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In Texas, prostate cancer is the second leading cause of cancer deaths among non-Hispanic whites and African American (AA) males. This thesis addresses the research questions: what psycho-social characteristics associated with men who participate in prostate screening? What psycho-social and clinical characteristics are associated with reported risk factors?


Focus groups were conducted to identify attitudes, perceptions and health beliefs of African American men's early detection behavior. Existing data from a prostate screening program in Dallas County, Texas was analyzed to determine associations of demographic variables, risk factors variables and screening participation for each subgroup with AA as the group of interest. Comparison of responses and data analysis provided the framework for a conceptual model.

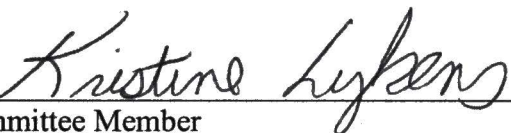
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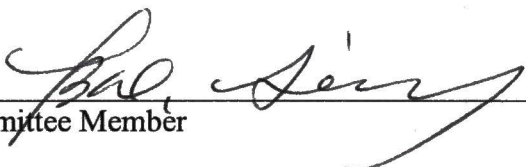
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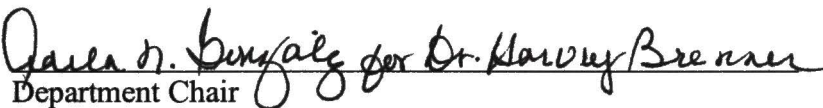
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Health Risk, Behavior and Attitudes of Urban African American Men Toward Prostate  
Cancer Screening

THESIS

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## CHAPTER I

### PURPOSE

This research study was conducted to answer three research questions: What are the health attitudes, perceptions and behaviors of the African American (AA) men who have participated in prostate screening, which limit or promote behavior modification of early detection practices, specifically digital rectal exams? Secondly, what social interactions influence health behavior among African American men? Finally, what social determinants and risk factors are associated with men who participate in community-based prostate screening?

#### *Background and Significance*

Globally, prostate cancer is the ninth most common cancer with the highest rates occurring in North America, Europe and Australia and the lowest rates reported in Japan, India, Hong Kong and China (Chan, 2002). In Texas, prostate cancer is the second leading cause of cancer deaths among non-Hispanic whites and African American males (Texas Cancer, 2004). From 1998-2002, the U.S. age-adjusted incidence and death rates was 173.8 and 30.0, respectively, per 100,000 men per year for all ethnicities (National

Cancer Institute, 1998-2002). Nationally and local data show higher ethnical incidence and mortality rates among African Americans, Caucasians, and Hispanics, respectively. The American Cancer Society estimated that in 2005, over 200,000 men would be diagnosed and over 30,000 men would die of prostate cancer (National Cancer Institute, 1998-2002). From age of diagnosis to death, African Americans yield lower median of age at death than Caucasians. From the same years of 1998 through 2002, AA men were diagnosed at median age of 65 with median age of deaths 77, whereas, Caucasians median ages are 68 at diagnosis and 80 at death (National Cancer Institute, 1998-2002). The National Cancer Institute reported average years of life lost per person dying of prostate cancer is 9.1 years for all ethnicities. (National Cancer Institute, 2002)

According the Texas Department of Health Prostate Cancer 2002 report, Texas males for the years 1990-1999 averaged 1881 deaths each year and age-adjusted mortality rate for all races was 24.5 per 100,000. Additionally, the ethnic distribution of 1990-1999 age-adjusted mortality rates for non-white is 23.3, Hispanic 16.3 and 54.1 for African American men (Texas Department of Health, 2002). In Dallas County from 1995 to 1998 the average age-adjusted annual cancer incidence rates for African American was 535.3 per 100,000 as compared to Non-Hispanic White and Hispanics of 468.8 and 296.0 respectively (American Cancer Society, 2003). African Americans have a 34 percent greater chance of being diagnosed with prostate cancer and a 123 percent greater chance of dying from the disease (Lee, 2002).

While there have been development in research, patient and community education, and health promotion targeting African American men, disparities still exist. Reasons for these disparities are not clear. Previous research has proposed possible factors ranging from genetics, lack of knowledge and susceptibility, cultural and personal beliefs/barriers, inadequate health care access, various literacy levels, possible diet deficiencies, and under use of early detection technology and screening services. (Jones, 2005) To assist in reducing the mortality rates among all races/ethnic groups, especially among African American men, early detection and treatment is recommended (American Cancer Society, 2002). Obtaining a prostate cancer screening which consists of a brief physical history and exam, digital rectal (DRE) and a blood test called prostate specific antigen (PSA) will provide a baseline for a physician to monitor the progressive health of a man and provide intervention at an earlier stage. However, African American men have predominately low levels of utilization of early detection technologies as compared to whites (Agho, 2001). Reasons for low utilization are not easily understood by the medical and research community. However, additional outreach communication and research activities are required to assist African American men to be informed and motivated to action to take the initial step in managing their health wellness and obtaining an initial prostate screening (Collins, 1997; Demark-Wahnefried, 1995; Shelton, 1999).

Most often prostate screening tests, screen for cancer in men who are healthy or asymptomatic. Unlike breast, cervical or colorectal cancer, early detection methods of prostate screening is a controversial issue among many medical organizations (Seller,



2003). Most of the controversy stems from whether men should be screened regularly and at what age. American Cancer Society (ACS) and the American Urological Association (AUA) recommend screening (PSA testing and digital rectal examination) begin at age 50 in men with a life expectancy of 10 years or more, or earlier if they are African American or have first-degree relatives diagnosed with prostate cancer (American Cancer, 2002; American Urological Association, 2000). Other medical organizations such as United States Preventive Services Task Force (USPSTF) and the American Academy of Family Physicians (AAFP) agree that routine screening is not recommended since it has not been proved screening for prostate cancer saves lives. The National Comprehensive Cancer Network (NCCN) in 2004 is urging prostate cancer screening for all men starting at age 40. NCCN is a panel comprised of experts from 19 hospitals who represent urology, radiation oncology and medical oncology professions who have developed the current and previous two renditions of prostate cancer screening guidelines (Anonymous, 2004).

#### *At Risk Populations*

Prostate cancer is common among all ethnic groups but incidence and mortality rates are disproportionately high among African American males. National Cancer Institute reported 1998-2002 incidence and mortality age adjusted rates for African American men was 272.0 and 68.1 per 100,000 men, respectively. For the same years, incidence and

mortality rates for Caucasians, were 169.0 and 27.7 and for Hispanics were, 141.9 and 23.0 per 100,000 men, respectively (National Cancer Institute, 1998-2002).

According to the Texas Cancer Registry, in Dallas County males for the years 1996-2001 averaged 978 deaths with age-adjusted rates African American men average mortality rate of 80.5, and with 29.3 , 20.0 per 100,000 persons for Non-Hispanic White and Hispanic respectively (Texas Cancer Registry, 1996-2001).

Groups affected by prostate cancer include family members of diagnosed males (spouse, children, and social contacts of daily living), healthcare professionals and healthcare service organization (hospitals, life insurance companies, pharmaceutical companies) throughout the diagnosis and treatment process. The estimated annual cost of prostate cancer in Texas was over \$445 million in total expenditures (Texas Department of Health, 2002). Total expenditures include direct cost of screening and treatment and indirect costs related to lost opportunities for economic contributions and years of life lost and loss of productivity. Prostate cancer affects more than just the diagnosed male it collectively impacts daily familial, occupational and communal interactions.

There are national and local organizations whose mission is informing the public of the importance of maintaining one's health by participating in preventive health initiatives such as health screening for heart disease, diabetes, breast cancer, colon rectal, and prostate. In Dallas County, there are health care providers or organizations that offer health screenings more specifically prostate screening, either free, at reduced costs, or billable to third party insurance. Policy initiatives to assist with access include the Texas

State Legislative passing several acts, Senate Bill 1685 and Senate Bill 258, creating initiatives: an educational program to promote public education and awareness of prostate cancer. The second was an advisory committee to educate the public, health care professionals, public officials and the Legislature on the most up to date prostate cancer information. The advisory committee was later revised to include an educational strategy to reach high-risk populations. Senate Bill 258 provided insurance coverage for prostate cancer screening physical examination and a PSA test for males 50 years of age and for males 40 years of age who have family history of prostate cancer or other prostate cancer risk factors. In 1997, Senate Resolution No. 10 established annual awareness week to begin after Father's Day in June. In addition, Senate Resolution No.7 passed in January of 2001 recognizes September as Prostate Cancer Awareness Month (Texas Department of Health, 2002).

### *Terminology and Definitions*

**Access** - "the potential for or actual entry of a population into the health system" (Turnock, 2001, p. 321).

**Adenocarcinoma** - "cancer arising in glandular tissue, such as prostate" (Bostwick, 2005, p. 349).

**Association** - "the causal relationship between two or more events or variables" (Schutt, 2004, p.181).

**Health attitudes** - (behavioral predispositions) "a state of a person that predisposes a favorable or unfavorable response to an object, idea" (as cited in Olson & Zanna, 1993, p. 118).

**Health Behavior** - "the manner in which one acts; the actions or reactions of individuals

under specific circumstances” regarding one’s health. (Thomas, 1940/1993, p. 215).

Health belief - an opinion(s) with feeling and value(s) that influences decisions and thinking processes regarding one’s health.

Benign - noncancerous or nonmalignant (Bostwick, 2005, p. 350).

Benign prostates hyperplasia - noncancerous enlargement of the prostate (Bostwick, 2005, p. 350).

Biopsy - removal and study of a tissue under a microscope (Bostwick, 2005, p. 350).

Bivariate - involves two variables when attempting to show a correlation between two variables (Schutt, 2004, p. 392).

Chemotherapy - “use of drugs to kill or control cancer cells” (Bostwick, 2005, p. 351).

Chi-square - “an inferential statistic used to test relationship between two or more variables” (Schutt, 2004, p.398).

Clinical trial - “test on human subjects of existing, new or experimental treatments” (Bostwick, 2005, p. 352).

Confidence Interval - “the range of values that a population parameter could take at a give level of significance” (Schutt, 2004, p. 157).

Crosstabulation (crosstab) - “displays the distribution of one variable for each category of another variable” (Schutt, 2004, p. 392).

Curative treatment -- “therapy aimed at producing a cure” (Bostwick, 2005, p.352).

Demographics - “characteristic data, such as size, growth, density, vital statistics that are used to study human population” (Turnock, 2001, p.326).

Dependent Variables - “a variable that is caused or influenced by another variable” (Schutt, 2004, p. 45).

Descriptive Statistics - “numerical or graphical summaries of data” (Shott, 1990, p. 7).

Determinant - “a primary risk factor association with a level of health problem” (Turnock, 2001, p.326).

Dichotomies - “variable having only two values” (Schutt, 2004, p.111).



Digital Rectal Examination - “diagnostic test for prostate cancer and rectal diseases where the doctor inserts a gloved lubricated finger into rectum and feels the prostate gland” (Bostwick, 2005, p.353).

False negative - “test result implying a condition does not exist when in fact it does” (Bostwick, 2005, p.353).

False positive - “test result implying a condition exists when in fact it does not” (Bostwick, 2005, p.354).

Focus group - “a small panel of persons selected for their knowledge or perspective on a topic of interest that is convened to discuss the topic with the assistance of a facilitator” (Rossi, 1979/1999, p. 443).

Frequencies - “the number of observations that fall into each interval” (Shott, 1990, p. 11).

Gleason score - “a method of classifying the grade of prostate cancer cells on a scale of 2 to 10” (Bostwick, 1999, p.267).

Grade - “degree of malignancy based upon microscopic analysis of cancer cells” (Bostwick, 1999, p.267).

Hypercholesterolemia - “excessive amount of cholesterol in the blood” (Thomas, 1940/1993, p.932).

Hypertension - “high blood pressure than that judged to be normal” (Thomas, 1940/1993, p.940).

Independent Variable - “a variable that causes or influences another variable” (Schutt, 2004, p.45).

Indicator - “a measure of health status or a health outcome” (Turnock, 2001, p. 337).

Localized Prostate Cancer - “tumor confined to prostate gland” (Bostwick, 1999, p. 269).

Mean - “the sum of the observations, divided by the number of observation, the average” (Shott, 1990, p.8).

Odds Ratio - “is the measure of association between the factor and outcome” (Shott, 1990, p.287).

Outlier - “a data point that falls far outside the range of the rest of the data” (Shott, 1990, p.285).

Palliative treatment - "therapy aimed at relieving symptoms" (Bostwick, 1999, p.271).

Prostate Specific Antigen (PSA) - "a protein produced by the prostate gland. Levels usually rise in men with prostate cancer" (Bostwick D, 1999, p.272).

Prostatectomy - "surgical removal of all or part of the prostate gland" (Bostwick, 2005, p.360).

Prostatic Intraepithelial Neoplasia (PIN) - "microscopic appearance of prostate gland cells change" (Bostwick, 2005, p.361).

Prostatitis - "inflammation of prostate, non cancerous" (Bostwick, 2005, p.361).

Radical prostatectomy - "surgical removal of the entire prostate gland with seminal vesicles and neighboring tissues" (Bostwick, 2005, p.361).

Risk Factor - "a behavior or condition that is thought to influence susceptibility to a health problem" (Turnock, 2001, p.339).

Sample - "a subset of population that is used to study the population as a whole" (Schutt, 2004, p.128).

Screening - "the use of technology and procedure to differentiate those individual with signs or symptoms of disease from those less likely to have the disease" (Turnock, 2001, p.340).

Socioeconomic Status - "refers to a system of stratification whereby individuals as classified. The most frequently used measure are income, education, occupation, occupational prestige and wealth" (LaVeist, 2005, p.158).

Standard Error (S.E.) - "a measure of the random variability of a statistic; the standard error of the mean is equal to the standard deviation divided by the square root of the sample size" (Schutt, 2004, p.390).

Statistical Inference - "the process of generalizing from the data collected, to all possible observations of interest" (Shott, 1990, p.7).

Theory - "a logical interrelated set of proposition about empirical reality" (Schutt, 2004, p.I-33).

TNM - a staging system for prostate cancer; T - "indicates the extent of the tumor; N is the extent of lymph node involvement, and M - indicates if metastases is present" (Bostwick, 2005, p.363).

**Variable** - “a characteristic or property that can take on different values or attributes”  
(Schutt, 2004, p.44).

## CHAPTER II

### LITERATURE REVIEW

Research literature was reviewed on prostate cancer epidemiology, predictors of participation in preventive screening, co-morbidities associated with males and community-based health screenings primarily after 1999. However, several articles preceding 1999 are included due the high significance of the research findings.

Prostate adenocarcinoma is a noncutaneous malignancy affecting the prostate gland in males. The prostate is part of the male reproductive system; it is located in front of the rectum, below the bladder and surrounds the urethra. It is normally the size of a walnut (National Cancer Institute, 2005). The risk of developing prostate cancer increases with age. The prostate specific antigen (PSA) is a serine protease that may enter the blood circulation where it exists in several forms unbound or “free” and bound or “complexed”. Most commercially available assays measure both forms, called total PSA (tPSA). However, tPSA results are not specifically indicative of prostate cancer (Parson & Partin, 2004). Other conditions can influence PSA levels such as urinary catheterizations, benign prostatic hyperplasia (BPH), prostatitis and any therapy that depresses androgen levels (Routh & Leibovich, 2005). Continuous research has been under taken to improve sensitivity and specificity of prostate cancer screening blood tests (Martin et al., 2003).

Routh et al. (2005) mentions the most commonly used PSA threshold is 4.0 ng/mL but stating evidence has suggested PSA levels should be adjusted based upon the patient's age. A health younger man with no other health conditions (i.e. 50 yrs old) with elevated PSA levels of 3.0 ng/mL could prompt further investigation. While older man (i.e. >70 yrs old) with the same value may be normalcy considering his age, and current health conditions. American Cancer Society (ACS) and the American Urological Association (AUA) recommend screening (PSA testing and digital rectal examination) begin at age 50 in men with a life expectancy of 10 years or more, or earlier if they are African American or have first-degree relatives diagnosed with prostate cancer (American Cancer, 2002).

Ethnicity and positive family history has been significantly associated as risk factors (Crawford, 2003). Early detected methods include the combination of digital rectum examination (DRE) and prostate specific antigen blood test. When the DRE and PSA are used together, detected rates of prostate cancer are higher than with PSA alone (Bruskewitz, 2003).

### *Predictors, Behaviors and Perception of Participation in Preventive Screening*

Predictors to participation in preventive screening encompass various factors. Psychosocial factors include knowledge base of prostate cancer, cognitive perceptions of susceptibility and barriers (internal and external), and socioeconomic status. Cues to



Participation Theory postulates a relationship between overall exposure to prostate cancer information and screening will motivate men to participate in screening (Nivens, 2001). Fearing et al. (2000) study supported Pender's Health Promotion Model (1997) where cognitive perceptual factors (i.e. importance of health, perceived control, self efficacy, and perceived health status), modifying factors (i.e. demographic, biological, situational and behavioral) are influential in determining one's health beliefs and health promoting practices. Other theoretical models such as the Health Belief Model have been used to determine motivators and psychosocial concerns among African American men.

Pierce (2003) identified negative perceptions, religion and socioeconomic status may be barriers. Perceived susceptibility and severity was identified with study participants. AA with low education and low incomes were less knowledgeable about prostate cancer. Furthermore, more than half of AA reported they felt no need to have a DRE unless they had symptoms. Pierce cites works from Plowden (1999) about negative perceptions where men may value their sexuality and independence, most often masculinity and sexuality are closely linked. Such findings are significant in the scope of understanding African American men's health related behaviors regarding prostate screening. Furthermore, Plowden (1999) states "there is a conflict between perceived susceptibility, severity and knowing the benefits, it can act as a barrier". For example, the DRE could be perceived by some as uncomfortable and unnatural by an individual therefore screening probably will not occur. Plowden cites association between regular religious services may lower mortality and biblical principles and other faith practices



may guide many health decisions. Cues to action included internal triggers, usually the symptoms and external triggers such as media influencing personalities.

Clark-Tasker et al. (2003) examined the relationship of African American's perceptions of cancer to perceptions of cancer using the Health Belief Model and found socioeconomic status was significant predictor of participant's perceptions to cancer prevention, detection, and susceptibility when controlled for age and gender. Clarke-Tasker's conceptual model states many factors affect decision-making related to health. Factors mention in the model includes perceptions, demographic characteristics, past experience with cancer and cues to action. Perceptions encompass one's susceptibility and seriousness of the condition along with perceived threat of the disease. Modifying factors includes demographic and socio-psychological and structural variables in the environment. Cues to action: advice from other, information from doctor or illness of friends and family.

Boyd et al. (2001) reported more structural obstacles for African American men. Older men were more likely to have less knowledge of how to find the doctor's number to make an appointment. Highly statistically significant obstacles included making an appointment, planning for the appointment such as transportation, use of reminders to go the appointment and navigating the healthcare system. Findings of the study supports results from other projects that race and martial status to be a significant predictor for participation in prostate screening.

Yet, the link from individual to utilization of health care services encompasses more than just the availability and knowledge of services, it is finding the fit between of “Five A’s of Access”: availability, accessibility, accommodation, affordability and acceptability of services between organizations, institutions, providers and individual’s beliefs, perceived and actual needs (Penchansky, 1981). While there may be characteristics of facilities, providers, organizations which facilitate or impede access, an individual must navigate through his predisposing, perceived barriers and limiting factors in order to utilize community resources to maintain health wellness. Other theoretical models such as the Health Belief Model, Self-Efficacy, Social Learning Theory, Stages of Change have been noted in previous studies expounding on health behavior motivation, attitudes and beliefs of men in engaging in prostate screening activities (Pierce, 2003; Clarke-Taker, 2002; Boyles, 2003).

### *Co-morbidities*

Blacks are known to have higher rates of heart disease and stroke compared to whites and racial differences in heart disease seem greatest during middle years 45 to 64 years (Holmes, Arispe, & Moy, 2005). An association between lower socioeconomic status (SES) and poorer health, including cause- mortality and increased cardiovascular morbidity and mortality has been observed. Holmes et al. (2005) states references that in United States blacks are known to have considerably lower SES than whites. Lower SES is associated with increased psychological stress, increased cardio-vascular reactivity and

increase incidence of hypertension. Blacks and Hispanics had higher prevalence of diabetes and hypertension, were less likely to be physically active but more likely to be obese (Rodriguez et al., 2004). Blacks are noted to have higher risks, less knowledge and more damage to organs than whites. Blood pressure (BP) control has been documented to be attained more often among whites and privately insured individuals. In addition, patients with history of cardiovascular disease were more likely to have their BP controlled. However, patients with diabetes were less likely to controlled blood pressure. Race/ethnicity, sex, age, income, insurance status, diabetes and CAD are documented association to BP control (Hicks et al., 2004).

Bassett et al. (2002) cites various theories to account for ethnic differences in hypertension including “autonomic function, endocrine factors, renal physiology and psychosocial factors. Furthering citing the National Health and Examination Survey (NHANES) II database where “No leisure-time physical activity” was prevalent in black men more than white men. Physical activity has been documented to be important independent contributors to hypertension prevalence (Bassett, Fitzhugh, Crespo, King, & McLaughlin, 2002).

As cited by National Institute of Diabetes & Digestive and Kidney Disease, diabetes was the 6th leading cause of death listed on the US death certificates in 2002. Diabetes is a group of diseases marked by high levels of blood glucose resulting from defects in insulin production, insulin action or both. Diabetes can lead to serious complications and premature death. Twenty million Americans have diabetes that is 7.0

of the US population. Men have greater prevalence than women. Blacks are 1.8 times more likely to have diabetes than Caucasians of similar age on average Mexican Americans are 1.7 times more likely to have diabetes as white of similar age. Limited data for Asian Americans; however some groups within these populations are increased risk (National Institute of Diabetes & Digestive and Kidney Disease, 2005).

The CDC analyzed self reported data collected during 1999-2000 from the National Survey on Drug Use and Health. This report identified prevalence of smoking among blacks was similar to that of whites. Yet smoking prevalence was less among Asian American than whites. During 1965-2001, cigarette smoking decline more rapidly among blacks than whites. As a result the prevalence of smoking among blacks is similar to whites. Prevention and control initiatives targeting blacks in 1990's may be attributable to decline. Minority populations have less access to cessation educational materials, media messages, and services. Often minorities are targeted by marketing strategies of the tobacco industry for cultural events and organizational funding. (Centers for Disease, 2004)

Flegal et al. (2002) states obesity is a risk factor for many chronic conditions including diabetes, hypertension, hypercholesterolemia, stroke, cardiovascular disease (CVD), certain cancers and arthritis. The study reports the results of the National Health and Nutrition Examination Survey from 1999-2000 regarding trends in obesity and frequency distribution in United States. Obesity is defined as a body mass index (BMI) of 30 or higher. Prevalence of obese men by ethnic group in the United States between the

years 1999-2000 identifies blacks having higher prevalence than whites and Hispanics, especially among 40-59 year old males. Males greater than or equal to 60 yrs old, whites had higher prevalence than blacks and Hispanics (Flegal, Carroll, Ogden, & Johnson, 2002). In a study by Fontaine et al. (2005), when adjusting age, race, smoking, education, employment, income and health insurance compared to healthy weight men, men in the overweight category were significantly more likely to obtain a PSA test within the previous year. Obesity is documented to be associated with high grade cancer and high recurrence rates after radical prostatectomy. Greater body mass index is an independent factor of higher Gleason grade cancer (Amling, 2005)



## CHAPTER III

### METHODOLOGY

The research used mixed methods to generate a grounded theory with combined qualitative data using focus groups and quantitative data analysis of existing data from a prostate screening program. A grounded theory approach was used to systematically collect and code qualitative data to find plausible relationships among concepts or themes (Creswell, 1998). Comparison of focus group responses and data analysis provided the framework for a conceptual model.

### FOCUS GROUPS

#### *Recruitment of Subjects*

All focus group subjects were recruited from Methodist Health Systems Prostate Screening and Awareness Program. Men were randomly selected from the hospital database and a letter of invitation to volunteer was sent to participants with a self-addressed return envelope. The Institutional Review Board from UNTHSC and Methodist Health System approved the focus group protocol in October 2004. The designated moderators were from Methodist Health System Prostate Screening and Awareness Program (MHSPSAF). Group I, men with PSA only, were scheduled for a focus group session on November 10, 2004, and group II, men with PSA and DRE were



scheduled for a focus group session on November 4, 2004. Each session included a meal and the overall time was from 6pm to 9pm.

The recruitment process included sorting the MHSPSAP database with the following variables: resident of City of Dallas, and African American. Year three, August 1, 2002 - July 31, 2003, of the program database was chosen to assemble variables for group II. The decision to use year three increased the likelihood of having current addresses of participants and having the ability to determine which screening events had DRE performed/offered. The assembly of variables provided 170 subjects to sort by last name and first name to exclude repeats and every other entry was selected, for a total of 40 potential participants. Year four was chosen for group I, during the months of May 31, 2004, thru July 31, 2004, a specific time in the program's duration when no DRE's were performed or offered.

Within each group, 40 participants were randomly chosen for recruitment mailings. An invitation letter with a return response sheet was mailed to a total of 80 African American men. The mailings were sent out a 10 days in advance for the first November session and approximately two weeks for the second November session. Several days before the scheduled session, MHSPSAP staff members followed up with phone call to verify participation of the received returned responses and the reminding those who did not respond. Verification provided 11 participants for group II and 5 participants for group I. A follow up call by MHSPSAP personnel prior to the date of study was made to confirm attendance.

### *Conducting the Focus Group*

The investigators developed and used a 13 question interview instrument (Appendix A). The same questions were asked in two focus group sessions. Men who participated in prostate specific antigen blood tests were identified as Group I. Group II men with prostate specific antigen blood tests and digital rectal exams.

A time outline for each session was developed by one of the researchers and the moderators. Materials provided included: focus group guide and informed consent sheets for moderators and copies for subjects, two audio recorders, two audio tapes, 20 name tags, poster board and demographic sheet for subjects to complete. The meal was organized by Methodist Health System food service department.

Both focus group sessions reported low numbers of participants, a total of nine men were present. Group II (Nov. 4) had six men with the discussion being lead by Moderator 1. Group I (Nov 10) had 3 men participants with the discussion being led by Moderator 2. Both moderators reported following the focus group guide as directed. The completed demographic sheets and audio tapes were returned to the researchers.

### *Data Analysis*

Focus group discussion tapes were transcribed verbatim, manually coded and reviewed by the researcher. Using a grounded theory approach of open, axial and selective coding, the transcriptions were examined for categories of themes, and multiple perspectives about the categories (Creswell, 1998). Explorations of the causal conditions

of interrelationships were identified. The method for verification included review of categories by both researchers with focus group experience to provide input regarding conclusions from data analysis, and triangulation with literature sources.

Descriptive statistics were compiled from the demographic sheets using SPSS version 11 software (Appendix B: Table 1 and Table 2). The mean age of the participants was 57.8 (n=6). Of the nine participants, fifty two percent of the men were married; whereas twenty two percent were either single or divorced. Forty four percent were retired whereas thirty three percent were employed and twenty two percent identified themselves as disabled. The majority of the men (33%) reported income within 10-24 K range, whereas twenty two percent reported lower income and moderate income, below 10 K and 35-49 K respectively. Forty four percent (4 of the 9) reported a high school education whereas twenty two percent (2 of the 9) reported having a graduate degree. The remaining eleven percent reported some college or four year college degree. In short, data collected confirms that the majority of the study subjects were married, retired, income within \$10-24 K, have high school education, primarily Medicare recipients, had undergone and reported at least one PSA blood test and digital rectal exam within 12 months, no previous treatment for prostate cancer or prostate diseases and not participating in a prevention trial.

### *Focus Group Responses*

Initially the focus group questions were divided into two sections: (1) Perceptions, (2) Attitudes and Behaviors. The same questions were asked of the men of both groups. Group one consisted of men who had PSA tests only, whereas group two had had PSA test and DRE's previously.

#### *Perceptions*

When asked of their perception of African American or men's health initiative/health fairs in general in Dallas County (Question 1), group two identified barriers, methods of communications. They commented on cost, negative information (the downside of a condition) causing fear, hearing of events by word of mouth or mailed reminders from screening programs, and helpfulness of information. Responses further revealed that the health initiatives need to start at an earlier age. Group one identified churches as "doing a lot of comprehensive health care and stuff like that" and but there needs to be an education organizing component to go along.." with the screenings because "people are getting kind of numb.. not taking advantage of the program". They further commented that if financial problems are the "excuse" for not participating in preventive screenings, such limitations have been addressed with screening programs available for no fee or at reduced cost. Such findings of both groups are consistent with other studies of African American (AA) men's health beliefs and practices. By increasing knowledge about prostate cancer through education programs at community



sites, such as churches, worksites, local events and offering free screening, the efforts helped to improve AA participation in early detection programs (Fearing, 2000).

Literature supports the finding that AA men were more willing to participate when barriers to their participation are removed (Weinrich, 1998a; Collins, 1997).

When asked if having basic knowledge and understanding of an ethnic groups cultural beliefs and perceptions is important in providing health services, especially men's health, (Question 2), both groups identified the need for health care providers to have a great understanding among men and men's their health needs. In group one, one made references to a belief by noting that "a lot of people say that in the African American community there is a cultural belief that the DRE is a threat to their manhood", but made a distinction between the situation in which a "doctor of medicine is going to do the DRE verses a guy sitting across the table from me". He identified a cultural myth/belief but applied the belief in relation to his perceptions of health professionals. Group two noted that someone "who looks like me" might have a better understanding of the health issues they faced and that "more of us should be involved" in health issues.

Most of the participants seem to answer the question as if men in general, not just the health professionals/providers/planners, need to understand their cultural beliefs and male interactions. This is evident by a responses in group two "I think the average black person don't understand the ethnic problems that we are faced with", and "A lot of African Americans don't have (no) financial means to support any type of medical

problems... that's one thing that may keep them out of the doctor's office.." Perhaps, the wording of the question was not clear.

Yet another participant responded to the importance of providing services in the community: "It's the way of conveying the message to your friend without him thinking negatively". Again, realizing there are gender specific medical needs, another participant answered "Medically informing the community requires great understanding among male community". Also commenting on the possibility that beliefs/perceptions may be similar regardless of ethnicity, one participant asked if the Anglo/Caucasian community has the same reservations about the DRE - that it not a "cultural phenomenon, all men probably" have the same reaction. Peers and professionals can be effective motivators to action for black men. A study by Tingen et al (1998), illustrated how peer education and social workers efforts, assisted men to "navigate the through health care system". Such efforts were more successful with men participation in health screening than just receiving educational materials or personal testimonies (Tingen, 1998).

When group one was asked why they think AA men hesitate to participate in PSA screenings, (Question 3), responses included economic problems, never having screening as a priority in the household, health fairs not readily available, "living under perception of a previous history", fear of cancer- that "they just don't want to know" or "accept the possibility" that prostate cancer can affect them.

Group two identified ignorance, cost, stigma of digital rectal examination, perception of damaged manhood if they agreed to DRE, fear of needles, and "nobody



really cares” are reasons AA lack participation in PSA screenings. Discussions included previous oppression and treatment of AA men, that “no matter how (he) tries that nothing matters, nobody really cares.”

When asked about what prompted participation in Methodist Health System prostate screening events and if there were any parts they would want to change, (Question 4), the responses from group one were inaudible, possibly due to audio tape problems and no notes were taken. Group one’s reasons for screening participation responses included screening available free at no cost, to be “abreast of problems”, to educate oneself of health issues, involvement through church and television advertising about health, and program notification through mail. One participant stated that “I’m trying to stay here as long as I can”, making the claim that health screening may assist in prolonging his life. Suggestions provided included having a bus or van similar to women’s mammogram bus to go to poorer communities, hold screenings in other communities through out the year, not just in September (Prostate Cancer Month), involving churches by making announcements of screening bus/van locations.

Group one’s view of changed prostate screening methods since participation with the screening program, (Question 5), includes responses of a greater need to educate individuals that PSA blood test is not indicative of cancer, overcoming limiting barriers, such as negative perceptions “we got to get over this stigma about how it’s a cultural thing”. Group two identified their changed view of screening methods by the screening choices now technologically available, either a blood test only or blood test and digital

rectal exam. It is important to note participants in group two often referred to the digital rectal exam as the “old fashion fingerwave”.

Group one answered how important it is to have a health provider of same ethnicity, (Question 6), by stating “providers close to your community” are the ones people visit but if “someone is confident, has good bedside manner (he or she) is equally acceptable to any person concerned about their health”. Group two had responses that were similar, that it “doesn’t make a bit of difference” as long as the person is knowledgeable enough to examine, and not prejudiced, and it doesn’t matter what “color they are as long as they and I can feel comfortable”. The underlying theme of responses was that as long as the individual provided genuine concern and proper credentials for their health care, the men were not too concerned about the provider’s ethnicity.

### *Attitudes and Behaviors*

When asked how comfortable they are in discussing sexually related problems with their partner majority replied with favorable social support from their partners (Question 1). Group one responses included being able to “open up in terms that whatever happens.. it is not going to be a surprise to my family”, and their partners knowledge of health problems are important for them to share, “my issues are going to be her issues” and “my significant other’s health issues are my health issues”. Building and maintaining a good support system is as one participant states “..a hallmark of a new generation where people kind of look out for each other”. Group two had similar responses, “she needs to be aware of just as much about my problems as I am about hers”

and that “women understand more than you think they do”. But several participants identified lack of communication and conversation can be delayed because men were “quick to blame”, “we’re ego drive, we have our pride” and by deflecting the discussion, “we’ll lay it on her and say hey, you’re the problem” instead of discussing the problem.

Yet several participants from each group responded that men have the ability to either limit couple’s intimate communication by “our ego is standing in the way” or be the initiator of communication regarding sensitive or intimate issues by “...it took her awhile to really understand openness when it came to sex...” and “women try to be an authority when they are not”.

Both groups responded similarly when asked if given a choice, would you decline the DRE or participate in both screening tests, by identifying privacy and physician/patient relationship as factors (Question 2). Group one responses included the decision would be based upon privacy afforded, that “privacy is essential”. The location of event, if held at a “temporary location”, most likely would decline DRE because “..knowing other people on the other side of the curtain knowing you are getting a DRE”. However, if held at a facility with “hard walls and doors” that “has a medical feel so I think I would get one done every time”, they would most likely participate in both screening methods. Group two responded with preference of their personal physician performing DRE, “someone I that I am comfortable with” and “hesitant about that...because there’s somebody there that I’m not comfortable with”. Participating in health fairs provides opportunity for blood tests, but they would prefer other

examinations performed elsewhere. Yet one participant said “ I’ve had both so many times, it doesn’t matter., I’m just so used to it’.

When answering the question if they would participate in prostate screening with encouragement from loved one rather than on their initiative, (Question 3), most responses indicated the loved ones influence was helpful, comforting and encouraging. Group two responses included “you want to do it for your family”, “their encouragement alone helped me” and “they can plan a very influential role in someone seeking medical care”. Yet one participant in group one stated “It’s either way”... “I can’t say that I would go because they suggested it as opposed to my going on my own”. Group two identified the possibility that “average men won’t do (initiate participation on own)”. Yet most of the other responses concluded the involvement of loved ones in the motivating them to screening is a factor because “I felt that to be rather comforting because women encourage you to go and participate and remind you”, and “it is really encouraging to me to see my spouse is more concerned about my health than I am.. if I don’t take care of myself, I’m going to be a burden to her”.

When asked if comfortable discussing health related sexual issues within their social circle, (Question 4), the majority of men in both groups replied they did not feel comfortable. In group two, reasons for not discussing sexual issues within their social circle included ego, “male ego that rides us and we don’t want to get into that until someone else breaks the ice”; feeling exposed and lack of confidentiality, “I don’t ever like to totally expose myself...you don’t have that confidentially”; and untruth spoken in



groups, “...with a bull session I’m not comfortable because men lie. If I was one on one in a conversation, I’ll talk to you”. In group one, reasons for unease in social circle discussions include incorrect information given and atmosphere of humor instead of seriousness. If the discussion is not identified as serious among the individuals “...I would not feel comfortable... because I am just like probably a lot of other people, don’t really cater to the laughing, the joking and all those other things” and that some discussions “sometimes do more harm than good, because the funniest person can influence everybody else”. As in group two, the lack of truth is a factor, “A lot of times, those types of conversations, the information is wrong”.

However, group two identified friendship, sharing of information and confidentiality as factors of discussions. Responses included, “the group of guys that I associate with, we’re always eager to share information like this. Because if it doesn’t help me now, I can use it, I can put it away and use this information later on” and “if you’re a true friend, I feel like we can discuss anything, you know man to man”. The need for confidentiality “...iron sharpens iron, you have to have that confidentiality... before you expose yourself”.

When asked if sharing prostate related experiences might help another man, (Question 5), both groups identified helpfulness to others, sharing knowledge and credibility as factors. Responses from group one included; “any medical experience that shared will help somebody who has to live through it” and “it lends a tremendous amount of creditability”. Group two responses to helping others by sharing experiences and



knowledge included, “learning what they have gone through and things they have experienced, helped me now and also in the future” and “...it is helpful to talk to someone that has experienced problems with the prostate from cancer”, “you learn from somebody else”, “word of mouth”, “it’s good to tell us all sickness is not unto death” and “experience is the best teacher”. Learning from others “...it’s good to talk to others about your problems because everything you learn, you learn from somebody else”.

When asked who they would most likely discuss sexually related problems with, (Question 6), both groups acknowledged their physician and or their partner, “my wife who will tell me to go to the doctor”, another response was “my physician”. Yet participants who do not have a spouse responded, “...the doctor- I don’t have a wife” and “... we all discuss with doctors.. but I feel I’ll discuss it with a friend or even a stranger”, and “confidential friends”, “ I talk to a lot of older men”.

When asked if they have discussed prostate screening testing or cancer risks with other men and what they said, (Question 7), group two had the most responses. Group one participants agreed that answers were previously responded to. In group two, the most common responses included testing other health issues, finding a common way of discussing prostate problems by “joking with him (his grandson)...my way of communicating prostate gland problems”, “it’s better to get stuck with a needle than cut with a knife” and “...testing for PSA but I said about other health issues with the screening process”.

### *Limitations*

Limitations of the focus group study include low numbers of focus group participants, selection of participants, and screening program's diminished efforts in providing digital rectal exams to prostate screening individuals and incomplete responses to questions identified in the audio recordings. Group one (men with PSA only) had initial verification of five participants but only three were present. Group two (men with PSA and DRE) had verification of eleven men, but six men were present for discussion. The decision to use selective years may cause a bias in the overall findings of the study. The rationale for picking the selected dates stated under recruiting of subjects is due to the method of identifying participants of DRE testing in MHSPAP database. However, digital rectal exams have not been offered to participants for the last years of the program. Only during Prostate Cancer Month, September, have DRE's been performed by volunteer physicians at large screening sites in the Dallas community. Thus the men in group one labeled as men who had not had a DRE, only PSA blood test, may not have personally agreed to the screening test. There is no way for the researchers to know unless each participant in group decided one was asked individually, which was not done.

Finally, there were incomplete responses noted on the audio recordings, especially from group one. There were spots in the recordings where responses were inaudible and there were no notes taken to record the responses. Thus there are no comparisons for several questions previously noted.

## DATA SET

### *Source of Data*

In Dallas, Texas, a hospital sponsored community-based prostate screening and awareness program has an early detection intervention program targeting African American and Hispanic men in primarily Dallas County and surrounding counties. The program has existed since fall of 2000 and currently has screened over 17, 000 men. Their prostate screening program consisted of educational sessions at community sites, fraternal, faith-based, and retail organizations and local employers. During the educational sessions, participants were offered, at no cost, prostate specific antigen (PSA) testing, digital rectal exams (DRE), lipid profile (cholesterol/triglyceride), glucose testing and blood pressure checks. The program did not require mandatory compliance for PSA and same day digital rectal exam of their participants in the community. In addition, if not available to participate in the physical exam, the participants had a choice to return the hospital's clinic for the examination.

### *Results*

Existing data, converted from Microsoft Excel file format into SPSS file, from a prostate screening and awareness program in Dallas County, Dallas, Texas from August 1, 2000 to July 31, 2004 was analyzed to determine what social and demographic descriptors are associated with men who participate in community-based prostate

screening. Statistical analysis was completed using SPSS version 12. Demographic variables include age, ethnicity, marital status, employment, family income, and educational level. Risk factor data comes from the responses of the participants who answered the following questions from the questionnaire: I eat a diet high in fat, I am considered obese, I do not exercise three or more times a week, I smoke, I take medication for diabetes, high cholesterol, high blood pressure, and I have a family history of heart disease, high blood pressure, diabetes and cancer. Other diagnostic data analyzed include prostate specific antigen, cholesterol and glucose blood test results which were stratified into dichotomies.

The data set was stratified by African American, Caucasian, Asian and Hispanic men who reside in Dallas- Fort Worth Metroplex area. Reported ages were stratified in groups of 10 years, starting at age 40 through 89. Any ages less than or equal to 39 or greater than or equal to 90, were placed in their own category. The remaining demographic variables were previously stratified by the program and kept during the analysis. Marital status has two categories, married and single/divorced/widowed. Employment categories include disabled, employed, retired and unemployed. Family income categories are divided as below \$10K, \$10-20K, \$20-30, \$30-40K and above \$40K. Education level has four groups below high school, high school, vocational, some college and college. The remaining numeric variables, glucose, cholesterol and prostate specific antigen results were recoded into different groups. Cholesterol results reported in mg/dL units were divided into low (below 100), normal (101-160), desirable (161-200),



borderline high (201-240), high (241-500) and greater than or equal to 500 (What Are Healthy, n. d.). Glucose results obtained in mg/dL units were divided in low (below 50), Normal (51-150), High (151-200), abnormal high (201-500) and greater or equal to 500 (All About Pre, 2004). Prostate specific antigen results in units ng/dL were divided into normal (0 - 1.0), normal medium (1.1 - 4.0), high (4.1 – 10.0) and greater than or equal to 10.0 (High PSA Levels, 2003).

Descriptive statistics was utilized to examine the demographic and risk factors reported by each stratified group. Frequencies, cross-tabulation, chi square and odds ratio analysis were used to determine associations of demographic variables, risk factors variables and screening participation for each subgroup with African American males being the group of interest.

The number of database entries for August 1, 2000 through July 31, 2004 totaled 18, 760 cases. Reported residences include Dallas and surrounding Metroplex cities as well as far west to California, east to Virginia, New Jersey, north to Pennsylvania and internationally to United Kingdom and Zambia. However, only Texas residents were used in statistical analyzes which brought the number of cases to 18,385, excluding 375 cases. The data set was screened for missing data and clerical entry errors entries. Fifty-two cases were deleted due to clerical entry errors leaving a total of 18, 333 valid cases. The percentage of missing cases was identified in each demographic category: age 25 (0.1%), ethnicity 9 (0.0%), martial status 959 (5.2%), employment 1,855 (10.0%), family income 4,054 (22.0%) and education 2904 (15.8%).



Further descriptive of tables found in Appendix C and the discussion of the statistical findings are Chapter IV.

### *Limitations*

Limitations of the data set study include the data collection methods, and wording of questions for accurate responses. Marital status was identified as a significant risk factor, it would have been more useful to have the responses collected and stratified into separate categories to identify which status, married, single, divorced or widowed, was more significant. Questions asked of the participants were not clear and possible responses to the question about exercising may not be accurate. The initial purpose to identify DRE participation as a covariate in binary analysis was not attempted due to of collection data. Responses collected and entered into the data file, did not distinguish between participants receiving or declining a DRE. The data identified only if men had a negative result and/or not performed or a positive DRE result. Thus data for DRE participation was not used other than to quantify case entries. Revising questions on the consent form and allowing for addition responses in the data file, could have assisted in a clearer representation of categorical data analysis.

Other limitations, self reported questionnaires are prone to measurement error and errors in recall. However, strengths include the large sample for analysis and large sample of African American men.

## CHAPTER IV

### DISCUSSION OF FINDINGS

#### *Focus Group*

Both groups of study participants identified factors similar in previous studies theoretically summarized as perceived susceptibility, perceived severity, perceived benefits, and cues to action. The categories are components of the Health Belief Model (Plowden, 1999). The Health Belief Model has been used as a framework to understand African American men motivators to prostate screening. Such studies have concluded that if there is a conflict between perceived susceptibility, severity and knowing the benefits, such conflict becomes a barrier to motivation (Pierce, 2003; Tasker, 2003; Plowden, 1999 & 2000).

AA men's negative perceptions of screening practices may be barriers. Most often men link their sexuality and independence to their masculinity. Gelfand et al. (1995) found negative attitudes towards DRE to be barriers more associated with younger, less educated, lower income AA men than older, more educated, higher income AA men. The mean age of the men in our current study was 58, with the majority having lower income, and less education. Thus culturally, AA men may have more negative perceptions about digital rectal exams (Plowden, 1999; Shelton, 1999). Yet, another study found AA

attitudes toward DRE to be favorable if the men believed the exam was part of a routine physical (Gelfand, 1995).

Both groups identified psychosocial concerns of costs, attitudes of screening procedures, fear, lack of support (emotional and financial) and previous history. Some psychosocial concerns are not as tangible in monetary, political or economic methods but are fusion of attitudes, beliefs from cultural and social network of family, peers and society.

Subjects in both groups identified psychosocial factors such as financial resources or lack of resources possible, screening location, health provider's knowledge and attitudes, media involvement as both predictors and barriers to participating in preventive prostate screening. Such findings of both groups are consistent with other studies of African American men health beliefs and practices (Jernimigan, 2001; Tasker, 2003). By increasing knowledge about prostate cancer through education programs at community sites, such as churches, worksites, local events and offering free screening, the efforts helped to improve AA men's participation in early detection programs (Fearing, 2000).

Literature supports that AA men were more willing to participate when barriers to their participation are removed and tailored with cultural and ethnic sensitivities (Fearing, 2000; Boyd, 2001; Weinrich, 1998a; Pierce, 2003; Plowden, 2000& 2003). The importance of spiritual principles and religious practices must be noted as a comfortable location of receiving health related material, information and support. Several

participants identified church as the location of screening and receiving personal support (Hamilton, 2004).

### *Data Set*

Ethnicity and socioeconomic status have been well documented as significant factors in health disparities. Initially, the researcher hypothesized AA male's findings would be more significant than the three subgroups studied. Yet, when the data was adjusted for ethnicity, (Table 6), surprisingly Asian males were significantly more likely to smoke (C.I. 1.05 - 1.97), take medication for blood pressure (C.I. 1.43 - 2.33), and have familial history of heart disease (C.I. 1.15 - 2.16), hypertension (C.I. 1.81 - 2.89), diabetes (C.I. 1.23 - 2.04) and cancer (C.I. 1.09 - 2.07) than African American males. It was expected that findings would be consistent with the literature review of reporting African American male's smoking more than Asians Americans. Plausible reasons of the contradictory results maybe self reported bias in data or the Asian sample represented in this research provides a current view of Asian American smoking behaviors where the once the self reported data was limited (Center for Disease and Prevention, 2004) . The CDC analyzed self reported data collected during 1999-2000 from the National Survey on Drug Use and Health. This report identified prevalence of smoking among blacks was similar to that of whites. Yet smoking prevalence was less among Asians than whites (Centers for Disease, 2004). Another explanation of contradictory results maybe that the research sample has greater Asian diversity of socioeconomic status. No SES data was documented in the literature cited.



Hispanics were more likely to smoke (C.I. 1.12 - 1.74), take medication for hypertension (C.I. 1.91. - 2.64) and have family history of high blood pressure (C.I. 1.75 - 2.25) than AA males. Such findings for the Hispanic subgroup are plausible. Research has identified minorities, African American's and Hispanics, at greater risk for hypertension and diabetes. However, AA rates of prevalence were higher than Hispanics. Such findings of hypertension among Hispanics possibly could be attributable to regional and local efforts to improve health care access and increase screening efforts targeting Hispanics in the surrounding Dallas - Fort Worth area. Furthermore, other research documents African American's males and females being at greater risk and higher prevalence of hypertension and inequality of health outcomes among minorities (Ferlinz, 2005; Thomas, Eberly, Smith, Neaton, & Stamler, 2005).

Results reveal Caucasians were significantly more likely than AA, to be diabetic (C.I. 1.75 - 2.57), hypertensive (C.I. 1.95 - 2.49) and have familial history of hypertension (C.I. 1.97 - 2.43) was not expected. Such findings of Caucasians are contradictory of other findings. Rodriguez et al, identified blacks and Hispanics of having higher prevalence of diabetes and hypertension, were less likely to be physically active but more likely to be obese (Rodriquez et al, 2004). Our findings may be contributable to Caucasians more likely to have their blood pressure under control and receiving antihypertensive therapy than Hispanics and African Americans. Numerous studies have demonstrated ethnic differences in rates of blood pressure control, antihypertensive therapy and regular physician monitoring of condition (Hicks et al., 2004; as cited in Berlowitz & Ash, 1998).



However, in regards to dietary factors, Caucasians were less likely to consume a high fat diet (C.I. 0.62 - 0.83) than AA males. Such finding is consistent with other research. The increased consumption of increased foods high in animal fat has been linked to prostate cancer and findings have found greater consumption among African Americans (Hayes et al., 1999).

Ethnicity was a significant factor for unhealthy behaviors, familial histories and current health conditions (Table 7). Caucasian males were less likely to be obese (C.I. 0.56 - 0.83), consume high fat (C.I. 0.75 - 0.98) and more likely to exercise at least 3 times a week (C.I. 0.72 - 0.88) as compared to African American males. AA males who are obese with high blood pressure have a greater prevalence of pre-diabetes, undetected typ2 diabetes and insulin resistance syndrome (Campbell, Kushner, & Falkner, 2004).

Our finding for employment status is a concern. Retired males are likely to have unhealthy behaviors of high fat diet (C.I. 1.65 - 2.45), smoking (C.I. 1.40 - 2.01). But retired males are more likely to exercise (C.I. 1.37- 1.75). Such findings seem to contradict each other. Educational and income levels can impact healthy choices. Our data identifies income \$20K to \$30K (C.I. 1.05 - 1.46) and \$30K- \$40K (C.I. 1.07 - 1.46) as being associated with eating a high fat diet. In addition, a high school education was associated with obesity (C.I. 1.00 - 2.38), lack of exercise (C.I. 1.05 - 1.53) and smoking (C.I. 1.05 - 1.53). Low to moderate income and low educational levels has been associated with poor dietary practices and unhealthy behaviors (Hicks et al., 2004).

Marital status was a factor in the health status of men (Table 8). Men who reported to being single, divorced or widowed were more likely to require medication for

health conditions of diabetes (C.I 1.13 - 1.54) , hypertension (C.I 1.84 - 1.56) and hypercholesterolemia (C.I. 1.13 -1.37). This finding is consistent with previous research findings that being married is a protective factor. Marriage has been associated with curative treatment and married individuals have a tendency to live longer and healthier lives (Denberg, Beaty, Kim, & Steiner, 2005).

Consistently so, ethnicity and income are significant factors associated with glucose and PSA screening tests (Table 10). Elevated glucose levels are defined as greater than 150mg/dL and elevated PSA levels are defined as greater than 4.0 ng/dL. Caucasians are more likely to have elevated glucose levels (C.I. 1.15 - 1.64) than AA's. This finding is consistent with our findings that Caucasians are 2.12 times more likely to take medication for diabetes. Glucose levels can be measured quantitatively to provide metabolic measurement of serum levels in the blood. Yet, Caucasians males are statistically less likely to have elevated PSA levels (C.I. 0.59 - 0.93) compared to African American males. This finding is significant, our data provides additional consensus of African American men being at a greater risk for prostate disorders than other ethnic groups. Elevated PSA levels are not indicative of prostate carcinoma, but such screening results would prompt further diagnostic investigation. Elevated PSA results were significantly higher with income greater than \$40K (C.I. 1.70 - 2.29) than \$30-40K (C.I. 1.12- 1.97) and \$20K-30K (C.I. 1.04 - 1.81). Our finding provides additional representation that elevated PSA levels is significant among males of all income levels. However, our data provides interesting possibilities of exploring elevated PSA results of men who do not meet the criteria for low SES or low income.

## CHAPTER V

### CONCLUSION AND APPLICATION

The removal of barriers does not totally explain one's motivation to participating in health screenings. Participant responses provided insight of more individualistic, personal beliefs and personal views, such as obtaining accurate information, proximity, community- church involvement, privacy-feeling comfortable at location for digital rectal exam and provider's professional manner and knowledge. One's personal health decisions can be influenced by one's perception (either negatively or positively) by the availability, acceptability, accessibility, accommodation and affordability of screening methods and services. Also termed the 5 A's to access, the 5 A's is a conceptual model integrating the work of Andersen, Donabedian, Penchansky, Thomas, by Michel Long concluding access has several dimensions of behavioral and societal factors which affect individuals and populations (Long, 1994). Donabedian's approach includes many characteristics of facilities/providers which facilitate or impede access by having the capacity to produce services with intervening geographical and socio-organizational factors (Donabedian, 1973). Penchansky and Thomas define access and the relationship to consumer/client satisfaction as the fit between individual and the healthcare system in regards to availability, accessibility, accommodation, affordability and acceptability of services (Penchansky, 1981). Finally, Andersen used a behavioral model of utilization

with predisposing, enabling and need variables, intervening geographical, societal, organizational and behavioral factors (Andersen, 1968).

Availability is the capacity of the organization/provider and the individual's requirement. Linking the predisposing and enabling variables of the individuals and provider or service. For example, type of organization, source of funding, size, appropriately trained staff, treatment methods, religious affiliation or preference must be comparable to the individual's needs or wants. Accessibility is, geographically; the location of the provider or service verses the location of the individual, transportation resources, travel distance, time and cost. Affordability is the ability to pay and the value/benefit of the service from the individual who then determines if utilization of services occurs. Payment for services may be through health insurance plans, self pay, sliding scale fees, or eligibility for subsidized programs. Accommodation is the manner in which resources are organized to supply services and the ability of an individual to take advantage. As seen in appointment systems, hours of operation, walk-in facilities, telephone services, and bi-lingual or cultural sensitive staff and providers. Acceptability is based on attitudes and beliefs of both individuals and facility/providers. It is a "fit" between an individuals (patient) attitude about the personal and professional characteristics of providers and the provider's attitudes about the personal characteristic of the individual (patient). Other considerations are ethnic/cultural origin, government or private funding, religious affiliation, and gender and the physical attractiveness and social location of the site.



As previously stated, the focus group participants identified factors that can be categorized as the 5 A's to access thus implying psychosocial factors play an important role in men's health decisions. {Appendix B} Similarly, components of the Health Belief Model and different variations are usefully in understanding the limiting beliefs and perceptions of the men. While the intent of this study was to ascertain what behaviors limit or prompt involvement in prostate screening among two groups of men, the findings of the focus group illustrate the responses of both groups of men were quite similar. There were little differences in beliefs, attitudes and perceptions of prostate health, social support and personal views of local health screenings. This study has illustrated that while African American men have "diverse experiences, all men are often influenced by personal and societal factors" and such diversity that must be taken in consideration when intervention and strategies are developed (Gray, 2005). Possible reasons for congruity of responses were discussed further in the limitations section of this paper.

The data from a screening program in Dallas County, which targets primarily African American men, afforded the opportunity to analysis a larger sample size of African American males in relation to other subgroups. While majority of our findings were consistent with other literature, some anomalies were present. Statistical results of behavioral, current health conditions and familial histories may have hinted at the possibility of reduction of health care access and physician monitoring for conditions for African Americans, Hispanics and Asian Americans. Ethnicity and socioeconomic status, in particular income and educational level, continue to be an integral component for healthy outcomes.



The application of the findings of this research was developed into a conceptual model, named the “Five Psycho-social A’s of Urban African American Male Participation in Prostate Screening (Appendix D). The conceptual model assists to illustrate the answer to the research questions, what are the health attitudes, perceptions and behaviors and what social interactions influence health behavior of AA men. In the focus group study, participants responses were identified as components of the Health Belief Model and the 5 A’s to access. The data analysis provides current and local data supporting components of the proposed model. African American men were more responsive to screening when it was perceived health screening were more accommodating, accessible, affordability, available and accepting of their cultural norms, religious afflictions, economic status and time restraints. It must be noted, the five psycho-social A’s include barriers, and benefits that may function as predictors and/or cues to action. Combining the five psychosocial A’s with the inner circle of family, friends and other social networks provides a constant flux of support, information and cues to action; which can impact the most inner circle. The inner circle represents one’s knowledge, spirituality, health perceptions of susceptibility and severity, health attitudes and beliefs. The most inner circle, the “bulleye”, represents urban African American men. The illustration of a “bulleye” signifies the revolving, and constant vortex of internal and external factors that challenge urban African American men to stay on target when making decisions to take action to protect their health status and quality of life. The answer to the third research question, what social determinants and risk factors with male participants of prostate screening; concludes ethnicity (AA) and socioeconomic status,

are statistically associated with unhealthy behaviors of smoking, not exercising, high fat diet. Furthermore, ethnicity (AA) and marital status (married males) are shown to be significant for health conditions of hypertension, diabetes and hypercholesterolemia and elevated PSA results than other subgroups studied.

### *Recommendations*

While various psychosocial barriers and benefits to prostate screening are well documented, health professionals must consistently strive to promote strategies which assist in reducing the inequalities of health disparities among minority groups. Because African American men amongst all socioeconomic levels are at risk to developing prostate cancer at an early age, and have higher prevalence of co-morbidities and mortality rates, health promotional efforts should not be discontinued. Though mass prostate screening may not be universally endorsed by well known health agencies, preventive health measures through screening initiatives is the back bone of public health. The old adage, “A pound of prevention, beats a pound of cure” may be redundant but always applicable when identifying prostate cancer at an earlier stage and early age among African American men who are afflicted significantly more than other ethnic group.

## APPENDIX A

## FOCUS GROUP QUESTIONS

### Perceptions

1. What is your opinion of men's health initiatives (health fairs or screenings) in Dallas County? Health fairs for African American men?
2. Do you think having basic knowledge and understanding of an ethnic group's cultural beliefs and perceptions is important in providing health care services, especially men's health in our communities? Please explain.
3. Why you think men, specifically AA men, hesitate to participate in prostate cancer screening?
4. What prompted you to participate in a previous Methodist Health System prostate screening event? (not this particular event) Is there any part of the event you would want to change and why?
5. Has your view of prostate screening methods changed since participating in Methodist's screening program? If so, how?
6. How important is it for you to have a health provider of the same ethnicity? Please explain.

### Attitudes and Behaviors

1. How comfortable are you in discussing sexually related problems with your significant other? Why?
2. Scenario #1  
A men's health event offers free prostate cancer screening to include prostate specific antigen (PSA) blood test and digital rectal exam (DRE). It is not mandatory to have both tests in order to participate. Given this choice, would you decline the DRE or participate in both screening tests? Please explain.
3. Would you likely participate in a health screening event with encouragement from your loved one's (wife, daughter, other family member or friend) than on your own initiative? Why?
4. Are you comfortable discussing health related sexual issues with other men in your social circle? If yes, why? If no, please explain further.
5. Do you think sharing prostate related experiences might help another man? Why?
6. Who would you most likely discuss sexually related problems with and why?
7. Since your participation in PSA screening, have you discussed prostate testing or cancer risks factors with other men? If yes, what did you say in your discussion? If no, please provide reasons.

**Table 1**  
**Demographics of Focus Group Participants**  
**November, 2004**

**Martial Status**

Married	55.6
Single	22.2
Divorced	22.2

**Employment**

Disabled	22.2
Employed	33.3
Retired	44.4
Unemployed	

**Family Income**

Below \$10K	22.2
\$10-24K	33.3
\$25-34K	11.1
\$35-49K	22.2
Above \$60K	11.1

**Education %**

Below High School	11.1
High School	44.4
Some College	11.1
4 Yr College Degree	11.1
Graduate	33.8

 = Greater Percentages



**Table 2**  
**Reported Previous Screening of Focus Group Participants**  
**November, 2004**

Previous PSA w/n 12 mo	One	44.4
	Two	33.3
	Three or more	22.2
Previous DRE w/n 12 mo	None	22.2
	One	33.3
	Two	33.3
	No Response	11.1
Previously treated for CaP	No	88.9
	No Response	11.1
Participating in Prevention Trial	No	66.7
	Yes	22.2
	No Response	11.1
How Did You Hear About Prostate Screening	Church	11.1
	Employer	11.1
	Relative	11.1
	Other	44.4
	No Response	22.2

 = Greater Percentages

## APPENDIX B

# Focus Group Responses Associated with Five A's to Access and Health Belief Model Components

	GROUP ONE November 10, 2004 (PSA Only)	HBM	5 A's	GROUP TWO November 4, 2004 (PSA and DRE only)	HBM	5 A's
<b>PERCEPTIONS</b>						
<b>A)</b> <b>Perceptions of men's health initiatives (health fairs or screening) in Dallas County</b>	church involvement	Cues to Action	Acceptability & Accommodation	cost	Barriers	Affordability
	educational need	Susceptibility & Severity	Accommodation	negative information	Barriers	Accessibility
	cost	Barriers	Affordability	fear	Barriers	Acceptability & Accommodating
	availability of programs	Barriers	Accessibility	advertising	Cues to Action	Accommodation
				increased knowledge	susceptibility & severity	Accommodation
<b>B)</b> <b>Importance of having basic knowledge and understanding of an ethnic group's cultural beliefs/perceptions</b>	knowledge of health needs	Susceptibility	Acceptability	knowledge of health needs	Susceptibility	Acceptability
	cultural beliefs (DRE)	Severity	Acceptability	same ethnicity, same health concerns	Severity	Acceptability
	greater need of male interaction	Cues to Action	Accommodation	more minorities needed	Cues to Action	Acceptability
	cost	Barriers	Affordability	service to be base in community	Barriers	Availability
<b>C)</b> <b>Why do you think AA men, hesitate to participate in prostate cancer screening?</b>	cost	Barriers	Affordability	cost	Barriers	Affordability
	not priority	Severity		Fear of cancer	Barriers	
	access	Cues to Action	Accessibility	lack of support	Cues to Action	Accommodation
	past knowledge	Susceptibility	Acceptability	attitude toward DRE	Barriers	Acceptability
	history	Severity	Acceptability			
	fear	Barriers	Acceptability			
	willing ignorance	Barriers	Acceptability			

Focus Group Responses Associated with 5 A's of Access and Health Belief Model Components (continued)

	GROUP ONE November 10, 2004 (PSA Only)	HBM	5 A's	GROUP TWO November 4, 2004 (PSA and DRE only)	HBM	5 A's
<b>D)</b> What prompted you to participate in a previous MHS prostate screening ?	responses inaudible			no cost/free	Cues to Action	Affordability
	responses inaudible			education received	Benefits	Acceptability
	responses inaudible			church involvement	Cues to Action	Accessibility Accommodation, accept
	responses inaudible			media involvement	Cues to Action	Acceptability
	responses inaudible			prolong life	Benefits	Accommodation
	responses inaudible			location	Cues to Action	Accessibility
Any parts to change?	make van visible and use in low income communities	Cues to Action	Accessibility & Availability & Affordability	Part two of question not asked		
	educate year long	Susceptibility & Severity	?	Part two of question not asked		
<b>E)</b> Has your view of prostate screening methods changed since participating in Methodist's screening program	increase education	Susceptibility & Severity	Accommodation	given a choice of tests	Cues to Action	Acceptability
	increase education of PSA test	Susceptibility & Severity	Accommodation	blood test available	Cues to Action	Acceptability
	change thinking to seek screening	Susceptibility & Severity & Barriers	Acceptability	slang word used- fingerwave	Barriers	Acceptability
	cultural issues	Barriers	Accommodation			
<b>F)</b> How important is it for you to have a health provider of the same ethnicity?	proximity to community	Barriers & Cue to Action	Accessibility & Availability	knowledgeable	Cues to Action	Acceptability
	provider's attitude & professional manner	Barriers	Accommodation & Accessibility	provider attitudes/beliefs	Barriers	Acceptability
				comfort level	Barriers	Acceptability



Focus Group Responses Associated with Five A's to Access and Health Belief Model Components (continued)

GROUP ONE November 10, 2004 (PSA Only)	HBM	5 A's	GROUP TWO November 4, 2004 (PSA and DRE only)	HBM	5 A's
--	-----	-------	--	-----	-------

**ATTITUDES AND BEHAVIORS**

A) How comfortable are you in discussing sexually related problems with your significant other?	open communication	Barriers	Accommodation & Acceptability	awareness for both	Benefits	Acceptability
	no surprise to family	Benefits	Acceptability	ego driven	Barriers	Acceptability
	share problems	Benefits	Acceptability	place blame else	Barriers	Acceptability
	effects both	Cues to Action	Acceptability			
	patient/Dr relationship	Cues to Action	Acceptability	comfort level with Dr	Cues to Action	Accommodation
	location important	Barriers & Cue to Action	Accommodation & Accessibility	location important	Barriers & Cue to Action	Accommodation & Accessibility
C) Participate in screening with encouragement than on your own initiative?	social support	Cues to Action	Accommodation	motivation from others	Cues to Action	Acceptability
	for family	Cues to Action	Accommodation	comforting/encouraging spouse	Cues to Action	Acceptability
	helped me	Benefits	Acceptability			
	very important role	Benefits	Acceptability			
D). Are you comfortable discussing health related sexual issues with men in a social circle?	incorrect information given	Susceptibility	Acceptability	male ego	Barriers	Acceptability
	atmosphere of humor	Barriers	Accommodation & Accessibility	feeling exposed	Barriers	Accommodation & Acceptability
	influential	Benefits	Acceptability	lack of confidentiality	Barriers	Accommodation & Acceptability
				credibility of group discussions	Barriers	Accommodation & Acceptability



Focus Group Responses Associated with 5 A's to Access and Health Belief Components (continued)

	GROUP ONE November 10, 2004 (PSA Only)	HBM	5 A's	GROUP TWO November 4, 2004 (PSA and DRE only)	HBM	5 A's
	GROUP ONE November 10, 2004 (PSA Only)	HBM	5 A's	GROUP TWO November 4, 2004 (PSA and DRE only)	HBM	5 A's
<b>E)</b> Do you think sharing prostate related experiences might help another man?	helpfulness	Benefits	Acceptability	helpfulness	Benefits	Acceptability
	credibility	Benefits	Acceptability	sharing problems	Benefits	Acceptability
				sharing experiences	Benefits	Acceptability
				learn for other's experiences	Benefits	Accommodation
				male bonding	Benefits	Acceptability
				Word of mouth	Benefits	Acceptability
				you learn from others	Benefits	Acceptability
<b>F)</b> Who would you most likely discuss sexually related problems with?	physician	Benefits & Barriers	Acceptability	physician	Benefits & Barriers	Accommodation & Acceptability
	spouse	Benefits & Barriers	Acceptability	partner / spouse	Benefits & Barriers	Accommodation & Acceptability
				confidential friends	Benefits	Accommodation & Acceptability
				older men	Benefits	Accommodation & Acceptability
				stranger	Benefits	Accommodation & Acceptability
<b>G )</b> Have you discussed prostate screening testing or cancer risks factor with other men? What did you say?	no responses given			testing other health issues	Benefits	Accessibility & Accommodation
				better now than later with problems	Benefits	Accessibility & Acceptability

## APPENDIX C

TABLE 3

**Demographics of Prostate Screening Participants  
August 1, 2000 to July 31, 2004**

	AA n(10,634)	Asian n(672)	Caucasian n(3,388)	Hispanic n(3,492)
<b>Ethnicity (n=18,324)</b>	58.0	3.7	18.5	19.0
<b>Mean age (yr)</b>	49.6	58.7	58.2	50.7
sd	9.8	10.4	11.6	9.3
min ,max	(24, 95)	(30,92)	(26,64)	(27,98)
<b>Age Stratified</b>				
=<39 yrs old	13.1	1.8	2.8	5.4
40-49 yrs old	43.4	18.5	22.4	46.2
50-59 yrs old	27.3	31.0	31.3	31.2
60-69 yrs old	11.9	31.7	25.4	12.9
70-79 yrs old	3.4	15.8	13.9	3.9
80-89 yrs old	0.8	1.2	4.2	0.5
=>90	0.1	0.1	0.1	0.0
<b>Marital Status (n=17,369)</b>				
Married (%)	66.2	93.1	73.0	82.3
Single/Divorced/Widowed (%)	33.8	6.9	27.0	17.7
<b>Employment (n=16,505)</b>				
Disabled(%)	3.4	0.8	1.4	2.1
Employed (%)	72.8	55.7	61.4	73.3
Retired (%)	11.3	25.3	31.4	8.5
Unemployed (%)	12.5	18.2	5.8	16.1
<b>Family Income (n=14,278)</b>				
Below \$10K (%)	11.4	29.4	6.2	18.3
\$10-20K (%)	10.9	18.5	9.3	26.3
\$20-30K (%)	14.8	16.5	14.2	23.9
\$30-40K (%)	17.8	13.3	15.9	14.6
Above \$40K (%)	45.1	22.4	54.3	16.8
<b>Education (n=15,427)</b>				
Below High School (%)	4.2	12.4	3.1	35.0
High School (%)	25.0	28.8	16.4	31.3
Vocational (%)	5.3	1.8	3.2	5.1
Some College (%)	31.7	13.5	27.8	14.1
College (%)	33.8	43.5	49.5	14.4

 = Greater Percentages

TABLE 4

Reported Risk Factors of Prostate Screening Participants (%)  
August 1, 2000 to July 31, 2004

	p-value		AA n (10,634 )	Asian n (672)	Caucasian n (3,388)	Hispanic n (3,492)
Eat a diet high in fat (%)	***	No	88.1	86.8	88.0	90.0
		Yes	11.9	13.2	12.0	10.0
Considered obese (%)	***	No	96.2	97.9	94.2	94.4
		Yes	3.8	2.1	5.8	5.6
Do not exercise 3 or > times a week	***	No	69.7	74.1	64.9	75.9
		Yes	30.3	25.9	35.1	24.1
Smoke (%)	***	No	83.6	88.4	89.5	87.8
		Yes	16.4	11.6	10.5	12.2
Medication for diabetes	***	No	90.9	87.2	93.7	89.9
		Yes	9.1	12.8	6.3	10.1
Medication for high cholesterol	***	No	89.9	80.5	82.6	90.9
		Yes	10.1	19.5	17.4	9.1
Medication for high BP	***	No	75.4	73.7	78.5	88.2
		Yes	24.6	26.3	21.5	11.8
Family history of heart disease	***	No	85.5	87.8	83.2	89.5
		Yes	14.5	12.2	16.8	10.5
Family history of high BP	***	No	59.4	76.0	76.6	81.1
		Yes	40.6	24.0	23.4	18.9
Family history of diabetes	***	No	72.0	80.4	81.5	74.5
		Yes	28.0	19.6	18.5	25.5
Family history of cancer	***	No	82.2	90.8	78.0	86.5
		Yes	17.8	9.2	22.0	13.5
DRE Performed	***	No	91.4	93.9	82.0	92.0
		Yes	8.6	6.1	18.0	8.0

p &lt; 0.05 \*

p &lt; 0.02 \*\*

p &lt; 0.01 \*\*\*

 = Greater Percentages

TABLE 5

## Risk Factors of Prostate Screening Participants (%)

August 1, 2000 to July 31, 2004

	AA	Asian	Caucasian	Hispanic
Cholesterol (mg/dL)	n (10,568 )	n (668 )	n(3,370)	n (3,468)
Low <100	0.4	0.3	0.4	0.3
Normal 101-160	18.4	14.8	17.5	12.4
Desirable 161-200	36.9	39.4	39.2	36.2
Borderline High 201-240	30.3	34.4	30.6	34.1
High 241-500	14.0	10.9	12.2	17.0
=>500	0.1	0.1	0.0	0.1
Glucose (mg/dL)	n (10,597)	n (672)	n(3,375)	n (3,471)
Low <50	0.6	1.0	0.9	0.3
Normal 51-150	91.2	85.6	92.5	86.3
High 151-200	4.0	7.7	3.5	5.0
Abnormal High 201-500	4.0	5.7	3.1	8.2
=>500	0.2	0.0	0.0	0.3
PSA levels (mg/dL)	n(10,608)	n(669)	n(3,377)	n(3,490)
Normal 0-1.0	69.9	61.0	58.4	68.0
Normal Medium 1.1 - 4.0	26.7	31.7	35.8	29.0
Normal High 4.1 - 10.0	2.8	6.6	5.2	2.5
Very High =>10	0.5	0.7	0.7	0.5

= Greater Percentages



**TABLE 6**  
Association of Risk Factors  
Adjusted for Ethnicity  
(compared to AA)

Risk factors (Yes)	Hispanic				Asian				Caucasian			
	Crude Odds Ratio		Adjusted OR		Crude Odds Ratio		Adjusted OR		Crude Odds Ratio		Adjusted OR	
	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI
Eat a diet high in fat	1.22	1.07, 1.38	1.03	0.87, 1.22	1.13	0.90, 1.43	0.99	0.73, 1.34	0.99	0.84, 1.11	0.72	0.62, 0.83
Considered obese Yes	0.68	0.57, 0.81	0.50	0.39, 0.63	0.54	0.31, 0.92	1.79	0.95, 3.37	0.64	0.77, 0.54	0.65	0.53, 0.81
Do not exercise 3 or >	1.37	1.26, 1.50	1.04	0.92, 1.18	0.80	0.67, 0.96	1.33	1.06, 1.67	0.80	0.74, 0.87	0.08	0.85, 0.70
Smoke	1.41	1.26, 1.58	1.47	1.25, 1.74	0.67	0.53, 0.85	1.44	1.05, 1.97	1.67	1.48, 1.88	1.06	0.92, 1.23
Medication for diabetes	0.83	0.78, 1.01	1.01	0.83, 1.22	1.47	1.16, 1.86	1.14	0.83, 1.58	1.49	1.27, 1.73	2.12	1.75, 2.57
Medication for high cholesterol	1.12	0.98, 1.27	1.02	0.84, 1.23	2.16	1.76, 2.64	0.82	0.62, 1.08	0.53	0.48, 0.59	0.94	0.81, 1.08
Medication for high BP	2.45	2.19, 2.73	2.25	1.91, 2.64	1.09	0.92, 1.31	1.82	1.43, 2.33	1.19	1.08, 1.31	2.21	1.95, 2.49
Family history of heart disease	1.45	1.28, 1.63	1.13	0.96, 1.34	0.82	0.65, 1.04	1.57	1.15, 2.16	0.84	0.75, 0.93	0.83	0.73, 0.95
Family history of high BP	2.93	2.67, 3.22	1.98	1.75, 2.25	0.46	0.38, 0.55	2.28	1.81, 2.89	2.24	2.05, 2.44	2.19	1.97, 2.43
Family history of diabetes	1.14	1.05, 1.24	0.80	0.71, 0.91	0.63	0.52, .076	1.58	1.23, 2.04	0.59	0.53, 0.64	0.63	0.56, 0.70
Family history of cancer	1.39	1.24, 1.54	0.98	0.84, 1.14	0.47	0.36, 0.61	1.50	1.09, 2.07	0.77	0.70, 0.89	0.60	0.54, 0.68



More likely

OR= Odd Ratio S.E. = Standard Error CI= 95 % confidence interval

Table 7  
Caucasian and Hispanic Social Demographics Associated with Behavioral Risk Factors  
(AA men the reference group)  
*Adjusted Odds Ratio*

ref (yes)	Eat a diet high in fat				Considered obese				Do not exercise 3 or >				Smoke			
	OR	S.E	CI		OR	S.E	CI		OR	S.E	CI		OR	S.E	CI	
Race (Ref= AA)																
Hispanic	1.03	0.09	0.87	1.22	0.52	0.12	0.41	0.65	1.07	0.06	0.94	1.22	1.50	0.08	1.27	1.76
Caucasian	0.86	0.07	0.75	0.98	0.68	0.10	0.56	0.83	0.80	0.05	0.72	0.88	1.15	0.07	0.995	1.32
Marital (Ref=Married)																
Single/D/W	0.87	0.06	0.78	0.99	0.90	0.09	0.75	1.08	1.02	0.05	0.94	1.12	1.02	0.05	0.94	1.12
Employment (Ref=employed)																
Retired	2.01	0.10	1.65	2.45	1.24	0.14	0.95	1.62	1.55	0.06	1.37	1.75	1.68	0.09	1.40	2.01
Unemployed	1.08	0.10	0.89	1.33	0.75	0.15	0.56	1.00	0.94	0.07	0.81	1.08	0.82	0.09	0.69	0.97
Disabled	1.07	0.18	0.75	1.51	0.47	0.22	0.30	0.73	0.83	0.13	0.65	1.07	0.72	0.14	0.54	0.95
Income (Ref= < \$20K)																
> \$40K	1.05	0.07	0.92	1.19	0.90	0.10	0.74	1.11	0.83	0.05	0.75	0.91	3.22	0.06	2.84	3.64
\$30-40K	1.26	0.08	1.07	1.48	1.01	0.13	0.79	1.29	0.89	0.06	0.80	1.00	1.88	0.07	1.63	2.17
\$20-30K	1.24	0.08	1.05	1.46	1.07	0.13	0.59	0.85	0.98	0.06	0.88	1.11	1.51	0.07	1.31	1.73
Education (Ref= Vocational)																
College	1.29	0.13	0.91	1.49	1.40	0.18	0.99	1.99	1.27	0.09	1.05	1.52	1.27	0.93	1.05	1.52
Some College	1.16	0.13	0.91	1.49	1.47	0.18	1.04	2.09	1.08	0.09	0.90	1.30	1.08	0.09	0.90	1.30
High School	1.12	0.13	0.86	1.44	1.56	0.22	1.00	2.38	1.27	0.10	1.05	1.53	1.27	0.10	1.05	1.53
< H.S	0.96	0.16	0.71	1.30	1.54	0.22	1.00	2.38	1.26	0.12	1.00	1.58	1.26	0.12	1.00	1.58

= less likely

= more likely

OR= Odd Ratio S.E. = Standard Error CI= 95 % confidence interval

**Table 8**  
**Caucasian and Hispanic Social Demographics**  
**Associated with Medication for Co-morbidities**  
*(AA men the reference group)*  
**Adjusted Odds Ratio**

ref (yes)		Medication for diabetes				Medication for high chol				Medication for high BP			
		OR	S.E	CI		OR	S.E	CI		OR	S.E	CI	
Race (Ref= AA)													
	Hispanic	1.03	0.10	0.85	1.25	1.03	0.09	0.85	1.24	2.16	0.08	1.85	2.53
	Caucasian	1.72	0.09	1.43	2.06	0.70	0.07	0.61	0.80	1.50	0.06	1.34	1.68
Marital (Ref=Married)													
	Single/D/W	1.32	0.08	1.13	1.54	1.36	0.07	1.18	1.56	1.25	0.05	1.13	1.39
Employment (Ref=Employed)													
	Retired	0.48	0.09	0.40	0.57	0.33	0.07	0.28	0.38	0.35	0.06	0.31	0.40
	Unemployed	1.04	0.13	0.80	1.34	1.04	0.13	0.82	1.33	1.08	0.09	0.90	1.29
	Disabled	0.33	0.16	0.24	0.45	0.40	0.16	0.29	0.55	0.41	0.13	0.32	0.53
Income (Ref= < \$20K)													
	\$40K +	1.15	0.08	1.22	1.65	0.97	0.07	0.84	1.11	1.17	0.05	1.06	1.30
	\$30-40K	1.44	0.10	1.19	1.74	0.96	0.09	0.81	1.14	1.19	0.07	1.05	1.36
	\$20-30K	1.22	0.09	1.01	1.46	0.97	0.09	0.82	1.15	1.04	0.07	0.92	1.19
Education (Ref= Vocational)													
	College	0.93	0.17	0.66	1.31	0.88	0.15	0.65	1.19	1.00	0.11	0.80	1.25
	Some College	0.92	0.17	0.66	1.30	0.87	0.15	0.65	1.18	0.88	0.11	0.71	1.10
	High School	0.66	0.17	0.47	0.92	0.74	0.16	0.55	1.00	0.79	0.11	0.63	0.98
	< H.S	0.66	0.20	0.45	0.96	0.81	0.19	0.56	1.16	1.03	0.14	0.78	1.36

= less likely      = more likely

OR= Odd Ratio S.E. = Standard Error CI= 95 % confidence interval



Table 9  
Social Demographics Associated with Family History of Co-morbidities  
Caucasians and Hispanics compared to AA

ref (yes)	Family history of heart disease				Family history of high BP				Family history of diabetes				Family history of cancer			
	OR	S.E	CI		OR	S.E	CI		OR	S.E	CI		OR	S.E	CI	
Race (Ref= AA)																
Hispanic	1.17	0.09	0.99	1.38	2.05	0.06	1.81	2.32	0.86	0.06	0.76	0.97	1.02	0.08	0.88	1.18
Caucasian	0.81	0.06	0.72	0.92	2.35	0.05	2.13	2.60	1.73	0.06	1.55	1.93	0.72	0.06	0.64	0.80
Marital (Ref=Married)																
Single/D/W	0.96	0.06	0.86	1.08	1.05	0.05	0.96	1.14	0.99	0.05	0.90	1.08	0.97	0.05	0.87	1.07
Employment (Ref=employed)																
Retired	1.02	0.08	0.87	1.18	1.05	0.06	0.93	1.19	1.15	0.07	1.01	1.31	1.26	0.08	1.09	1.46
Unemployed	1.02	0.10	0.74	1.08	0.89	0.08	0.77	1.04	0.89	0.08	0.77	1.04	0.79	0.09	0.67	0.94
Disabled	0.61	0.15	0.45	0.82	0.74	0.13	0.58	0.96	0.79	0.13	0.61	1.03	0.69	0.15	0.52	0.92
Income (Ref= < \$20K)																
\$40K +	1.13	0.06	0.99	1.27	0.81	0.05	0.73	0.89	0.86	0.05	0.77	0.94	0.91	0.06	0.81	1.01
\$30-40K	1.12	0.08	0.96	1.30	0.89	0.06	0.79	1.00	1.00	0.06	0.88	1.13	1.03	0.07	0.90	1.19
\$20-30K	1.20	0.08	1.03	1.40	1.03	0.06	0.91	1.16	1.08	0.06	0.95	1.22	1.17	0.07	1.01	1.35
Education (Ref= Vocational)																
College	0.95	0.13	0.74	1.23	0.99	0.10	0.82	1.19	0.90	0.10	0.74	1.10	1.02	0.12	0.82	1.28
Some College	0.79	0.13	0.62	1.02	0.84	0.10	0.70	1.01	0.85	0.10	0.70	1.04	0.86	0.11	0.69	1.07
High School	0.92	0.13	0.72	1.20	0.95	0.10	0.78	1.14	0.86	0.10	0.70	1.05	1.06	0.12	0.84	1.34
< H.S	1.26	0.17	0.91	1.74	1.39	0.12	1.10	1.77	1.25	0.13	0.97	1.60	1.23	0.15	0.92	1.63

= less likely      = more likely

OR= Odd Ratio      S.E. = Standard Error      CI= 95 % confidence interval



**Table 10**  
**Social Demographics Associated with Screening Tests**  
**Caucasians and Hispanics compared to AA**

Ref (Elevated/ high values=01)		Elevated Cholesterol Levels				Elevated Glucose Levels				Elevated PSA levels			
		OR	S.E	CI		OR	S.E	CI		OR	S.E	CI	
<b>Race (Ref= AA)</b>													
	Hispanic	0.75	0.06	0.67	0.84	0.62	0.09	0.52	0.74	1.29	0.18	0.92	1.82
	Caucasian	1.02	0.05	0.93	1.12	1.37	0.09	1.15	1.64	0.74	0.12	0.59	0.93
<b>Marital (Ref=Married)</b>													
	Single/D/W	1.02	0.04	0.94	1.11	1.01	0.08	0.87	1.12	0.93	0.12	0.74	1.17
<b>Employment (Ref=employed)</b>													
	Retired	1.37	0.06	1.23	1.54	0.59	0.09	0.49	0.71	0.21	0.12	0.17	0.27
	Unemployed	1.06	0.07	0.92	1.21	0.90	0.12	0.71	1.14	0.67	0.20	0.45	0.98
	Disabled	1.26	0.13	0.98	1.61	0.46	0.18	0.33	0.65	0.64	0.33	0.34	1.21
<b>Income (Ref= &lt; \$20K)</b>													
	\$40K +	0.84	0.05	0.76	0.93	1.43	0.08	1.22	1.69	2.18	0.13	1.70	2.79
	\$30-40K	0.94	0.06	0.84	1.06	1.30	0.10	1.07	1.58	1.49	0.14	1.12	1.87
	\$20-30K	0.96	0.06	0.85	1.08	1.25	0.10	1.04	1.51	1.37	0.14	1.04	1.81
<b>Education (Ref= Vocational)</b>													
	College	1.14	0.09	0.96	1.37	0.96	0.17	0.69	1.33	0.98	0.26	0.59	1.62
	Some College	1.12	0.09	0.94	1.34	0.90	0.17	0.65	1.26	1.39	0.26	0.83	2.32
	High School	1.08	0.09	0.90	1.29	0.77	0.17	0.55	1.07	0.92	0.26	0.55	1.51
	< H.S	1.05	0.11	0.84	1.30	0.71	0.19	0.49	1.03	0.70	0.29	0.40	1.25

= less likely      = more likely

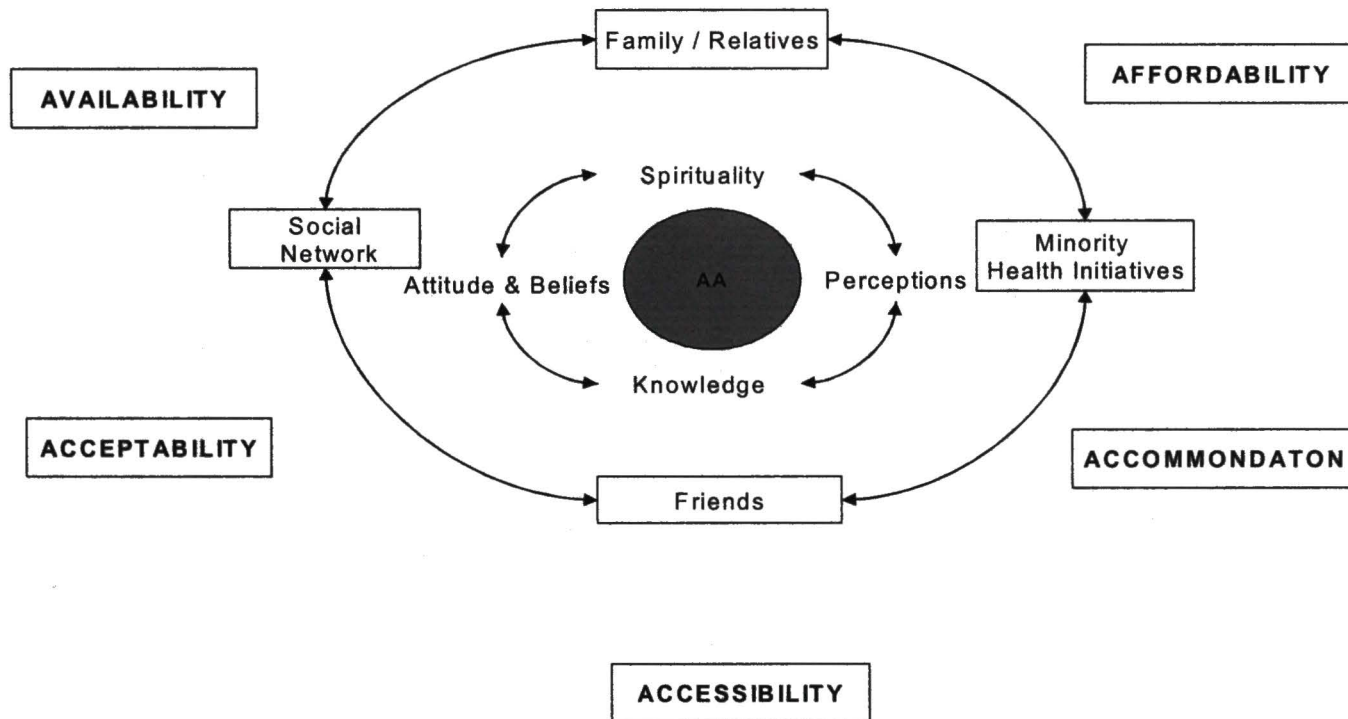
OR= Odd Ratio

S.E. = Standard Error

CI= 95 % confidence interval

## APPENDIX D

## The Five Psychosocial A's to Urban African American Male Participation in Prostate Screening



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