, knowledge, and behaviors among African American men: Focus group findings. *Journal of Health Care for the Poor and Underserved*, 16, 22-30.
- Freeman, H. (1989). *Cancer and the socioeconomic disadvantaged*. Atlanta: American Cancer Society.
- Friedman, L.C., Woodruff, A., Lane, M., Weinberg, A.D., Cooper, H.P., and Webb, J.A. (1995). Breast cancer screening behaviors and intentions among asymptomatic women 50 years of age and older. *American Journal of Preventive Medicine*, 11(4), 218-223.
- Gelfand, D.E., Parzuchowski, J., Cort, M., and Powell, I. (1995). Digital rectal examinations and prostate cancer screening: Attitudes of African American men. *Oncology Nursing Forum*, 22(8), 1253-1255.
- Gibson, W.H. (1995). *Attitudes of men in their health beliefs related to prostate cancer*. Unpublished master's thesis, University of South Florida, Tampa, Florida.
- Godin, G. and Kok, G. (1996). The theory of planned behavior: A review of its applications to health-related behaviors. *American Journal of Health Promotion*, 11(2), 87-98.
- Groenwald, S. (2000). *Cancer Nursing: Principles and Practice*. Philadelphia, PA: Jones and Bartlett Publishing.
- Gwede, C.K. and McDermott, R.J. (2006). Prostate cancer screening decision making under controversy: Implications for health promotion practice. *Health Promotion Practice*, 7, 134-146.
- Hillhouse, J.J., Adler, C.M., Drinnon, J., and Turrisi, R. (1997). Application of Ajzen's theory of planned behavior to predict sunbathing, tanning salon use, and sunscreen use intentions and behaviors. *Journal of Behavioral Medicine*, 20(4), 365-378.
- Hillhouse, J.J., Turrisi, R., and Kastner, M. (2000). Modeling tanning salon behavioral tendencies using appearance motivation, self-monitoring and the theory of planned behavior. *Health Education Research*, 15(4), 405-414.

- Hughes, G.D., Sellers, D.B., Fraser, Jr., L., Teague, R., and Knight, B. (2007). Prostate cancer community collaboration and partnership: Education, awareness, recruitment, and outreach to southern African-American males. *Journal of Cultural Diversity*, 14(2), 68-73.
- Jennings-Dozier, K.J. (1999). Predicting intentions to obtain a Pap smear among African American and Latina women: Testing the theory of planned behavior. *Nursing Research*, 48(4), 198-205.
- Johnson, R. (2005). Gender differences in health-promoting lifestyles of African Americans. *Public Health Nursing*, 22(2), 130-137.
- Krueger, R.A., and King, J. (1997). *The Focus Group Kit*. Oakland Hills, CA: Sage Publications.
- Kurtz, M.E., Given, B., Given, C.W., and Kurtz, J.C. (1993). Relationships of barriers and facilitators to breast self-examination, mammography, and clinical breast examination in a worksite population. *Cancer Nursing*, 16, 251-259.
- Lambert, S., Fearing, A., Bell, D., and Newton, M. (2002). A comparative study of prostate screening health beliefs and practices between African American men and Caucasian men. *The American Black Nursing Faculty Journal*, 13(3), 61-63.
- Landis, S.H., Murray, T., Bolden, S., and Wingo, P.A. (1998). Cancer statistics: 1998. *CA: A Cancer Journal for Clinicians*, 48(1), 6-11.
- Lim, L.S., Sherin, K., and ACPM Prevention Practice Committee. (2008). Screening for prostate cancer in U.S. men: ACPM position statement on preventive practice. *American Journal of Preventive Medicine*, 34(2), 164-170.
- Magnus, M. (2004). Prostate cancer knowledge among multiethnic black men. *Journal of the National Medical Association*, 96(5), 650-656.
- Mainous, A.G. and Hagen, M.D. (1994). Public awareness of prostate cancer and the prostate specific antigen test. *Cancer Practice* 2, 217-221.
- McCaul, K.D., Sandgren, A.K., O'Neill, H.K., and Hinz, V.B. (1993). The value of the theory of planned behavior, perceived control, and self-efficacy for predicting health-protective behaviors. *Basic and Applied Social Psychology*, 14(2), 231-252.
- McCoy, C.B., Anwyl, R.S., Metsch, L.R., Inciardi, J.A., Smith, S.S., and Correa, R. (1995). Prostate cancer in Florida. *Cancer Practice*, 3(2), 88-93.

- Morse, J.M. (1994). Strategies for sampling. In J.M. Morse (Ed.). *Qualitative Nursing Research: A Contemporary Dialogue*. Rockville, MD: Aspen Publishing.
- Myers, R.E., Wolf, T.A., McKee, L., McGrory, G., Burgh, D.Y., Nelson, G., and Nelson, G.A (1995). Factors associated with intention to undergo annual prostate cancer screening among African American men in Philadelphia. *Cancer*, 7(3), 471-479.
- Myers, R.E., Chodak, G.W., Wolf, T.A., Burgh, D.Y., McGroy, G.T., Marcus, S.M., Diehl, J.M., and Williams, M. (1999). Adherence by African American men to prostate cancer education and early detection. *Cancer*, 86(1), 88-104.
- Myers, R.E., Ross, E., Jepson, C., Wolf, T., Balshem, A., Millner, L., and Leventhal, H. (1994). Modeling adherence to colorectal cancer screening. *Preventive Medicine*, 23, 142-151.
- Myers, R.E. (1999). African American men, prostate cancer early detection examination use, and informed decision-making. *Seminars in Oncology*, 26(4), 375-381.
- Myers, R.E., Wolf, T.A., Balshem, A.M., Ross, E.A., and Chodak, G.W. (1994). Receptivity of African American men to prostate cancer screening. *Urology*, 43(4), 480-487.
- Myers, R.E., Wolf, T.A., McKee, L., McGrory, G., Burgh, D.Y., Nelson, G., and Nelson, G.A. (1996). Factors associated with intention to undergo annual prostate cancer screening among African American men in Philadelphia. *Cancer*, 78(3), 471-479.
- Muhlenkamp, A.F. and Broerman, N.A. (1988). Health beliefs, health value, and positive health behaviors. *Western Journal of Nursing Research*, 10(5), 637-646.
- National Cancer Institute. (2003). Retrieved July 27, 2003, from <http://www.cancer.gov>.
- National Center of Educational Statistics. (2006). Retrieved August 8, 2008 from <http://www.nces.ed.gov>.
- Odedina, F.T., Campbell, E.S., LaRose-Pierre, Scrivens, J., and Hill, A. (2008). Personal factors affecting African-American men's prostate cancer screening behavior. *Journal of the National Medical Association*, 100(6), 724-733.

- Odedina, F.T., Scrivens, J., Emanuel, A., LaRose-Pierre, M., Brown, J., and Nash, R. (2004). A focus group study of factors influencing African-American men's prostate cancer screening behavior. *Journal of the National Medical Association*, 96(6), 780-788.
- Oliver, J.S. (2007). Attitudes and beliefs about prostate cancer and screening among rural African American men. *Journal of Cultural Diversity*, 14(2), 74-80.
- Oncology Nursing Society. (2000). Oncology nursing society multicultural outcomes: Guidelines for cultural competence. Pittsburgh, PA.
- Parchment, Y.D. (2004). Prostate cancer screening in African American and Caribbean males: Detriment in delay. *The American Black Nursing Faculty Journal*, 15(6), 116-120.
- Parker, S.L., Davis, K.J., Wingo, P.A., Ries, L.G., and Heath, C.W. (1998). Cancer statistics by race and ethnicity. *CA: A Cancer Journal for Clinicians*, 48(1), 31-33.
- Parse, R.R. (2001). *Qualitative Inquiry: The Path of Sciencing*. Sudbury, MA: Jones and Bartlett Publishing.
- Pender, N.J. and Pender, A.R. (1996). *Health Promotion in Nursing Practice*. Appleton and Lange: Stamford, CT.
- Pender, N.J. and Pender, A.R. (1986). Attitudes, subjective norms, and intentions to engage in health behaviors. *Nursing Research*, 35(1), 15-18.
- Pender, N.J., Walker, S.N., and Sechrist, K.R. (1990). Predicting health-promoting lifestyles in the workplace. *Nursing Research* 39(6), 326-332.
- Pett, M.A., Lackey, N.R., and Sullivan, J.J. (2003). *Making Sense of Factor Analysis*. Thousand Oaks, CA: Sage Publications.
- Phillips, J.M., Cohen, M.Z., and Moses, G. (1999). Breast cancer screening and African American women: Fear, fatalism, and silence. *Oncology Nursing Forum*, 26(3), 561-571.
- Plowden, K.O. (1999). Using the health belief model in understanding cancer in African American men. *The American Black Nursing Faculty Journal*, 10(1), 4-8.
- Plowden, K.O. (2006). To screen or not to screen: Factors influencing the decision to participate in prostate cancer screening among urban African-American men. *Urologic Nursing*, 26(6), 477-481.

- Plowden, K.O. and Miller, J.L. (2000). Motivators of health seeking behavior in urban African American men: An exploration of triggers and barriers. *Journal of National Black Nurses ` Association, 11(1)*, 15-20.
- Polit, D.F. and Beck, C.T. (2006). *Essentials of Nursing Research: Methods, appraisal, and utilization*. Philadelphia, PA: Lippincott Williams & Wilkins.
- Polit, D.F. and Hungler, B.P. (1995). *Nursing Research: Principles and Methods*. Philadelphia, PA: J.P. Lippincott.
- Powe, B.D. (1995c). Fatalism among elderly African Americans: Effects on colorectal screening. *Cancer Nursing, 18(5)*, 385-392.
- Powe, B. (1995a). Perceptions of cancer fatalism among African Americans: The influence of education, income, and cancer knowledge. *Journal of National Black Nurses' Association, 7(2)*, 41-48.
- Powe, B. (2001). Cancer fatalism among elderly African American women: Predictors of the intensity of the perceptions. *Journal of Psychosocial Oncology, 19(3/4)*, 85-95.
- Powe, B.D. and Johnson, A. (1995). Fatalism among African Americans: Philosophical perspectives. *Journal of Religion and Health, 34*, 119-125.
- Powe, B. D. (1996). Cancer fatalism among African Americans: A review of the literature. *Nursing Outlook, 44(1)*, 18-21.
- Powe, B.D. (1995b). Cancer fatalism among elderly Caucasians and African Americans. *Oncology Nursing Forum, 22(9)*, 1355-1359.
- Powe, B. and Weinrich, S. (1999). An intervention to decrease cancer fatalism among rural elders. *Oncology Nursing Forum, 26(3)*, 583-588.
- Powe, B.D., Daniels, E.C. and Finnie, R. (2005). Comparing perceptions of cancer fatalism among African American patients and their providers. *Journal of the American Academy of Nurse Practitioners, 17(8)*, 318-324.
- Price, J.H., Colvin, T.L., and Smith, D. (1993). Prostate cancer: Perceptions of African American males. *Journal National Medical Association, 85(12)*, 941-947.
- Redding, C.A., Rossi, S.R., Velicer, W.F., and Prochaska, J.O. (2000). Health behavior models. *The International Journal of Health Education, 3*, 180-193.

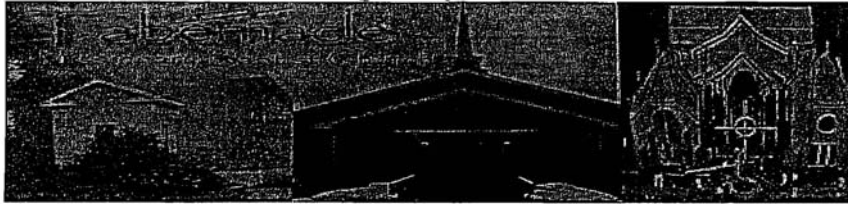
- Rosenstock, L.M. (1974). Historical origins of the health belief model. In Becker, M.H. (Ed.). *The Health Belief Model and Personal Health Behavior*. (pp. 1-9). Thorofare, NJ: Charles B. Slack.
- Sandelowski, M. (1995). Sample size in qualitative research. *Research in Nursing and Health, 18*, 179-183.
- Savage, S.A., and Clarke, V.A. (1996). Factors associated with screening mammography and breast self-examination intentions. *Health Education Research, 11*(4), 409-421.
- Sheeran, P., and Orbell, S. (2000). Using implementation intentions to increase attendance for cervical cancer screening. *Health Psychology, 19*(3), 283-289.
- Shelton, P., Weinrich, S., and Reynolds, W.A. (1999). Barriers to prostate cancer screening in African American men. *Journal of Black Nurses' Association, 10*(1), 14-28.
- Spurlock, W.R. and Cullins, L.S. (2006). Cancer fatalism and breast cancer screening in African American women. *American Black Nursing Faculty Journal, 17*(1), 38-43.
- Steele, C.B., Miller, D.S., Maylahn, C., Uhler, R.J., and Baker, C.T. (2000). Knowledge, attitudes, and screening practices among older men regarding prostate cancer. *American Journal of Public Health, 90*(10), 1595-1600.
- Straub, D., Boudreau, M-C., and Gefen, D. (2004). Validation guidelines for IS positivist research. *Communications of the Association for Information Systems, 13*, 380-407.
- Straughan, P.T. and Seow, A. (1998). Fatalism reconceptualized: A concept to predict health screening behavior. *Journal of Gender, Culture, and Health, 3*(2), 85-100.
- Stromborg, M.F., Pender, N.J., Walker, S.N., and Sechrist, K.R. (1990). Determinants of health promoting lifestyle in ambulatory cancer patients. *Social Science Medicine, 11*(10), 1159-1168.
- Taylor, K.L., Shelby, R., Kerner, J., Redd, W., and Lynch, J. (2002). Impact of undergoing prostate carcinoma screening on prostate-cancer related knowledge and distress. *Cancer, 95*(5), 1037-1044.
- Underwood, S.M. (1991). African American men: Perceptual determinants of early cancer detection and cancer risk reduction. *Cancer Nursing, 14*(6), 281-288.

- Underwood, S.M., Sanders, E., and Davis, M. (1993). Determinants of participation in state-of-the-art cancer prevention, early detection/screening, and treatment among African Americans. *Cancer Nursing, 16*(1), 25-33.
- Underwood, S.M. (1992). Cancer risk reduction and early detection behaviors among black men: Focus on learned helplessness. *Journal of Community Health Nursing, 9*(1), 21-31.
- Underwood, S.M. and Sanders, E. (1990). Factors contributing to health promotion behaviors - among African American men. *Oncology Nursing Forum, 17*(S), 707-712.
- VanRyn, M., Lytle, L.A., and Kirscht, J.P. (1996). A test of the theory of planned behavior for two health-related practices. *Journal of Applied Social Psychology, 26*(10), 871-883.
- Vetter, N., Lewis, P., and Charny, M. (1991). Health, fatalism, and age in relation to lifestyle. *Health Visit, 64*, 191-194.
- Walker, S., Sechrist, K., and Pender, N. (1987). The health-promoting lifestyle profile: Development and psychometric characteristics. *Nursing Research, 36*, 76-81.
- Watson, E., Hewitson, P., Brett, J., Bukach, C., Evans, R., Edwards, A., Elwyn, G., Cargill, A., and Austoker, J. (2006). Informed decision making and prostate specific antigen (PSA) testing for prostate cancer: A randomized controlled trial exploring the impact of a brief patient decision aid on men's knowledge, attitudes and intention to be tested. *Patient Education and Counseling, 63*, 367-379.
- Watts, R.J. (1994). Beliefs about prostate disease in African American men: A pilot study. *The American Black Nursing Faculty, 102-105*.
- Weber, R. P. (1995). Basic content analysis. In Lewis-Beck, M.S. (Ed.). *Research Practice International Handbook of Qualitative Application in the Social Sciences*. London: Sage Publishing.
- Wehrwein, T. C. and Eddy, M.E. (1993). Breast health promotion: Behaviors of midlife women. *Journal of Holistic Nursing, 11*, 223-236.
- Weinrich, S. (2001). The debate about prostate cancer screening: What nurses need to know. *Seminars in Oncology Nursing, 17*(2), 78-84.

- Weinrich, S.P., Seger, R., Miller, B.L., Davis, C., Kim, S., Wheeler, C., and Weinrich, M. (2004). Knowledge of the limitations associated with prostate cancer screening among low-income men. *Cancer Nursing*, 27(6), 442-451.
- Weinrich, S.P., Weinrich, M.C., Boyd, M.D., and Atkinson, C. (1998). The impact of prostate cancer knowledge on cancer screening. *Oncology Nursing Forum*, 25(3), 527-534.
- Weinrich, S.P., Weinrich, M.C., Priest, J., and Fodi, C. (2003). Self-reported reasons men decide not to participate in free prostate cancer screening. *Oncology Nursing Forum*, 30(1), E12-E16.
- Weinrich, S.P., Yoon, S., and Weinrich, M. (1998). Predictors of participation in prostate cancer screening at worksites. *Journal of Community Health*, 15(2), 113-129.
- Wilkes, G., Freeman, H. and Prout, M. (1994). Cancer and poverty: Breaking the cycle. *Seminars in Oncology Nursing*, 10, 79-88.
- Wilkinson, S., List, M., Sinner, M., Dai, L., and Chodak, G. (2003). Educating African-American men about prostate cancer: Impact on awareness and knowledge. *Urology*, 61, 308-313.
- Williams-Piehot, P.A., McCormack, L.A., Treiman, K., and Bann, C.M. (2008). Health information styles among participants in a prostate cancer screening informed decision-making intervention. *Health Education Research*, 23(3), 440-453.
- Zhan, L., Clutterbuck, J., Keshian, J., and Lombardi, L. (1998). Promoting health: Perspectives from ethnic elderly women. *Journal of Community Health*, 15(1), 31-44.

Appendices

Appendix A: Letter of Support



"The little church with the big and friendly heart, where everybody is somebody"

July 10, 2007

Ms. Susan A. Baker
5614 Pinnacle Heights Circle
Unit 307
Tampa, Fl. 33624

Dear Ms. Baker:

Tabernacle M.B. Church has agreed to allow the research project entitled "Prostate Cancer Screening Intention among African American Men: An Instrument Development Study" to be conducted with the members of the Brotherhood ministry. It is our understanding that the participants with the research project will be consented via the informed consent procedures as designed at the University of South Florida. The research will take place between the dates of August 1, 2007 to December 1, 2008.

I will be happy to contact the coordinator of the Brotherhood ministry when you are ready to begin the focus groups. If you need further information or have additional questions, don't hesitate to contact me.

Sincerely,

Rev. Stanley L. Walker, Sr.
Senior Pastor
Tabernacle M.B. Church

Appendix A: Letter of Support

**St. John Progressive M.B. Church
2504 East Chipco Street
Tampa, Fl. 33604
Rev. Bartholomew Banks, Sr. Pastor**

March 5, 2005

Susan A. Baker
5614 Pinnacle Heights Circle #307
Tampa, Fl. 33624

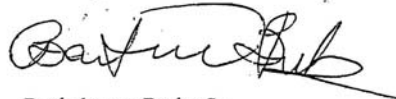
Dear Miss Baker:

It is with great pleasure that I grant permission for you to conduct your research with the men here at St. John. I know about the high incidence of prostate cancer in African American men and feel your research study is one that is definitely needed.

I think the Brotherhood is the group that would be most helpful in terms of the information you are trying to gather. I am sure they would be agreeable to participating in completing the surveys.

The members of St. John are very concerned about the health of African Americans and are happy to be a part of any effort to decrease illness in our people. Please contact me at 813-247-7204 so that I may provide you with the name and number of the president of the Brotherhood. He will be able to assist you with a specific date and time for the men to meet.

Sincerely,



Bartholomew Banks, Sr.
Pastor
St. John Progressive M.B. Church

Appendix B: IRB Approval



DIVISION OF RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-5618

August 5, 2008

Susan Baker, MS, RN
Nursing
5614 Pinnacle Heights Circle, #307
Tampa, FL 33624

RE: Expedited Approval for Continuing Review

IRB#: 106037 G

∨ Title: *Prostate Cancer Screening Intention Among African American Men: An Instrument Development Study*

Study Approval Period: 08/01/2008 to 07/31/2009

Dear Ms. Baker:

On August 1, 2008, Institutional Review Board (IRB) reviewed and **APPROVED** the above protocol for the period indicated above. It was the determination of the IRB that your study qualified for expedited review based on the federal expedited category number six (6) and seven (7).

Also approved was the increase in total number of subjects from 140 to 200 and the Adult Informed Consent form.

***Please provide current human subjects protection education certificate for co-investigator, Dr. McMillan.

Please note, if applicable, the enclosed informed consent/assent documents are valid during the period indicated by the official, IRB-Approval stamp located on page one of the form. Valid consent must be documented on a copy of the most recently IRB-approved consent form. Make copies from the enclosed original.

Please reference the above IRB protocol number in all correspondence regarding this protocol with the IRB or the Division of Research Integrity and Compliance. In addition, we have enclosed an Institutional Review Board (IRB) Quick Reference Guide providing guidelines and resources to assist you in meeting your responsibilities in the conduction of human participant research. Please read this guide carefully. It is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB.

Appendix D

Focus Group Questions

1. Tell the group how long you've been a member of this church and what ministries you're involved in.
2. What does health or being healthy mean to you?
3. What kind of things do you do to stay healthy?
4. Do most of the people you know get physical exams?
5. How do you think people your age feel about getting tested to prevent disease?
6. What are some specific health screenings that you've participated in?
7. Does anyone you know have prostate cancer? (If yes, ask "tell me what you know about their experience")
8. What do you think is the risk for people your age getting prostate cancer?
9. How many of you have ever been tested for prostate cancer?
10. What do you think gets in the way of people getting tested for prostate cancer?
11. Tell me what you think might be three benefits of getting tested for prostate cancer. (Moderator will write the responses on a flip chart)
12. If you had to convince one of your friends or one of the brethren to get tested for prostate cancer, what would you tell him? (Moderator will write responses on a flip chart)
13. Of all the things that you would say to convince your friend or one of the brethren to get tested for prostate cancer, which do you think is most important?
14. Is there anything we didn't cover that we should have?

Cancer Screening Intention Scale-Prostate

Instructions: Please read each sentence carefully and circle the response that best describes your belief about the sentence.

Digital Rectal Exam (DRE): A gloved finger is placed in the rectum to check the prostate

1. I intend to get a DRE this year.

Strongly agree Agree Disagree Strongly Disagree

2. I have already scheduled an appointment to get a DRE this year.

Strongly agree Agree Disagree Strongly Disagree

3. I believe that getting a DRE will benefit me.

Strongly agree Agree Disagree Strongly Disagree

4. I believe that getting a DRE and the blood test for prostate cancer will lower my chances of getting prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

5. Getting the DRE and the blood test for prostate cancer will help find prostate cancer early.

Strongly agree Agree Disagree Strongly Disagree

6. Getting the DRE and the blood test for prostate cancer will keep me from worrying about getting prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

7. I believe that a DRE will be harmful to me.

Strongly agree Agree Disagree Strongly Disagree

8. I believe that the DRE will be a painful experience for me.

Strongly agree Agree Disagree Strongly Disagree

9. Getting the DRE is embarrassing to me.

Strongly agree Agree Disagree Strongly Disagree

10. Thinking about getting the DRE scares me.

Strongly agree Agree Disagree Strongly Disagree

11. I think most African American (Black) men don't know about the DRE and the blood test for prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

12. The hours at my job will keep me from getting the DRE and the blood test for prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

13. Lack of transportation will keep me from getting the DRE and the blood test for prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

14. I believe that it is completely up to me whether or not I have a DRE and the blood test for prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

15. I am confident that I will be able to get a DRE.

Strongly agree Agree Disagree Strongly Disagree

16. I believe that it would be worthless for me to have a DRE.

Strongly agree Agree Disagree Strongly Disagree

17. The people in my life whose opinions I value think I should have a DRE.

Strongly agree Agree Disagree Strongly Disagree

18. Most of my male family members and friends have had a DRE.

Strongly agree Agree Disagree Strongly Disagree

Prostate Cancer Blood Test

19. I intend to get the blood test for prostate cancer this year.

Strongly agree Agree Disagree Strongly Disagree

20. I have already scheduled an appointment to get the blood test for prostate cancer this year.

Strongly agree Agree Disagree Strongly Disagree

21. I believe that it would be valuable for me to get the blood test for prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

22. I believe that the blood test for prostate cancer will be harmful to me.

Strongly agree Agree Disagree Strongly Disagree

23. I believe that the blood test for prostate cancer will be a painful experience for me.

Strongly agree Agree Disagree Strongly Disagree

24. Getting the blood test for prostate cancer is embarrassing to me.

Strongly agree Agree Disagree Strongly Disagree

25. Thinking about getting the blood test for prostate cancer scares me.

Strongly agree Agree Disagree Strongly Disagree

26. It will be easy for me to go get the blood test for prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

27. I believe it is useless for me to get the blood test for prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

28. The people in my life whose opinions I value think that I should have the blood test for prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

29. Most of my male family members and friends have had the blood test for prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

Prostate Cancer

30. I believe that prostate cancer is a serious disease.

Strongly agree Agree Disagree Strongly Disagree

31. Prostate cancer would threaten my relationship with my partner.

Strongly agree Agree Disagree Strongly Disagree

32. I worry about getting prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

33. I believe that I am at risk for getting prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

34. I believe that I am at higher risk for getting prostate cancer than other men.

Strongly agree Agree Disagree Strongly Disagree

35. It is likely that I will get prostate cancer in the future.

Strongly agree Agree Disagree Strongly Disagree

36. I believe there is nothing I can do to prevent me from getting prostate cancer.

Strongly agree Agree Disagree Strongly Disagree

37. Doing what my family and friends think I should do is very important to me.

Strongly agree Agree Disagree Strongly Disagree

Lifestyle

38. I eat well-balanced meals daily.

Strongly agree Agree Disagree Strongly Disagree

39. I get yearly physical check-ups.

Strongly agree Agree Disagree Strongly Disagree

40. I exercise at least three times a week.

Strongly agree Agree Disagree Strongly Disagree

41. I go see the doctor even when I'm not sick.

Strongly agree Agree Disagree Strongly Disagree

42. I eat at least five servings of fruits/vegetables daily.

Strongly agree Agree Disagree Strongly Disagree

Decision Making

43. I am confident that I can talk to my healthcare provider about the benefits and risks of prostate cancer screening.

Strongly agree Agree Disagree Strongly Disagree

Appendix F
Prostate Cancer Knowledge Questionnaire
(Sally Maliski, 2007)

DIRECTIONS: Please answer each question by circling "TRUE" or "FALSE"

1. The prostate is located between the bladder and penis, in front of the rectum.

TRUE FALSE

2. If you have brothers or sons they are at higher risk for prostate cancer.

TRUE FALSE

3. A man can have prostate cancer without having any pain or symptoms.

TRUE FALSE

4. Antibiotics can be used to cure prostate cancer.

TRUE FALSE

5. Surgery or radiation can cure prostate cancer in its early stage.

TRUE FALSE

6. Prostate cancer treatment can increase your sex drive.

TRUE FALSE

7. Eating soybean products such as tofu and soymilk can lower the risk of prostate cancer.

TRUE FALSE

Appendix G
Prostate Cancer Belief Scale

DIRECTIONS: Please read each sentence carefully and circle the response that best describes your belief about the sentence.

1. I search for new information to improve my health.

Strongly agree Agree Disagree Strongly disagree

2. I feel it is important to carry out activities which will improve my health.

Strongly agree Agree Disagree Strongly disagree

3. When I have a recommended digital rectal exam (DRE or finger test), I feel good about myself.

Strongly agree Agree Disagree Strongly disagree

4. Having a DRE will decrease my chances of dying from prostate cancer.

Strongly agree Agree Disagree Strongly disagree

5. Having a DRE would take too much time.

Strongly agree Agree Disagree Strongly disagree

6. Having a DRE would cost too much money.

Strongly agree Agree Disagree Strongly disagree

7. I feel I will get prostate cancer in the future.

Strongly agree Agree Disagree Strongly disagree

8. There is a good possibility I will get prostate cancer.

Strongly agree Agree Disagree Strongly disagree

9. I am afraid to think about prostate cancer.

Strongly agree Agree Disagree Strongly disagree

10. If I developed prostate cancer, I would not live longer than five years.

Strongly agree

Agree

Disagree

Strongly disagree

Appendix H

Powe Fatalism Index (1995)

Directions: Please answer the following questions.

1. I think if someone is meant to have prostate cancer, it doesn't matter what kinds of food they eat, they will get prostate cancer anyway.	YES NO
2. I think if someone has prostate cancer, it is already too late to get treated for it.	YES NO
3. I think someone can eat fatty foods all their life, and if they are not meant to get prostate cancer, they won't get it.	YES NO
4. I think if someone is meant to get prostate cancer, they will get it no matter what they do.	YES NO
5. I think if someone gets prostate cancer, it was meant to be.	YES NO
6. I think if someone gets prostate cancer, their time to die is soon.	YES NO
7. I think if someone gets prostate cancer, that's the way they were meant to die.	YES NO
8. I think getting checked for prostate cancer makes people scared that they may really have prostate cancer.	YES NO
9. I think if someone is meant to have prostate cancer, they will have prostate cancer.	YES NO
10. I think some people don't want to know if they have prostate cancer because they don't want to know they may be dying from it.	YES NO
11. I think if someone gets prostate cancer, it doesn't matter whether they find it early or late, they will still die from it.	YES NO
12. I think if someone has prostate cancer and gets treatment for it, they will probably still die from the prostate cancer.	YES NO
13. I think if someone was meant to have prostate cancer, it doesn't matter what doctors and nurses tell them to do, they will get prostate cancer anyway.	YES NO
14. I think if someone is meant to have prostate cancer, it doesn't matter if they eat healthy foods, they will still get prostate cancer.	YES NO
15. I think prostate cancer will kill you no matter when it is found and how it is treated.	YES NO

Appendix I

Health Promoting Lifestyle Profile II

DIRECTIONS: This questionnaire contains statements about your *present* way of life or personal habits. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behavior by circling:

N for never, **S** for sometimes, **O** for often, or **R** for routinely

- | | | | | |
|---|---|---|---|---|
| 1. Choose a diet low in fat, saturated fat, and cholesterol. | N | S | O | R |
| 2. Report any unusual signs or symptoms to a physician or other health professional. | N | S | O | R |
| 3. Follow a planned exercise program. | N | S | O | R |
| 4. Feel I am growing and changing in positive ways. | N | S | O | R |
| 5. Limit use of sugars and food containing sugar (sweets). | N | S | O | R |
| 6. Read or watch TV programs about improving health. | N | S | O | R |
| 7. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber). | N | S | O | R |
| 8. Eat 6-11 servings of bread, cereal, rice and pasta each day. | N | S | O | R |
| 9. Question health professionals in order to understand their instructions. | N | S | O | R |
| 10. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week). | N | S | O | R |
| 11. Eat 2-4 servings of fruit each day. | N | S | O | R |
| 12. Get a second opinion when I question my health care provider's advice. | N | S | O | R |
| 13. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling). | N | S | O | R |

14.	Eat 3-5 servings of vegetables each day.	N	S	O	R
15.	Discuss my health concerns with health professionals.	N	S	O	R
16.	Do stretching exercises at least 3 times per week.	N	S	O	R
17.	Eat 2-3 servings of milk, yogurt or cheese each day.	N	S	O	R
18.	Inspect my body at least monthly for physical changes/ danger signs.	N	S	O	R
19.	Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).	N	S	O	R
20.	Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.	N	S	O	R
21.	Ask for information from health professionals about how to take good care of myself.	N	S	O	R
22.	Check my pulse when exercising.	N	S	O	R
23.	Read labels to identify nutrients, fats, and sodium content in packaged food.	N	S	O	R
24.	Attend educational programs on personal health care.	N	S	O	R
25.	Reach my target heart rate when exercising.	N	S	O	R
26.	Eat breakfast.	N	S	O	R
27.	Seek guidance or counseling when necessary.	N	S	O	R

About the Author

Susan A. Baker is a native Floridian. She received her BSN from Florida A&M University. Susan received her MSN from the University of South Florida. Her research interests lie in racial disparities in cancer and health. She is especially interested in breast and prostate cancer in African Americans.

Susan A. Baker is a board member of the Diversity Council at H. Lee Moffitt Cancer Center and the American Cancer Society Operating Committee. Susan is an avid volunteer with the American Cancer Society.