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Health Promotion Behaviors among African American Women

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UNIVERSITY OF MIAMI

HEALTH PROMOTION BEHAVIORS AMONG AFRICAN AMERICAN WOMEN

By

Sandra E. Douchand Brown

A DISSERTATION

Submitted to the Faculty
of the University of Miami
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HEALTH PROMOTION BEHAVIORS AMONG AFRICAN AMERICAN WOMEN

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The purpose of this research was to examine and describe the relationships among health status, marital status, income level, education level, age, and body mass index (BMI) with the added influence of spirituality on the health promotion behaviors of African American women, living in South Florida. The sample consisted of 137 women, 18 to 64 years of age, who were born in the United States and whose parents were born in the United States. Each participant completed a demographic questionnaire, the Health-Promoting Lifestyle Profile II (HPLP II), the Short Form–36 Health survey (SF-36), and the Spiritual Well-Being Scale (SWBS). Descriptive and inferential statistics with an alpha level of .05 were used for data analysis. Statistically significant findings were (1) a positive relationship between health promotion behaviors and formal education, (2) a positive relationship between health promotion behaviors and spirituality (existential well-being), and (3) a negative relationship between health promotion behaviors and number of children. In the regression model, the five sets of variables together accounted for 25.5% of the variance in overall health promotion behaviors of African American women $F (15, 121) = 2.768, \ p < .01$. The health promotion behaviors of African American women were not significantly affected by health status, marital status or BMI.
Of the five demographic variables entered in the model, only number of children and education made statistically significant, unique contributions to health promotion behaviors. A sense of life satisfaction and purpose (existential well-being) made an additional, statistically significant, unique contribution to health promotion behaviors among African American women. The unique contribution of religious well-being was trivial. Therefore, formal education, number of children, and spirituality (existential well-being) may be used as predictors of health promotion behaviors among African American women, based on the results of this study. Culturally appropriate and relevant interventions used to encourage and educate African American women to increase physical activity, and decrease caloric intake are critical to mitigate the high rate of morbidity and mortality that African American women experience from CVD.
Dedication

This dissertation is dedicated to:

1. God, my Father, Lord, and Counselor, I delight in you; you are my sole desire.

2. My parents: Manuela Mantia Campbell, and Lloyd Douchand for your incessant support and encouragement through all my years of education.


4. My sons: L. Theodore St. Matthew, and Matthew Joseph Brown, both of you are my gifts, my inspiration, and my treasured miracles.

Shalom
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God, Father – Thank you. You have been more than faithful. I give this back to you. Use me for your glory.

I give you all the glory I give you all the praise
I pledge to you each moment for the length of all my days.
My Rock and my Redeemer, my Savior and my Friend
I will ever praise you because of who you are.
(Wexelberg, 1997)
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Chapter I

Introduction

Cardiovascular Disease (CVD) is the leading cause of death in the United States of America (American Heart Association [AHA], 2006). Hypertension, coronary heart disease, heart failure, stroke, and congenital cardiovascular defects are the conditions included in the CVD group (Rosamond et al., 2007). Cardiovascular disease is responsible for more deaths each year than the next four causes of death combined: cancer, chronic respiratory illnesses, accidents, and diabetes (AHA, 2006).

Thirty-five percent of women have some type of cardiovascular disease. In 2005, 53% of all women died from CVD (Lloyd-Jones et al., 2009). Since 1984, the number of women who have died from cardiovascular disease has exceeded the number of men who have died from cardiovascular disease (AHA, 2007). In 2005, CVD caused the death of 454,613 women compared to 409,867 men (Lloyd-Jones et al., 2009). In 2005, CVD mortality was linked to the deaths of 52,401 African American women compared to 47,384 African American men (Lloyd-Jones et al., 2009).

Healthy People 2010, the United States Department of Health and Human Services (USDHHS) 10 year agenda for health promotion and disease prevention in the 21st century, has two main goals: (a) to increase quality and years of healthy life and (b) to eliminate health disparities (USDHHS, 2000). Life expectancy would rise approximately seven years if major forms of CVD were eliminated compared to three years if all forms of cancer were eliminated (National Center for Health Statistics [NCHS], 1999). Health disparities are described as inequitable mortality and morbidity rates for minority groups in comparison to the white, non-Hispanic population in the
United States (USDHHS, 2000). The rising cost associated with healthcare, along with barriers, such as: the lack of or inadequate health insurance coverage; the lack of primary healthcare providers; cultural, spiritual, and language differences; the lack of knowledge of what to do or when to seek medical care; and concerns about confidentiality and/or discrimination, limit access to healthcare (USDHHS, 2000) thereby confounding the disparities that minority groups experience.

The objective of Healthy People 2010 is to assist individuals regardless of their age, gender, educational level, income, race, ethnicity, cultural customs, language, religious beliefs, disability, sexual orientation, geographic location, or occupation to participate in improving personal health, which will advance the Nation’s health (USDHHS, 2000). In order to achieve equitable health services, every individual in every community across the United States of America should have equal access to comprehensive, culturally competent, community-based healthcare systems that are committed to meeting the healthcare needs of individuals and building healthier communities (USDHHS, 2000).

African Americans in the United States of America are disproportionately affected by several health related concerns (Mensah, Mokdad, Ford, Greenland & Croft, 2005; USDHHS, 2000). The infant death rate among African Americans is double that of Caucasians. The death rate for all cancers is 30% higher for African Americans than for Caucasians. Prostate cancer in African American men is more than double that for Caucasian men (USDHHS, 2000). Despite having a mammography screening rate that is nearly equal to their Caucasian counterparts, African American women have a higher death rate from breast cancer. The death rate for HIV/AIDS for African Americans is
more than seven times that for Caucasians, and the rate of homicides among African Americans is six times that of Caucasians (USDHHS, 2000). African Americans have a mortality rate from cardiovascular disease that is more than 40% higher than their Caucasian counterparts (USDHHS, 2000). In 2005, African American women had a higher death rate (319.7 per 100,000 population) than their Caucasian counterparts (230.4 per 100,000 population) (Lloyd-Jones et al., 2009).

The objectives and goals of Healthy People 2010 can only be achieved through the collaborative efforts of the public and private sectors and individuals within American communities. The greatest opportunity to reduce health disparities is to educate individuals to make informed healthcare decisions and to promote community wide safety, education, and access to healthcare (USDHHS, 2000). Healthcare providers are well positioned to assess the awareness and knowledge of African American women regarding their risk for CVD and provide education and interventions that are culturally competent and appropriate for the African American population.

Healthcare providers are able to assist African Americans to increase the degree of responsibility they have for their personal healthcare, and to reduce the disparities they experience. Healthcare providers are also able to inform African American women of their higher morbidity and mortality rates related to CVD and encourage them to take action to reduce their risk factors. Healthcare providers are well positioned to educate African American women that healthy choices to increase physical activity, to stop smoking, to maintain ideal body weight, and to eat a balanced healthy diet will mitigate the risk of CVD as they age (Christian, Rosamond, White, & Mosca, 2007; Koenig, McCullough & Larson, 2001; USDHHS, 2000; Whitlock & Williams, 2003).
Culturally competent care is essential for all Americans. Spirituality and the church permeate and shape significant portions of the African American lived experiences (Newlin, Knafl, & Melkus, 2002). Throughout history, spirituality and religion in the African American population have been instrumental in promoting feelings of emancipation, hope, and meaning in relationship to the sociopolitical climate and economic injustices (Newlin et al., 2002). In the African American culture, the church and spirituality influence healthcare practices and beliefs of the African American population (Newlin et al., 2002; Saunders & Johnson, 2006). Therefore, any culturally relevant program geared toward African American women should incorporate spiritual and religious messages (Chester, Himburg, & Weatherspoon, 2006; Newlin et al., 2002).

Healthcare providers have the ability to assess for the awareness and knowledge of CVD of younger African American women, identify the factors that influence the health promotion behaviors of younger African American women, and develop culturally appropriate interventions to promote health in this target population. This assessment and identification has the potential to lead to interventions that will improve health and decrease the CVD morbidity and mortality rates among African American women in the United States of America.

**Statement of the Problem**

African American women are disproportionately affected by CVD and lead in CVD morbidity and mortality rates when compared to African American men and white non-Hispanic women in the United States of America (AHA, 2007; National Institutes of Health [NIH]/National Heart, Lung, and Blood Institute [NHLBI], 2002; Whitlock & Williams, 2003). Multiple risk factors are more prevalent among African Americans and
those of a lower socioeconomic status. African American women have higher rates of several of the major risk factors for cardiovascular disease. These risk factors include high blood pressure, elevated serum cholesterol levels, physical inactivity, obesity, diabetes mellitus, and smoking (NIH/NHLBI, 2002; Whitlock & Williams, 2003).

African American women are more likely to have hypertension, and diabetes mellitus, to be physically inactive, and to have a higher body mass index (BMI) when compared to Caucasian women (AHA, 2007; Christian et al., 2007).

Hypertension is a major risk factor for cardiovascular disease (AHA, 2006; Saunders & Johnson, 2006). Hypertension in African Americans in the United States is among the highest of any group in the world (AHA, 2006; Saunders & Johnson, 2006). The prevalence of hypertension among African Americans is greater, and death rates from stroke are higher in the southeastern region of the United States than in any other region (NIH/NHLBI, 1997). According to the National Center of Health Statistics (2005), men typically have higher blood pressure than women until age 45. From age 45 to 54, the percentage of men and women with high blood pressure is similar. After age 54, the percentage of high blood pressure is higher in women than in men. African American women have an 85% higher rate of out-patient visits for hypertension compared to their Caucasian counterparts (Rosamond et al., 2007).

Diabetes mellitus affects 3.2 million African American adults in the United States of America (National Institute of Diabetes and Digestive and Kidney Disease [NIDDK], 2005). The rate of diabetes mellitus for African Americans has tripled during the past 30 years and is 1.4 times higher in African Americans as in Caucasians (NIDDK, 2005). Risk factors for diabetes mellitus include having a family history of diabetes mellitus,
being African American, having an elevated BMI, having a history of gestational diabetes mellitus, having hypertension, having abnormal cholesterol levels, and leading a sedentary lifestyle. African American women are at a higher risk than African American men and Caucasian women for developing diabetes mellitus (AHA, 2007; Christian et al., 2007; NIDDK, 2005). African American women have a 138% higher rate of out-patient visits for diabetes mellitus than Caucasian women (AHA, 2006). In 2004, the overall death rate from diabetes mellitus was 24 per 100,000 population. For Caucasian females, the death rate was 19 per 100,000 population, compared to 45 per 100,000 population for African American women (AHA, 2007). Cardiovascular disease is the leading cause of death for people with diabetes mellitus (NIDDK, 2005).

The Diabetes Prevention Program (DPP) (2002) of the NIDDK had 3,234 eligible participants enrolled; 45% of the participants were from minority groups. The participants were randomly assigned to one of three interventions: lifestyle changes plus metformin, lifestyle changes plus placebo, or an intensive program of lifestyle modification. The goals of the intensive lifestyle intervention were to achieve and maintain a minimum weight reduction of 7% of initial body weight through a healthy low-calorie, low-fat diet and to engage in physical activity of moderate intensity, such as brisk walking for 150 minutes per week. A 16 lesson curriculum, including diet, exercise, and behavior modification, was designed to help the participants achieve these goals. Participants in all three groups lost weight and increased physical activity. The participants assigned to the intensive lifestyle intervention had a greater weight loss and a greater increase in physical activity than the participants in the other two groups. The results of the DPP indicate that individuals can reduce their risk of diabetes mellitus
through lifestyle modifications in diet and physical activity (Diabetes Prevention Program Research Group, 2002).

Regular physical activity is associated with lower death rates from CVD and decreases the risk of developing diabetes mellitus and hypertension (USDHHS, 2000). Married adults (31%), never married adults (33%), adults with higher education (81%), and adults with a higher socioeconomic status (40%), are more likely to be physically active (AHA, 2007). In comparison, widowed adults (24%), adults with less than a high school diploma (41%), and adults with a lower socioeconomic status (23%) are less likely to be physically active (AHA, 2007). Women (66%) are less likely than men (56%) to participate in physical activity (Lloyd-Jones et al., 2009). African American women are among the least active population groups in physical activity with 34% of African American women leading sedentary lives compared to 22% of their Caucasian counterparts (AHA, 2007).

African American women continue to be in the higher percentage of those who lead sedentary lifestyles despite the benefits of physical activity, which have been documented in diverse populations (Banks-Wallace & Conn, 2002; Whitlock & Williams, 2003). One of the leading health indicators for Healthy People 2010 is to increase the number of adults who participate in increased physical activity. Regular physical activity decreases the risk of developing diabetes mellitus, hypertension, and aids in maintaining proper body weight thereby reducing the risk of CVD (Banks-Wallace & Conn, 2002; USDHHS, 2000). Physical activity is critical to successful weight management; also it mitigates mood disorders, particularly depression and anxiety (Whitlock & Williams, 2003).
One hundred and forty-five million Americans are overweight or obese; 68 million women are overweight compared to 77 million men, and 39 million women are obese compared to 35 million men (Lloyd-Jones et al., 2009). Flegal, Graubard, Williamson, and Gail (2005) found that approximately 112,000 deaths in the United States each year are attributed to obesity. The age-adjusted prevalence of overweight and obesity of African American women is 82%. This prevalence supersedes Mexican American women who have an age-adjusted prevalence of overweight and obesity of 75% (Ogden et al., 2006). The World Health Organization (WHO) has estimated that at the current trends, 2.3 billion people worldwide will be overweight or obese by the year 2015 (WHO, 2006).

Being overweight and/or obese are significant contributors to CVD. Individuals who are overweight and/or obese are at a higher risk for hypertension, hypercholesterolemia, diabetes mellitus, heart disease, stroke, some cancers, infertility, and respiratory illnesses. Being overweight and/or obese is the result of complex genetic, social, cultural, environmental, physiological, and behavioral factors (USDHHS, 2000); however, a healthy diet and physical activity are linked to a reduced incidence of being overweight and/or obese. African American women are leading the nation in risk factors for CVD and in morbidity and mortality from CVD.

Background and Significance

In 2009, the estimated cost of CVD is $475.3 billion dollars (Lloyd-Jones et al., 2009). While the number of studies about African American women has increased in the past decade (Chester et al., 2006; Johnson & Nies, 2005; Nothwehr & Stump, 2002; Webb & Gonzalez, 2006), there are few studies (Banks-Wallace & Conn, 2002; Sharma,
Sargent & Stacey, 2005) on health promotion interventions that have a focus on culture and are appropriate for African American women to reduce the morbidity and mortality from CVD in this target population.

Having low levels of risk factors for heart disease between the ages of 18 to 30 can significantly reduce the risk of developing CVD later in life (NIH, 2007). Young women who do not smoke, have a BMI less than 25, have optimal levels of blood pressure, low-density lipid (LDL) cholesterol, and blood sugars will have a longer life expectancy and decreased morbidity and mortality from CVD (NIH, 2007).

Daviglus and colleagues (2004) found that younger women with favorable levels for five major risk factors for CVD have a decreased future incidence of cardiovascular disease in comparison to those who have unfavorable or elevated risk factors at a young age. Health promotion behaviors, such as good nutrition, normal weight, adequate physical activity, the cessation of or no cigarette smoking, moderate use of alcohol, no drug use, appropriate and safe sexual behaviors at a young age, have positive influences on health in the later years (Rosamond et al., 2007).

**Health Promotion**

Pender, Murdaugh, and Parsons (2006) define health promotion as behavior motivated by a desire to increase well-being and promote change and growth in the human health potential. Health promotion behaviors are those activities motivated by the desire to protect or promote health (Pender, Murdaugh, & Parsons, 2002). Young people may be motivated to participate in health promotion behaviors to enhance physical appearance and attractiveness versus the desire to avoid illness. As people get older, they may experience vulnerability to illnesses and degenerative conditions; therefore, adults
may be motivated to participate in health promotion behaviors to improve stamina and energy and to avoid cardiovascular disease (Pender et al., 2006).

Cardiovascular disease is related to poor dietary habits and a sedentary lifestyle, which results in an energy imbalance. The Dietary Guidelines for Americans require that all adults participate in regular physical activity and less sedentary activities to promote health (USDHHS, 2005). Participation in moderate intensity exercises above the usual daily activities for a minimum of 30 minutes per day for six to seven days of the week will reduce the risk of CVD. Individuals are encouraged to choose a diet that includes vegetables, fruit, whole grains, fat-free or low-fat milk products, fish, lean meats, poultry, and beans. The foods chosen for consumption are to be low in saturated fats, with no added sugars, and in portions suitable for one’s calorie intake level (USDHHS, 2005).

The community, environment, and society in which individuals and families live influence the health of the residents and can either sustain and expand the health potential or inhibit the emergence of health and well-being (Pender et al., 2006). The agenda for health promotion is directed toward maximizing behaviors that move individuals and groups to a high-level of health and well-being. Primary prevention and health promotion have substantial benefits in decreasing morbidity and mortality. To accomplish the goal of improving health in any given population requires an understanding of the motivational dynamics that influence health promotion behaviors within the population of interest (Pender et al., 2006).

The exploration of the variables that influence healthy behaviors and lifestyle choices of African American women could lead to health promotion and prevention of disease, disability, and premature death in African American women. Once these
variables are identified, interventions that are culturally appropriate can be developed to assist African American women to decrease the high rate of morbidity and mortality from CVD.

**Purpose of the Study**

The purpose of this study was to examine the variables that influence health promotion behaviors among African American women.

**Research Questions**

1. Are the variables of income level, educational level, BMI, and marital status, predictors of health promotion behaviors in African American women?

2. What is the relationship among health status, age, income level, educational level, BMI, marital status, spirituality, and health promotion behaviors in African American women?

3. What are the relative unique contributions of health status, age, income level, educational level, BMI, marital status, and spirituality to health promotion behaviors among African American women?
Chapter II

Literature Review

Awareness of CVD among African American Women

A significant increase in awareness that heart disease is the leading cause of death among women exists; however, a considerable gap in awareness exists that CVD is the leading cause of death in minority racial and ethnic groups, who are at a higher risk for CVD (Christian et al., 2007). Increased physical activity and modification of dietary patterns can mitigate the effects of obesity in causing CVD. The known lack of physical exercise among African American women may be related to their lack of knowledge about effective interventions to increase physical activity. More research is needed on health promotion behaviors, which include increased physical activity and improved dietary habits of the African American population (Banks-Wallace & Conn, 2002).

Dancy and Ralston (2005) identified the need for older African Americans to be educated to take responsibility for self-care through interventions that increase awareness of the healthcare problems and needs of older African Americans. Although personal behavior and lifestyle choices made at a younger age influence health in later years (AHA, 2006; Koenig et al., 2001), the African American community still experiences some major health problems (Dancy & Ralston, 2005).

Christian and colleagues (2007) surveyed a nationally representative sample of 1,005 women, identified through random digit dialing, and the results were compared to similar survey results conducted in 2003 (Mosca, Ferris, Fabunmi, & Robertson, 2004), in 2000 (Robertson, 2001), and in 1997 (Mosca et al., 2000). The results of the survey in 2006 (Christian et al., 2007) indicate that awareness of heart disease, as the leading cause
of death among women, was 57% \((p < .00)\). This result is significantly higher than those found in the previous surveys. In 2003, 1,024 women were surveyed and 46% \((p < .00)\), were aware of heart disease being the leading cause of death. This result compares to 1,004 women surveyed in 2000 with 34% \((p = .00)\), awareness and 1997 when 1,000 women were surveyed and 30% \((p = .00)\) were aware (Christian et al., 2007).

Among African American women, the awareness of CVD being the leading cause of death among women was 31% in comparison to 68% \((p < .05)\) awareness among Caucasian women (Christian et al., 2007). Also identified was considerable media confusion about basic CVD prevention strategies. Christian and colleagues (2007) suggested the need for increased education regarding heart disease and stroke and the need for minority ethnic and racial groups to be the targeted population for strategies to prevent CVD because minority ethnic and racial groups are at a higher risk for CVD morbidity and mortality (Christian et al., 2007).

_Hypertension in African American Women_

Hypertension is a major risk factor for cardiovascular disease (AHA, 2006; Saunders & Johnson, 2006). Hypertension in African Americans in the United States is among the highest in the population groups of the world (Chobanian et al., 2006; Webb & Gonzalez, 2006); however, health promotion behaviors which reduce hypertension in African Americans remain inadequate (Johnson & Nies, 2005). African American women lack awareness of the cause and management of hypertension. An understanding of how African American women perceive hypertension and their ability to reduce risk factors may assist healthcare providers to develop health promotion strategies to control
hypertension, resulting in the reduction of higher CVD morbidity and mortality in the African American population (Webb & Gonzalez, 2006).

Using qualitative methodology, Webb and Gonzalez (2006) conducted five focus groups to explore how African American women perceived hypertension. A purposeful sample of 47 African American women from the southeastern United States was interviewed. The women perceived hypertension as a significant disease threat, which was associated with risk factors interrelated within the context of psychological stress.

Four themes emerged from the focus groups: (a) vulnerability and inevitability, (b) bio-behavioral assaults, (c) barriers to effective care, and (d) culturally relevant remedies. The women perceived themselves as vulnerable to hypertension, with the risk of having hypertension and the consequences of hypertension, being inevitable if family members had hypertension, and there were significant stressors in the family (Webb & Gonzalez, 2006). In describing the bio-behavioral assaults, the women were knowledgeable about preventable risk factors, such as obesity, lack of exercise, smoking, and poor dietary habits. They described the African American woman’s dietary habits within a cultural context as passed down from generation to generation (Webb & Gonzalez, 2006).

The women identified stress as the most significant risk factor for hypertension. They described varied psychological burdens such as: (a) racial burden (being born African American in the United States), (b) performance burden (overachievement), (c) kinship burden (strong sense of commitment to the family), and (d) multi-role burden (community involvement) of the African American woman (Webb & Gonzalez, 2006).
These psychological burdens contributed to the stressful environment of the African American woman.

**Barriers to Implementing Health Promotion Behaviors**

Understanding the barriers to implementing health promotion behaviors among African Americans may assist in the development of culturally relevant interventions (Johnson & Nies, 2005; Webb & Gonzalez, 2006). The women in the focus groups described barriers to effective hypertension management as day-to-day hassles and societal detachment. Day-to-day hassles included the demands of work and family responsibilities, busy schedules, time constraints, not having time for self, forgetting to take medications, no time to exercise, and relying on fast foods instead of preparing nutritious meals (Webb & Gonzalez, 2006).

Societal detachment was described as having limited economic resources, which resulted in inadequate healthcare utilization, non-adherence to treatment regimens, and eating affordable foods versus healthy foods. Some of the women explained that they did not feel valued by their healthcare providers and therefore did not feel comfortable talking to them about healthcare needs and concerns. The women also agreed that the media did not target African Americans’ health issues but tended to focus on health issues that were germane to the Caucasian population (Webb & Gonzalez, 2006).

Using qualitative methods, Johnson and Nies (2005) conducted two focus group interviews to identify barriers to health promoting behaviors of African Americans. The sample had 12 African American participants from rural areas and 9 participants from a metropolitan area of the United States. Seventy-one percent of the sample was female. The participants were asked: (a) to describe health promoting activities, (b) what were the
reasons they do not do the activities they would like to do, and (c) what keeps them from these activities. Three themes were identified from 21 categories: (a) cost, (b) lack of discipline versus not having enough time, and (c) lack of motivation.

For the rural group, a barrier of cost related to the expense of more nutritious foods and the time to prepare healthy meals versus purchasing fast foods that were readily available were identified. The participants interviewed in the metropolitan areas agreed that eating healthier meals was costly, but they acknowledged that cost should not prevent one from walking, meditating, and going to church (Johnson & Nies, 2005).

The participants from both the rural and metropolitan areas agreed that busy lifestyles, schedules, and family responsibilities interfered with the implementing of health promotion behaviors; however, not making time for health promotion activities was viewed as a lack of discipline. Johnson and Nies (2005) identified African American cultural habits of relaxation versus exercise; dietary habits that reduced the probability of preparing healthy meals as components of a lack of motivation to implement health promotion behaviors.

Dancy and Ralston (2002) reported that older African Americans living in rural areas tend to have a lower socioeconomic status, poorer diet and nutrition habits, and are geographically isolated from formal healthcare systems. They further identified that older African American women have a higher incidence of chronic illnesses, including strokes, cancer, and diabetes mellitus, than African American men and Caucasian women.

Dancy and Ralston (2002) identified the following barriers to optimal health among older African Americans: (a) lack of confidence in the formal healthcare system,
resulting in a dependence on informal support systems rather than the formal healthcare system; (b) higher rates of poverty than urban older African Americans; (c) geographic isolation resulting in a lack of access to healthcare and social support systems; (d) attitudes that reflect health pessimism; (e) attitudes that reflect an overestimation of health; (f) major family responsibilities, (intergenerational family composition), impacted by lower financial resources, and time limitations to seek appropriate healthcare; (g) lack of transportation; and (h) lack of medical doctors in rural areas (p. 231).

Culturally Relevant Strategies

Culturally relevant health strategies for the African American woman should be focused on stress management, including time management, solitude and spirituality, emotional support, assertiveness, exercise, and learning to relax and take care of oneself (Webb & Gonzalez, 2006). Webb and Gonzalez (2006) suggested that community interventions to promote health in the African American population should include extensive public health education in known community dwellings, such as churches, community centers, schools, parks, and hospitals where large numbers can be reached with health information about hypertension. Health messages can be placed in music to attract children and youth. Radio stations and African American role models can be a part of the community health education outreach project. African American health professionals should tailor interventions to include family members. Behavioral models that fail to contain beliefs and perceptions of the target population pose a barrier to scientific advances (Webb & Gonzalez, 2006).

Culturally relevant strategies are needed to increase physical activity and dietary changes among African American women (Banks-Wallace & Conn, 2002). Healthcare
providers are in a position to consider the barriers identified previously when developing a culturally relevant, health promotion plan of care for African American women. If these barriers are taken into consideration when planning care and health promotion interventions for African American women, a reduction in health disparities and a decrease in the statistics of morbidity and mortality among this target population may result (Johnson & Nies, 2005).

Extensive awareness and collective action are needed to assist African Americans to recognize that health is a major priority (Dancy & Ralston, 2002). In addressing the health problems of the older African American population, Dancy and Ralston (2002) suggest community-wide educational efforts to raise the awareness of CVD and build confidence in the formal healthcare system. These suggestions include: (a) community coalitions to provide consistent messages and to promote common activities throughout the community; (b) the use of community organizations such as churches and community recreation centers to promote health for older African Americans; and (c) the use of African American professionals, trained staff, leaders such as ministers, funeral home directors, and other community leaders to reinforce positive health messages (p. 231-232). Banks-Wallace and Conn (2002) suggested offering transportation and childcare and the use of African American professionals as liaisons to ensure that interventions are delivered in a culturally appropriate manner and also to enhance participation of the community (p. 330) as ways to assist in decreasing the barriers to health promotion behaviors among African Americans.

Other community suggestions included the use of women’s auxiliaries and other organizations that allow for women to share their concerns and receive support.
Multigenerational programs, which incorporate family, friends, and kinfolk, are important elements to be included in culturally relevant interventions among African American women. During these programs, women could have the opportunity to discuss lifespan issues related to women inclusive of CVD concerns (Banks-Wallace & Conn, 2002; Dancy & Ralston, 2002).

**Physical Activity, Dietary Modification, Social Support, and Self Efficacy**

In a randomized controlled clinical trial to test the effects of two lifestyle interventions on blood pressure control (PREMIER), Young and colleagues (2005) found that CVD risk factors were mitigated with higher levels of physical activity and dietary modification. The researchers examined the cross-sectional associations among physical activity, cardio-respiratory fitness, dietary habits, and CVD risk factors in a sample of 810 adults. Eighty percent of the sample was women; African Americans were represented in 34% of the sample. Men and women age 25 or older with elevated blood pressure were included in the sample. People who were significantly underweight or overweight; regularly used anti-hypertensive medication; were current users of insulin or oral hypoglycemic agents; had previous CVD events or cancer diagnosis; had current congestive health failure or symptoms of angina or peripheral vascular disease were excluded from the study. Baseline assessments of physical activity levels, cardio-respiratory fitness, dietary intake, blood pressure readings, and CVD risk factors were collected. Mean levels of BMI, lipid profiles, caloric intake from fat and saturated fat, fruits, vegetables, and fiber were examined across three physical activity levels and two fitness categories (Young, et al., 2005).
The African American women demonstrated lower fitness levels than the non-African American women and lower activity levels than the African American men. The researchers used established guidelines for weight loss, physical activity, and alcohol, and sodium intake from the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure VI (JNC 6), for the lifestyle interventions (Young et al., 2005).

The researchers found that cardiovascular risk factors were mitigated at higher physical activity and fitness levels among African American and non-African American men and women. Both the men and women with higher fitness levels had a significantly lower BMI ($p < .01$). Associations among physical activity, cardio-respiratory fitness, and CVD risk factors varied by gender and race categories. Dietary fat intake was lower in non-African American men at the highest physical activity category. Dietary fiber was significantly higher at the higher physical activity levels for non-African American women ($p = .02$). African American women were more likely to be in the poor, or below average fitness category than their non-African American counterparts (Young, et al., 2005).

Webb, Beckstead, Meininger, and Robinson (2006) conducted a pilot study to test the effects of two stress management interventions on blood pressure and stress related variables in 33 African American women who were employed at a large metropolitan university. The participants were randomly assigned to one of three groups: (a) cognitive meditation, (b) relaxation, or (c) delayed treatment. During the 10 weeks of the study, participants had their blood pressures measured at three weeks, six weeks, and 10 weeks; they completed assessments of stress related variables: anger, strain, and coping
resources. The researchers found no significant reductions in blood pressure, anger, or personal strain; however the personal resources questionnaire showed statistically significant interactions $F (2, 30) = 3.89, p = .03$. The personal resources questionnaire measured self-care, social support, recreation, and rational-cognitive coping resources. In debriefing sessions at the end of the 10 weeks, participants shared that getting together and sharing with other women in group sessions was a source of stress relief and was the most beneficial part of the interventions (Webb et al., 2006).

Sharma and colleagues (2005) suggested that interventions to promote an increase in physical activity among African American women should build on social support of friends and self efficacy. In a quantitative study, 240 African American women completed a 45 item questionnaire at community health centers, and churches. The mean weekly physical activity was found to be 88 minutes, with self-efficacy ($p = .01$) and social support from friends ($p = .01$) being significant predictors for physical activity. These variables accounted for 24% of the variance (Sharma et al., 2005).

Nothwehr and Stump (2002) interviewed 155 low income African American women via telephone in an effort to better understand their current weight management practices. The sample was recruited from a primary care clinic; 80 of the women were trying to lose weight and 75 were not. The researchers found that those women who were trying to lose weight were more likely to engage in goal setting, diet strategies, and cognitive strategies. Nothwehr and Stump (2002) suggested that healthcare providers might want to deliver a stronger, broader message about healthy and successful weight management for the African American population.
Health Promotion among Homeless Women

As among minority populations, health disparities are prevalent among homeless people. There is a higher mortality rate among homeless people when compared to the general United States population. Women, often with children, are becoming a significant part of the homeless population (Wilson, 2005).

Using Pender’s Health Promotion Model (Pender et al., 2002) as the theoretical framework, Wilson (2005) examined the health practices of sheltered homeless women, using a cross-sectional, descriptive, non-experimental design. The participants were 137 educated, mostly unemployed, single, and homeless women. The sample was 44% African American women. Wilson (2005) found significant correlations among age, health status, and health index. Older homeless women reported their health status as worse ($r = .19, p < .05$) and were more likely to have a greater number of physical illnesses ($r = .29, p < .01$). The participants with more physical illnesses (health index) were more likely to practice more health behaviors (health responsibility) ($r = .18, p < .05$). The participants with a higher health status were more likely to practice health promotion behaviors related to total lifestyle profile ($r = -.22, p < .01$), nutrition ($r = -.21, p < .01$), spiritual growth ($r = -.22, p < .01$), and stress management ($r = -.25, p < .01$).

The homeless women who took personal responsibility for their health also practiced more health behaviors related to nutrition ($r = .59, p < .01$); spiritual growth ($r = .62, p < .01$); interpersonal relations ($r = .69, p = .01$); and stress management ($r = .59, p < .01$). In the subscales, the strongest relationships were noted between spiritual growth and interpersonal relations ($r = .78, p < .01$), and spiritual growth and stress management ($r = .72, p < .01$). Those women who participated in spiritual growth
behaviors also participated in behaviors of interpersonal relations and stress management (Wilson, 2005).

Wilson (2005) credited the effective functioning of the shelter services for the correlation among spiritual growth, interpersonal relations, and stress management. Lower levels of physical activity, noted in the African American population and particularly in the homeless population, were attributed to possible economic and access issues. Restrictions in food choices within the homeless environment may have affected the nutrition scores. The women who identified specific physical conditions were aware of their problems and practiced more health behaviors as observed in the correlation between the health index and the health responsibility subscale (Wilson, 2005).

Health Promotion, Socioeconomic Status, Education and Marital Status

Johnson (2005) used a descriptive comparative design to examine gender differences among African American lifestyle behaviors. A convenience sample of 223 African Americans living in the southeastern United States was recruited. The Health Promotion Lifestyle Profile (HPLP) was used to measure health promotion behaviors. Both total health promoting lifestyle scores and individual behaviors were examined in this study. Independent \( t \)-test analysis revealed no statistically significant gender differences for total HPLP scores \( t (220) = -1.49, p = .14 \) when controlling for income, education, and marital status; no significant interactions were seen with gender on HPLP. Independent \( t \)-test analyses revealed statistically significant differences for interpersonal relationship support \( t (221) = -1.97, p = .05 \), health responsibility \( t (214) = -2.46, p = .02 \), and nutrition \( t (219) = -3.27, p < .00 \), with women scoring higher than men.
Johnson (2005) asked three questions to guide the investigation of gender differences among 223 African American lifestyle behaviors:

1. Are African American women’s self-reported overall HPLP higher than those of African American men?
2. Do African American women report higher frequencies of specific health-promoting behaviors than those of African American men?
3. Do socio-demographic factors influence the reported frequencies of health-promoting behaviors in African men and women?

The African American women in this study reported higher nutrition scores than men. There was also a higher frequency of interpersonal relationships and nutritional and health responsibility activities found in African American women. The researcher found a greater frequency of health promoting behaviors among individuals with higher income and education; this finding is consistent with previous studies. In addition, the researcher found that socio-demographic factors have a greater influence on health promoting lifestyles than does gender. Although the women scored higher on the health responsibility, nutrition, and interpersonal relationships, these relationships changed when the women’s levels of income, education, and marital status were considered (Johnson, 2005). The researcher suggested that in creating care plans for African American women, healthcare providers should consider gender, income, education, and marital status.

*Health Promotion and Spirituality*

Populations at risk for CVD are not adequately influenced to include healthy dietary habits and increased physical activity in their lives to prevent illnesses and
promote health (Chester et al., 2006). In a descriptive, cross-sectional, correlation study, Chester and colleagues concluded that the church plays a central role in the lives of African Americans and that any culturally relevant program geared at African American women should incorporate spiritual and religious messages. These researchers examined a combination of factors present in individuals that made them more willing to incorporate health promoting behaviors in their lifestyle (Chester et al., 2006).

Canonical correlation analysis of the results of the survey of a sample of 260 African American women revealed good nutrition \( (r = .95) \), physical activity \( (r = .79) \), and healthy eating habits \( (r = .42) \) were positively associated with stress management \( (r = .88) \), health responsibility \( (r = .67) \), spiritual growth \( (r = .66) \), interpersonal relationships \( (r = .50) \), education \( (r = .49) \), and self-esteem \( (r = .33) \). The above set of variables explained 56% of the variability \( (p < .00) \).

Using qualitative methods, Abrums (2000) examined how life experiences and belief systems of nine poor, working class, community dwelling, African American women helped them cope with life. These women perceived the healthcare system as unfriendly and hostile. They revealed feelings of fear and distrust in their personal experiences as African American women within a predominantly Caucasian healthcare system. They said they coped with their illnesses by ascribing spiritual meaning to their health issues. They further demonstrated that inspiration and motivation came to them through prayer and scripture. The women emancipated themselves from what they perceived to be a dominant Caucasian healthcare system by giving their fears and distrust to God. Further, they stated their belief that God had the ultimate control over their well-being. The women in this study were able to cope with an intimidating healthcare system
because of their spiritual beliefs. They found hope, peace, and comfort through their lived experiences with spirituality. In conclusion, the women were able to sustain their unique individuality in the healthcare system because of an inner core, spiritual value system (Abrums, 2000).

Simoni, Martone, and Kerwin (2002) identified spirituality as a resource for psychological adaptation that enhanced the well-being of 230 low income African American and Puerto Rican women infected with HIV/AIDS. In a cross-sectional, correlation study, the researchers extended current findings regarding the benefits of spiritual coping to this population of women infected with HIV/AIDS. Spirituality and religious practices were negatively correlated with drug use and positively correlated with social support and psychological adaptation. Bivariate analyses of the data collected revealed that psychological adaptation was positively correlated to spirituality ($r = .24$, $p = .00$) and spiritually based coping ($r = .27$, $p = .00$).

Simoni and colleagues (2002) examined the added effects of spirituality and spiritually resilient coping on psychological adaptation. The participants were assigned to three groups related to their scores for spirituality and spiritually resilient coping. An analysis of covariance (ANCOVA) which compared the three groups on the psychological adaptation indicator was conducted. The main effect for the group was significant, $F (4, 213) = 5.60, p < .00$, unadjusted psychological adaptation scores for each group increasing in the expected direction. Using hierarchical regression models, education, ethnicity, and drug use in step one, social support in the second step, and spirituality in the third step revealed that spirituality ($p < .05$), ethnicity ($p < .05$), drug
use ($p < .01$), and education ($p < .01$) remained significant independent predictors of psychological adaptation for the population being studied.

In this study, frequency of church attendance was negatively related to recent drug use, and spirituality and spiritually based coping were both related to more social support and less drug use ($p < .05$). The results of the study support the need for collaboration between religious and mental health professionals to balance the pain and suffering of life-threatening illnesses. These women were able to cope with their life-threatening illnesses and circumstances because of their spiritually based coping (Simoni et al., 2002). The results indicate that even after controlling for other types of coping strategies, spiritually based coping produces an independent, additive contribution to psychological adaptation.

In the Established Populations for the Epidemiologic Studies of the Elderly (EPESE) program of the National Institutes of Health (NIH), Koenig and colleagues, (1999, 1998, & 1997) conducted several studies examining the relationship among religion, religious practices and several variables: hypertension, smoking, depression, and immune system functioning. A probability sample of 3,968 community-dwelling adults greater than age 64 was surveyed in 1981 and followed prospectively for six years.

The relative hazard (RH) of dying for frequent attendees to religious services was 46% less than for those who attended religious services less frequently ($RH .54$, $95\% CI .48-.61$). The effect was strongest among women attendees ($RH .51$, $95\% CI .43-.59$). Investigators concluded that older adults, particularly women who attended religious services at least once per week, had a higher survival advantage than those who attended less frequently (Koenig et al., 1999). Older adults with hypertension who were
religious activity were more likely to take their antihypertensive medication ($p = .00$).
However, while most religious activity was associated with lower blood pressures, older adults with hypertension who watched television or listened to religious radio had higher blood pressures (Koenig, George, Cohen, Hays, Blazer, et al., 1998). Older adults who attended religious services at least once per week and who prayed or read scripture were 90% less likely to smoke than the older adults who engaged less in religious activities ($p = .00$). This study illustrated that religiously active persons were less likely to begin smoking but not more likely to quit smoking (Koenig, George, Cohen, Hays, Larsen, et al., 1998). The rate of depression of subjects who attended religious services once per week or more was one-half of those who attended services less than once per week ($p = .00$) (Koenig, Hays, et al., 1997). Koenig, Cohen and colleagues (1997) measured interleukin-6 (IL-6) levels of older adults to determine the immune functioning of older adults who frequently attend church. The researchers suggested that older adults who attend church frequently may have more stable immune systems than less frequent attendees ($p < .00$).

Results of these studies contribute knowledge of the impact that religious activities may have on health promotion behaviors. Religious activities are a major expression of spirituality among actively religious persons.

**Summary**

In summary, the review of literature supports the need for more education among minority racial and ethnic groups to increase awareness that cardiovascular disease is the leading cause of death and that there are behavioral changes that can mitigate the risk factors. African Americans perceive themselves at a greater risk for hypertension, a
major risk factor for CVD; however, they do not consistently practice appropriate health behaviors to prevent and control the disease progression.

Several personal, cultural, and environmental barriers to health promotion in the African American population exist. Healthcare providers should consider these barriers when seeking to implement culturally appropriate interventions among this target population. Culturally appropriate strategies to promote health in the African American population requires a multiprofessional approach that incorporates the healthcare system, institutions of influence, and key African American role models in the community. The church and African American spirituality can play a major role in mitigating the risk factors for CVD among African American women, thereby reducing the morbidity and mortality rates that they disproportionately experience.

Pender and colleagues (2006) designed the *Health Promotion Model* (HPM) to assess the multidimensional nature of individuals interacting with their interpersonal and physical environments in their pursuit of health. In harmony with the vision of *Healthy People 2010*, Pender and colleagues emphasized the importance of targeting vulnerable populations who experience health disparities. Health promotion for these populations should be culturally appropriate and incorporated into the context of daily living (Pender et al., 2006).

**Theoretical Framework**

*The Health Promotion Model*

The *Health Promotion Model* (HPM) was used as the theoretical framework in this study to examine and describe the health promotion behaviors of African American women. Pender and colleagues (2006) emphasize that health promotion is a positive
approach to life and not illness or injury specific. Health promotion behaviors expand a positive potential for health and well-being. The HPM has applicability across the life-span and is a competence or approach-oriented model, which does not include fear or threat as a motivational factor (Pender et al., 2006).

The HPM as shown in Figure 1 is based on seven assumptions and 14 theoretical propositions, which emphasize the responsibility of the individual in influencing and maintaining health behaviors and in adjusting the environmental context for health behaviors (Pender et al., 2002). Health professionals play an influential role within the individual’s interpersonal environment throughout the lifespan.

Pender and colleagues (2002) describe the variables of the HPM as follows:

1. Individual Characteristics and Experiences describes each person’s unique personal characteristics and experiences that affect future actions. The importance of the effect will depend on the target behavior being considered.

2. Behavior-Specific Cognitions and Affect relates to particular actions and the feelings associated with the actions. This set of variables in the HPM is considered to be of major motivational significance. These variables are subject to modification through nursing actions and can influence changes in commitment or in the occurrence of health promotion behaviors.

3. Commitment to a Plan of Action initiates a behavioral event. This commitment will propel the individual into and through the behavior unless there is a competing demand that the individual cannot avoid or a competing preference that the individual does not resist intervenes. Commitment without associated
strategies often results in good intentions but failure to implement a valued health promotion behavior.
Figure 2.1. From Health Promotion in Nursing Practice (p. 50) by N. J. Pender, C. L. Murdaugh and M. A. Parsons, 2006 New Jersey: Pearson Prentice Hall. Copyright 2006 by Pearson Education, Inc. Reprinted with permission.
4. **Immediate Competing Demands and Preferences** refers to alternative behaviors that intrude into consciousness as possible courses of action immediately prior to the intended occurrence of a planned health promoting behavior. Competing demands are viewed as those alternative behaviors over which the individual has low control because of environmental contingencies such as work or family care responsibilities. Failure to respond to a demand may have untoward effects for the self or for significant others. Competing preferences are viewed as alternative behaviors with powerful reinforcing properties over which individuals exert a relatively high level of control. They can derail a health promotion behavior in favor of the competing behavior. The extent to which an individual is able to resist competing preferences depends on one’s ability to exercise self-regulation and control capabilities. Strong commitment to an action plan may sustain dedication to complete a behavior in light of competing demands and/or preferences.

5. **Behavioral Outcome** is the endpoint or action outcome in the HPM. The health promotion behavior is ultimately directed toward attaining positive health outcomes for the client.

The individual characteristics of African American women were examined in this study. The personal characteristics predictive of a given health promotion behavior are influenced by the nature of the target behavior outcome (Pender et al., 2006). Personal individual characteristics are classified as biological, psychological, and sociocultural (Pender et al., 2006). Based on the HPM the personal factors of the African American women included age, BMI, health status, race, education level, and income level.
Spirituality was assessed as a sociocultural variable of African American women. These variables were examined in relation to health promotion behaviors of African American women. The Health-Promoting Lifestyle Profile II (HPLP II) was used to measure health promotion behaviors of the African American women.

*The Health-Promoting Lifestyle Profile II*

The 52 items of the HPLP II were designed to measure six dimensions of health promotion behaviors of individuals. The spiritual growth items describe one’s sense of inner wholeness and peace, having a sense of meaning and purpose to life, and working towards goals to achieve that purpose. The interpersonal relations items assess one’s ability to develop intimate, close, meaningful relationships with effective communication patterns and not just casual acquaintances. The nutrition items involve the selection and consumption of foods essential for well-being and health consistent with the dietary guidelines for Americans. The physical activity items involve regularly planned activity within a planned program or part of everyday leisure activity for fitness and health goals. The health responsibility items assess one’s active sense of accountability for well-being, health, education about health, and proactive informed decisions when seeking professional healthcare. The stress management items assess the individual’s ability to identify and mobilize psychological and physical resources to control or reduce anxiety (Walker, Sechrist & Pender, 1987).

Health promotion behaviors, when integrated into a healthy lifestyle that permeates all aspects of living, should result in enhanced functional ability, improved health, and better quality of life at all stages of human development across the lifespan. The HPLP has been used in several studies to measure the health promotion behaviors of
African Americans. Socioeconomic status, religiosity, age, education, marital status, health status, and health index have been shown to influence health promotion behaviors in African American women, but the effect of all these variables together has not been significantly examined.

Socioeconomic status.

Brady and Nies (1999) compared the health promotion behaviors of 58 older African American women living above and below the poverty level. African American women living above the poverty level had higher overall scores on the HPLP and higher scores on the exercise subscale of the HPLP than those women living below the poverty level \((p = .01)\). The mean age of the sample was 58 years old, and all the women attended a Baptist church in the Midsouth.

Religiosity, age, education, and marital status.

Pettaway and Frank (1999) examined health promotion behaviors in a sample \((N = 198)\) that was 73% African American women identified as head of household. The mean age of the sample was 35 years old. Being head of household had no significant relationship to health promoting activities. Religiosity had a significant effect on the total HPLP scores and was positively associated with self-actualization \((p = .00)\) and interpersonal support \((p = .02)\) subscales. Education was positively correlated with all subscales \((p < .05)\) except with nutrition. Age positively influenced nutrition \((p < .05)\), stress management \((p < .05)\), and self-actualization \((p < .05)\) subscales, and widowed participants scored the highest on the nutritional \((p = .01)\) subscale.

Johnson (2005) examined gender differences among African American lifestyle behaviors. In a sample of 223 African Americans living in the southeastern United
States, independent \( t \)-test analyses revealed statistically significant differences for interpersonal relationship support \( t (221) = -1.97, p = .05 \); health responsibility \( t (214) = -2.46, p = .02 \); and nutrition \( t (219) = -3.27, p < .00 \) with women scoring higher than men.

African American women in this study reported higher nutrition scores than men. There was also a higher frequency of interpersonal relationships and nutritional and health responsibility activities found in African American women. Johnson (2005) found a greater frequency of health promotion behaviors among individuals with higher income and education, which is consistent with previous studies. Socio-demographic factors had a greater influence on health promotion lifestyles than gender (Johnson, 2005).

**Age, health status, and health index.**

Wilson (2005) examined the health practices of 137 sheltered homeless women, using a cross-sectional, descriptive, non-experimental design. The sample was 44% African American women. Wilson (2005) found significant correlations between age, health status, and health index. Older homeless women reported their health status as worse \( (r = .19, p < .05) \) and were more likely to have a greater number of physical illnesses \( (r = .29, p < .01) \). The participants who reported more physical diseases (health index) were more likely to practice more health behaviors (health responsibility) \( (r = .18, p < .05) \). The participants with a higher health status were more likely to practice health promotion behaviors related to total lifestyle profile \( (r = -.22, p < .01) \); nutrition \( (r = -.21, p < .01) \); spiritual growth \( (r = -.22, p < .01) \); and stress management \( (r = -.25, p < .01) \).

Homeless women who took personal responsibility for their health also practiced more health behaviors related to nutrition \( (r = .59, p < .01) \); spiritual growth \( (r = .62, p < .01) \); interpersonal relations \( (r = .69, p = .01) \); and stress management \( (r = .59, p < .01) \).
In the subscales, the strongest relationships were noted between spiritual growth and interpersonal relations ($r = .78, p < .01$); and spiritual growth and stress management ($r = .72, p < .01$). The women who participated in spiritual growth behaviors also participated in behaviors of interpersonal relations and stress management (Wilson, 2005).

**Nutrition, interpersonal support, and exercise.**

Felton, Parsons, Misener, and Oldaker (1997) compared racial differences in health definition, health value, and health promotion behavior of 62 pairs of African American and Caucasian college women matched for age, BMI, and socioeconomic status. Both groups of women had similar definitions of health and valued health to the same extent. There was no significant statistical difference in the scores of both groups of women for levels of self-actualization, health responsibility, exercise, and stress management on the HPLP scale. However, the African American women scored significantly lower for nutritional behaviors ($p < .01$) and interpersonal support ($p < .01$).

Jones and Nies (1996) examined the perceived benefits of and barriers to exercise of older African American women in senior citizen centers in midsouth United States. The sample consisted of 30 women over 60 years of age. The researchers examined the relationship among the participants’ current exercise level, their perceptions regarding the importance of exercise, and the benefits of and barriers to engaging in regular exercise. A significant relationship was found between reported exercise levels and perceived benefits of and barriers to exercise ($p < .00$).

Jefferson, Melkus, and Spollett (2000) assessed the health promotion behaviors of 30 young African American women at risk for type 2 diabetes mellitus. Their ages ranged from 25 to 44. In this sample of African American women, health promotion behaviors
such as diet modification and exercise were not routinely practiced. In the six
dimensions of the HPLP, the women had the highest scores in spiritual growth ($M = 2.96$, $SD = .59$); interpersonal relations ($M = 2.95$, $SD = .53$); and health responsibility ($M = 2.59$, $SD = .59$). Lower mean scores were obtained in stress management ($M = 2.33$, $SD = .55$); and nutrition ($M = 2.31$, $SD = .54$). The lowest mean score was in the physical activity subscale ($M = 1.92$, $SD = .42$). There was no significant difference in the HPLP mean scores of women with or without a college education.

In these studies, several of the variables were examined in homogeneous populations. African American women who were older and had lower health status or were at risk for illness were dominant in the selected samples. While the variables of age, marital status, socioeconomic status, religiosity, and education have been examined in these populations, no studies were found that examined the demographic variables with the additive effect of spirituality in a diverse sample.

In this study, the researcher seeks to add to the body of knowledge on health promotion in African American women by examining the influence of the demographic variables and health status, with the added effect of spirituality on the health promotion behaviors of African American women from ages 18 to 64. Results of this study will help illuminate important variables that will influence the design of culturally appropriate interventions to meet the health promotion needs of African American women.
Chapter III

Methods

This chapter is an outline of the specific methodology and procedures that were implemented for this study. The research objectives, questions, hypotheses, design, and sample are included. A description of the measurement tools, methods of data collection, and data analysis is presented. The protection of human subjects and ethical considerations are discussed. Finally, along with the study timetable and proposed budget, the methodological limitations and plan for the communication of the findings are presented.

Research Objective:

The objective of this study was to examine and describe the correlates of health promotion of a group of African American women living in South Florida.

Research Questions

1. Are the variables of income level, educational level, BMI, and marital status, predictors of health promotion behaviors in African American women?

2. What is the relationship among health status, age, income level, educational level, BMI, marital status, spirituality, and health promotion behaviors in African American women?

3. What are the relative unique contributions of health status, age, income level, educational level, BMI, marital status, and spirituality to health promotion behaviors among African American women?
Research Hypotheses

H1: African American women who have a higher education level and a higher income level will report better health promotion behaviors.

H2: African American women who are married will report better health promotion behaviors.

H3: African American women who report higher levels of spirituality will report better health promotion behaviors.

Description of the study

Previous researchers have studied the relationships between health status, marital status, income level, education, age, BMI and health promotion behaviors among African American populations (Ahijevych & Bernhard, 1994; Brady & Nies, 1999; Jefferson et al., 2000; Johnson, 2005; Johnson & Nies, 1996; Pettaway & Frank, 1999; Wilson, 2005). In this study, the researcher examined the relationship among health status, marital status, income status, education, age, and BMI with the added influence of spirituality on the health promotion behaviors of African American women.

The purpose of this study was to examine and describe the relationships among the variables that influence health promotion behaviors of community dwelling African American women, 18 to 64 years of age, who live in South Florida. African American women are leading in CVD mortality and morbidity rates but are not participating consistently if at all in the behaviors that can reduce their modifiable risk factors for CVD morbidity and mortality. This study is an examination of the health promotion behaviors of African American women, their modifiable risk factors, disease processes, and the factors that would influence their participation in health promotion activities.
Study Design

A cross-sectional, descriptive, correlational design was used to describe relationships that exist among the phenomena of interest as they naturally occur, rather than to test theory (Brink & Wood, 1998). The results of a correlational study can be used to develop hypotheses for future studies and provide support for varied theoretical perspectives (Brink & Wood, 1998).

In a correlational study, no attempt is made to manipulate or control the variables; therefore, correlational studies are not directed at revealing causal relationships. However, the correlational design is an effective and efficient method to analyze quantitative data, which can be used to develop causal models (Brink & Wood, 1998). The correlational design is based in reality, which provides a basis for pragmatic solutions to complex problems being examined (Brink & Wood, 1998). These suggested solutions may later be tested in an experimental study. This study was designed for the examination of several variables that are related to health promotion activities among African American women. The goal of this study was to expand knowledge and insight that will benefit African American women and assist them to participate in health promotion behaviors that will mitigate their risk factors for CVD, thereby reducing their CVD morbidity and mortality.
Sample

Sample Setting and Process

Participants for this study were recruited from sites where African American women congregate: religious institutions, community centers, health facilities, and educational forums. Convenience sampling, that is, sampling those participants who are conveniently available in the sample setting, was used for this study. Network and snowball sampling techniques were used because these sampling techniques allow participants in social networks that typically have common characteristics to participate in the study and invite others to participate also (Wilson, 1993).

Sampling Criteria

The participants in this study were women who identified themselves as African American. They were born in the United States of America and have parents who were born in the United States of America. African American women who were born in a foreign country due to the military service of their parents, but have parents born in the United States, were included in this study. The women were between 18 and 64 years of age and were able to read, to write and to understand English. Women who described themselves as African American, but were not born within the United States or have parents who were not born within the United States, were not included in this study.

Sample Size

In order to determine an adequate number of participants for this study, a power analysis was performed to obtain a power level of .80. Power is the capacity to detect differences in relationships that actually exist and are significant in the population of interest (Cohen, 1988). A power level of .80 allows for a 20% tolerance of a Type II
error. A Type II error occurs when the null hypothesis is false and the researcher fails to reject it; this means that statistical significance exists among the variables, but the researcher fails to discover the significance (Wilson, 1993).

To conduct a power analysis, an estimate of the effect size is necessary. Effect size reflects the strength of the relationship among research variables (Wilson, 1993) or the extent of the presence of the phenomenon in the population of interest (Cohen, 1988). In order to estimate an effect size, a review of the literature was performed. Ahijevych & Bernhard (1994) described health-promoting lifestyle behaviors among African American women and compared results with those of other published reports. To determine Cohen’s $d$, the mean of one group was compared with another and divided by the standard deviation ($SD$) to produce an effect size of $.78$. Cohen’s $d$ was converted to $f$-squared $.25$. Cohen (1988) discussed the relevance of the effect size being estimated as small, medium, or large and indicated the numerical values for small, medium, and large effects on the basis of specific statistical procedures (Cohen, 1988). According to Cohen, (1988) an $f$-squared $.25$ would reflect a small effect size.

The level of significance (alpha) for this study was set at $.05$, which means that there is a 5% chance of making a Type I error. A Type I error occurs if the null hypothesis is true, and it is rejected based on the results of the study (Wilson, 1993; Cohen, 1988). Using $G$ Power software (Faul & Erdfelder, 1992), the sample size was calculated with the following information: a power of $.80$, effect size of $0.25$, an alpha of $.05$ (the alpha was set to $.008$ to correct for the six multiple regressions that would be done for each subscale), and 20 variables, which included the subscales of the instruments and the interactions of marital status and educational years with the subscales
of spirituality. The power analysis revealed the need for a minimum of 137 participants. A sample of 137 participants \( (N=137) \) was recruited for this study.

**Measurement**

**Demographics**

A demographic tool (see Appendix A), designed for this study based on the literature review, was used to identify the participants’ reported age, birthplace, parents’ birthplace, occupation, employment status, height, and weight. The height and weight were used to calculate the BMI of each participant. In addition, the participants’ marital status was measured by asking participants to choose from the following categories: (a) married, (b) living with partner, (c) widowed, (d) divorced, (e) separated, and (f) never married. Participants were asked to record the number of children, if applicable.

Education was measured by the participants choosing the exact number of years of formal schooling, and household income was measured by asking participants to choose from 9 income categories. If applicable, the participants also indicated any diagnosed medical conditions, along with prescribed medications they were taking.

**Health Promotion**

Health promotion was measured for each participant with the Health-Promoting Lifestyle Profile II (HPLP II) (see Appendix B). The HPLP-II is a 52-item paper-pencil instrument that takes 20 to 25 minutes to complete. The HPLP-II has six subscales to measure major parts of a health promoting lifestyle: health responsibility, physical activity, nutrition, interpersonal relations, spiritual growth, and stress management. Each item is answered on a four-point Likert scale. Both the total scale scores and the scores
for each subscale are calculated to measure the overall health promoting lifestyle (Pender & Murdaugh, 2006).

Data from 712 adults ranging from 18 to 92 years of age were used to assess validity and reliability of the HPLP II. Construct validity was supported by factor analysis that confirmed a six–dimensional structure of health-promoting lifestyle, by convergence with the Personal Lifestyle Questionnaire ($r = .68$) and by a non-significant correlation with social desirability. Content validity was established by literature review and content experts. Criterion-related validity was indicated by significant correlations with concurrent measures of perceived health status and quality of life ($r = .27-.50$). The alpha coefficient of internal consistency for the total scale was .94; alpha coefficients for the subscales ranged from .79-.87. The three-week test-retest stability coefficient for the total scale was .89. The instrument was found to have a high internal consistency, with an alpha coefficient of .92 (Walker & Hill-Polerecky, 1996). A Pearson $r$ was .93 for the total scale when evaluated for stability by administering the instrument to a sample of 63 adults at an interval of 2 weeks (Walker et al., 1997).

**Health Status**

Health status was measured by the Medical Outcomes Study (MOS), a 36 item Short-Form Health Survey (SF-36) (see Appendix D). The SF-36 was constructed for use in health status surveys. The SF-36 was designed to be used in the evaluation of health policy, clinical practice, and research and to survey the general population (Ware & Sherbourne, 1992). The SF-36 includes one multi-item scale that is used to assess eight health aspects: (a) limitations in physical activity related to health problems; (b) limitations in social activities related to physical or emotional problems; (c) limitations in
usual role activities due to physical health problems; (d) bodily pain; (e) general mental health, including psychological distress and well-being; (f) limitations in role activities due to emotional problems; (g) vitality (energy and fatigue); and (h) general health perceptions (Ware & Sherbourne, 1992).

Using a postal survey for a sample of randomly selected patients ($N = 1980$) ages 16 to 74, Brazier and colleagues (1992) found considerable evidence for the reliability of the SF-36. The SF-36 health survey was retested on a subgroup two weeks after the initial mailing. Cronbach’s $\alpha$ of .85 and reliability coefficient greater than .75 was found for all dimensions except social functioning.

Corica and colleagues (2006) conducted an observational multi-center study ($N = 1735$) of patients seeking treatment for obesity to investigate the construct validity of the SF-36. The construct validity was assessed by main component factor analysis. Age, gender, and education adjusted general linear models were used to investigate the relationship between BMI and SF-36 domains or factors identified by the main component analysis.

Body mass index was statistically significantly associated with poor health related quality of life in all eight SF-36 domains, and the strongest association was observed with physical activity. Main component factor analysis generated a six-factor solution explaining 59% of the observed variance. BMI was strongly associated with factors based on the loading of items regarding the physical activity domain and factors based on role-physical and role-emotional items or general health and bodily pain items.
**Spirituality**

Spirituality was measured for each individual with the Spiritual Well-Being Scale (SWBS) (see Appendix C). The scale was developed as a general indicator of the subjective state of well-being, and it provides a measure of the perceived spiritual quality of life as understood in an existential and religious manner (Moberg & Brusek, 1978). The SWBS provides a measurement of the spiritual quality of life as well as subscale scores for religious (RWB) and existential well-being (EWB). The RWB provides a self-assessment of one’s relationship with God, and the EWB gives a self-assessment of one’s sense of purpose and life satisfaction.

The SWBS is a 20-item paper-pencil instrument that takes 10 to 15 minutes to complete. Each item is answered on a six-point Likert scale. Ten of the items are used to assess RWB, and ten to assess EWB with no religious connotation. Approximately 50% of the items are worded in the negative direction in order to control for any possible response bias. Each item is scored from 1 to 6 with a higher number representing greater well-being. Negatively worded items are reverse scored. The SWBS can be used to measure both individual and congregational spiritual well-being. It provides an overall measure of the perception of spiritual quality of life.

Bufford, Paloutzian & Ellison (1991) examined the reliability coefficients in several samples. Test-retest reliability coefficients for intervals between one and ten weeks were at least .82 for the SWB and at least .73 for the subscales in four samples. The *alpha* coefficient was at least .89 for the SWB and at least .78 for each of the subscales. The magnitude of these coefficients suggests that the SWBS and subscales have adequate reliability (Paloutzian & Ellison, 1982).
Factor analysis of the final version of the SWBS, using varimax rotation, was obtained from 206 students at three religiously oriented colleges and showed that the items clustered together generally as expected. The first three Eigenvalues (the amount of information captured by a factor) emerging from the analysis were 7.14, 2.72 and 0.86. Two factors were retained, and the correlation between the subscales ranged from .62 ($p < .01$) in the experiments with the initial 15 items version of the scale to .32 ($p < .01$) for the revised scale. The religious items loaded on the RWB factor and the existential items (EWB) appeared to load into two sub factors, one connoting life direction and one connoting life satisfaction (Paloutzian & Ellison, 1982). The SWBS has sufficient validity for use as a quality of life indicator (Paloutzian & Ellison, 1982).

Data Collection and Analysis

Procedure for Data Collection

Support letters from churches, health centers, and educational forums were obtained (see Appendices F to K). Flyers and business cards (see Appendices L to N), announcing the dates and times of the study, were distributed by leaders at the recruitment sites. For the African American women who congregate in the group settings, the leader announced the presence of the researcher and the study to examine the health promotion behaviors of African American women at the regular established meeting. The investigator explained the purpose of the study and invited participation. The women were informed that the study was voluntary. Women who indicated their willingness to participate in the study received the study packet with the consent form (see Appendix O) and the measurement tools to complete. Data collection was completed in a private setting. After completing the consent form, the participants...
completed the study packet. The demographic tool, SF-36 survey, SWBS, and the HPLP II measurement tools were given to the participants in randomized order to guard against reliability drift caused by response fatigue. A blank cover sheet and an identification code were used to protect the confidentiality of each participant’s responses. As each participant completed the packet, she raised her hand; the researcher collected the packet and reviewed it for completeness. For each completed packet, the participant received a $10.00 Publix gift card.

For African American women who did not congregate in the group settings, flyers were distributed by leaders at the healthcare facilities. Women interested in participating in the study contacted the researcher by electronic mail or by telephone requesting the study packet. The women were informed that the study was voluntary.

Women who indicated their willingness to participate in the study received the study packet with the consent form and the measurement tools to be completed and returned by mail. The demographic tool, SF-36 survey, SWBS, and the HPLP II measurement tools were sent to the participants in randomized order to guard against reliability drift caused by response fatigue. As each participant completed the packet, she mailed the completed packet to the researcher in a self-addressed, stamped envelope. Once the study packets were received, the researcher reviewed them for completeness and then mailed the $10.00 Publix gift card to the participants.

African American women from the Florida Education Fund McKnight Doctoral Fellow’s database were invited to participate in the study by a general electronic message that explained the purpose of the study. The flyer was used to invite their participation. Interested participants were invited to send emails to the researcher with the address
where they wished the study packet to be mailed. Packets were mailed to the designated addresses of the participants with the instructions to complete each packet. The demographic tool, SF-36 survey, SWBS, and the HPLP II measurement tools were in randomized order to guard against reliability drift caused by response fatigue. The researcher provided each participant with a self-addressed, stamped envelope to return the study packet once it was completed. The participants were asked to provide a designated address to receive the Publix gift card. Once the study packets were received, the researcher reviewed them for completeness and then mailed the $10.00 Publix gift card to the participants.

All documents received from the participants were reviewed and assigned an identification number. All identifying information was separated from the measurement tools and stored separately. Data collected were entered into the researcher’s personal computer and are only accessible with an administrative password. The data have no identifying information attached. Raw data and consent forms are being stored in a locked file drawer at the investigator’s home and will be destroyed five years after the completion date of this study.

**Missing Data**

The participants were encouraged to answer every item on the questionnaires to the best of their ability. Each packet was reviewed for completeness prior to the gift card being given. Any survey with greater than 30% missing data was discarded. Mean or mode replacement or substitution was applied to those surveys with less than 30% missing data. Mean or mode replacement or substitution involves calculating the mean or
mode of the variable without the missing values and replacing the missing values with the mean or mode of the variable that is available (Munro, 2001).

**Protection of Human Subjects**

Permission to conduct this study was obtained from the investigator’s PhD dissertation committee at the University of Miami School of Nursing and Health Studies, the Institutional Review Board (IRB) of the University of Miami and church administrators from Glendale Baptist, Sweet Home Missionary Baptist, Second Baptist, and Grace of God Baptist Churches. Permission was obtained from the President and CEO of Jesse Trice Community Health Centers and the McKnight Doctoral Fellowship Program Manager. Information regarding the purpose and the desire to conduct the study was disseminated to each setting through flyers, electronic media, and word of mouth. The researcher used electronic media and congregational and community meetings to inform the participants about the purpose of the study and invite the women to participate in the study.

Consenting African American women were asked to complete the four study instruments. The participants completed their survey packets in a private room, and a clipboard with a blank cover sheet was used to protect the confidentiality of the participant’s responses. This study had the potential to involve some risks or discomfort to participants. Risks of participation might have included some emotional discomfort. Participants were invited to report any challenges they might have encountered as they completed the measurement tools. Possible emotions that they might have experienced included but were not limited to anxiety or embarrassment should they have perceived themselves as not following good health practices or failing to meet established
guidelines. Participants were asked to follow up with their primary healthcare providers as needed. The participants were informed that the potential benefit is knowledge gleaned from their participation that will be used in the development of interventions for African Americans, specifically African American women. None of the participants expressed any emotional discomfort related to participation in the study.

Data Analysis

Data were entered into the computer and analyzed by the researcher, using “Statistical Package for the Social Sciences” 16.0 (SPSS 16.0, 2007), an analytical software package for Windows, developed by Nie, Hull & Bent in 1968 at Stanford University. Demographic data were described with frequencies, percents, means, and standard deviations and were presented in table format. Because one of the assumptions underlying parametric tests (that Pearson product moment correlation and multiple regression are a normal distribution of data), the demographic data set was examined for skewness and outliers. Means, standard deviations, ranges, and Cronbach’s alpha were calculated on data collected for the HPLP II, the SF-36 and the SWBS. The hypotheses guided the direction for further analysis of the data. Correlation matrices and stepwise multiple regression were used to describe and analyze the relationships among the variables. Health status scores were entered into the regression model first because health problems had been shown to have an increased effect on one’s desire to increase efforts toward health promotion activities (Ahijevych & Bernhard, 1994). The demographic variables, followed by the spirituality scores, were entered into the regression model to obtain the degree of variance for these variables.
Methodological Limitations

The limitations of this study included possible disturbance caused by extraneous environmental variables such as the temperature in the room, and other activities in the location where the women completed their questionnaires, which were not controlled. Non-probability sampling methods were used, which increased the possibility of sampling bias in the sample and will limit generalization of the results. The cross-sectional design of the study limits the generalizability, because the study reflected a one-time evaluation of the participants with no evaluation of the longitudinal consistency in the response. The participants self-reported, which allowed for the possibility of under or over estimation on selected variables. Self-reporting has the potential of introducing measurement bias into the study. The survey was limited to African American women in South Florida and therefore, cannot be generalized to other population groups. The mean education level of the sample was 16 years of formal education; therefore, the study cannot be generalized to population groups that have less formal education. The SWBS had the potential for a ceiling effect among religious groups of women; however, not all the women were from religious groups, allowing for some variability of the SWBS scores.

Communication of Study Findings

The study will be presented at health conferences that feature women’s health, cardiovascular health, and competency in cultural care. The results will be submitted for publication in a research or clinical journal for the prevention of cardiovascular disease and women’s health promotion, such as Nursing Research, Journal of Cardiovascular Nursing, Women’s Health Journal, or Obesity Management.
**Budget and Timetable**

The budget (see Appendix P) for this study was $4,122.88; this funding included subject compensation, material to conduct the testing, and the software package for data analysis. Grants from *Sigma Theta Tau, Beta Chapter*, and the Florida Education Fund supported this study. The estimated timetable for the study (see Appendix P) was 12 to 16 months.

*Summary*

In this chapter, the research objective, questions, hypotheses, and design were presented. The sample \(N=137\) was described with details of the sample setting, process, criteria, and an explanation of sample size. The measurement tools were described with statements of reliability and validity.

Procedures for data collection, including the handling of missing data, were presented. Maintaining confidentiality and the protection of human subjects was illuminated. Data analysis with an outline of methodological limitations was presented. Finally, plans for the communication of the study findings, the study timetable, and budget were presented.
Chapter IV

Results

Overview

The purpose of this study was to examine and to describe the relationships among the variables that influence health promotion behaviors of community dwelling African American women, 18 to 64 years of age, who live in South Florida. For this study, stepwise regression was used to study the relationship among health status, marital status, income level, education level, age, and BMI with the added influence of spirituality on the health promotion behaviors of African American women. This study is an examination of the health promotion behaviors of African American women, their modifiable risk factors, disease processes, and the factors that would influence their participation in health promotion activities. A cross-sectional, descriptive, correlational design was used to answer and test the following questions and hypotheses.

Research Questions

1. Are the variables of income level, educational level, BMI, and marital status, predictors of health promotion behaviors in African American women?

2. What is the relationship among health status, age, income level, educational level, BMI, marital status, spirituality, and health promotion behaviors in African American women?

3. What are the relative unique contributions of health status, age, income level, educational level, BMI, marital status, and spirituality to health promotion behaviors among African American women?
Research Hypotheses

H1: African American women who have a higher education level and a higher income level will report better health promotion behaviors.

H2: African American women who are married will report better health promotion behaviors.

H3: African American women who report higher levels of spirituality will report better health promotion behaviors.

Convenience, network, and snowball sampling techniques were used to recruit participants from religious institutions, community centers, health facilities, and educational forums. Data were collected over a three-month period using a demographic questionnaire and three standardized instruments. Data were analyzed using the Statistical Package for Social Sciences 16.0 (SPSS) for Windows (2007). Descriptive statistics, as well as parametric and non-parametric statistics, were utilized for hypotheses testing.

Description of the Sample

Convenience sampling resulted in 180 packets containing the study questionnaires being distributed with 149 packets returned. Eighty-five study packets were mailed to participants recruited through the Florida Education Fund and by flyers in the community; 54 were returned in the mail, reflecting a 63.5% mail response. Only 46 of the study packets returned via mail met criteria to be included in the data analysis resulting in a mail response rate of 33.6%. A total of 95 participants returned study packets in person in forums designed for data collection. Only 91 of the study packets collected in person were included in the data analysis, resulting in 66.4% of the
participants completing the survey in forums designed for the collection of the study data. Twelve study packets were excluded from the data analysis because the respondents did not meet the study inclusion criteria which had been established. Five women were of Jamaican parentage and/or born in Jamaica, three women were not within the age specifications, and four women had incomplete data with pages missing from the packet.

Demographics

All participants in this study self reported being African American women with an age range from 18 to 64 years. Each participant was born in the United States of America, and her parents were also born in the United States.

Marital status.

Fifty-four (40%) of the participants reported being married. Seven (5%) reported living with a partner; three (2%) reported being widowed; 32 (23%) reported being divorced; five (4%) reported being separated; and 36 (26%) reported being never married (see Table 6). One participant did not answer the marital status question, and mode substitution was used.

Age.

Twenty-one (15%) of the participants reported their ages as 18 to 29; 23 (17%) reported their ages as 30 to 39. Thirty-seven (27%) of the participants reported their ages as 40 to 49; 47 (34%) reported their ages as 50 to 59. Nine (7%) of the participants reported their age as 60 to 64 (see Table 7).
**Number of hours worked.**

Twenty-nine (21%) of the participants reported they did not work at all. Nineteen (14%) of the participants reported they worked less than 40 hours per week. Sixty-five (47%) of the participants reported working 40 hours per week, and 24 (18%) of the participants reported working greater than 40 hours per week (see Table 8).

**Number of children.**

Forty-one (30%) of the participants reported they had no children. Nineteen (14%) of the participants reported they had one child. Thirty-five (26%) reported they had two children; 26 (19%) of the participants reported they had three children; and 16 (12%) of the participants reported they had more than three children (see Table 9).

**Years of education.**

Four (3%) of the participants reported having fewer than 12 years of formal education. Nineteen (14%) of the participants reported 12 years of formal education. Sixty-one (45%) of the participants reported having between 13 and 16 years of formal education. Twenty-one (15%) of the participants reported having 17 and 18 years of formal education. Thirty-two (23%) of the participants reported having between 19 to 23 years of formal education (see Table 10).

**Income.**

Twenty-five (18.5%) of the participants reported an annual household income less than $20,000. Fifty-two (38%) of the participants reported an annual household income of $20,000 to $49,999. Twenty-seven (20%) of the participants reported an annual household income of $50,000 to $74,999. Sixteen (12%) of the participants reported an
annual household income of $75,000 to $99,999. Seventeen (12%) of the participants reported an annual household income greater than $100,000 (see Table 11).

**Body mass index.**

None of the participants was underweight. Twenty-six (19%) of the participants had a calculated BMI of 18.5 to 24.9 reflecting a normal BMI. Thirty-seven (27%) were considered overweight with a calculated BMI of 25.0 to 29.9. Sixty (44%) of the participants were obese with a calculated BMI of 30.0 to 39.9. Fourteen (10%) of the participants were considered extremely obese with a calculated BMI greater than 40.0 (see Table 12). Four participants did not report their weight, and mean substitution was used.

**Medical conditions.**

Fifty-one (37%) of the participants reported that they had no medical conditions. The remaining 86 (63%) of the participants reported either single or multiple medical conditions. Hypertension was reported 49 times, diabetes mellitus was reported 15 times, hyperlipidemia was reported 10 times, asthma was reported eight times, HIV/AIDS was reported six times, arthritis was reported five times, and thyroid disease was reported four times. Breast disorders, including breast cancer, and cardiomyopathy were reported three times each. Sleep apnea, anemia, allergies, and depression were each reported twice. The following conditions were reported once by the participants: back pain, cervical dysplasia, chronic obstructive pulmonary disease (COPD), dermatitis, diverticulitis, edema, endometriosis, hepatitis C, hypoglycemia, knee injury, systemic lupus erythematosus, osteoporosis, polycystic ovarian syndrome, polymyositis, retinal
degeneration, seizure disorder, sickle cell trait, sleep deprivation, and thalassemia (see Table 13).

The demographic data were examined for skewness (see Table 14). Hours worked per week were negatively skewed, which implies that the mean was not in the center of the distribution and was less than the median (Munro, 2001). Descriptive statistics for the demographic characteristics of the African American women in this study are found in Table 1.

Table 1
Descriptive Statistics of the Demographic Characteristics of African American Women (N=137)

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<td>Hours worked per week</td>
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</tr>
<tr>
<td>BMI</td>
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<td>6.75</td>
<td></td>
</tr>
</tbody>
</table>

Study Variables

The following section is a summary of the results measuring the study variables: the HPLP II (health promotion), the SF-36 (health status), and the SWBS (spirituality). SPSS 16.0 was used for the analysis.

Health promotion behaviors.

The HPLP II was used to measure health promotion behaviors. These behaviors are multidimensional patterns of self-initiated actions and perceptions that serve to preserve or improve the level of wellness, self-actualization, and fulfillment of the
individual. The 52-item summated behavior rating scale employs a 5-point response format to measure the frequency of self-reported health promotion behaviors in six domains: health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management. A score for overall health-promoting lifestyle is obtained by calculating the mean of the individuals’ responses to all 52 items. The six subscale scores are obtained similarly by calculating the mean of the responses to subscale items (Walker, 1995).

*Health status.*

Health status was measured using the SF-36 which provided scores for the Physical and Mental Component Summary (PCS and MCS) scales. The PCS scores are the combined scores for physical functioning, role physical, bodily pain, and general health. The MCS scores are the combined scores for vitality, social functioning, role emotional, and mental health. Norm-based scoring was used to score the PCS and the MCS scales. In norm-based scoring, each scale is scored to have the same average (50) and the same standard deviation (10 points). Therefore, a scale score of 50 is average health, below 50 would be below average health, and above 50 would reflect above average health (Ware & Kosinski, 2006).

*Spirituality.*

Spirituality was measured using the SWBS. The total scores for the positively and negatively worded items gave the total score for spiritual well-being (SWB). A score in the range of 100-120 means high spiritual well-being, a score in the range of 41-99 means moderate spiritual well-being, and a score in the range of 20-40 means low spiritual well-being. The religious well-being (RWB) score is a measure of one’s view of
the relationship with God and reflects a sense of satisfaction and positive connection with
God. The sum of the odd numbered items gave the score for RWB. A score range of 10-20 means an unsatisfactory relationship with God; 21-49 means moderate relationship
with God, a score in the range of 50-60 means a very positive view of one’s relationship
with God. The existential well-being (EWB) score is a measure of life satisfaction and
life purpose. The sum of the even numbered items gave the score for EWB. A score
range of 10-20 means a low satisfaction with life and ambiguity about one’s purpose in
life; 21-49 means moderate levels of life satisfaction and purpose; and a score in the
range of 50-60 means a high level of satisfaction with one’s life and a clear sense of
purpose (Paloutzian & Ellison, 1982). Descriptive statistics for the study variables of the
African American women in this study are found in Table 2.
Table 2
Descriptive Statistics for the Study Variables of African American Women (N=137)

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPLP II (total)</td>
<td>2.76</td>
<td>.437</td>
</tr>
<tr>
<td>HPLP II (subscales)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health responsibility</td>
<td>2.71</td>
<td>.59</td>
</tr>
<tr>
<td>Physical activity</td>
<td>2.19</td>
<td>.76</td>
</tr>
<tr>
<td>Nutrition</td>
<td>2.54</td>
<td>.56</td>
</tr>
<tr>
<td>Spiritual growth</td>
<td>3.27</td>
<td>.59</td>
</tr>
<tr>
<td>Interpersonal relations</td>
<td>3.17</td>
<td>.55</td>
</tr>
<tr>
<td>Stress management</td>
<td>2.60</td>
<td>.55</td>
</tr>
<tr>
<td>SF-36 PCS- NBS</td>
<td>50.75</td>
<td>9.49</td>
</tr>
<tr>
<td>SF-36 MCS-NBS</td>
<td>51.91</td>
<td>9.01</td>
</tr>
<tr>
<td>SWBSRWB</td>
<td>56.27</td>
<td>6.61</td>
</tr>
<tr>
<td>SWBSEWB</td>
<td>52.80</td>
<td>7.63</td>
</tr>
</tbody>
</table>

_HPLP II – Health Promoting Lifestyle Profile II, SF-36 PCS-NBS-Short Form-36 Physical Component Summary-norm-based scores, SF-36MCS-NBS- Short Form-36 Mental Component Summary-norm-based scores, SWBSRWB= Spiritual Well-Being Scale religious well-being, SWBSEWB- Spiritual Well-Being Scale existential well-being._
Correlations

The correlation between HPLP II and being widowed was negative and statistically significant, \( r (135) = -.18, p = .01 \). African American women participants who were not widowed had better health promotion behaviors.

Table 3
Correlations between the Total HPLP II and Demographic Variables of African American Women

<table>
<thead>
<tr>
<th></th>
<th>HPLP II</th>
<th>Age</th>
<th>Hours worked per week</th>
<th>Number of children</th>
<th>Formal Education (years)</th>
<th>Income</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPLP II</td>
<td>-.08</td>
<td>.16*</td>
<td>-.29**</td>
<td>.34**</td>
<td>.10</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>.04</td>
<td>.35**</td>
<td>-.05</td>
<td>.16*</td>
<td>.16*</td>
<td></td>
</tr>
<tr>
<td>Hours worked per week</td>
<td></td>
<td></td>
<td>-.16*</td>
<td>.34**</td>
<td>.47**</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
<td></td>
<td></td>
<td></td>
<td>-.31**</td>
<td>-.19*</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td>Formal education (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.46**</td>
<td>-.23**</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.14*</td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*p<.05; **p<.01. HPLP II – Health Promoting Lifestyle Profile II, BMI – Body mass index

The correlations between the total HPLP II and the demographic variables are found in Table 3. The correlation between HPLP II and number of children was negative and statistically significant \( r (135) = -.29, p < .01 \), and the correlation between HPLP II and education was positive and statistically significant, \( r (135) = .34, p < .01 \). African American women participants having fewer children had better health promotion behaviors.
behaviors. African American women participants having more years of formal education had better health promotion behaviors.

Table 4
Correlations between the Total HPLP II and Health Status and Spirituality Variables of African American Women

<table>
<thead>
<tr>
<th></th>
<th>HPLP II</th>
<th>SF-36 PCS</th>
<th>SF-36 MCS</th>
<th>SWBS RWB</th>
<th>SWBS EWB</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPLP II</td>
<td>—</td>
<td>.04</td>
<td>-.02</td>
<td>.07</td>
<td>.20*</td>
</tr>
<tr>
<td>SF-36 PCS</td>
<td>—</td>
<td>—</td>
<td>-.04</td>
<td>-.04</td>
<td>-.05</td>
</tr>
<tr>
<td>SF-36 MCS</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.03</td>
<td>.04</td>
</tr>
<tr>
<td>SWBS RWB</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.44**</td>
</tr>
<tr>
<td>SWBS EWB</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

* *p<.05; **p<.01. HPLP II—Health Promoting Lifestyle Profile II, SF-36 PCS-NBS-Short Form-36 Physical Component Summary-norm-based scores, SF-36 MCS-NBS-Short Form-36 Mental Component Summary-norm-based scores, SWBS RWB—Spiritual Well-Being Scale religious well-being, SWBS EWB—Spiritual Well-Being Scale existential well-being.

The correlation between the HPLP II and health status and spirituality is found in Table 4. The correlation between the HPLP II and the SWBS (EWB) was positive and statistically significant, \( r (135) = .20, p = .01 \). African American women participants who had better existential spiritual well-being also had better health promotion behaviors.

The correlations between each of the subscales of the Lifestyle Profile and the independent variables were calculated. The correlation between being widowed and health responsibility was negative and statistically significant, \( r (135) = -.23, p < .01 \). The correlation between education and health responsibility was positive and statistically significant, \( r (135) = .19, p = .01 \). African American women participants who were not
widowed and who had more years of formal education had better health responsibility behaviors.

The correlation between physical activity and education was positive and statistically significant, $r (135) = .17, p = .02$. African American women participants with more years of formal education had better physical activity behaviors. The correlation between nutrition and education was positive and statistically significant, $r (135) = .31, p = < .01$. The correlation between nutrition and number of children was negative and statistically significant, $r (135) = -.22, p = < .01$. African American women participants with more formal education and fewer children had better nutrition behaviors.

The correlation between spiritual growth and education was positive and statistically significant, $r (135) = .25, p = < .01$. The correlation between spiritual growth and the number of children was negative and statistically significant, $r (135) = -.19, p = .01$. The correlation between spiritual growth and spiritual well-being was positive and statistically significant, $r (135) = .31, p = < .01$. The correlation between spiritual growth and mental health was positive and statistically significant, $r (135) = .14, p = .05$. African American women participants with fewer children, more years of formal education, better mental health, and better spiritual well-being had better spiritual growth behaviors.

The correlation between interpersonal relationships and the hours worked per week was positive and statistically significant, $r (135) = .22, p = .01$. The correlation between interpersonal relationships and education was positive and statistically significant $r (135) = .34, p = < .01$. The correlation between interpersonal relationships
and number of children was negative and statistically significant, $r (135) = -.28, p = < .01$. The correlation between interpersonal relationships and income was positive and statistically significant, $r (135) = .21, p = .01$. The correlation between interpersonal relationship and existential spiritual well-being was positive and statistically significant, $r (135) = .26, p = < .01$. African American women participants with fewer children, more years of formal education, more income, who worked more hours per week, and who had better existential well-being also had better interpersonal relationship behaviors.

The correlation between stress management and education was positive and statistically significant, $r (135) = .18, p = .02$. The correlation between stress management and number of children was negative and statistically significant, $r (135) = -.21, p = .01$. African American women participants with fewer children and more years of formal education had better stress management behaviors.

Other statistically significant findings included the following: education was positively correlated with hours worked per week ($r = .34, p = < .01$) and income ($r = .46, p = < .01$) and negatively correlated with number of children ($r = -.31, p = < .01$) and BMI ($r = -.23, p = < .01$). African American women participants with more years of education had better incomes and worked more hours per week. They had fewer children and had a lower BMI. Similarly, RWB was positively correlated to EWB ($r = .44, p = < .01$). African American women participants with higher RWB had higher EWB.

**Hypothesis Testing**

A step-wise multiple regression analysis (see Table 5) was conducted to answer the questions regarding the overall health promotion behaviors of African American women participants. The variables were entered in five steps. Health status was entered
in the first step and accounted for 0.2% of the variance ($R^2 = .002, p = .86$). Marital status was entered in the second step and accounted for an additional 6% of the variance ($R^2$ change = .061, $p = .15$). Five demographic variables (hours worked per week, years of formal education, age, number of children, and income) were entered in the third step and accounted for an additional 15.6% of the variance ($R^2$ change = .154, $p < .01$). BMI was added in the fourth step and accounted for an additional <1% of the variance ($R^2$ change = .001, $p = .73$). Spirituality was added in the fifth step and accounted for an additional 3.8% of the variance ($R^2$ change = .038, $p = .05$). The five sets of variables together accounted for 25.5% of the variance in overall health promotion behaviors of African American women in this study $F(15, 121) = 2.768, p < .01$.

The first step of the analysis was conducted to evaluate whether health status predicted health promotion behaviors of African American women. Health Status accounted for 0.2% of the health promotion behavior variance $R^2 = .002, F(2, 134) = .146, p = .86$. Health status did not have a statistically significant effect on the health promotion behaviors of African American women participants. This result does not correspond with the findings of previous studies (Simoni et al., 2002; Wilson, 2005).

The second step of the analysis was conducted to evaluate the effect of marital status on the health promotion behaviors of African American women. Marital status did not have a statistically significant effect on health promotion behaviors of African American women participants $R^2$ change = .061, $p = .15$. This analysis did not support hypothesis 2 that African American women who were married would report better health promotion behaviors.

Research questions 1 and 2 were addressed in the third step.
1. Are the variables of income level, educational level, BMI, and marital status predictors of health promotion behaviors in African American women?

2. What is the relationship among health status, age, income level, educational level, BMI, marital status, spirituality, and health promotion behaviors in African American women?

The third step of the analysis was conducted to evaluate whether the hours worked per week, years of formal education, age, number of children, and income predicted health promotion behaviors of African American women. These five variables accounted for a significant proportion of the health promotion behavior variance after controlling for the effects of health status and marital status $R^2$ change $= .15$, $F (5, 124) = 4.87, p < .01$. Of the five demographic variables entered in step 3 only number of children (semi partial $r = -.19, p = .03$) and education (semi partial $r = .29, p < .01$) made significant, unique contributions. The fewer number of children and the more years of formal education, the better the reported health promotion behaviors.

The fourth step of the analysis was conducted to evaluate whether BMI predicted health promotion behaviors of African American women over and above previous health status, marital status, and demographic data. BMI did not account for a statistically significant proportion of the health promotion behavior variance after controlling for the effects of health status, marital status, and the other demographic data ($R^2$ change $= .001, p = .73$). Health promotion behaviors of African American women participants were not affected by BMI.
The fifth step of the analysis was conducted to evaluate whether spirituality (SWB) predicted health promotion behaviors of African American women over and above previous health status, marital status, demographic data, and BMI. Spirituality accounted for a significant proportion of the health promotion behavior variance after controlling for the effects of health status, marital status, other demographic data, and BMI. $R^2$ change = .038, $p = .05$. Health promotion behaviors of African American women participants were positively affected by spirituality. Only the existential well-being scale made a statistically significant, unique contribution (semi partial $r = -.03, p = .02$). The unique contribution of religious well-being was trivial (semi partial $r = .07, p = .78$).

The third hypothesis (African American women who report higher spirituality will report better health promotion behaviors) was partially supported in the fifth step of the regression analysis. The five steps accounted for 25.5% of the variance in overall health promotion behaviors of African American women in this study. In the final model, formal education, the number of children, and existential spirituality accounted for statistically significant, unique portions of the variance.
Table 5
Summary of Stepwise Regression Analysis for Variables Predicting African American Women’s Health Promotion Behaviors (N = 137)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF-36 Physical Component Summary NBS</td>
<td>.002</td>
<td>.004</td>
<td>.040</td>
</tr>
<tr>
<td>SF-36 Mental Component Summary NBS</td>
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<td>.004</td>
<td>-.022</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF-36 Physical Component Summary NBS</td>
<td>.004</td>
<td>.004</td>
<td>.077</td>
</tr>
<tr>
<td>SF-36 Mental Component Summary NBS</td>
<td>-.002</td>
<td>.004</td>
<td>-.032</td>
</tr>
<tr>
<td>Marital status</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF-36 Physical Component Summary NBS</td>
<td>.001</td>
<td>.004</td>
<td>.021</td>
</tr>
<tr>
<td>SF-36 Mental Component Summary NBS</td>
<td>.000</td>
<td>.004</td>
<td>.009</td>
</tr>
<tr>
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<td>—</td>
</tr>
<tr>
<td>Age</td>
<td>-2.433E-5</td>
<td>.003</td>
<td>.000</td>
</tr>
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<td>SF-36 Mental Component Summary NBS</td>
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<td>.004</td>
<td>.008</td>
</tr>
<tr>
<td>Marital status</td>
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</tr>
</tbody>
</table>
### Table 1: Regression Coefficients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Age</th>
<th>Hours worked per week</th>
<th>Number of children</th>
<th>Education</th>
<th>Income</th>
<th>BMI</th>
<th>SWBSEWB</th>
<th>SF-36 Physical Component Summary NBS</th>
<th>SF-36 Mental Component Summary NBS</th>
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</thead>
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<td>.000</td>
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<td>.046</td>
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</tr>
</tbody>
</table>

**Step 5**

- SF-36 Physical Component Summary NBS: .002, .004, .046
- SF-36 Mental Component Summary NBS: -1.080E-5, .004, .000
- Marital status: __, __, __

<table>
<thead>
<tr>
<th>Variable</th>
<th>Age</th>
<th>Hours worked per week</th>
<th>Number of children</th>
<th>Education</th>
<th>Income</th>
<th>BMI</th>
<th>SWBSEWB</th>
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</thead>
<tbody>
<tr>
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<td>.002</td>
<td>.027</td>
<td>.013</td>
<td>.022</td>
<td>.005</td>
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<tr>
<td></td>
<td>-.056</td>
<td>.111</td>
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<td>.320</td>
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<td>-.029</td>
<td>-.026</td>
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<td>-.040</td>
<td>.022</td>
<td>-.201</td>
<td>.219</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Note

$R^2 = .002$ (p = .86) for Step 1; $\Delta R^2 = .06$ (p = .15) for Step 2; $\Delta R^2 = .15$ (p < .01); $\Delta R^2 = .001$ (p = .73) for Step 4; $\Delta R^2 = .03$ (p = .05) for Step 5

In a post hoc analysis of the variance, number of children, education, and existential well-being were entered into a regression model to assess the effect of these statistically significant, unique variables. All three variables remained statistically significant predictors of total health promotion behaviors of African American women.
In the first step of the analysis, number of children accounted for 8.2% of the total health promotion behavior variance $R^2 = .082$, $F(1, 135) = 12.12, p < .01$. In the second step of the analysis, education accounted for an additional 6.9% of the total health promotion behavior variance $R^2$ change = .069, $p < .01$. In the third step, existential well-being accounted for an additional 2.3% of the total health promotion behavior variance $R^2$ change = .023, $p = < .01$. The three sets of variables together accounted for 17.4% of the variance in the overall health promotion behaviors of African American women participants $F(3, 133) = 9.36, p < .01$.

**Summary**

In the stepwise regression calculated to answer and test the research questions and hypotheses, having more years of formal education, having fewer children, and having a sense of purpose and meaning to life (existential well-being) were associated with better health promotion behaviors in African American women in this study. Health status, marital status, and BMI were not significantly related to health promotion behaviors of African American women in this study.
Chapter V

Discussion and Conclusion

Overview

This chapter is a summary of the study, and the findings are presented in relationship to the study variables of health promotion behaviors, health status, spirituality, and the demographic characteristics of the participants. This chapter is also a discussion of the significant predictors of health promotion behaviors in this sample of African American women. Limitations of the study and implications for nursing education, research, theory, practice, and social policy are also included.

Summary of the Study

Although African American women are disproportionately affected by CVD and lead in CVD morbidity and mortality rates when compared to African American men and white non-Hispanic women in the United States of America (AHA, 2007; National Institutes of Health [NIH]/National Heart, Lung, and Blood Institute [NHLBI], 2002; Whitlock & Williams, 2003), they continue to experience higher rates of multiple risk factors for cardiovascular disease. African American women are more likely to have hypertension and diabetes mellitus, to be physically inactive, and to have a higher BMI when compared to Caucasian women (AHA, 2007; Christian et al., 2007).

The exploration of the variables that influence healthy behaviors and lifestyle choices of African American women could lead to health promotion and prevention of disease, disability, and premature death of African American women. Once these variables are identified, significant interventions that are culturally appropriate can be
developed to assist African American women to decrease the high rate of morbidity and mortality from CVD.

A review of literature (Christian et al., 2007; Dancy & Ralston, 2005; Mosca et al., 2000) supports the need for more education among African American women to increase awareness that cardiovascular disease is the leading cause of death and that behavioral changes can mitigate the risk factors. Although African Americans perceive themselves at a greater risk for hypertension, a major risk factor for CVD, they do not consistently practice appropriate health behaviors to prevent and control the disease progression (Johnson & Nies, 2005; Webb & Gonzalez, 2006).

Several personal, cultural, and environmental barriers to health promotion exist in the African American population. As healthcare providers consider culturally appropriate strategies to promote health in the African American population, a multiprofessional approach that addresses these barriers and incorporates the healthcare system, institutions of influence, and key African American role models in the community is required. The church and African American spirituality can play a major role in mitigating the risk factors for CVD among African American women, thereby reducing the morbidity and mortality that they disproportionately experience.

Pender and colleagues’ (2006) Health Promotion Model (HPM) was the theoretical framework used to examine and describe the health promotion behaviors of African American women in this study. The HPM was used to assess the multidimensional nature of individuals interacting with their interpersonal and physical environments in their pursuit of health. The HPM includes items related to health status and spirituality also. In harmony with the vision of Healthy People 2010, Pender and
colleagues emphasized the importance of targeting vulnerable populations who experience health disparities. Health promotion for these populations should be culturally appropriate and incorporated into the context of daily living (Pender et al., 2006). From the HPM theoretical framework, three research questions and hypotheses were generated and tested in this study:

**Research Questions**

1. Are the variables of income level, educational level, BMI, and marital status, predictors of health promotion behaviors in African American women?

2. What is the relationship among health status, age, income level, educational level, BMI, marital status, spirituality, and health promotion behaviors in African American women?

3. What are the relative unique contributions of health status, age, income level, educational level, BMI, marital status, and spirituality to health promotion behaviors among African American women?

**Research Hypotheses**

H1: African American women who have a higher education level and a higher income level will report better health promotion behaviors.

H2: African American women who are married will report better health promotion behaviors.

H3: African American women who report higher levels of spirituality will report better health promotion behaviors.

A cross-sectional, descriptive, correlational design was used with a convenience sample of African American women in order to study the relationships among health
status, marital status, income level, education, age, and BMI, with the added influence of spirituality on the health promotion behaviors of African American women. Data were collected via self-reported questionnaires from African American women (N=137) at various sites in south Florida over a three-month period in 2008. Data were analyzed using SPSS 16.0. The hypotheses were subjected to testing using the Pearson product-moment correlation coefficients (r), and step-wise regression.

A sample of women, who identified themselves as African American, were born in the United States of America from parents who were born in the United States of America, were between 18 to 64 years of age, and were able to read, to write, and to understand English were recruited to participate in this study. Women who were born in a foreign country due to the military service of their parents, but had parents born in the United States were also included in this study.

Discussion

The individual personal factors of African American women that were the focus of this study included age, BMI, health status, race, education level, and income level. Spirituality was one of the sociocultural variables that affected African American women participant’s health promotion behaviors. The HPM was a very good fit for studying the variables of the African American women in this study. According to Pender and colleagues (2002), each person’s unique personal characteristics and experiences affect future actions. In this study, formal education level was a statistically significant contributor to health promotion behaviors and spirituality had an added effect.

Notably, in the six subscales of the HPLP II, participants had the highest scores for spiritual growth (M = 3.27, SD = .59); interpersonal relationships (M = 3.17, SD =
.55); and health responsibility ($M = 2.71, SD = .59$). Lower mean scores were obtained for stress management ($M = 2.60, SD = .55$); and nutrition ($M = 2.54, SD = .56$). Physical activity had the lowest mean score of the HPLP II subscales ($M = 2.19, SD = .76$). The finding that spirituality was a positive contributor to health promotion behaviors of African American women in this study was similar to results of previous studies (Abrums, 2000; Chester et al., 2006; Pettaway & Frank, 1999; Simoni et al., 2002). Also, the finding of lower physical activity scores among African American women in this study was similar to the results of previous studies (Jefferson et al., 2000; Sharma et al., 2005; Young et al., 2005).

Unlike previous studies (Johnson, 2005; Nothwehr & Stump, 2002; Pettaway & Frank, 1999; Wilson 2005; Young et al., 2005), age, health status, BMI, and marital status were not statistically significant variables in this sample of African American women. Although age, health status, and BMI were not statistically significant, 61% of the sample was between 40 to 59 years of age and hypertension was the number one health condition reported by the African American women participants. Fifty-four percent of the African American women in this sample were obese or extremely obese.

According to the National Center of Health Statistics (2005), men and women age 45 to 54 have a similar percentage of hypertension, and women have a higher risk for hypertension than men after age 54. Hypertension is a major risk factor for CVD (AHA, 2006; Saunders & Johnson, 2006). The percentage (54%) of women who were obese in this sample of African American women is comparable with the national percentage (51%) of obesity among African American women (National Center for Health Statistics,
More than 50% of this sample of African American women was at high risk for CVD.

Education, number of children, and having a sense of purpose and meaning in life (existential well-being) were associated with better health promotion behaviors in African American women in this study. Income, hours worked per week, BMI, and number of children were related to educational level. The more years of formal education that African American women participants had, the better their health promotion behaviors, income, hours of work, and their BMI. They also had fewer children.

Notably, the mean education level for African American women in this study was 16 years, suggestive of a baccalaureate degree. Sixty-one (45%) of the participants reported having between 13 to 16 years of formal education. This educational level is higher than the average educational level of female Floridians, which is 16% at the baccalaureate level (U.S. Census Bureau, 2007). This point is remarkable because even among educated African American women, education positively impacts health promotion behaviors. The higher level of education in this sample would limit the generalizability of the findings of the study to similar African American female populations.

Based on the findings of this study, culturally relevant health promotion interventions can be designed and directed at improving the formal education of African American women, inclusive of health promotion educational activities. Culturally relevant interventions can be designed to foster a sense of purpose and life satisfaction (existential well-being) among African American women.
Religious well-being was not statistically significant in this study despite anecdotal and research evidence of the effect of spirituality (religious well-being) on health and health promotion behaviors (Abrums, 2000; Chester et al., 2006; Koenig et al., 1999; Koenig et al., 1998; Simoni et al., 2002). The possibility that there are inadequate instruments to measure spirituality among the African American population may have limited the findings regarding religious well-being in this study. Religious well-being was positively correlated with existential well-being. Having a positive relationship with God and practicing religious activities are avenues for African American women to develop a strong sense of purpose and life satisfaction (existential well-being).

In providing culturally relevant health promotion interventions, forums such as community and church outreach programs that are designed to promote social support and spirituality can be integral in motivating and encouraging health promotion behaviors among African American women. Healthcare providers are able to teach African American women to be role models for future generations, passing on the ancestral batons of healthy behaviors for younger African American women. Women getting together to discuss their health concerns and sharing therapeutic choices can be beneficial to developing health promotion behaviors (Webb et al., 2006).

Healthcare providers have a responsibility to recognize the barriers to health promotion behaviors among African American women and use a multiprofessional approach to reach African American women in communities incorporating significant personnel who can enhance the delivery of the health promotion message. Such individuals include pastors, teachers, healthcare providers of color, and celebrities, as well as other well respected role models in the African American community.
Implications for Nursing

Implications for Education

Cultural diversity is an important aspect of nursing curricula (Andrews & Boyle, 2002; Leininger, 2001). However, cursory mention of culture and cultural issues is not sufficient for learning and intervening among multi-cultural groups. Nurses are in an ideal position to incorporate the perceived barriers to health promotion and the factors that influence health promotion behaviors of all groups, including African American populations into nursing’s knowledge and evidence-based practice. The knowledge and practice of evidence-based nursing can aid practitioners of nursing to deliver care within these culturally defined boundaries, to plan programs and interventions that are better targeted to African American women, and to facilitate adherence to treatment regimens and interventions designed to increase health promotion behaviors of African American women.

Implications for Research

In this study the researcher focused on the individual characteristics of African American women, as described in the HPM. Future researchers among African American women could focus on the behavior-specific variables of the HPM: barriers, benefits, efficacy, affect, interpersonal influences, environmental influences, and competing demands and preferences (N. Pender, personal communication, March 15, 2009). Several researchers (Christian et al., 2007; Johnson & Nies, 2005; Mensah et al., 2005; Webb & Gonzalez, 2006) have documented the health disparities and lack of adherence to health promotion behaviors among African American women; however, more intervention studies are needed to examine the information gleaned to form a better
picture of the extent to which health promotion behaviors are effective among persons with health disparities. There is a need for longitudinal interventional studies to examine the long-term effect of participating in health promotion behaviors, which mitigate CVD risk factors among African American women. There is a need for longitudinal studies designed to illustrate the long term benefits of increased activity, and decreased caloric intake among the African American female population. Spirituality had an added effect on the health promotion behaviors of African American women. Further studies are needed to identify the components of spirituality as defined by African American women, which enhance and enrich health promotion behaviors.

**Implications for Theory**

A meta-analysis of the studies done regarding health promotion among African American women to understand the barriers and factors related to health promotion behaviors has the potential to influence the development of a health promotion theory unique to African American women. The subsequent theory could include an emphasis on education and spirituality as defined by African American women, and would facilitate further research among this vulnerable population.

**Implications for Practice**

In their routine care of African American women, healthcare providers are in the best position to demonstrate an understanding of the barriers African American women have to health promotion behaviors. Healthcare providers are able to integrate into routine care strategies that will foster social support, education, and spirituality to enhance health promotion behaviors required to mitigate CVD risk factors. Healthcare providers are able to incorporate a multiprofessional approach, including African.
American community leaders, to assist in the delivery of the health promotion message to African American women.

Implications for Social Policy

A significant finding of this study is that formal education is germane to health promotion behaviors among African American women. Providing financial incentives to assist young women to complete more years of formal education could radically enhance the benefit of improved health promotion behaviors. With an emphasis on formal education amid the added effect of existential spirituality, the risk for CVD morbidity and mortality could be decreased among the African American female population.

Conclusion

Based on the results of this study, formal education had a unique, significant effect on health promotion behaviors in a sample of African American women in south Florida. Spirituality (existential well-being) had an added effect on health promotion behaviors among African American women. Further research needs to be conducted to validate these findings and to identify the tangible components of spirituality that impact African American women’s health promotion behaviors. Barriers to health promotion behaviors among African American women are documented within the literature. The impact of interpersonal and situational influences needs to be examined further. Culturally appropriate and relevant interventions used to encourage and educate African American women to increase physical activity and decrease caloric intake are critical to mitigate the high rate of morbidity and mortality that African American women disproportionately experience from CVD.
References

Abrums, M. (2000). Jesus will fix it after a while: Meanings and health. *Social Science and Medicine, 50*(1), 89-105.


Appendices

Appendix A

The Demographic Survey tool was used to identify the age, height, weight, place of birth of the participants and their parents, employment status, occupation, marital status, number of children if applicable, number of years of schooling completed, annual gross household income, any illnesses, and medications if applicable.
ID number _______ Data collection Site ____________ Date __________

**Demographic Survey**

This document requires you to fill in the information requested. Once the data are entered into the data analysis system, this sheet will be stored separately from the rest of the packet. Please give your best estimate in your responses. Please do not write your names on any of the forms.


4. Place of birth: ____________________________

5. Place of birth for parents: Mother ________  Father ________


9e. Separated  9f. Never Married

10. Number of children (if any) ____________

11. Circle the number that best represents the years of schooling you have completed:


   0 1 2 3 4 5  6 7 8  9 10 11 12  13 14 15 16

   11e. Graduate school

   17 18 19 20 21 22 23

12. What is your annual gross household income? Circle your best estimate:

   1. Under $10,000  4. $30,000-$39,000  7. $75,000-$99,999

   2. $10,000-$19,999  5. $40,000-$49,999  8. $100,000-$150,000

   3. $20,000-$29,999  6. $50,000-$74,999  9. over $150,000

   If applicable:

13. List any diagnosed illnesses ____________________________

14. List prescription medications ____________________________
Appendix B

The Health-Promoting Lifestyle Profile II (HPLP II) was used to measure the frequency with which participants engaged in health promotion behaviors. Following the HPLP II is the letter of permission to use the tool from Dr. Susan Noble Walker.
**LIFESTYLE PROFILE II**

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

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

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>SOMETIMES</th>
<th>OFTEN</th>
<th>ROUTINELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Discuss my problems and concerns with people close to me.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>2. Choose a diet low in fat, saturated fat, and cholesterol.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>3. Report any unusual signs or symptoms to a physician or other health professional.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>4. Follow a planned exercise program.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>5. Get enough sleep.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>6. Feel I am growing and changing in positive ways.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>7. Praise other people easily for their achievements.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>8. Limit use of sugars and food containing sugar (sweets).</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>9. Read or watch TV programs about improving health.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>10. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>11. Take some time for relaxation each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>12. Believe that my life has purpose.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>13. Maintain meaningful and fulfilling relationships with others.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>14. Eat 6-11 servings of bread, cereal, rice and pasta each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>15. Question health professionals in order to understand their instructions.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>16. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>17. Accept those things in my life which I can not change.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>18. Look forward to the future.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>19. Spend time with close friends.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>20. Eat 2-4 servings of fruit each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>22. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>23. Concentrate on pleasant thoughts at bedtime.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>24. Feel content and at peace with myself.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>25. Find it easy to show concern, love and warmth to others.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>26. Eat 3-5 servings of vegetables each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
</tbody>
</table>
27. Discuss my health concerns with health professionals.

28. Do stretching exercises at least 3 times per week.

29. Use specific methods to control my stress.

30. Work toward long-term goals in my life.

31. Touch and am touched by people I care about.

32. Eat 2-3 servings of milk, yogurt or cheese each day.

33. Inspect my body at least monthly for physical changes/danger signs.

34. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).

35. Balance time between work and play.

36. Find each day interesting and challenging.

37. Find ways to meet my needs for intimacy.

38. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.

39. Ask for information from health professionals about how to take good care of myself.

40. Check my pulse rate when exercising.

41. Practice relaxation or meditation for 15-20 minutes daily.

42. Am aware of what is important to me in life.

43. Get support from a network of caring people.

44. Read labels to identify nutrients, fats, and sodium content in packaged food.

45. Attend educational programs on personal health care.

46. Reach my target heart rate when exercising.

47. Pace myself to prevent tiredness.

48. Feel connected with some force greater than myself.

49. Settle conflicts with others through discussion and compromise.

50. Eat breakfast.

51. Seek guidance or counseling when necessary.

52. Expose myself to new experiences and challenges.

---

* S.J. Walker, K. Saadieh, N. Feudal, 1995. Reproduction without the author's express written consent is not permitted. Permission to use this scale may be obtained from: Sharon Noble Walker, College of Nursing, University of Nebraska Medical Center, Omaha, NE 68198-8220.
Dear Colleague:

Thank you for your request and payment to use the Health-Promoting Lifestyle Profile II. As indicated in the enclosed form, you have permission to copy and use the enclosed Health-Promoting Lifestyle Profile II for non-commercial data collection purposes such as research or evaluation projects provided that content is not altered in any way and the copyright/permission statement at the end is retained. The instrument may be reproduced in the appendix of a thesis, dissertation or research grant proposal without further permission. Reproduction for any other purpose, including the publication of study results, is prohibited without specific permission.

We thank you for your interest in the Health-Promoting Lifestyle Profile II and wish you much success with your efforts.

Sincerely,

Susan Noble Walker, EdD, RN, FAAN
Professor and Chair,
Department of Gerontological, Psychosocial and Community Health Nursing

Encl.: Health-Promoting Lifestyle Profile II
Scoring instructions
List of publications reporting use of the original Lifestyle Profile
Appendix C

The Spiritual Well-Being Scale (SWBS) was used to measure the perceived spiritual quality of life as understood in an existential and religious manner. The SWBS provides a measurement of the spiritual quality of life. Following the SWBS is the letter of permission to use the tool from Dr. Craig W. Ellison.
SWB Scale

For each of the following statements circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience:

SA = Strongly Agree
MA = Moderately Agree
A = Agree
D = Disagree
MD = Moderately Disagree
SD = Strongly Disagree

1. I don’t find much satisfaction in private prayer with God.
   SA MA A D MD SD

2. I don’t know who I am, where I came from, or where I am going.
   SA MA A D MD SD

3. I believe that God loves me and cares about me.
   SA MA A D MD SD

4. I feel that life is a positive experience.
   SA MA A D MD SD

5. I believe that God is impersonal and not interested in my daily situations.
   SA MA A D MD SD

6. I feel unsettled about my future.
   SA MA A D MD SD

7. I have a personally meaningful relationship with God.
   SA MA A D MD SD

8. I feel very fulfilled and satisfied with life.
   SA MA A D MD SD

9. I don’t get much personal strength and support from my God.
   SA MA A D MD SD

10. I feel a sense of well-being about the direction my life is headed in.
    SA MA A D MD SD

11. I believe that God is concerned about my problems.
    SA MA A D MD SD

12. I don’t enjoy much about life.
    SA MA A D MD SD

13. I don’t have a personally satisfying relationship with God.
    SA MA A D MD SD

    SA MA A D MD SD

15. My relationship with God helps me not to feel lonely.
    SA MA A D MD SD

16. I feel that life is full of conflict and unhappiness.
    SA MA A D MD SD

17. I feel most fulfilled when I’m in close communion with God.
    SA MA A D MD SD

18. Life doesn’t have much meaning.
    SA MA A D MD SD

19. My relation with God contributes to my sense of well-being.
    SA MA A D MD SD

20. I believe there is some real purpose for my life.
    SA MA A D MD SD

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October 31, 2002

Sandra E. Brown
20020 SW 124 Place
Miami, FL 33177

Dear Mrs. Brown,

Thank you for your order of the Spiritual Well-Being Scale Specimen Set. We have enclosed the Specimen Set, which includes one copy of the scale. If you would like to use additional copies of the scale in your research, please use the attached form to order them through Life Advance, Inc.

You are granted permission to use the Spiritual Well-Being Scale in your research. Please be aware that the Spiritual Well-Being Scale is copyrighted and may not be reproduced without expressed written consent from Life Advance, Inc., 81 Front Street, Nyack, New York, 10960.

We wish you well in your research. If you would like more information on the SWBS or Life Advance, Inc., please visit our new website at www.lifeadvance.com. We are delighted to be of assistance to you and look forward to a continuing working relationship.

Sincerely,

Craig W. Ellison, Ph.D. President

Enclosure
Appendix D

The Short-Form Health Survey (SF-36) was used to measure the health and well-being status of the participants. Following the SF-36 is the letter of permission to use the tool from Ms. Elisabeth Perrin.
# Your Health and Well-Being

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Thank you for completing this survey!

For each of the following questions, please mark an ☒ in the one box that best describes your answer.

1. In general, would you say your health is:

<table>
<thead>
<tr>
<th>Excellent</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

2. Compared to one year ago, how would you rate your health in general now?

<table>
<thead>
<tr>
<th>Much better now than one year ago</th>
<th>Somewhat better now than one year ago</th>
<th>About the same as one year ago</th>
<th>Somewhat worse now than one year ago</th>
<th>Much worse now than one year ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

SF-36® Health Survey © 1998, 2002 by Medical Outcomes Trust and QualityMetric Incorporated. All Rights Reserved. SF-36® is a registered trademark of Medical Outcomes Trust.
3. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

<table>
<thead>
<tr>
<th>Yes, limited a lot</th>
<th>Yes, limited a little</th>
<th>No, not limited at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

- Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports
- Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf
- Lifting or carrying groceries
- Climbing several flights of stairs
- Climbing one flight of stairs
- Bending, kneeling, or stooping
- Walking more than a mile
- Walking several blocks
- Walking one block
- Bathing or dressing yourself
4. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

- Cut down on the amount of time you spent on work or other activities ........................................... □ ................................ □
- Accomplished less than you would like ................................................................. □ ................................ □
- Were limited in the kind of work or other activities ................................................ □ ................................ □
- Had difficulty performing the work or other activities (for example, it took extra effort) ................................ □ ................................ □

5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

- Cut down on the amount of time you spent on work or other activities ........................................... □ ................................ □
- Accomplished less than you would like ................................................................. □ ................................ □
- Did work or other activities less carefully than usual ........................................................ □ ................................ □

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SF-36® is a registered trademark of Medical Outcomes Trust.
(SF-36 Standard, US Version 1.0)
6. **During the past 4 weeks**, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

7. **How much bodily pain** have you had during the **past 4 weeks**?

<table>
<thead>
<tr>
<th>None</th>
<th>Very mild</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Very Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

8. **During the past 4 weeks**, how much did **pain** interfere with your normal work (including both work outside the home and housework)?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>A good bit of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
</tr>
</tbody>
</table>

- Did you feel full of pep? ........................................ [ ] [ ] [ ] [ ] [ ] [ ] [ ]
- Have you been a very nervous person? ........................ [ ] [ ] [ ] [ ] [ ] [ ] [ ]
- Have you felt so down in the dumps that nothing could cheer you up? ........................................ [ ] [ ] [ ] [ ] [ ] [ ] [ ]
- Have you felt calm and peaceful? ........................ [ ] [ ] [ ] [ ] [ ] [ ] [ ]
- Did you have a lot of energy? ........................ [ ] [ ] [ ] [ ] [ ] [ ] [ ]
- Have you felt downhearted and blue? ........................ [ ] [ ] [ ] [ ] [ ] [ ] [ ]
- Did you feel worn out? ........................ [ ] [ ] [ ] [ ] [ ] [ ] [ ]
- Have you been a happy person? ........................ [ ] [ ] [ ] [ ] [ ] [ ] [ ]
- Did you feel tired? ........................ [ ] [ ] [ ] [ ] [ ] [ ] [ ]

SF-36 Health Survey © 1998, 2002 by Medical Outcomes Trust and QualityMetric Incorporated. All Rights Reserved. SF-36® is a registered trademark of Medical Outcomes Trust.
10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
</tr>
</tbody>
</table>

11. How TRUE or FALSE is each of the following statements for you?

<table>
<thead>
<tr>
<th>Definitely true</th>
<th>Mostly true</th>
<th>Don't know</th>
<th>Mostly false</th>
<th>Definitely false</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
</tr>
</tbody>
</table>

- I seem to get sick a little easier than other people
- I am as healthy as anybody I know
- I expect my health to get worse
- My health is excellent

Thank you for completing these questions!
From: Elisabeth Perrin [mailto:eperrin@qualitymetric.com]
Sent: Wednesday, May 28, 2008 9:40 AM
To: selsiech@bellsouth.net
Subject: Survey Forms, Science Support Form and Test Data Set for License #R1-032608-35262

Dear Sandra,

Thank you for returning the signed agreement and payment to license the QualityMetric SF-36® Health Survey. Attached are the surveys in Microsoft Word (.doc) and Adobe Acrobat (.pdf) formats, and the corresponding Test Data Set. If you are hand-scoring your data, this Test Data Set will allow you to verify that your algorithm has been programmed correctly.

Note: If you have licensed other languages besides US English, please print a hard copy of the Adobe Acrobat file for each translation. Please compare the Microsoft Word file against the Adobe Acrobat file before administering to assure that they are identical. If you do not have Adobe Acrobat Reader installed on your computer, you can download it for free at http://www.adobe.com/support/downloads/main.html/.

As part of your academic license, you are entitled to scientific support for the duration of your study. In order to efficiently provide this service when needed, please fill out the attached Scientific Support Request Form and email it to my attention or fax it to 401-642-9349. I will ensure that your questions are responded to by the appropriate QualityMetric resource in a timely manner.

For your Scoring Software 2.0™, you will receive the download link, activation key and installation manual in a separate email.

IMPORTANT NOTE: All software is purchased in one-year, one-seat access increments and should only be installed on the computer intended for use on. Once the installation key has been activated, it can not be re-used.

Your scoring manual will be mailed to you by United Parcel Service (UPS).

Best wishes with your study!

Kind Regards,
Elisabeth

QualityMetric
Health Outcomes Solutions

Elisabeth Perrin
Administrative Assistant
Office of Grants and Scholarly Research (OGSR)
640 George Washington Hwy. Suite 201 | Lincoln, RI 02865
Phone: 401.334.8600 ext 248 | Fax: 401.642.9349
www.QualityMetric.com
Appendix E

Letter of permission to reprint the Revised Health Promotion Model (HPM) figure from Dr Nola Pender and Pearson Education, Inc.
From: Nola Pender [npender@umich.edu]  
Sent: Sunday, March 01, 2009 5:28 PM  
To: Sandra E. Brown  
Subject: Re: use of the HPM picture/figure in my dissertation.

Dear Sandra:

You have my permission to reprint the Health Promotion Model in your dissertation, Health Promoting Behaviors among African American Women.

There is a copy of the Model on my website: www.nursing.umich.edu/faculty/pender_nola.html

Good luck with your academic work.

Wishing you good health,

Nola Pender

Quoting "Sandra E. Brown" <selaineb@bellsouth.net>:

Dear Dr Pender:

Good evening. My name is Sandra Brown, I am a Ph. D student at the University of Miami in Florida.

I am writing to obtain permission to use the HPM figure in my dissertation.

The title of my Dissertation is Health Promotion Behaviors among African American women. I used the HPLP II to measure health promotion behaviors and have a letter of permission to use the instrument. However I need permission to reprint the model in the dissertation.

I trust all is well with you and I do look forward to hearing from you at your earliest convenience.

Sincerely,

Sandra Brown ARNP, MSN
Mar 24, 2009

SANDRA BROWN
20020 SW 124PL
Miami, FL 33177

Dear Sandra:

You have our permission to include content from our text, HEALTH PROMOTION IN NURSING PRACTICE, 4th Ed. by PENDER, NOLA J.; MURDAUGH, CAROLYN L.; PARSONS, MARY ANN, in your dissertation for your course at UNIVERSITY OF MIAMI.

Content to be included is:

   Page 50 Figure 2-4: Health Promotion Model

Please credit our material as follows:

Sincerely,

Cheryl Freeman, Permissions Administrator
Appendices F through K

Appendix F is the support letter from Glendale Baptist church given by Rev. Rickey Armstrong, Pastor.

Appendix G is the support letter from Grace of God Baptist church given by Rev. Mark Coats, Pastor.

Appendix H is the support letter from Second Baptist church given by Rev. Dr. Alphonso Jackson, Senior Pastor.

Appendix I is the support letter from Sweet Home Missionary Baptist church given by Dr. Walter T. Richardson, Senior Pastor.

Appendix J is the support letter from Jesse Trice Community Health Centers Inc., given by Ms. Annie R. Neasman, President and CEO.

Appendix K is the support letter from the Florida Education Fund given by Mr. Charles Jackson, MDF Program Manager.
Glendale Baptist Church  
14580 Southwest 117th Avenue  
Miami, Florida 33186

Rev. Rickey Armstrong, Pastor

Telephone:  
Office: 233-6435  
Area Code: (305)  
Fax: 305-254-6221

January 22, 2007

Mrs. Sandra E. Brown, ARNP, MNS  
20020 SW 124 Place  
Miami, Florida 33177

Dear Sandra:

It was a pleasant surprise to meet you in your professional role as a Nurse Practitioner. Thank you for reminding me that we have met previously at Riverside and that Lance Brown is your husband. It is exciting to learn that you are studying "What is the relationship between spirituality and health promotion activities in African-American women." I strongly support your study endeavor. I would like to offer our church facilities and members as a recruitment site. Anything that you can do to help reduce the cardiovascular disease rate among the African-American population would be most welcomed. We look forward to the opportunity to partner with you in this important effort.

Please expect a phone call or e-mail from Judy Daniels. She is our director of the Health Care Ministry. She will give you guidance as to how best to involve our people in your study. May God bless your services to our community.

Sincerely,

Pastor R. Armstrong

RA:cmg

Lt/Brow/Standal
January 24, 2007

Sandra E. Brown ARNP, MSN
University of Miami
School of Nursing and Health Studies
5030 Brunson Drive,
Coral Gables, Florida 33124-3850

Dear Sandra Brown:

I am writing in support of your study, “What is the relationship between spirituality and health promotion activities in African-American women.” Cardiovascular diseases are disproportionately affecting African-Americans and any intervention that will reduce this disparity will be beneficial. Understanding cultural factors influencing health is important to develop culturally sensitive interventions to promote health in this population.

Grace of God Baptist Church would be delighted to participate in your study as a recruitment site and we look forward to the opportunity to work with you.

Sincerely,

[Signature]

Rev. Mark Coats, Pastor
January 24, 2007

Sandra E. Brown ARNP, MSN
University of Miami
School of Nursing and Health Studies
5801 Red Road
Coral Gables, Florida 33124-3850

Dear Ms. Brown:

I am writing in support of your study, "What is the relationship between spirituality and health promotion activities in African-American women." Cardiovascular diseases are disproportionately affecting African-Americans and any intervention that will reduce this disparity will be beneficial. Understanding cultural factors influencing health is important to develop culturally sensitive interventions to promote health in this population.

We will be delighted to participate in your study as a recruitment site. We look forward to the opportunity to work with you.

Sincerely,

Reverend Dr. Alphonso Jackson, Sr.
Senior Pastor/Teacher
January 19, 2007

Sandra E. Brown, ARNP, MSN
University of Miami
School of Nursing and Health Studies
5801 Red Road
Coral Gables, Florida 33124-3850

Dear Sandra Brown:

I am writing in support of your study, “What is the relationship between spirituality and health promotion activities in African American women.” Cardiovascular diseases are disproportionately affecting African-Americans and any intervention that will reduce this disparity will be beneficial. Understanding cultural factors influencing health is important to develop culturally sensitive interventions to promote health in this population.

We will be delighted to participate in your study as a recruitment site. We look forward to the opportunity to work with you.

Sincerely,

Dr. Walter T. Richardson
Senior Pastor

WTR/ah
February 25th, 2008

Ms. Sandra E. Brown ARNP, MSN
University of Miami
School of Nursing and Health Studies
5030 Branson Drive,
Coral Gables, Florida 33124-3850

Dear Sandra Brown:

I am writing in support of your study, "An Exploration of Health Promotion in African-American women." Cardiovascular diseases are disproportionately affecting African-Americans and any intervention that will assist in reducing this disparity will be beneficial. Understanding cultural factors influencing health is important to develop culturally sensitive interventions to promote health in this population.

We will be delighted to participate in your study as a recruitment site. We look forward to the opportunity to work with you.

Sincerely,

[Signature]

Annie R. Neesman, MS, RN
President & CEO
April 2, 2008

Mrs. Sandra E. Brown ARNP, MSN
University of Miami
School of Nursing and Health Studies
5030 Brunson Drive,
Coral Gables, Florida 33124-3850

Dear Sandra Brown:

I am writing in support of your study, “An Exploration of Health Promotion in African-American women.” Cardiovascular diseases are disproportionately affecting African-Americans and any intervention that will assist in reducing this disparity will be beneficial. Understanding cultural factors influencing health is important to develop culturally sensitive interventions to promote health in this population.

We will be delighted to participate in your study as a recruitment site. We look forward to the opportunity to work with you.

Sincerely,

[Signature]

Mr. Charles Jackson, MDF Program Manager

FLORIDA EDUCATION FUND

Charles E. Jackson
MDF Program Manager & Development Specialist
mjackson@verizon.net
(813) 272-2272 ext 205 • Fax: (813) 272-2784 • www.fefonline.org
201 East Kennedy Boulevard • Suite 1525 • Tampa, FL 33602-5850
Appendices L through N

Appendix L is the flyer that was distributed through the churches and group settings with regular meeting times.

Appendix M is the flyer that was distributed to all settings giving the telephone and email contact information.

Appendix N is the business card that was distributed to all settings and individuals to invite participants for the study to make contact with the researcher.
Are you an **African American Woman**?

Are your parents born in the United States of America?

Are you between the age of 18 & 64?

**I NEED YOUR HELP!**

You are invited to participate in a study about

**Health Promotion Among African American Women**

**DATE:**
**TIME:**
**LOCATION:**
**CONTACT:** Sandra Brown *(305) 431-6712*
healthywomen@bellsouth.net
Are you an African American Woman?

Are your parents born in the United States of America?

Are you between the age of 18 & 64?

I NEED YOUR HELP!

You are invited to participate in a study about Health Promotion Among African American Women

CONTACT: Sandra Brown (305) 431-6712 healthywomen@bellsouth.net
University of Miami
Doctoral Nursing Student
HEALTH PROMOTION RESEARCH

Be part of a research study for African American Women
born of African American parents.

I am currently recruiting African American women between the age
of 18 and 64 for a study about
Health Promotion Among African American Women.

You will be compensated for your participation.
If interested, please contact Sandra Brown at
(305) 431-6712 or email: healthywomen@bellsouth.net
Appendix O

The University of Miami consent to participate in a research study which participants signed prior to completing the study packets.
University of Miami

CONSENT TO PARTICIPATE IN A RESEARCH STUDY
An Exploration of Health Promotion among African American Women

The following information describes the research study in which you are being asked to participate. Please read the information carefully. At the end, you will be asked to sign if you agree to participate. Thank you for your participation in this study.

PURPOSE OF STUDY:
You are being asked to participate in a research study. The purpose of this study is to examine/explain the factors/variables that influence health promotion behaviors of African American women.

PROCEDURES:
This is a one time activity that requires 40 - 60 minutes of your time. The packet you will receive will have four surveys for you to complete. The demographic survey contains questions about your personal information such as your name, age, date of birth, place of birth, income, and education. This will take about 5-10 minutes to complete.

The Health Status survey (SF-36 Health Survey) contains questions about your overall health and well-being. Questions such as during the past four weeks have you been able to perform certain activities related to physical and emotional health. This will take about 10-15 minutes.

The Lifestyle Profile II contains statements about your present way of life or personal habits such as Get enough sleep, eat 2-4 servings of fruit per day. This will take 10-15 minutes to complete.

The Spiritual Well-Being Scale (SWBS) contains statements about your feelings and beliefs such as: I believe that God loves and cares about me, Life doesn’t have much meaning. This will take about 15-20 minutes to complete.

RISKS AND/OR DISCOMFORTS:
This study may involve some risks or discomfort to participants. Risks of participation might include some emotional discomfort. Possible emotions that you may experience include, but are not limited to: anxiety or embarrassment should you perceive yourself as not following good health practices, or failing to meet established guidelines. You should report any difficulty/challenges you may encounter as they complete the measurement tools to the researcher.

BENEFITS:
No benefit can be promised to you from your participation in this study. The knowledge gleaned from your participation in this study will have the potential of assisting in the development of health promotion interventions for the African American population. The study is expected to specifically benefit African American women.
CONFIDENTIALITY:
Please do not write your name on any of the questionnaires. Once the consent is verified, the consent form will be removed and stored separately from the remaining packet. All documents have an identification code as the method of keeping the information provided together. A blank sheet of paper will be at the top of your packet to maintain the confidentiality of your responses. All data will be accessible only to the Primary investigator and will be kept in a locked file cabinet at the investigator's home. By signing this consent, you authorize the Investigator to access your study information as may be necessary for purposes of this study. The investigator will consider your records confidential to the extent permitted by law. The U.S. Department of Health and Human Services (DHHS) may request to review and obtain copies of your records. Your records may also be reviewed for audit purposes by authorized University or other agents who will be bound by the same provisions of confidentiality.

COSTS:
There are no costs associated with your participation in this study.

COMPENSATION:
For your participation and completion of all four surveys you will receive a $10.00 Publix gift certificate. As you complete the packet, please raise your hand, I will collect the packet, check for completion, and you will receive the gift certificate. For those who are responding by mail, after receiving your completed packet, I will mail the gift certificate to your designated address.

RIGHT TO DECLINE OR WITHDRAW:
Your participation in this study is voluntary. You are free to refuse to participate in the study or withdraw your consent at any time during the study. Your withdrawal or lack of participation will not affect the treatment received at the University of Miami. The investigator reserves the right to remove you without your consent at such time that they feel it is in the best interest for you.

If you are an employee or student at the University of Miami, your desire not to participate in this study or request to withdraw will not adversely affect your status as an employee or grades at the University of Miami.

CONTACT INFORMATION:
If you have questions about the study you can call the Primary Investigator, Sandra E. Brown at 305-431-6712, or email at healthywomen@bellsouth.net. I will gladly answer any questions you may have concerning the purpose, procedures, and outcome of this project. If you have questions about your rights as a research subject you may contact Human Subjects Research Office at the University of Miami, at (305) 243-3195.
PARTICIPANT AGREEMENT:
I have read the information in this consent form and agree to participate in this study. I have had the chance to ask any questions I have about this study, and they have been answered for me. I am entitled to a copy of this form after it has been read and signed.

_________________________   ___________
Signature of Participant       Date

_________________________   ___________
Signature of person obtaining consent       Date
Appendix P

The budget for the study and the study timetable.
Budget for Study

<table>
<thead>
<tr>
<th>Budget Item</th>
<th>Cost/item</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistician</td>
<td>$100/hr X 9.7 hours</td>
<td>$970.00</td>
</tr>
<tr>
<td>Paper cost</td>
<td>$320.61</td>
<td></td>
</tr>
<tr>
<td>SPSS software</td>
<td>$214.48</td>
<td></td>
</tr>
<tr>
<td>SF36 software</td>
<td>$937.79</td>
<td></td>
</tr>
<tr>
<td>SWBS</td>
<td>150 @ 0.50SCALE + 20.00</td>
<td>$100.00</td>
</tr>
<tr>
<td>Travel</td>
<td>100 miles @ 0.40/mile</td>
<td>$40.00</td>
</tr>
<tr>
<td>Supplies (envelopes, stamps, etc)</td>
<td>50 X 1.34 X2</td>
<td>$160.00</td>
</tr>
<tr>
<td>Publix gift cards</td>
<td>138 @ $10.00</td>
<td>$1380.00</td>
</tr>
<tr>
<td>Grand total</td>
<td></td>
<td>$4122.88</td>
</tr>
</tbody>
</table>

Study Timetable

<table>
<thead>
<tr>
<th>Task to Be Performed</th>
<th>Performer</th>
<th>Completion of Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete proposal and forms</td>
<td>Researcher</td>
<td>Jan - May 2008</td>
</tr>
<tr>
<td>Defend and revise proposal</td>
<td>Researcher</td>
<td>May 2008</td>
</tr>
<tr>
<td>Seek IRB approval</td>
<td>Researcher</td>
<td>May 2008</td>
</tr>
<tr>
<td>Assemble data collection packets</td>
<td>Researcher</td>
<td>May - June 2008</td>
</tr>
<tr>
<td>Data Collection</td>
<td>Researcher</td>
<td>June – Sept. 2008</td>
</tr>
<tr>
<td>Interpret Data results</td>
<td>Researcher</td>
<td>January 2009</td>
</tr>
<tr>
<td>Review with Chair</td>
<td>Researcher</td>
<td>Jan. – Mar. 2009</td>
</tr>
<tr>
<td>Dissertation defense</td>
<td>Researcher</td>
<td>April 2009</td>
</tr>
<tr>
<td>Final Draft</td>
<td>Researcher</td>
<td>April 2009</td>
</tr>
<tr>
<td>Communicate findings</td>
<td>Researcher</td>
<td>1-2 years following</td>
</tr>
</tbody>
</table>
Appendix Q

The expedited approval letters from the Institutional Review Board (IRB) of the University of Miami.
EXPEDITED – APPROVAL

May 19, 2008

Doris Ugarriza, Ph.D.
University of Miami
Department of Nursing
Coral Gables Campus, Locator Code: 3850

HSRO STUDY NUMBER: 20080356
STUDY TITLE: An Exploration of Health Promotion among African American Women
IRB ACTION DATE: 5/14/2008
STUDY APPROVAL EXPIRES: 5/13/2009

On 5/14/2008, an IRB Chair approved the following items under the expedited review process.

APPROVAL INCLUDES:

- New Research Protocol
- Research Materials (English Versions Only)
  - Informed Consent Form
  - Demographic Survey
  - SF-36 Health Survey
  - Health Promotion Lifestyle II
  - Spiritual Wellbeing Scale
  - Health Promotion Poster
  - Health Promotion Poster - Contact Information
  - Research Business Card

NOTE: Translations of IRB approved study documents, including informed consent documents, into languages other than English must be submitted to HSRO for approval prior to use.

A request to continue this study must be submitted to the HSRO at least 45 days before IRB approval expires. If this study does not receive continuing IRB approval prior to expiration, all research activities must be ceased, and may officially be suspended or terminated.

All principal investigators must abide by and comply with all policies and procedures for the conduct of human subject research as posted on the HSRO website (http://www.hsro.miami.edu)

Sincerely,

https://eprost.med.miami.edu/Eprost/Doc/0/V71A66T21TSKD9VCD2ORCPLL5/fromSt... 5/22/2008
Amanda Coltes-Rojas, MPH, CIP
Associate Director
Regulatory Affairs & Educational Initiatives

cc: IRB File
    Sandra Brown
EXPEDITED – APPROVAL

June 16, 2008

Doris Ugarriza, Ph.D.
University of Miami
Department of Nursing
Coral Gables Campus, Locator Code: 3850

HSRO STUDY NUMBER: 20080356
STUDY TITLE: An Exploration of Health Promotion among African American Women
IRB ACTION DATE: 6/13/2008
STUDY APPROVAL EXPIRES: 5/13/2009

On 6/13/2008, an IRB Chair approved the following items under the expedited review process:

APPROVAL INCLUDES:

- Amendment (20080356-01, dated 5/22/2008)
- Revision of the Demographic Survey
- Research Materials (English Version Only)
- Demographic Survey

NOTE: Translations of IRB approved study documents, including informed consent documents, into languages other than English must be submitted to HSRO for approval prior to use.

A request to continue this study must be submitted to the HSRO at least 45 days before IRB approval expires. If this study does not receive continuing IRB approval prior to expiration, all research activities must cease, and may officially be suspended or terminated.

All principal investigators must abide by and comply with all policies and procedures for the conduct of human subject research as posted on the HSRO website (http://www.hsro.miami.edu).

Sincerely,

Amanda Coltes-Rojas, MPH, CIP

https://eprost.med.miami.edu/Eprost/Doc/0/2CD580FOODAK99GOOKT1ITN036/fromS... 6/19/2008
Associate Director
Regulatory Affairs & Educational Initiatives

/sm

cc:                   IRB File
                     Sandra Brown
Tables

Tables 6 through 14 which illustrate the demographic characteristic of the study participants, and the Pearson’s Skewness Coefficients of the demographic variables of the study participants.
Table 6  
*Marital Status of African American Women*

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>54</td>
<td>40%</td>
</tr>
<tr>
<td>Living with partner</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>Widowed</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Divorced</td>
<td>32</td>
<td>23%</td>
</tr>
<tr>
<td>Separated</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>Never Married</td>
<td>36</td>
<td>26%</td>
</tr>
</tbody>
</table>

Table 7  
*Ages of African American Women*

<table>
<thead>
<tr>
<th>Ages</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 to 29</td>
<td>21</td>
<td>15%</td>
</tr>
<tr>
<td>30 to 39</td>
<td>23</td>
<td>17%</td>
</tr>
<tr>
<td>40 to 49</td>
<td>37</td>
<td>27%</td>
</tr>
<tr>
<td>50 to 59</td>
<td>47</td>
<td>34%</td>
</tr>
<tr>
<td>60 to 64</td>
<td>9</td>
<td>7%</td>
</tr>
</tbody>
</table>
### Table 8
*Employment Status of African American Women*

<table>
<thead>
<tr>
<th>Number of hours worked</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>29</td>
<td>21%</td>
</tr>
<tr>
<td>20-25</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>30-37.5</td>
<td>12</td>
<td>9%</td>
</tr>
<tr>
<td>40</td>
<td>65</td>
<td>47%</td>
</tr>
<tr>
<td>&gt;40 &lt;50</td>
<td>9</td>
<td>7%</td>
</tr>
<tr>
<td>50</td>
<td>9</td>
<td>7%</td>
</tr>
<tr>
<td>55</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>60</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>72</td>
<td>1</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

### Table 9
*Number of Children of African American Women*

<table>
<thead>
<tr>
<th>Number of children</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>41</td>
<td>30%</td>
</tr>
<tr>
<td>1</td>
<td>19</td>
<td>14%</td>
</tr>
<tr>
<td>2</td>
<td>35</td>
<td>26%</td>
</tr>
<tr>
<td>3</td>
<td>26</td>
<td>19%</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>6%</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>3%</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>3%</td>
</tr>
<tr>
<td>Years of education</td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>12</td>
<td>19</td>
<td>14%</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
<td>10%</td>
</tr>
<tr>
<td>14</td>
<td>20</td>
<td>15%</td>
</tr>
<tr>
<td>15</td>
<td>6</td>
<td>4%</td>
</tr>
<tr>
<td>16</td>
<td>21</td>
<td>15%</td>
</tr>
<tr>
<td>17</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>18</td>
<td>19</td>
<td>14%</td>
</tr>
<tr>
<td>19</td>
<td>11</td>
<td>8%</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>21</td>
<td>8</td>
<td>6%</td>
</tr>
<tr>
<td>22</td>
<td>1</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>23</td>
<td>9</td>
<td>7%</td>
</tr>
</tbody>
</table>
Table 11  
*Income of African American Women*

<table>
<thead>
<tr>
<th>Income ranges</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $10,000</td>
<td>13</td>
<td>9.5%</td>
</tr>
<tr>
<td>$10,000-$19,999</td>
<td>12</td>
<td>9%</td>
</tr>
<tr>
<td>$20,000-$29,999</td>
<td>14</td>
<td>10%</td>
</tr>
<tr>
<td>$30,000-$39,999</td>
<td>19</td>
<td>14%</td>
</tr>
<tr>
<td>$40,000-$49,999</td>
<td>19</td>
<td>14%</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>27</td>
<td>20%</td>
</tr>
<tr>
<td>$75,000-$99,999</td>
<td>16</td>
<td>12%</td>
</tr>
<tr>
<td>$100,000-$150,000</td>
<td>10</td>
<td>7%</td>
</tr>
<tr>
<td>&gt;$150,000</td>
<td>7</td>
<td>5%</td>
</tr>
</tbody>
</table>

Table 12  
*Body Mass Index of African American Women*

<table>
<thead>
<tr>
<th>BMI</th>
<th>Classification</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.5 or less</td>
<td>Underweight</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>18.5-24.9</td>
<td>Normal weight</td>
<td>26</td>
<td>19%</td>
</tr>
<tr>
<td>25.0-29.9</td>
<td>Overweight</td>
<td>37</td>
<td>27%</td>
</tr>
<tr>
<td>30.0-34.9</td>
<td>Obesity I</td>
<td>35</td>
<td>26%</td>
</tr>
<tr>
<td>35.0-39.9</td>
<td>Obesity II</td>
<td>25</td>
<td>18%</td>
</tr>
<tr>
<td>40.0 or greater</td>
<td>Extreme obesity</td>
<td>14</td>
<td>10%</td>
</tr>
</tbody>
</table>
Table 13
Medical Conditions of African American Women

<table>
<thead>
<tr>
<th>Medical condition</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>49</td>
<td>57%</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>15</td>
<td>17%</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>10</td>
<td>12%</td>
</tr>
<tr>
<td>Asthma</td>
<td>8</td>
<td>9%</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>6</td>
<td>7%</td>
</tr>
<tr>
<td>Arthritis</td>
<td>6</td>
<td>7%</td>
</tr>
<tr>
<td>Thyroid problems</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>Breast disorders, including cancer; cardiomyopathy</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Anemia, allergies, depression and sleep apnea</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

Table 14
Pearson’s Skewness Coefficients of the Demographic Variables of African American Women

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Skewness Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>44.39</td>
<td>46.00</td>
<td>56.00</td>
<td>-.13</td>
</tr>
<tr>
<td>Hours worked</td>
<td>31.82</td>
<td>40.00</td>
<td>40.0</td>
<td>-.45</td>
</tr>
<tr>
<td>Number of children</td>
<td>1.77</td>
<td>2.00</td>
<td>0</td>
<td>.14</td>
</tr>
<tr>
<td>Education</td>
<td>16 years</td>
<td>16 years</td>
<td>16 years</td>
<td>.01</td>
</tr>
<tr>
<td>Income($)</td>
<td>40-49,999</td>
<td>40-49,999</td>
<td>50-74,999</td>
<td>.06</td>
</tr>
<tr>
<td>BMI</td>
<td>31.14</td>
<td>30.60</td>
<td>29.23</td>
<td>.08</td>
</tr>
</tbody>
</table>

Formula for Pearson’s skewness coefficients [skewness = (mean – median)/SD] (Munro, 2001).