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Dimensions of Racial Identity as Predictors of Physical Activity in Midlife African American
Women

BY

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THESIS

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*For with much wisdom comes much sorrow; the more knowledge, the more grief.
Ecclesiastes 1:18*

This thesis is dedicated to my husband, Christopher, who has been my staunchest supporter, my shoulder to cry on and to lean on, my cook, my housekeeper, my driver, my motivator, my cross to bear, and my best friend. Thank you for taking this long, wonderful, exciting, and sometimes, ‘not sure where this is taking us’ journey with me. Without you and your unwavering support, and confidence in me, I could not have done this. I dedicate this thesis to my son, Terry, who has shown an interest in my research, and has given me the opportunity to change my life, while being able to watch him grow into an amazing young man.

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“If you have no confidence in self you are twice defeated in the race of life. With confidence you have won even before you have started.”

----Marcus Moziah Garvey

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LIST OF ABBREVIATIONS

AA	African American
ACSM	American College of Sports Medicine
BICS	Black Identity Classification Scale
BMI	Body Mass Index
BRFSS	Behavioral Risk Factor System Surveillance
CDC	Centers for Disease Control and Prevention
JPAC	Jackson Heart Physical Activity Survey
PA	Physical Activity
RS	Racial Salience
RQ	Research Question
USDHHS	United States Department of Health and Human Services

SUMMARY

Physical inactivity leads to serious health consequences, particularly for midlife African American (AA) women. Midlife African American (AA) women are less physically active and have higher obesity-related morbidity and mortality than midlife White women. Studies to examine these disparities typically view AAs as a homogeneous group, despite evidence of important within-group variance. Using a culturally-adapted identity-based motivational model, the purpose of this study was to determine whether dimensions of racial identity have differential influence on physical activity in midlife AA women.

A convenience sample of 252 AA women aged 40-65 was recruited from a predominantly Black community in Northwest Indiana. Using a cross-sectional design, participants completed the Jackson Heart Study physical activity measure (JPAC), and the Behavioral Risk Factor Surveillance Systems (BRFSS) physical activity measure along with a measure of dimensions of racial identity (Black American, Multicultural, Bicultural, Afrocentric, and Racial Salience), self-labeled race, and psychometrically valid and reliable self-report measures of known predictors of physical activity (self-efficacy, social support, neighborhood factors, BMI, and self-rated health).

Using level of physical activity (JPAC) as the outcome variable, a multiple regression model was fit to the data. The mean age was 52+7 yrs, and 59% were obese (BMI>30). Multiple regression revealed the only dimension of racial identity that was predictive of level of physical activity was Black American ($\beta=-.15$) controlling for the other variables in the model. Black American racial identity was shown to negatively predict level of physical activity along with BMI ($\beta=-.15$), while, self-efficacy ($\beta=.27$), social support for physical activity ($\beta=.17$), and good/excellent health ($\beta=.19$) positively predicted level of physical activity, accounting for 24% of the variance in the level of physical activity.

Using the BRFSS physical activity measure as the outcome variable, based on the distribution of the data, we collapsed these groups into two categories reflecting sufficient vs. insufficient activity. A logistic regression model was fit to the data. Logistic regression revealed the odds of engaging in

sufficient levels of physical activity were 2.5 times higher for women who reported good or excellent health compared to those who reported poor or fair health. In addition, an increase of one point on the physical activity self-efficacy scale increased the odds of engaging in sufficient levels of physical activity by 20% while an increase in BMI one unit reduced the odds of engaging in sufficient levels of physical activity by 40%, controlling for other factors in the model. These variables significantly predicted sufficient physical activity.

The disparities of race and sociocultural factors on health behavior have long been a focus of nursing. The findings from this cross-sectional study suggest that this sample of midlife African American women, having a strong dimension of racial identity in Black American, are more likely to engage in a lower level of physical activity. These findings provide foundational data necessary for future longitudinal work to examine the multidimensional role of racial identity on physical activity in midlife African American women over time. Longitudinal studies need to be developed with culturally, individually tailored interventions taking into account dimensions of racial identity to examine its effect on physical activity over time.

I. INTRODUCTION

A. Statement of Problem and Significance

Physical inactivity is a source of serious health problems (Roux, et al., 2008; Seefeldt, Malina, & Clark, 2002). The annual number of deaths in the United States due to physical inactivity has been estimated at more than 250,000 (Brownson, Boehmer, & Luke, 2005). Negative health effects of physical inactivity, such as cardiovascular disease, type 2 diabetes, and cancer, have staggering economic costs estimated at \$24 billion--\$76 billion (Roux, et al, 2008; US Department of Health and Human Services [USDHHS], 2003). Physical activity has been shown to reduce coronary disease, hypertension, atherosclerotic risk factors, insulin resistance, glucose intolerance, obesity, and improve well-being (Hays, Damush, & Clark, 2005; Pate, et al., 1995); however factors that distinguish those who engage in sufficient levels of physical activity from those who do not remain unclear.

The low level of physical activity among African American women is of particular concern given the disproportionate burden of chronic health conditions, and high mortality rate in this population (Whitt, Kumanyika, & Bellamy, 2003; Braveman, Egerter, Cubbin, & Marchi, 2007; USDHHS, 2003; Eyer, et al., 2002a, 2002b). As women age, they become less physically active, and more sedentary (Whaley, 2003). Women between the ages of 40-65, have been found to be less active than their younger counterparts, and more prone to chronic health problems (Cox, Gorley, Puddey, Burke, & Beilin, 2003). Among African American women in the US, 77% are sedentary and overweight, and they have much higher rates of chronic diseases (e.g., diabetes, cardiovascular disease, hypertension, osteoarthritis) compared to White women (USDHSS, 1996; Center for Disease Control [CDC], 2007b). Yet as compared to midlife White women, midlife African American women are less likely to meet CDC recommendations for sufficient physical activity (150 minutes per week of moderate-intensity physical activity, or 75 minutes per week of vigorous-intensity physical activity for adults) (CDC, 2007b). In comparison to White women, African American women are twice as likely to have hypertension and type 2 diabetes, and the mortality rate for African American women is nearly 2.5 times higher from cancer and

type 2 diabetes (CDC, 2001). Some have argued that even modest increases in physical activity levels can lead to major gains in disease prevention and health promotion in African American women (Roux, et al, 2008).

Although most of what is known about physical activity in African American women is based on cross-sectional studies with predominantly White middle-class women (Wilbur, et al., 2006; Whaley, 2003; Krummel, et al.; 2001; Nies, & Kershaw, 2002; Brownson, et al., 2005; Dishman, Sallis, & Orenstein, 1985); however the body of research on physical activity in African American women is growing (Whitt, et al., 2003; Wilbur, Miller, Chandler, & McDevitt, 2003b; Wilbur, Vassalo, Chandler, McDevitt, & Miller, 2005). Researchers have identified several factors that influence physical activity in African American women, but the findings of existing studies are somewhat mixed. For example, one of the most powerful predictors of physical activity –self-efficacy—has been shown to be increased in midlife African American women prior to the intervention and significantly decreased after exposure to the intervention as compared to White women (Wilbur, et al, 2003b). Personal barriers that negatively influenced physical activity include lack of motivation, poor perceptions of health, health concerns (Eyler, et al., 1999) and lack of self-efficacy (Nies & Kershaw, 2002; Wilbur et al., 2003b; Eyler et al., 2002b; Sharma, Sargent, & Stacy, 2005). Lack of social support (Wilbur, Chandler, Dancy, Choi, & Plonczynski., 2002; Sanderson, Littleton, & Pulley, 2002; Dunn, 2008) and lack of safe places in the community were also identified as factors negatively influencing physical activity (Eyler, et al., 2002a; Sanderson, et al., 2002). Cultural factors identified as discouraging physical activity in African American women were lack of community support, and scarcity of role models (Wilbur, et al., 2002; Eyler, et al., 2002a). Furthermore, African American overweight and obese women are significantly more likely than White overweight and obese women to perceive their weight as normal (Bennett & Wolin, 2006). The more accepting body image and greater acceptance of weight gain have been shown to be negatively correlated with physical activity in African American women (Sanchez-Johnsen, et al., 2004; Bennett & Wolin, 2006).

One potential reason for the mixed findings in existing studies may be that researchers have tended to view African Americans as a single homogeneous group despite evidence of considerable within-group heterogeneity. Within African American samples, several studies have shown that distinctions in Black culture (e.g. sense of connection to Africa, preference for traditional Black culture, importance of race to one's sense of self) are differentially associated with a variety of health behaviors including fruit and vegetable consumption, high fat foods, smoking, self-breast exam, and mammograms (Resnicow, et al, 2009; Oyserman, Yoder, & Fryberg, 2007a; Klonoff & Landrine, 1997; Bowen, Christensen, Powers, Graves, & Anderson, 1998). For example, one study showed that women who identified as "Black" (rather than "African American") were opposed to engaging in behaviors that were consistent with being "White" (i.e., eating healthier, engaging in physical activity, refusing to engage in mammography screening); and therefore, inconsistent with their racial identity (Peters, Aroian, & Flack, 2006; Bowen, et al., 1998). Another recent study of African Americans showed that fruit and vegetable consumption was higher for African Americans who received an intervention that was tailored to racial identity. Those who received the tailored intervention increased their daily mean fruit and vegetable intake compared to the control group, which did not receive the tailored intervention (Resnicow, et al., 2009). The findings of these studies suggest that when examining factors (cultural, behavioral, and psychological characteristics) that contribute to behavioral regulation in African Americans, it is essential to consider within-group heterogeneity rather than assuming that African Americans are a single homogeneous group and that predictive factors operate in the same way for all African Americans (Resnicow, et al., 2009).

In addition to within-group heterogeneity among African Americans as a group, there is an extensive body of literature demonstrating the powerful effect of individual differences in personal identities in regulating behavior. From a social cognitive perspective, personal identities are stable cognitive structures that are formed through social experiences and are stored in long-term memory (Markus & Wurf, 1987). These cognitive structures have been shown to enhance information processing (Markus, 1977) and to facilitate effective behavioral functioning in the domain (Markus, 1977). In fact,

identities are the cognitive foundation of behavior. Some investigators using this theoretical perspective have focused on the content of a single identity and its role on behavior. For example, Kendzierski & Whitaker (1997) found that among women in a dieting program who all had an intention to lose weight, only women who had a clear identity as a ‘dieter’ acted on their intention by persisting in this behavior over time. Other researchers using this theoretical perspective have focused on characteristics of the total collection of personal identities. For example, in predominantly White young adult samples, having few positive and many negative identities is a cognitive vulnerability that is associated with negative affect and health compromising behaviors (Corte & Stein, 2007; Stein & Corte, 2007).

B. Purpose of Study

Considering the motivational power of personal identities along with important within-group differences in racial identity among African Americans, the purpose of this study is to determine whether dimensions of racial identity contribute to physical activity in midlife African American women controlling for the effects of physical activity self-efficacy, social support for physical activity, neighborhood factors (safety), and health variables (body mass index [BMI] and self-rated health). In a subset of midlife African American women, we will also examine relationships among the total collection of personal identities and 1) dimensions of racial identity, 2) physical activity, and 3) known predictors of physical activity (self-efficacy, social support, neighborhood factors, BMI, and self-rated health).

II. LITERATURE REVIEW

Various studies have identified environmental and cultural factors as barriers of physical activity in African American women such as unsafe places to be physically active, family responsibilities, and lack of social support (Eyler et al., 2002a; Wilbur et al., 2002; Sanderson et al., 2002; Young, He, Harris, & Mabry, 2002; Dunn, 2008). Identifying modifiable factors that motivate sufficient physical activity in midlife African American women is essential for the development of effective interventions to promote physical activity. This literature review outlines the conceptual framework used for this dissertation study. This framework pulls together findings from the identity-based motivational literature and biopsychosocial and cultural factors shown to influence physical activity in African American women.

A. Racial Ethnic Identity

1. Identity-Based Motivation

The cognitive model of the self-concept has been central to the understanding of human behavior (Stein & Markus, 1996). The self-concept is a complex, dynamic, multifaceted cognitive structure that contains a collection of personal identities in a variety of content domains, e.g., social roles, values, attitudes, interests, behaviors, personality traits, personal characteristics (Markus & Wurf, 1987). Identities are highly elaborated and chronically accessible representations about the self that function to motivate and regulate behavior (Banting, Dimmock & Lay, 2009; Holloway, Waldrip & Ickes, 2009; Kendzierski, 1990). Identities form through experience with the social environment in areas that the individual perceives as particularly self-relevant. As such, identities are cognitive products of the social environment (Markus & Wurf, 1987; Oyserman, et al., 2007b). Because each individual's experiences, interests and values are different, each person has a unique collection of identities.

Some of our identities are related to being a member of a group (e.g., gender group, racial group, member of a book club or sports team). The identity-based motivation model links cultural and social identity perspectives to a broader social cognitive framework that outlines how social contexts influence social identities in ways likely to shift motivation (Oyserman, et al., 2007b). However, social-identities

that may influence motivation for engagement in health promotion have not been well studied. Motivation is simultaneously socially based and personalized. When socially primed identities are evoked, they are likely to contain attributes for the individual that are 'in-group' congruent (e.g., gender, social class, political affiliation, etc.) (Oyserman, Kimmelmeier, Fryberg, Brosh & Hart-Johnson, 2003). Therefore, 'in-group' defining attributes may be defined explicitly as the opposite or in direct contrast to attributes of another social identity group (Oyserman, et al., 2007b). According to Oyserman, et al., (2007b) racial ethnic minority and low socioeconomic status Americans viewed healthy and unhealthy behaviors as differentially characteristic of White and middle-class society versus characteristics of their in-group identity. These perceptions have health-related consequences, and in initial studies by Oyserman et al., (2007b), the unhealthy behaviors such as not being physically active, eating fried foods, and being heavier than Whites were described as in-group characteristics.

Many socially identified groups have several alternative labels available, and these various labels have different meanings both for members and nonmembers of a particular group (Phinney, 1996). One such group has been African Americans who have experienced several shifts in the predominant terms used to describe them in the past several decades (Larkey, Hecht, & Martin, 1993; Ghee, 1990; Fairchild, 1985; Longshore, 1979; Speight, Vera, & Derrickson, 1996). However, self-labeling was hardly an option for African Americans and acceptance of derogatory terminology was almost a certainty (Sanders Thompson & Akbar, 2003). Ghee (1990), chronicled the labeling of Americans of African descent, "starting with the original name of African, other names were subsequently adopted or used, such as negro, nigger, colored, Negro, black, Black, Afro-American, Afric-American, and African American" (p.81). An individual's use of such terms as "Black" and "African American" provides insights into the self (Ghee, 1990). Although there is some choice as to self-label, usage is constrained to varying degrees by the way one is perceived by others. In a study of identity conducted prior to the Black power movement, only 23% of Black participants identified themselves by race, with almost all using the term Negro, and few using the terms "colored" and "Black" (Sanders Thompson & Akbar, 2003). "Black" generally based on classification of shared phenotypic characteristics, provided a sense of unity and

acceptability, linked in a social movement of civil rights history, emphasizing pride in race; while “African American” expresses the experience of a blended heritage, and traditions; and conceptually links the individual with both pre and post slavery/American histories (Larkey et al, 1993; Ghee, 1990; Grayman, 2009). The preferred term continues to evolve as the community struggles with self-definition and the importance of racial identity as a social identity (Sanders Thompson & Akbar, 2003). Some of these identities are more central or “salient” to one’s self-concept, while others are more peripheral (Resnicow et al., 2009).

Racial identity is a personal identity that contains detailed information about oneself in terms of what it means to be a member of a particular racial/ethnic group (e.g., Black, African American). More specifically, racial identity includes knowledge about how being a member of that group fits into the larger society and how members of these groups act, and the strategies they use to attain these goals; as well as the readiness to act in ways that are congruent with beliefs about group membership (Oyserman, 2009). Racial-ethnic minority groups may not see health promoting behaviors as congruent with their “in-group” identities; instead they may perceive health promoting activities as part of a White middle class “in-group” identity (Oyserman et al., 2003; Oyserman et al., 2007b). For example, Bowen et al., (1998) found that women who identified as “Black” were opposed to engaging in behaviors that were consistent with being “White” and therefore, inconsistent with their racial identity. Peters, Aroian, & Flack (2006), found that Black women who feared being seen as “acting White,” would engage in behaviors that were known to be unhealthy—“even to the point of dying,” just to prevent being ostracized by members of their “in-group.” However, women who identified as “African American” were more likely to seek mammography screening than those who identified as “Black”, which may reflect a positive sense of connection to both in-group and larger society (Bowen, Hickman, & Powers, 1997).

2. Racial Identity: Multi Dimensional Perspective

Resnicow, et al., (2009) conceptualized African American racial identity in terms of five major dimensions. One dimension is Black American which is characterized by pride in racial heritage and desire to educate oneself and family about Black American culture and history. Another dimension is

Afrocentric which is characterized by a strong sense of connection to Africa. A third dimension is Bicultural which is characterized by a perception of the world as a Black/White duality. A fourth dimension is Multicultural which is characterized by appreciation of the many ethnic groups and cultures that exist in the world. Finally, a fifth dimension, Racial Salience, focuses on the perceived importance and centrality of race to one's self-definition. From this perspective, racial identity is multidimensional rather than categorical (e.g., Black vs African American) and is not as simplistic as self-identification of race.

In a recent study, Resnicow et al., (2009) found that African Americans vary considerably along each of these dimensions suggesting that African Americans are a heterogeneous group. This is in sharp contrast to most research to date which considers African Americans as a single group (the implicit assumption is that African Americans are a homogeneous group with similar attitudes, values, and behaviors). Most importantly, Resnicow et al., (2009) also found that interventions for African American men and women that were tailored to their dimensions of racial identity positively predicted health behavior (fruit and vegetable consumption). In a sample of 625 African American women and men, Resnicow et al., (2009) used the Black Identity Classification scale (BICS) to create tailored intervention groups. The intervention groups received newsletters that displayed pictures and messages that were tailored to their dimensions of racial identity. The control group received racially neutral newsletters. The tailored intervention groups increased their daily fruit and vegetables more than the control group.

Although some empirical studies have shown the impact of racial identity on health behaviors, to date no one has examined the role of these variables in physical activity among midlife African American women. Culture and the self (i.e., racial identity) have been identified as having a direct influence on behavior (Markus & Nurius, 1986); and for some African Americans, their African and/or African American culture and heritage play a central role in their personal identity and daily psychosocial functioning, whereas for others, ethnicity and race may only be peripheral elements of the self (Resnicow et al., 2009). Although these dimensions of race are not exclusive, they may be described as continuous constructs within the individual's identity. Within group ethnic variability needs to be addressed because

African Americans cannot be treated as a culturally homogenous group (Resnicow, et al., in press), with African American women opposing what the majority group has indicated as normal (Oyserman, Brickman, & Rhodes, 2007a).

B. Physical Activity in African American Women

Physical activity behavior declines over the life span, with the most notable reduction following adolescence and the transition from high school to early adulthood (Mayo, 1992). Although many African American women describe physical activity as health promoting instead of disease preventing, physical activity behavior is essential to overall health by controlling weight, reducing the risk for heart disease and some cancers, strengthening bones and muscles, and improving mental health (USDHHS, 1996). Physical activity has been shown to prevent and manage numerous cardiovascular, and obesity related disease, as well as improve general well-being (Hays et al., 2005; Pate et al., 1995); however factors that distinguish those who engage in sufficient levels of physical activity from those who do not remain unclear.

For adults, a sufficient level of physical activity is defined as the accumulation of 30 minutes or more of moderate-intensity physical activity on 5 or more days each week (150 minutes per week), or an accumulation of 75 minutes per week of vigorous-intensity physical activity (Pate et al., 1995; USDHHS, 2000; CDC, 2003). Intensity is the level of effort required to do an activity; while an individual doing moderate-intensity activity can talk, but not sing, during the activity; while an individual doing vigorous-intensity activity cannot say more than a few words without pausing for a breath (USDHHS, 2009). A goal of Healthy People 2010 is to increase the proportion of adults who engage in sufficient physical activity (USDHHS, 2000), especially in minority and women populations.

The low level of physical activity among African American women is of great concern giving the disproportionate burden in this population of health conditions, along with the higher mortality rate among women of all racial and ethnic backgrounds (Whitt et al., 2003; Braveman, 2007; USDHHS, 2003). As women age, they become less physically active, and more sedentary (Whaley, 2003). Women between the ages of 40-65, have been found to be less active than their younger counterparts, and more

prone to chronic health problems (Cox et al., 2003). African American women as a group do not meet the CDC recommendations for physical activity. The prevalence of physical activity has been shown to be the lowest among African American women at 36.1%, as compared to Hispanic women at 45.3%, and 49.6% of White women (Kruger, Kohl, & Miles, 2008). The low level of physical activity is of great concern given the disproportionate burden in this population of health conditions associated with physical inactivity. Many African American women believe that opportunities for physical activity had not always existed for them due to historical, marginality, cultural and daily living issues (Henderson, & Ainsworth, 2001); therefore, increasing physical activity in midlife African American women is an important public health goal.

Most of what is known about physical activity in African American women is based on studies with predominantly White middle-class women (Wilbur, et al., 2006; Krummel, et al., 2001; Marcus, et al., 2006). According to Wilbur, et al., (2003b), prior research suggests that adults who reported being physically active in their youth, were more likely to be physically active as adults, although many African American women believed that opportunities for physical activity had not always existed for them (Henderson, & Ainsworth, 2001). Various studies have identified environmental (access to facilities, neighborhood safety) and cultural factors (social support) as promoting or limiting physical activity in African American women (Eyler et al., 2002b; Wilbur et al., 2002; Sanderson et al., 2002; Young et al., 2002; Dunn, 2008; Harley, Buckworth, Katz, Willis, Odoms-Young, & Heaney, 2009). With relatively few studies being completed with African American women (Wilbur et al., 2006; Dunn, 2008; Eyler et al., 2002; Harley et al., 2009), there is a gap in what is known regarding African American women and physical activity.

C. Known Predictors of Physical Activity

1. Physical Activity Self-Efficacy

A key predictor of physical activity in adults is physical activity self-efficacy (McAuley, Jerome, Elavsky, Marquez, & Ramsey, 2003a; McAuley, Jerome, Marquez, Elavsky, & Blissmer, 2003b; Speck & Harrell, 2003; Wilbur et al., 2003b). Self-efficacy is defined as one's belief that a given behavior will lead

to certain outcomes, and the individual is capable of successfully executing the behavior (i.e., maintenance of sufficient physical activity) (Bandura, 1977; Whaley, 2003; Speck & Harrell, 2003). Physical activity intervention studies with adults have consistently shown that higher levels of physical activity self-efficacy predict an increase in physical activity behavior (McAuley et al., 2003a; McAuley et al., 2003b). However, comparatively less research has focused on the relationship between physical activity self-efficacy and physical activity among ethnic minorities (Martin, Dutton, & Brantley, 2004). In a longitudinal intervention study with midlife White and African American women, it was shown that midlife African American women compared to White women scored higher in self-efficacy for physical activity, yet adherence to the specified number of walks was less for African American women as compared to White women. In one intervention study to increase walking in midlife White and African American women, Wilbur, et al., (2003b) found that compared to White women, African American women had higher levels of physical activity self-efficacy at baseline, but at post-intervention, physical activity self-efficacy decreased in African American women, and was not predictive of physical activity behavior in African American women. One reason cited for this decrease in behavior was that midlife African American women may have been unrealistically optimistic about their ability to complete the intervention (Wilbur et al., 2003b). These results suggest that the role of self-efficacy in predicting physical activity in African American women may be more complex than it is for White women (Wilbur et al., 2003b). Empirical studies have shown physical activity to be an important indicator of current and future physical activity behavior, but it is not clear whether engaging in physical activity results in increased self-efficacy, or if increases in one's level of self-efficacy results in higher levels of physical activity (Whaley, 2003). To better understand the motivator for physical activity behavior in midlife African American women we need to look beyond self-efficacy to the underlying cognitive structures that give rise to self-efficacy.

2. Physical Activity Social Support

Social support has been identified as a motivator of physical activity in African American women, and the lack of social support has been shown to decrease the level of physical activity. Social

support is defined as the aid and assistance exchanged through social relationships and interpersonal transactions, and has been studied primarily in White women. Several studies have found that midlife African American women value having social support, friends, family, and kinship as a motivating factor to initiating physical activity behavior (Wilbur, et al., 2002; Eyler, et al., 2002b; Eyler, et al., 1999). For some groups of people, the mere social contact that occurs during a structured physical activity program may enhance physical activity participation (Eyler, et al., 1999). Social support has been identified as an important cultural variable when studying motivation of physical activity in midlife African Americans. Many African American women rely on social support from others to initiate a new physical activity behavior. However, the role of social support has been reported to be less of a motivator to American women who are maintaining a physical activity behavior (Eyler, et al., 1999; Young, Gittelsohn, Charleston, Felex-Aaron & Appel, 2001; Dunn, 2008). Unfortunately for African American women, when caregiving duties or family responsibilities come along, these women are willing to forego their own activities for others (Wilbur, et al., 2008; Dunn, 2008).

3. Neighborhood Factors and Physical Activity

Environments may restrict a range of physical activity behaviors by promoting or discouraging physical activity through factors such as, access to safe recreation, accessibility of recreation facilities, and transit options. Hooker, Wilson, Griffin, & Ainsworth (2005) determined that environmental factors may be implicated as another factor accounting for the lower level of physical activity in blacks as compared to whites. Environmental factors bear significant influence on diet, physical activity and obesity. “The role and importance of the built environment in promoting physical activity is a relatively new area of research that has received increasing attention” (Loukaitou-Sideris, 2006, p, 220). If an individual perceives their neighborhood to be unsafe, whether it actually is or not, this can affect the individual’s actions and motivations (Loukaitou-Sideris, 2006; Hooker, et al., 2005). Studies have shown that women are more likely to avoid walking after dark, and particularly among minority women living in poor neighborhoods (Loukaitou-Sideris, 2006; Wilson, Kirtland, Ainsworth & Addy, 2004). Other factors that affected whether individuals walked for physical activity in the neighborhoods was the characteristic

of the social and physical setting (i.e., overgrown bushes, low lighting, being alone, and presence of unknown others) (Loukaitou-Sideris, 2006). The Centers for Disease Control and Prevention (CDC) goal of increasing physical activity among all Americans is supported by key strategies such as creating or enhancing access to places for physical activity as well as supporting urban design, land use and transportation policies.

4. Obesity, Chronic Health Conditions, and Physical Activity

Various studies have identified environmental and cultural factors as barriers of physical activity in African American women (Eyler, et al., 2002; Wilbur, et al., 2002; Sanderson, et al., 2002; Young, et al., 2002; Dunn, 2008). Another individual factor that may influence physical activity in midlife African American women is their body mass index (BMI). The BMI is calculated from an individual's weight and height, and is a reliable indicator of body fatness, used to screen for weight categories that may lead to health problems. The BMI has several categories: underweight (BMI <18.5 kg/m²), normal weight (BMI 18.5-24.9 kg/m²), overweight (BMI 25-29.9 kg/m²), obesity (BMI >30 kg/m²) (NIH, 2000). In 2006, the CDC reported 77% of African American women in the United States are overweight, with more than 50% of African American women classified as obese (CDC, 2007a). Obesity in African American women, which is associated with physical inactivity, may also be linked to the very essence of the women's cultural, historical, and psychosocial well being (Johnson & Broadnax, 2003). Studies further suggest that the African American culture supports female perceptions of body type and physical attractiveness (Frisby, 2004). Compared with White women, African American women are more satisfied with a larger body size (Cachelin, 2001), and if overweight, are more likely to feel attractive (Eyler, et al., 2002b; Kumanyika, et al., 2005). Rucker and Cash (1992) found that African American women tend to hold more favorable body image attitude than White women and also hold less strict criteria for perceptions of body fatness. Data shows that most African American women are less concerned with weight, dieting, or being thin (Frisby, 2004), and African American women who were physically active reported body weight or shape to be less important than being physically active (Young, et al., 2001).

The incidence of disease and higher BMI levels in African Americans continues to be debated among researchers (Kumanyika, et al., 2005). However, African American women diagnosed with breast cancer compared to White women, are more likely to be obese before diagnoses, and are significantly more likely to gain weight after diagnoses, and treatment (Kumanyika, et al., 2005). In a study conducted by Stevens, Juhaeri, Cai, & Jones (2002), it was found that the estimated incidence rates for mortality, diabetes, hypertension, and hypertriglyceridemia in white women was equated with a BMI of 30kg/m², but in African American women the BMI for these outcomes and risk estimates ranged from 18kg/m² to greater than 35kg/m². Clinical trial data for adults suggest that weight loss is more difficult for African Americans than whites, even if those enrolled and retained in the trials are highly motivated for lifestyle changes and given intensive counseling and support by well-trained health professionals (Kumanyika, et al., 2005). The more accepting body images and a greater acceptance of weight gain in African American women have been shown to be negatively correlated with physical activity (Sanchez-Johnsen, et al., 2004).

Chronic health conditions have been noted as barriers and motivators of physical activity in midlife African American women. Dunn (2008) found that women who had health problems were less likely to become physically active. Arthritis and joint pain were major complaints of women for not being physically active, as well as side effects of medications, fear of having a heart attack, and being tired (Dunn, 2008; Wilbur, et al., 2002; Eyler, et al., 1999). Some women considered poor health as a barrier and yet some women perceived having a chronic health condition as an enabler in promoting physical activity to improve their health (Sanderson, Littleton, & Pulley, 2002). Some African American women who feared being diagnosed with a chronic health condition, or had a family member with a chronic health condition were motivated to become physically active (Eyler, et al., 1999).

D. Conceptual Framework

The conceptual framework (Figure 1) is based on a culturally adapted social cognitive model in which dimensions of racial identity are predicted to influence physical activity in African American women, controlling for the known predictors of physical activity: self-efficacy, social support,

neighborhood factors, BMI, and self-rated health. Self-labeled race is considered a more crude measure of racial identity in this model.

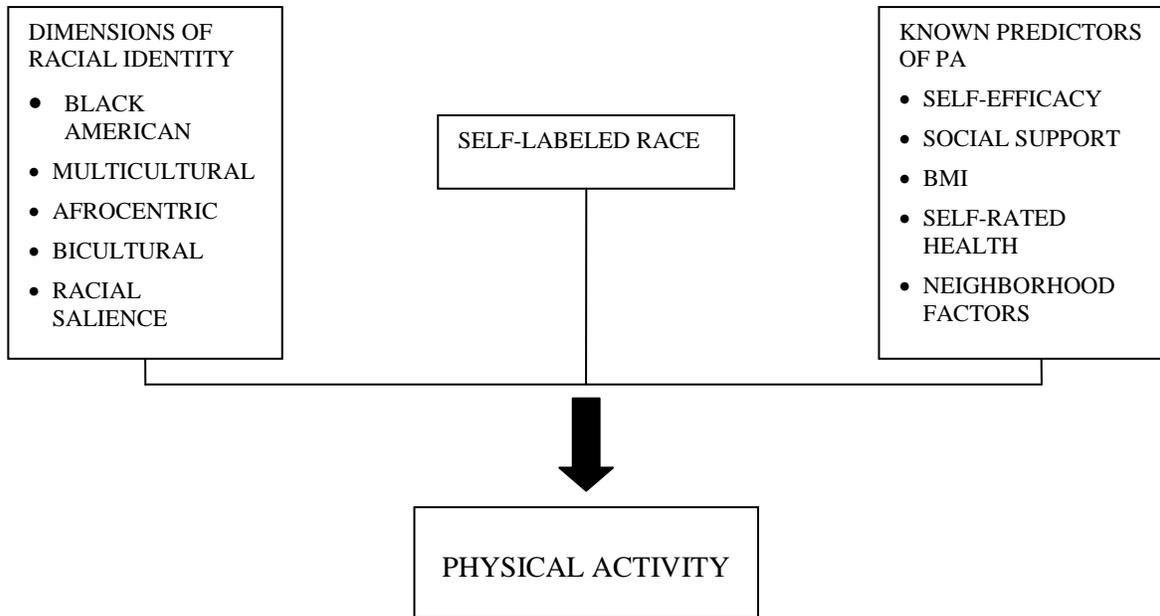


Figure 1 Conceptual Framework

E. **Research Aims and Hypotheses**

The following specific aims and research questions (RQ) will be addressed in midlife African American women:

Aim 1: Controlling for physical activity self-efficacy, social support for physical activity, neighborhood factors BMI, and self-rated health, determine whether dimensions of racial identity predict physical activity.

RQ 1a: Do dimensions of racial identity predict level of physical activity?

RQ1b: Do dimensions of racial identity predict sufficient (vs insufficient) physical activity?

Aim 2: In a subset of women (due to concerns about participant burden), examine relationships between the total collection of self-identities (number, valence, and content), dimensions of racial identity, physical activity self-efficacy, social support for physical activity, neighborhood factors, BMI, health variables, and physical activity.

III. METHODS

The proposed study will provide foundational data necessary for further longitudinal work to examine the role of dimensions of racial identity on physical activity in midlife African American women over time. Ultimately this work will lead to the development of tailored identity-based motivational interventions to increase physical activity in midlife African American women as a way of decreasing the health disparities associated with physical inactivity.

A. Study Design

This cross-sectional study used a descriptive correlational design.

B. Sample

The study sample included 252 African American women aged 40-65 residing in a predominantly Black community in Northwest Indiana (Gary, Indiana) and the surrounding area of 30 miles. The decision to focus on this age range was to be consistent with other researchers who have studied African American women and physical activity (Dunn, 2008; Wilbur, et al., 2006; King, et al., 2000; Kumanyika, et al., 1991). Gary, Indiana is located in the southeastern portion of the Chicago metropolitan area and is approximately 25 miles from downtown Chicago. The population in Gary was 84,000 in 2006-2008, and 83% of the population was African American or Black (United States Census Bureau, 2006-2008). Inclusion criteria: female, ages 40-65 years, self-identify as African American/Black, American born, and English speaking. Exclusion criteria: inability to provide informed consent, self-identify as other than African American/Black, younger than 40, or older than 65, and male.

Two hundred and fifty two African American women were enrolled in the study, and participants were obtained by convenience and snowball sampling. All participants enrolled into the study met the inclusion/exclusion criteria and agreed to participate in this study.

1. Sample Recruitment

A convenience sample of participants was recruited using flyers that were posted at the local public libraries, the YWCA, local beauty shops, eating establishments, and golf courses. Churches are an important social institution in the African American community because they preserve African American culture and traditions and thus are an appropriate target for recruitment (Young, et al., 2002). As such, announcements were also made at Sunday Church services, choir rehearsals, a dance class, and a women's conference held at a church. Finally, we also recruited women from a banquet hosted by the local Black Nurses Association.

Many women willing to participate hosted sessions at their homes, and invited several of their friends. Interested individuals contacted the principal investigator and were screened using the following screening questions: "Are you between the ages of 40 and 65? Were you born in the United States (in which state)? And how would you describe your race or ethnicity?" After screening and finding the individuals meeting the criteria, the recruitment script was read to them, explaining the procedures, and if willing, they were invited to participate in the study. Participants were then given a date, time, and location in which to meet to complete the surveys. Individuals who made first contact by email were screened by email and if they met the criteria were invited to complete the survey. One individual made first contact by text messaging. She was screened by text messaging, and given a date, time and location by text. The procedures were read to her at the face-to-face meeting, and she agreed to participate in the study. She had heard about the study from an individual she used to work with. Several women after having participated in the study called several of their friends, relatives, and other women to come to the libraries, beauty shops, and their homes so that they could complete the study. Wilbur, et al., (2006), identified the social networking that occurs through family, friends, and coworkers by spreading the word as an indirect method of recruiting participants. This type of community recruitment reinforces the notion of trust, which is necessary to support research endeavors (Yancey, Ortega, & Kumanyika, (2006). The

women who came without prior screening, were screened, and if eligible, were read the recruitment script, and invited to complete the surveys at that time.

Phone contact was made by the principal investigator to individuals in the community who were affiliated with libraries, churches, and local beauty shops. Many of these individuals were then emailed the flyer and the participant signup sheets for women who were interested in participating. The signup sheets were emailed, faxed or picked up by the principal investigator, and the women were called and screened. If eligible they were read the recruitment script, and if still willing, were given a date, time, and location that they could meet to complete the data collection.

2. Power Analysis

A power analysis was conducted based on binary logistic regression analysis with multiple predictors in the model, while focusing on the effects of the racial identity variables on meeting the CDC recommendations for moderate or vigorous physical activity (sufficient physical activity = 1; insufficient physical activity = 0). Based on cross-tabulations using the Web-Enabled Analysis Tool and national data from the 2005 BRFSS (CDC, 2005), among women 40-64 years old, 33% of Black women (probability = 0.33) and 48% of White women (probability = 0.48) engaged in sufficient physical activity. We assumed that the sufficient physical activity probability for Black women is at the means of the dimensions of the racial identity according to the Black Identity Classification Scale (BICS), and that the probability for Black women who score at the lower extremes of these scales would approach 0.48 (probability of sufficient physical activity for White women). Our sample size estimates are based on the smallest effect size that would be important to detect (odds ratio 1.5) with 80% power (one-tailed alpha = 0.05). This effect size corresponds to an increase in sufficient physical activity probability from 0.33 to 0.43 for Black women who score at 1 standard deviation below the means for the dimensions of the racial identity according to the BICS. Based on this power calculation, it was determined that 252 women was a sufficient sample size.

C. Procedure

Women recruited at the beauty shops, libraries, and churches were screened at that time, and if eligible, they were read the recruitment script, and completed the surveys face-to-face at that time. Participants took an average of 50 minutes to complete the measures. A random subsample of 30 women completed an open-ended measure of the total collection of identities (number, valence, and content) which took an additional 15 to 30 minutes. Several participants were read the survey for ease of completion. Each participant was compensated with \$15 for their time and effort, and a pen that they could keep.

D. Measurements

1. Physical Activity

The level of physical activity was measured in two ways. The CDC's Behavioral Risk Factor Surveillance System physical activity questionnaire (BRFSS) was used to categorize the participants into sufficient vs insufficient levels of physical activity while the Jackson Heart Physical Activity Survey (JPAC) was used as a continuous variable for physical activity.

1.1 Sufficient vs Insufficient Physical Activity

The Behavioral risk factor systems surveillance physical activity questionnaire (BRFSS) (CDC, 2009) is a population-based, random digit—dialed telephone survey of the civilian, non-institutionalized US population aged > 18 years in the 50 states, the District of Columbia, Guam, Puerto Rico, and the US Virgin Islands. The survey for appropriate physical activity was developed from the CDC and American College of Sports Medicine (ACSM) guidelines and recently questions were updated to include domains of leisure time, household, and transportation-related activity of moderate-and vigorous intensity and walking questions (Yore et al, 2007; CDC, 2003). The BRFSS assesses the number of minutes in a usual week of moderate and vigorous-intensity physical activity, engaged in over the past month. Participants were asked a total of 8 questions: 1) During the past month, other than your regular job, did you participate in any physical activities such as running, calisthenics, golf, gardening, or walking for exercise? 2) When you are at work, which of the following best describes what you do? Would you say---

i) mostly sitting or standing, ii) mostly walking, or, iii) mostly heavy lifting or physically demanding work. 3) Now thinking about the moderate activities you do in a usual week, do you do moderate activities for at least 10 minutes at a time, such as brisk walking, bicycling, vacuuming, gardening, or anything else that causes some increase in breathing or heart rate? 4) How many days per week do you do these moderate activities for at least 10 minutes at a time? 5) On days when you do moderate activities for at least 10 minutes at a time, how much total time per day do you spend doing these activities? 6) Now thinking about the vigorous activities you do in a usual week, do you do vigorous activities for at least 10 minutes at a time, such as running, aerobics, heavy yard work, or anything else that causes large increases in breathing or heart rate? 7) how many days per week do you do these vigorous activities for at least 10 minutes at a time?, and 8) On days when you do vigorous activities for at least 10 minutes at a time, how much total time per day do you spend doing these activities? Three questions to determine the number of minutes of moderate-intensity physical activity, and 3 questions to determine the number of vigorous-intensity physical activity performed in a usual week. According to the CDC (2003) the standards for sufficient levels of physical activity are : > 30 minutes/day of moderate-intensity physical activity on > 5 days/week, > 20 minutes/day of vigorous-intensity physical activity on > 3 days/week, or > 150 minutes/week of moderate-intensity, or 60 minutes/week of vigorous-intensity physical activity. The number of minutes of moderate or vigorous-intensity physical activity was used by the CDC to categorize the participants into three groups: inactive (no physical activity), insufficient (physical activity that falls short of the CDC guidelines for sufficient physical activity), and sufficient physical activity. We collapsed these groups into two categories reflecting sufficient vs. insufficient (0 = insufficient, 1 = sufficient; combining inactive and insufficient) activity for moderate, and vigorous-intensity activity.

The BRFSS questions to assess moderate and vigorous-intensity physical activity have been widely used (CDC, 2007b). Validity of the survey was assessed from a sample of 60 African American and White adults, using the accelerometer as the standard over the course of 7 days. The Cohen's kappa for moderate-intensity physical activity was 0.31, and the Cohen's kappa for vigorous-intensity physical activity was 0.26 (Yore, et al, 2007). The range for the weighted mean for other self-report physical

activity surveys when validated against an accelerometer was 0.11 to 0.36 for moderate activity, and 0.22 to 0.30 for vigorous activity (Sallis & Saelens, 2000).

Test-retest reliability was assessed in a sample of 106 African American and White adults over the course of 2 weeks. The intraclass correlation coefficient (ICC) for the number of minutes per week in moderate-intensity physical activity was 0.32, and the ICC for the number of minutes per week in vigorous-intensity physical activity was 0.58 (Evenson & McGinn, 2005). The reliability scores for 2-week re-test reliability for other self-report physical activity surveys ranged from 0.28 to 0.77 for moderate activity, and 0.32 to 0.79 for vigorous activity (Sallis & Saelens, 2000). In the current study, the Cronbach alpha coefficient for sufficient physical activity was 0.42.

1.2. Level of Physical Activity

The Jackson heart physical activity survey (JPAC) (Smitherman, et al., 2009) was used to obtain a more refined and continuous measure of physical activity. The measure was used in the Jackson Heart Study, a large prospective single site epidemiological study of cardiovascular disease among African American women and men, from the metropolitan area of Jackson, MS. Data collection began in 2000, with a cohort of 5,302 participants and ended in 2004. The measure is a 30-item survey used to assess physical activity over the past 12 months. The JPAC measure provides 4 subscale scores as well as a total score. The Active Living subscale contains 7 items that assess activity during leisure time. The Work subscale includes 8 items assessing work-related physical activity. The Home, Family, Yard, and Garden subscale (“Home/Life”) contains 7 items that assess activities that occur around the home, including care giving, cooking, major and minor cleaning, home repairs, and outdoor work. The Sport and Exercise subscale consists of 8 items. Most JPAC items are rated on a 5-point Likert scale (1 = lowest activity, to 5 = highest activity) and summed within each subscale. Items on the Sports subscale require specification of particular activities. Total scores are calculated by summing the 4 subscale scores, and can thus range from 3 to 20 for those participants with complete data (Smitherman, et al, 2009).

Convergent validity was assessed with objectively measured physical activity (24-hour accelerometer data and 3-day pedometer data) from 2 samples of participants from the Jackson Heart

Study (N = 404, and 294, respectively). The samples were predominantly middle-aged African American women, who were overweight, or obese. Participants were separated into tertiles based on the JPAC total scores, and objective physical activity data were compared across tertiles using linear trend analyses and Spearman correlations between accelerometer/pedometer values and JPAC total and subscale scores were calculated. The JPAC total ($\rho = 0.24$, $p < .0001$) and 3 of the 4 index scores ($\rho = 0.11$ to 0.17) were significantly and positively correlated with mean raw accelerometer counts/minute. JPAC total scores also were significantly correlated with minutes of > moderate-intensity activity regardless of the cutpoint used ($\rho = 0.17$ to 0.25 , all $p < .001$). The JPAC total score correlated most strongly with daily pedometer counts ($\rho = 0.32$, $p < .001$), while the Sports and Home/Life correlations were respectively, $\rho = 0.29$, $p < .0001$ and $\rho = 0.15$, $p < .01$; and the Active Living index correlated with pedometer past week activity minutes of moderate activity was $\rho = 0.21$, $p < .001$ (Smitherman, et al, 2009). The magnitude of these correlations is consistent with other self-report physical activity measures.

Test-retest reliability was assessed with 40 African Americans over a 2-week period. The test-retest reliability was 0.99 for the total score, and the subscale score reliability coefficients were all 0.99, confirming that scores for the JPAC 12-month recall were virtually invariant during the 2-week administration interval (Smitherman, et al, 2009). In the current study the Cronbach alpha coefficients for the following subscales were: 1) Total score (22 items) 0.77; 2) Active Living (4 items) 0.39; 3) Work Life (7 items) 0.91; Home/Life (7 items) 0.64; and 4) Sports (4 items) 0.56.

2. Racial Identity

We measured racial identity using an open-ended measure of self-labeled race and a close-ended measure that captures five major dimensions of racial identity in African Americans.

2.1. Self-Labeled Race

Racial ethnic identity (Oyserman, et al., 2007a; Oyserman, et al., 2007b). First, participants were asked to self-identify their race. Participants were told that “People have different ways of describing their race or ethnicity. Which describes you best?” the participants were asked to write down their answers. The participants were then asked to write down the answer to the following question: “Do you have a

reason for choosing that description?” This measure was used to identify race/ethnicity, because the socialization experiences of individuals who identify as “Black” are not necessarily the same as those who identify as “African American” (Grayman, 2009). Oyserman, et al., (2003) used this measure with young adults to determine how individuals racially and ethnically identify themselves.

2.2. Dimensions of Racial Identity

Black identity classification scale (BICS) (Resnicow et al., 2009), was used to obtain a more refined measure of racial identity that focused on dimensions of racial identity. This measure allowed us to determine that racial identity classification and racial salience are best conceptualized as separate dimensions rather than as a single variable. This measure is comprised of 32 items drawn from or adapted from other existing measures. Responses are on a 7-point scale ranging from 1 =strongly disagree, to 7 = strongly agree. Using a 3 stage algorithm, these items are used to identify 5 core racial identity dimensions: 1) Black American (proud of her racial heritage and believes in educating self and family about African American culture and history); 2) Multicultural (appreciates the many ethnic groups and cultures that exist in the world); 3) Bicultural (a positive affirmation of race, and perceives the world in a Black/White duality); 4) Afrocentric (feels strong connection to Africa); and 5) Racial Salience (importance or centrality of race to one’s self-definition) (Resnicow, et al, 2009). Using these dimensions of racial identity, Resnicow et al (2009) found that the racial identity dimensions corresponded in predicted ways with food choices providing evidence of construct validity. Alpha coefficients ranged from 0.67 to 0.80 across all subscales. In the current study the Cronbach alpha coefficients for the dimensions of race were as follows: 1) Black American (8 items) 0.80; 2) Multicultural (4 items) 0.78; 3) Bicultural (4 items) 0.91; 4) Afrocentric (7 items) 0.85; and 5) Racial Salience (6 items) 0.85.

These five dimensions of racial identity were used because Resnicow et al, (2009) found in their sample that African Americans vary considerably in these dimensions.

3. Self-Efficacy for Physical Activity

Self-efficacy for physical activity was assessed using a revised version of McAuley’s self-efficacy for physical activity measure (Resnick, Palmer, Jenkins & Spellbring, 2000b). The measure

consists of 9 items and assessed the participant's level of confidence regarding engaging in physical activity (at least three times per week for 20 minutes at moderate intensity). The measure is rated on a scale ranging from 0 (I am NOT very confident) to 10 (I am very confident). The confidence scores were then summed and divided by the total number of items giving a possible range of 0-10 (Resnick et al., 2000b).

Concurrent criterion validity was assessed from a sample of 187 older adults. A significant correlation between self-efficacy expectations and related behavior was $r = 0.56, p < .005$. Validity was further supported by statistical significant Lambda estimates which ranged from 0.61 to 0.87 (Resnick, & Jenkins, 2000a).

Internal consistency was assessed for the measure with a Cronbach's alpha of 0.92. Using structural equation modeling, the squared multiple correlations ranged from 0.38 to 0.76, providing further evidence of internal reliability (Resnick, & Jenkins, 2000a). In the current study, the Cronbach alpha coefficient was 0.92.

4. Social Support for Physical Activity

Social support was assessed using a 5-item measure (Eyler, et al, 1999), based on Sallis, Grossman, Pinski, Patterson, & Nader (1987), physical activity social support scale, used in a sample of middle-aged and older minority women. The items are rated on a 5-point scale (1 = strongly disagree to 5 = strongly agree). The first question focused on general physical activity social support. The second and third questions (defined as "friend physical activity social support") focused on encouragement from friends to be physically active with the participant. The fourth and fifth questions (defined as "family physical activity social support") focused on encouragement from relatives to be physically active and the availability of at least one relative who could commit to being physically active with the participant. Responses to each question are added together resulting in a scale score of 5-25. Higher scores indicate high physical activity social support, and lower scores indicate no/or low physical activity social support.

Criterion validity was established from a sample of young White women. Each subscale significantly positively related to a one-item vigorous activity question ($r = 0.35$ and 0.46 , respectively) (Treiber, Baranowski, Braden, Strong, Levi, & Knox, 1991).

From the same sample of young White women, the family and friend subscales have demonstrated adequate internal consistency ($\alpha = 0.91$ and 0.84 , respectively) and 1-to 2-week test retest reliability ($r = 0.79$ and 0.79 , respectively) (Treiber, et al, 1991). In the current study, the Cronbach alpha coefficient was 0.84 .

5. Neighborhood Factors

Neighborhood factors were assessed using a 7-item Likert-type questionnaire developed from an extensive literature review, expert input, and focus groups (Hooker, Wilson, Griffin, & Ainsworth, 2005). The items are rated on a 4-point scale (1 = strongly disagree to 4 = strongly agree). Five items were used to assess safety-related environmental supports for physical activity, and two items were used to assess social environmental supports for physical activity. The following items comprised the neighborhood factors scale: 1) There is so much traffic on the streets that it makes it difficult to walk in my neighborhood, 2) The number and quality of streetlights makes it difficult to walk in my neighborhood, 3) There are so many dogs running loose, that it makes it difficult to walk in my neighborhood, 4) The crime rate makes it unsafe to go on walks in my neighborhood. The following three items were reverse coded before summing the scores: 5) My neighbors can be trusted so that I can take walks in my neighborhood, 6) There are public places (e.g., parks, walking/biking trails, playgrounds) that are safe in my neighborhood, and 7) I see people being physically active (e.g., walking, jogging, biking) in my neighborhood. Responses to each question are summed resulting in a scale score of 7-28, with higher scores indicating lower neighborhood safety. The neighborhood is defined as the area within one half-mile or a 10-minute walk from their home.

Validity was assessed using a sample of 1,112, White and Black adults. Comparing the survey with objective measures of geographic information system (GIS), the kappa coefficients ranged from -0.02 to 0.37 (Kirtland, et al, 2003).

Test-retest reliability was assessed using a sample of 408, White and Black adults, with a 3-week time lapse between surveys. Spearman's rho for responses to the survey ranged from 0.42 to 0.74 (Kirtland, et al, 2003). In the current study, the Cronbach alpha coefficient was 0.75.

6. Demographics and Health Variables

Age, income, education, self-rated health and chronic health conditions were measured using a questionnaire that has been used in previous studies on midlife African American women (Wilbur, 2010), which allowed us to characterize our sample and use relevant variables as control variables.

Based on self-reported height and weight, body mass index (BMI) was calculated using the formula: $(\text{weight in pounds} \times 703) / (\text{height in inches})^2$.

7. Total Collection of Identities

Open-ended cardsorting task (Zajonc, 1960). With a random subset of 30 participants we examined the number and valence of the total collection of personal identities generated by these participants. This measure was administered one-on-one, and each participant was selected randomly depending on whether they received a packet ending in 2, 5, or 9. Each participant was given blank index cards labeled A to ZZ (a total of 52 cards) and asked to completely describe herself by putting one idea on each card using as many or as few cards as necessary. To identify which personal identities were core identities called self-schemas, several ratings were made by the participants. After the participant generated the cards, she rated each descriptor on a scale from 1-11 for the degree of self-descriptiveness (1 = not like me, to 11 = most like me). Then the participant rated each descriptor on a scale of 1-11 for importance of each characteristic to the participant (1 = not important to me, to 11 = most important to me). Lastly, the participant marked each descriptor with a valence rating, having a positive (+), negative (-), or neutral (0) meaning. The number of positive and negative core identities (positive and negative self-schemas) were computed by totaling the number of characteristics rated as both highly self-descriptive and highly important (8-11 on both scales) and rated positive or negative.

E. Data Analysis

The data were analyzed using the statistical program for social sciences (SPSS) version 18.0 for Windows (SPSS, Incorporated, Chicago, IL). The data set contained 252 cases. Frequencies and descriptive statistics were completed on all variables, and plots were produced to summarize the data, and check assumptions. Data cleaning was completed by the principal investigator validating data entry on each record, and validating variables not passing the range check against the questionnaire. Plots were produced that visually displayed distributions of variables.

We had two predictive models: one to predict the continuous outcome of physical activity (JPAC total score) and one to predict the dichotomous outcome (BRFSS sufficient physical activity). In both regression models, the five racial identity dimensions were entered simultaneously with the five control variables (physical activity self-efficacy, social support for physical activity, neighborhood factors, BMI, and self-rated health) and dummy variables for self-labeled race. In the model to predict the JPAC, multiple linear regression was conducted and in the model to predict sufficient vs insufficient physical activity (BRFSS), logistic regression was used.

F. Protection of Human Subjects

This study was approved for exemption by the University of Illinois Institutional Review Board, (Appendix A) as well as the administrative offices of the facilities utilized prior to participant recruitment and data collection. Participants were informed of the purpose of the study through verbal explanation and were given contact information for the principal investigator and the University of Illinois Institutional Review Board should any questions arise during or after the study period (Appendix C). In addition, all participants were informed through verbal explanation with whom their information would be shared (Appendix C). All participants meeting the inclusion criteria and completing the surveys were told that they could choose not to participate and may withdraw from the study at any time without affecting their relationships with the facility or the principal investigator. The participants were told that some of the questionnaires might contain sensitive and perhaps disturbing statements, and if they were uncomfortable answering the questions they could skip those items, or stop at any time. The risks for participating in this

study were minimal as participants were asked to complete a set of questionnaires, as well as there being no physical risks or discomforts. Subject identification numbers were used instead of names; this was done to protect confidentiality and privacy for data collection, analysis, and publication of results.

IV. RESULTS

The results of this study are organized into several sections. The first section describes characteristics of the sample. The second section consists of descriptive statistics and correlations among the major study variables. The third section consists of a linear regression model to address the research question: Do dimensions of racial identity predict physical activity controlling for physical activity self-efficacy, social support for physical activity, neighborhood factors, BMI, and self-rated health? The fourth section consists of logistic regression model to address the research question: Do dimensions of racial identity predict sufficient vs insufficient physical activity controlling for physical activity self-efficacy, social support for physical activity, neighborhood factors, BMI, and self-rated health? In the last section, relationships between dimensions of racial identity and the total collection of identities from the subsample of 30 women who completed the open-ended identities (cardsorting task) are presented.

A. Sample Characteristics

Participants ranged in age from 40-65, with a mean age of 52 years. Most participants were from Gary, Indiana and the South suburbs of Chicago. The majority of women in the sample had at least some college experience; 44% had college degrees. Seventy percent of the women reported being employed either full-time or part-time. One third of the sample reported an annual family income of \$30,000 or less. Forty-six percent of the sample self-labeled their race as Black, 46% self-labeled their race as African American, and the remaining 8% used terms other than Black or African American to identify their race, e.g., human being, child of God, Negro, Afro-American, and woman of color. Based on the distribution of the scores, we created 2 dummy variables for self-labeled race for use in regression—Other (0 = No, 1 = Yes), and African American (0 = No, 1 = Yes) with the reference group being Black. Sixty nine percent of the women reported having at least one chronic illness. Eighty five percent of the women were overweight or obese based on BMI computed from self-reported height and weight. Table I shows the demographic summary of the 252 participants.

TABLE I
Participant Demographics (N = 252)

CHARACTERISTICS	<i>n</i>	%	<i>M</i> (<i>SD</i>)	Min-Max
Age	250		51.84 (7.01)	40-65
Current Location				
Gary, IN	97	39.4%		
NWI	49	19.9%		
Chicago	23	9.3%		
South Suburbs of Chicago	77	31.3%		
Marital Status				
Single/Never Married	61	24.5%		
Married	100	40.2%		
Widowed	15	6.0%		
Divorced/Separated	70	28.1%		
Cohabiting	3	1.2%		
Highest Grade Completed				
High school or less	56	22.4%		
Some college	83	33.2%		
College degree	77	30.8%		
Graduate degree	34	13.6%		
Employment Status				
Unemployed	29	14.8%		
Homemaker	15	6.0%		
Student	4	1.6%		
Employed part-time	34	13.5%		
Employed full-time	140	55.8%		
Retired	29	11.6%		
Do you have children?				
Yes	212	84.5%		
No	39	15.5%		
Number of children			2.01 (1.50)	0-9
≤ 2	166	68.1%		
3 or more	78	31.9%		
Annual Income				
0-10,000	27	10.8%		
10,001-30,000	57	22.7%		
30,001-50,000	53	21.1%		
50,001-70,000	44	17.5%		
70,001 and above	45	17.9%		
REFUSED	25	10.0%		
Self-Labeled Race				
Black	115	45.6%		
African American	115	45.6%		
Other	22	8.7%		
Reported Number of Chronic Illnesses				0-6
0	78	31.2%		
1	64	25.6%		
2	52	20.8%		
3	30	12.0%		
4	17	6.8%		
5	5	2.0%		
6	4	1.6%		
Body Mass Index (BMI)			32.46 (7.23)	19.13-57.40
Normal (18.5-24.9kg/m ²)	37	15.0%		
Overweight (25.0-29.9kg/m ²)	65	26.4%		
Obese (>30.0kg/m ²)	144	58.5%		

B. Descriptive Statistics and Correlations for Independent and Dependent Variables

As shown in Table II, 61% of the women reported levels of physical activity that met BRFSS criteria for sufficient physical activity. According to the JPAC, physical activity was normally distributed with scores ranging from 3-20 and a mean score of 10. Physical activity self-efficacy and social support for physical activity were also normally distributed with means in the mid-range of their respective scales. Seventy-three percent of the women rated their health as good to excellent. The BMI had a mean of 32.5kg/ m² in the obese category, so based on the distribution a dichotomous variable was created (0 = normal/overweight, 1 = obese). Mean scores on the dimensions of racial identity (BICS) were above the midrange of the scale, with the exception of Afrocentric. The dimension of racial identity with the highest score was Bicultural (mean = 6.0), and the dimension of racial identity with the lowest score was Afrocentric (mean = 3.1). The mean score on the Racial Salience dimension of racial identity was 4.8, suggesting that the salience of race in this sample was slightly above the mid-range of the scale.

The relationships among all independent and dependent variables are shown in Table III, using Pearson product-moment correlation coefficient. The two physical activity variables were modestly positively correlated ($r = .36, p < .01$). JPAC physical activity and BRFSS sufficient vs insufficient physical activity were significantly and positively related to physical activity self-efficacy, ($r = 0.35, p < .01$); ($r = 0.24, p < .01$), social support ($r = 0.22, p < .01$); ($r = 0.14, p < .05$), and self-rated health [percentage of good/excellent health] ($r = 0.25, p < .01$); ($r = 0.22, p < .01$), respectively. There was a significant negative correlation between JPAC physical activity, BRFSS sufficient vs insufficient physical activity and BMI [percentage of obese] ($r = -0.19, p < .01$); ($r = -0.22, p < .01$) respectively. None of the dimensions of racial identity (BICS) (Black American, Multicultural, Bicultural, Afrocentric, and Racial Salience) or the two dummy variables for self-labeled race African American (vs Black and Other) and Other (vs Black and African American) were significantly correlated with JPAC physical activity or BRFSS sufficient vs insufficient physical activity. However, physical activity self-efficacy was modestly positively correlated with the Multicultural ($r = 0.19, p < .01$), Bicultural ($r = 0.13, p < .05$), and Afrocentric ($r = 0.15, p < .05$) dimensions of racial identity.

In sum, all correlation coefficients with the known predictors of physical activity were in the expected direction. The dimensions of racial identity variables were not correlated with physical activity, but several of the variables were correlated with physical activity self-efficacy as shown in Table III.

TABLE II

Descriptive Statistics for Variables

Variables	<i>n</i>	%	<i>M</i> (<i>SD</i>)	Min-Max
BRFSS				
0 = insufficient	95	35.1%		
1 = sufficient	148	60.9%		
JPAC				
JPAC Total	252	100.0%	10.09 (2.39)	3-20
Active Living			2.45 (0.86)	1-5
Work Activity			2.88 (0.62)	1-5
Home Activity			2.45 (0.70)	1-5
Sport Activity			3.57 (0.72)	1.5
Physical Activity Self-Efficacy			5.39 (2.59)	0-10
Physical Activity Social Support			15.35 (6.70)	5-25
Neighborhood Factors			13.16 (4.93)	7-28
Self-rated health				
0 = poor/fair	67	26.8%		
1 = good/excellent	183	73.2%		
BMI				
0 = normal/overweight	102	41.4%	32.46 (7.23)	19.13-57.40
1 = obese	144	58.5%		
BICS				
Black American			5.07 (1.15)	1-7
Multicultural			5.12 (1.35)	1-7
Bicultural			6.02 (1.16)	1-7
Afrocentric			3.06 (1.37)	1-7
Racial Salience			4.76 (1.62)	1-7

TABLE III

Correlations for Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Physical Activity (JPAC)	----	.352**	.218**	-.112	-.193**	.246**	-.107	.084	.008	-.007	-.040	.051	-.004	.360**
2. Physical Activity Self-efficacy		----	.231**	-.066	-.101	.143*	.029	.191*	.128*	.145*	.036	-.106	.087	.242**
3. Physical Activity Social support			----	-.077	-.011	.126*	.091	.115	.091	.083	.115	-.006	-.005	.135*
4. Neighborhood factors				----	-.053	-.192**	-.032	.094	-.118	-.010	.015	.159*	-.127*	.013
5. BMI (0=normal/overweight; 1=obese)					----	-.168**	.121	.002	.067	.022	.097	.002	-.073	-.222**
6. Self-rated health (0=poor/fair; 1=good/excellent)						----	.046	-.057	-.008	.037	-.028	-.099	.051	.218**
7. Black American							----	.248**	.111	.359**	.519**	-.039	.066	.032
8. Multicultural								----	.188**	.388**	.187**	-.037	.030	-.051
9. Bicultural									----	.096	.189**	-.052	.086	-.075
10. Afrocentric										----	.416**	-.013	.084	.035
11. Racial Salience											----	-.116	.107	-.017
12. Self-labeled Other (0 = No; 1 = Yes)												----	-.283**	.025
13. Self-labeled African American (0 = No; 1 = Yes)													----	-.048
14. BRFSS 1=sufficient; 0=insufficient														----

** $p < 0.01$ level (2-tailed); * $p < 0.05$ level (2-tailed)

C. Linear Regression Model Predicting Physical Activity (JPAC)

Simultaneous multiple linear regression was used to determine whether dimensions of racial identity [Black American, Multicultural, Bicultural, Afrocentric, and Racial Salience] and self-labeled race predicted the level of physical activity controlling for physical activity self-efficacy, social support for physical activity, neighborhood factors, BMI [0 = normal/overweight, 1 = obese], and self-rated health [0 = poor/fair, 1 = good/excellent]. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. As shown in Table IV, the model explained 23.9%, $F(12, 231) = 6.09, p < .001$ of the variance in the JPAC.

As shown in Table IV, one dimension of racial identity, Black American, negatively predicted physical activity controlling for physical activity self-efficacy, physical activity social support, neighborhood factors, BMI, self-rated health, and self-labeled race. The unstandardized coefficient for Black American (beta = $-.31, p = .035$) shows that controlling for other predictors, for every one point increase in the Black American subscale of the BICS, physical activity decreases by one third of a point. The other known predictors (with the exception of neighborhood factors) also significantly predicted physical activity.

TABLE IV

Multiple Regression Analysis to Predict Physical Activity JPAC (N = 244)

	R²	B	SEB	β	t	p
	.24					<.001
Physical Activity Self-efficacy		.25	.06	.27**	4.43	.000
Physical Activity Social support		.06	.02	.17**	2.74	.007
Neighborhood factors		-.04	.03	-.09	-1.46	.147
BMI (0=normal/overweight; 1=obese)		-.71	.29	-.15*	-2.45	.015
Self-rated health (0=poor/fair; 1=good/excellent)		1.04	.33	.19**	3.16	.002
Black American		-.31	.14	-.15**	-2.12	.035
Multicultural		.16	.12	.09	1.36	.177
Bicultural		-.06	.12	-.03	-.50	.517
Afrocentric		-.08	.12	-.05	-.71	.560
Racial Salience		.02	.10	.02	.23	.465
Self-labeled Other (0=No; 1=Yes)		.91	.52	.11	1.77	.078
Self-labeled African American (0=No; 1=Yes)		-.09	.29	-.02	-.30	.767

** $p < .01$; * $p < .05$

D. Logistic Regression to Predict the Odds of Sufficient Physical Activity (BRFSS)

Logistic regression was conducted to determine whether the five racial identity dimensions and self-labeled race predicted sufficient (vs. insufficient) physical activity as measured by the BRFSS controlling for physical activity self-efficacy, physical activity social support, neighborhood factors, BMI (0=normal/overweight, 1= obese), and self-rated health (0 = poor/fair, 1 = good/excellent)]. Based on the distribution of the data on the BRFSS variable, we collapsed women into two groups reflecting sufficient vs. insufficient (combining inactive and insufficient) activity for moderate and vigorous-intensity activity. The assumptions of observations being independent and independent variables being linearly related to the logit were checked and met. As shown in Table V, none of the racial identity dimensions nor were the self-labeled race variables significant predictors controlling for the known predictors. The odds of engaging in sufficient levels of physical activity were 2.5 times higher for women who reported good or excellent health compared to those who reported poor or fair health. In addition, an increase of one point on the physical activity self-efficacy scale increased the odds of engaging in sufficient levels of physical activity by 20% while an increase in BMI of one unit reduced the odds of engaging in sufficient levels of physical activity by 40%, controlling for other factors in the model. Social support for physical activity slightly (but not significantly) increased the odds of engaging in sufficient levels of physical activity. These variables significantly predicted sufficient physical activity, $\chi^2 = 41.13$, $df = 12$, $N = 236$, $p < .001$. The model as a whole explained between 16.1% (Cox and Snell R square) and 21.8% (Nagelkerke R squared) of the variance in sufficient physical activity, and correctly classified 70.3% of cases.

TABLE V

Logistic Regression Predicting Sufficient Physical Activity (BRFSS)

Predictor	B	SE	p	Odds Ratio	95.0% CI For Odds Ratio	
					Lower	Upper
Physical Activity Self-efficacy	.18	.06	.003	1.20**	1.06	1.35
Physical Activity Social support	.04	.02	.073	1.04	1.00	1.10
Neighborhood Factors	.02	.03	.482	1.02	.96	1.09
BMI (0=normal/overweight; 1=obese)	-.95	.32	.003	.39**	.21	.73
Self-rated health (0 = poor/fair; 1 = good/excellent)	.90	.34	.007	2.46**	1.24	4.63
Black American	.13	.16	.413	1.14	.84	1.54
Multicultural	-.18	.13	.142	.83	.65	1.06
Bicultural	-.17	.14	.224	.84	.64	1.11
Afrocentric	.08	.13	.554	1.08	.84	1.39
Racial Salience	-.02	.12	.863	.98	.78	1.23
Self-labeled Race						
Other (0 = No, 1 = Yes)	-.27	.55	.622	1.31	.44	3.89
African American (0 = No, 1 = Yes)	-.32	.31	.309	.73	.39	1.35

**p<.01,*p<.05

E. Relationship between the Total Collection of Identities, Dimensions of Racial Identity, Physical Activity, and Known Predictors of Physical Activity in the Cardsorting Subsample

1. Descriptive Statistics of Subsample

In the subsample of 30 women from the original sample who completed the cardsorting task, 33% (n=10) of the participants spontaneously generated a self-descriptor related to race. The demographics of the subsample did not differ from the full sample with the exception that the subsample had higher employment and higher BMI. Twenty-seven percent of the subsample was unemployed compared to 15% of the full sample, and 70% of the subsample was categorized as obese compared to 59% of the full sample. The descriptive statistics for the total collection of identities and other study variables are displayed in Table VI.

2. Differences between Women with a Core Identity Related to Race Compared to Women Who Did Not

Eight of the ten women who generated a self-descriptor related to race /ethnicity rated the characteristic as both highly self-descriptive and highly important to the sense of self (8-11 on both 1-11 scales). An enormous body of literature shows that self-descriptors that are rated as both highly self-descriptive and important are core identities called self-schemas which are central sources of self-definition that play a powerful role in behavioral regulation (Markus, 1977; Kendzierski & Whitaker, 1997; Oyserman, 2008; Stein & Markus, 1996).

An independent samples t-test was conducted to determine if there were any differences in the major study variables between the 8 women who had a core identity related to race and the 22 women in the subsample who did not. These results are shown in Table VII. Racial salience was significantly higher for women who had a core identity related to race ($M = 6.10$) compared to women who did not ($M = 5.11$), $t(24.78) = -2.33$, $p = .028$. In addition, women who had a core identity related to race had a significantly higher score on the Black American ($M = 5.83$ vs $M = 4.85$; $t(23.47) = -2.51$, $p = .020$) and Afrocentric ($M = 4.20$ vs $M = 2.92$; $t(28) = -2.32$, $p = .028$) dimensions of racial identity compared to women who did not. Other than these dimensions of racial identity, the only other significant difference

was that women who had a core identity related to race had higher levels of social support ($M = 19.75$) compared to women who did not ($M = 14.68$), $t(22.34) = -2.37$, $p = .027$. The effect sizes were large ranging from 0.71 to 0.97.

3. Correlations between Total Number of Identities and Major Study Variables

Table VIII shows the bivariate correlations between the number of positive and negative identities and other study variables. The number of positive core identities was positively associated with the level of physical activity (JPAC) and with physical activity social support and was negatively associated with BMI. The number of negative core identities was not significantly associated with any study variables.

TABLE VI

Descriptive Statistics for Subsample

Characteristics	<i>n</i>	%	<i>M</i> (SD)	Min-Max
Physical Activity				
BRFSS				
0 =insufficient	7	24.1%		
1 = sufficient	22	75.9%		
JPAC				
JPAC Total	30	100.0%	10.62 (2.46)	3-20
Active Living			2.48 (0.91)	1-5
Work Activity			2.62 (0.97)	1-5
Home Activity			2.50 (0.73)	1-5
Sport Activity			3.01 (1.18)	1-5
Physical Activity Self-efficacy			4.49 (2.61)	0-10
Physical Activity Social support			16.03 (6.93)	5-25
Neighborhood Factors			13.07 (5.50)	7-28
BMI			34.45 (8.12)	21.92-57.40
Self-rated health				
0 = poor/fair	11	36.7%		
1 = good/excellent	19	63.3%		
BICS				
Black American			5.11 (1.30)	1-7
Multicultural			4.88 (1.35)	1-7
Bicultural			6.09 (0.83)	1-7
Afrocentric			3.26 (1.42)	1-7
Racial Salience			5.37 (1.44)	1-7
Self-Labeled Race				
Other				
0 = No	27	90.0%		
1 = Yes	3	10.0%		
African American				
0 =No	17	56.7%		
1 = Yes	13	43.3%		

TABLE VII

Mean Differences in all Study Variables between Participants with Spontaneously Generated Racial Identities and those Without Spontaneously Generated Racial Identities

Variable	No Racial Identity (n=22)		Racial Identity(n=8)		<i>df</i>	<i>t</i>	<i>p</i>
	M	SD	M	SD			
Physical activity (JPAC)	10.50	2.31	10.94	2.98	28	-.42	.677
Physical Activity Self-efficacy	4.21	2.71	5.26	2.31	28	-.97	.338
Physical Activity Social Support	14.68	7.31	19.75	4.13	22.34	-2.37*	.027
Neighborhood Factors	12.64	5.63	14.25	5.31	28	-.70	.487
BMI	35.46	8.52	31.68	6.60	28	1.13	.267
Black American	4.85	1.37	5.83	.73	23.47	-2.51*	.020
Multicultural	4.73	1.36	5.28	1.30	28	-1.00	.328
Bicultural	6.06	.83	6.19	.87	27	-.37	.718
Afrocentric	2.92	1.17	4.20	1.71	28	-2.32*	.028
Racial Salience	5.11	1.55	6.10	.77	24.78	-2.33*	.028

** $p < .01$, * $p < .05$

TABLE VIII

Correlations between the Number of Positive and Negative Core Identities and Study Variables for Subsample

Variables	# Positive Core Identities	# Negative Core Identities
Physical Activity (JPAC)	.357	-.179
Physical Activity Self-efficacy	.068	-.068
Physical Activity Social Support	.348	.011
Neighborhood Factors	-.278	-.123
BMI	-.364	.065
Self-rated Health 0 = poor/fair 1 = good/excellent	.200	-.044
Black American	-.076	.015
Multicultural	.257	.221
Bicultural	.177	.089
Afrocentric	.146	.041
Racial Salience	.196	.264
Self-labeled Race		
Other (0 = No; 1 = Yes)	-.129	-.057
African American (0 = No; 1 = Yes)	.098	.067
BRFSS sufficient vs insufficient	.186	-.198

V. DISCUSSION

The purpose of this study was to determine whether dimensions of racial identity influence the level of physical activity in midlife African American women controlling for known predictors of physical activity. To our knowledge, this is the first study to examine racial identity as a predictor of physical activity in midlife African American women. In our sample of 252 self-identified midlife Black/African American women, we found that having a strong identification with the Black American dimension (proud of racial heritage and believes in educating self and family about African American culture and history), predicted lower levels of physical activity. This finding is consistent with the findings of studies that show that African Americans who strongly identify with traditional Black culture are less likely to engage in positive health behaviors and more likely to have a strong pro-Black orientation for foods, as well as engaging in behaviors that have more negative health consequences (Resnicow et al., 2009; Landrine & Klonoff, 1994, 2004).

The other dimensions of racial identity (Afrocentric, Bicultural, Multicultural, and Racial Salience) did not influence physical activity. The Afrocentric dimension of racial identity (strong sense of connection to Africa) had the lowest scores of all the dimensions of racial identity in our sample. This suggests that women in our study did not strongly identify with Africa, where physical activity may not be as relevant. According to Resnicow et al. (2009), women with a strong Bicultural identity tend to view the world as a Black/White duality and see themselves as getting along in both Black and White worlds. While more empirical evidence is necessary, it is possible that the effects of identifying strongly with Black and White cultures (in which the prevalence of engaging in health behaviors differs) may cancel each other out. Resnicow et al., (2009) found that African American men and women who had high Multicultural scores had a higher level of intrinsic motivation and were more willing to try new and different fruits and vegetables than those who had low scores on this dimension. Although the Multicultural

dimension of racial identity was not a significant predictor of physical activity in our study; having a stronger Multicultural dimension of racial identity, may be more related to the confidence of being able to be physically active, rather than to the behavior itself. Racial salience did not influence physical activity. This suggests that it is not the centrality of race, but rather, the degree to which one identifies with the Black American dimensions of racial identity that exerts an influence on physical activity.

Over and above the dimensions of racial identity and factors previously shown to predict physical activity, self-identifying as either Black or African American (versus something else like child of God, woman of color, etc.) did not significantly predict the level of physical activity. While an individual's use of such terms as "Black" and "African American" provides insights into the self (Ghee, 1990), self-labels are clearly not interchangeable with dimensions of racial identity (Resnicow et al., 2009). In fact, there were no significant associations between the self-labels (Black and African American) and the dimensions of racial identity (Pearson *r*s range from -0.01 to 0.09). With the evolution of the preferred term in the African American community, which can be affected by generational status; there is substantial individual variation in self-labeling.

Most of the factors that have been shown in previous studies to predict physical activity (physical activity self-efficacy, social support for physical activity, neighborhood factors, BMI, and self-rated health) were significant predictors in our study. Physical activity self-efficacy positively predicted physical activity in our sample. This was an expected result, as supported by previous research that showed self-efficacy as an important predictor of physical activity in older White adults (McAuley, et al., 2003a; McAuley, et al., 2003b; Wilbur, et al., 2003). Self-efficacy has been consistently and positively associated with adult physical activity and adherence to structured physical activity programs; however, comparatively less research has focused on the relationship between self-efficacy and physical activity among ethnic minorities (Martin, Dutton, & Brantley, 2003). One intervention study showed African American women had a higher level

of self-efficacy for physical activity at baseline when compared to White women, but at post-intervention self-efficacy was not predictive of physical activity in the African American women (Wilbur et al., 2003). In our study, self-efficacy positively strongly predicted physical activity.

The influence of social support on the level of physical activity suggests that this is a very important factor for midlife African American women. This finding is consistent with several studies that have shown that midlife African American women value having social support, friends, family, and kinship as a motivating factor to initiate physical activity behavior (Wilbur, et al., 2002; Eyler, et al., 2002). For some groups of people merely having social contact during a structured exercise program may enhance physical activity participation (Eyler, et al., 1999). Social support has been identified as an important cultural variable when studying motivation of physical activity in midlife African Americans (Dunn, 2008). Social support has been shown to help women initiate a behavior; our study shows that social support is directly predictive of physical activity.

Although neighborhood factors have been shown to be important influences on whether or not African American women engage in physical activity (Humpel, Owens, & Leslie, 2002; Eyler, et al., 2002; Trost, et al., 2002), this variable was not a significant predictor in our study after controlling for other known predictors (BMI, social support, self-rated health, and physical activity self-efficacy) and dimensions of racial identity. In fact the safety of the neighborhood was only modestly (and not significantly) associated with the level of physical activity in bivariate correlations. The participants in our study perceived their neighborhoods as generally safe, with an average of 27.8 years living at their current residence. With the social aspects of neighbors and neighborhoods and observing others being active in the neighborhood as influencing factors in physical activity among some women (Sanderson, Littleton, & Pulley, 2002); this may have influenced the perceived neighborhood safety in this sample of midlife African American women.

The fact that BMI negatively predicted physical activity and self-rated health positively predicted physical activity in our sample is not surprising. In a review and update of correlates of adults' participation in physical activity, Trost, Owen, Bauman, Sallis & Brown (2002) found that overweight and obesity were consistent negative predictors of physical activity. Seventy-three percent of the women in our study reported their health as good or excellent. The perception of good/excellent health has been shown to be consistent with participation in physical activity behavior (Trost, et al., 2002). Non-obese women who perceive that they are in good or excellent health are both more likely to believe they can successfully engage in physical activity (have high physical activity self-efficacy) and actually engage in the behavior. Thus, physical activity intervention studies must consider these variables.

In this study, physical activity was measured using the CDC Behavioral Risk Factor Surveillance System (BRFSS) as well as the Jackson Heart Physical Activity Survey (JPAC). These variables were modestly positively correlated with each other ($r = 0.36$, $p < .01$) providing evidence of construct validity. However, our model was much better at predicting the level of physical activity (using the JPAC) rather than the odds of engaging in sufficient levels of physical activity (using the BRFSS). The JPAC has been shown to be a valid and reliable measure among African Americans, as well as asking about usual activity over the past year. Although the BRFSS has been widely used, it has not been validated in African American samples. Our relative lack of findings with the BRFSS may be due to the fact that 1) it may not have been a very sensitive measure for our sample, and 2) it takes much more power to detect a dichotomous outcome than a continuous outcome.

Findings from our subsample of 30 women who completed an open-ended measure of the total collection of identities revealed that having many positive identities is associated with higher levels of physical activity ($r = 0.36$) and social support for physical activity ($r = 0.35$) while being negatively associated with a higher BMI ($r = -0.36$). Although very preliminary given the small sample, this suggests that for midlife African American women, having a large collection of

positive identities may be a cognitive resource – one that facilitates physical activity. Further studies with larger samples of African American women will be needed to replicate these findings and to further examine the role of the total collection of identities in the enactment of physical activity. It was interesting that 30% of the women in this subsample spontaneously generated a self-descriptor related to race/ethnicity. It is important to note that the measure of the total collection of identities was administered prior to any other measures, so race was not primed before the self-descriptors were generated. Those women who considered race/ethnicity to be a core identity had significantly higher physical activity social support than those who did not have a core identity related to race/ethnicity. They also had higher racial salience, and Black American and Afrocentric dimensions of racial identity. The latter finding provides evidence of construct validity of the open-ended cardsorting measure.

A. Limitations

Despite the fact that this is the first study to demonstrate that the Black American dimension of racial identity exerts an influence on physical activity in midlife African American women controlling for several known predictors of physical activity, there are some limitations. First, the cross-sectional design precludes making inferences about the causal direction of the findings. Longitudinal studies are needed to examine the role of dimensions of racial identity on physical activity over time in midlife African American women. Next, the generalizability of the results is limited because of the convenience sample recruited for this study, as well as the geographic region from which the participants were recruited. Further studies in rural areas and other geographic regions need to be conducted to replicate these findings. Another limitation to the study is the use of self-report for physical activity. Nonetheless, self-report questionnaires remain the method of choice for physical activity assessment on the basis of money, time, subject costs, and the likelihood of influencing behavior (Cardinal, 1995; Welk, 2002). Physical activity questionnaires need to be developed that are culturally relevant for women and minority populations (Pereira, Folsom, McGovern, Carpenter, Arnett, et al., 1999; Sternfeld, Ainsworth &

Quesenberry, 1999). Finally, a limitation to the study may have been self-reported weight. Rowland (1990) reported that errors in self-reported weight were greater in overweight females, and race and age were ancillary predictors of reporting error in weight. Cachelin and colleagues (2002) found that midlife African American women were more satisfied with a larger body size than midlife White women. Although height and weight were self-reported in this study, 85% of the participants were classified as overweight and obese.

B. Conclusions and Implications

To our knowledge, this was the first study to demonstrate that racial identity influences physical activity in midlife African American women, even after controlling for known predictors of physical activity including physical activity self-efficacy, social support for physical activity, neighborhood factors, BMI, and self-rated health. Because there is considerable within-group variability among midlife African Americans, one-size-fits-all physical activity interventions may not be effective. Most research to date considers African Americans as a single homogeneous group which may in fact be one reason for the mixed findings from existing physical activity studies in African Americans. Future interventions may need to be tailored to dimensions of racial identity in order to be effective.

The disparities of race and sociocultural factors on health behavior have long been a focus of nursing. The findings from this cross-sectional study provide foundational data necessary for future longitudinal work to examine the multidimensional role of racial identity on physical activity in midlife African American women over time. Longitudinal studies are needed to provide stronger evidence of the nature and direction of racial/ethnic identity in predicting physical activity in midlife African American women. Ultimately, this work will lead to the development of a culturally specific, individually tailored intervention focusing on the dimensions of race to promote physical activity in midlife African American women as a way of decreasing the health disparities associated with physical inactivity.

C. Next Steps

The next step of this research will be to examine the possibility that dimensions of racial identity moderate the effects of self-efficacy on physical activity. Self-efficacy is the most powerful predictor of physical activity. If one or more dimensions of racial identity moderate the effects of self-efficacy on physical activity, this would better explain the disparity in physical activity between AA women and White women, despite the same predictors of physical activity. It would also provide clear direction about tailoring interventions.

APPENDICES

APPENDIX A
UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
 Office of the Vice Chancellor for Research (MC 672)
 203 Administrative Office Building
 1737 West Polk Street
 Chicago, Illinois 60612-7227

Exemption Granted

July 14, 2010

Elaine Hardy, MS
 Health Systems Science
 6959 Berkshire Drive
 Export, PA 15632
 Phone: (708) 751-1340

RE: Research Protocol # 2010-0553
“Racial Identity and African American Acculturation as Predictors of Physical Activity in Midlife African American Women”

PAF#: 2010-06176
 Grant/Contract No: Not available
 Grant/Contract Title: Not available
 Sponsor: American Nurses Foundation

Dear Ms. Hardy:

Your Claim of Exemption was reviewed on June 28, 2010 and it was determined that your research protocol meets the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b)]. You may now begin your research

Your research may be conducted at UIC and with adult subjects only.

Exemption Period: June 28, 2010 – June 27, 2013

The specific exemption category under 45 CFR 46.101(b) is:

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

APPENDIX A (Continued)

1. Amendments You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.
2. Record Keeping You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.
3. Final Report When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).
4. Information for Human Subjects UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:
 - a. The researchers affiliation; UIC, JBVMAC or other institutions,
 - b. The purpose of the research,
 - c. The extent of the subject's involvement and an explanation of the procedures to be followed,
 - d. Whether the information being collected will be used for any purposes other than the proposed research,
 - e. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
 - f. Description of any reasonable foreseeable risks,
 - g. Description of anticipated benefit,
 - h. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
 - i. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
 - j. A statement that the UIC IRB/OPRS or JBVMAC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.

Please be sure to:

→Use your research protocol number (listed above) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 355-2908 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne, CIP
 Assistant Director, IRB # 2
 Office for the Protection of Research Subjects
 Enclosure(s): None

APPENDIX A (Continued)

cc: Arlene Miller, Health Systems Science, M/C 802
Colleen Corte, Health Systems Science, M/C 802

APPENDIX A (Continued)
 UNIVERSITY OF ILLINOIS
 AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
 Office of the Vice Chancellor for Research (MC 672)
 203 Administrative Office Building
 1737 West Polk Street
 Chicago, Illinois 60612-7227

Exemption Determination
Amendment to Research Protocol – Exempt Review
UIC Amendment # 1

September 29, 2010

Elaine Hardy, MS
 Health Systems Science
 6959 Berkshire Drive
 Export, PA 15632
 Phone: (708) 751-1340

RE: Protocol # 2010-0553
“Racial Identity and African American Acculturation as Predictors of Physical Activity in Midlife African American Women”

Dear Ms. Hardy:

The OPRS staff/members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research, and have determined that your research protocol continues to meet the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b))].

The specific exemption category under 45 CFR 46.101(b) is:

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You may now implement the amendment in your research.

Please note the following information about your approved amendment:

<u>Exemption Period:</u>	September 28, 2010 – September 27, 2013
<u>Amendment Approval Date:</u>	September 28, 2010
<u>Sponsor:</u>	American Nurses Foundation
<u>Grant/Contract #:</u>	Not Available
<u>Grant Contract #:</u>	Not Available
<u>Performance Site:</u>	UIC
<u>Number of Subjects:</u>	Up to 302 Adult Subjects Only

APPENDIX A (Continued)

Amendment:

Summary: UIC Amendment #1 dated August 25, 2010 is an investigator-initiated amendment increasing the number of participants in the subgroup from 25 to 50.

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

5. Amendments You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.
6. Record Keeping You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.
7. Final Report When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).
8. Information for Human Subjects UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:
 - f. The researchers affiliation; UIC, JB VAMC or other institutions,
 - g. The purpose of the research,
 - h. The extent of the subject's involvement and an explanation of the procedures to be followed,
 - i. Whether the information being collected will be used for any purposes other than the proposed research,
 - j. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
 - f. Description of any reasonable foreseeable risks,
 - k. Description of anticipated benefit,
 - l. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
 - m. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
 - n. A statement that the UIC IRB/OPRS or JB VAMC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.

Please be sure to:

→Use your research protocol number (2010-0553) on any documents or correspondence with the IRB concerning your research protocol.

APPENDIX A (Continued)

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 355-2908 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne, B.S., C.I.P.
Assistant Director, IRB #2
Office for the Protection of Research Subjects

Enclosure: None

cc: Arlene Miller, Health Systems Science, M/C 802
 Colleen Corte, Health Systems Science, M/C 802

APPENDIX A (Continued)
UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
 Office of the Vice Chancellor for Research (MC 672)
 203 Administrative Office Building
 1737 West Polk Street
 Chicago, Illinois 60612-7227

Exemption Determination
Amendment to Research Protocol – Exempt Review
UIC Amendment # 2

September 16, 2010

Elaine Hardy, MS
 Health Systems Science
 6959 Berkshire Drive
 Export, PA 15632
 Phone: (708) 751-1340

RE: Protocol # 2010-0553
“Racial Identity and African American Acculturation as Predictors of Physical Activity in Midlife African American Women”

Dear Ms. Hardy:

The OPRS staff/members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research, and have determined that your research protocol continues to meet the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b))].

The specific exemption category under 45 CFR 46.101(b) is:

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You may now implement the amendment in your research.

Please note the following information about your approved amendment:

<u>Exemption Period:</u>	September 14, 2010 – September 13, 2013
<u>Amendment Approval Date:</u>	September 14, 2010
<u>Sponsor:</u>	American Nurses Foundation
<u>PAF #:</u>	2010-06176
<u>Grant/Contract #:</u>	Not Available
<u>Grant/Contract Title:</u>	Not Available
<u>Performance Site:</u>	UIC

APPENDIX A (Continued)**Number of Subjects:**

Up to 252

Amendment:

Summary: UIC Amendment #2 is an investigator-initiated amendment adding the following dissertation committee members as co-investigators so they can assist with data analysis and consultation with the data and results: Lorna Finnegan, Alicia Matthews, Mi Ja Kim and JoEllen Wilbur

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

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11. Final Report When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).
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 - m. The extent of the subject's involvement and an explanation of the procedures to be followed,
 - n. Whether the information being collected will be used for any purposes other than the proposed research,
 - o. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
 - f. Description of any reasonable foreseeable risks,
 - o. Description of anticipated benefit,
 - p. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
 - q. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
 - r. A statement that the UIC IRB/OPRS or JB VAMC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.

Please be sure to:

→Use your research protocol number (2010-0553) on any documents or correspondence with the IRB concerning your research protocol.

APPENDIX A (Continued)

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 355-2908 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne, CIP
Assistant Director, IRB # 2
Office for the Protection of Research Subjects

Enclosure: None

cc: Tonda Hughes,

Arlene Miller, Health Systems Sciences, M/C 802
Colleen Corte, Health Systems Sciences, M/C 802

APPENDIX B

ID Number _____

Physical Activity

We are interested in finding out about the kinds of physical activities that midlife African American women do as part of their everyday lives.

The questions are about the time you spent being physically active in the **past month and the past year**. They include questions about activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise, or sport.

The following questions are based on your physical activity during the past month:

- 1) During the past month, other than your regular job, did you participate in any physical activities such as running, calisthenics, golf, gardening, or walking for exercise? **(BRFSS_1)**
 Yes
 No
 Don't know
- 2) When you are at work, which of the following best describes what you do? Would you say—**(BRFSS_2)**
 Mostly sitting or standing,
 Mostly walking, or
 Mostly heavy lifting or physically demanding work.

We are interested in two types of physical activity—vigorous and moderate.

Vigorous activities cause large increases in breathing or heart rate while moderate activities cause small increases in breathing or heart rate.

- 3) Now thinking about the moderate activities you do in a usual week, do you do moderate activities for at least 10 minutes at a time, such as brisk walking, bicycling, vacuuming, gardening, or anything else that causes some increase in breathing or heart rate? **(BRFSS_3)**
 Yes
 No
 Don't know
- 4) How many days per week do you do these moderate activities for at least 10 minutes at a time? **(BRFSS_4)**

On days when you do moderate activities for at least 10 minutes at a time, how much total time per day do you spend doing these activities? **(BRFSS_5)**

APPENDIX B (Continued)

ID Number _____

- 5) Now thinking about the vigorous activities you do in a usual week, do you do vigorous activities for at least 10 minutes at a time, such as running, aerobics, heavy yard work, or anything else that causes large increases in breathing or heart rate? (**BRFSS_6**)

_____ Yes
_____ No
_____ Don't know

- 6) How many days per week do you do these vigorous activities for at least 10 minutes at a time? (**BRFSS_7**)

- 7) On days when you do vigorous activities for at least 10 minutes at a time, how much total time per day do you spend doing these activities? (**BRFSS_8**)

“Now if you could answer some questions about your physical activity during the past year. First, we would like to know about the general level of physical activity involved in your daily routine.”

A. ACTIVE LIVING: (ACL01)

1. How many minutes a day do you usually walk and/or bicycle to and from work, school or errands? (**PA1**)

A_____ Less than 5 minutes
B_____ At least 5 but less than 15 minutes
C_____ At least 15 but less than 30 minutes
D_____ At least 30 but less than 45 minutes
E_____ At least 45 minutes

2. How many city blocks (10 city blocks is about 1 mile) do you usually walk each day to and from work or doing errands? (**BLK01**)

A_____ Less than 5 blocks
B_____ At least but less than 10 blocks
C_____ At least 10 but less than 15 blocks
D_____ At least 15 but less than 20 blocks
E_____ More than 20 blocks

APPENDIX B (Continued)

ID Number _____

3. During leisure time, how often did you walk for at least 15 minutes at a time? **(PA3)**

A_____ Less than once a month

B_____ Once a month

C_____ 2-3 times a month

D_____ Once a week

E_____ More than once a week

4. During leisure time, how often did you bike for at least 15 minutes at a time? **(PA4)**

A_____ Less than once a month

B_____ Once a month

C_____ 2-3 times a month

D_____ Once a week

E_____ More than once a week

5. During leisure time, how often do you sweat from exertion? **(PA5)**

A_____ Less than once a month

B_____ Once a month

C_____ 2-3 times a month

D_____ Once a week

E_____ More than once a week

6. During the past year, how often did you watch television? **(TLV01)**

A_____ Less than 1 hour a week

B_____ At least 1 hour a week but less than 7 hours a week

C_____ At least 1 hour a day but less than 2 hours a day

D_____ At least 2 hours a day but less than 4 hours a day

E_____ 4 or more hours a day

APPENDIX B (Continued)

ID Number _____

7. During a usual week in the past year, about how many times a week did you do physical activity in your free time for at least 20 minutes without stopping, which was hard enough to make your heart rate and breathing increase a large amount? Please put number in boxes below. **(PA7)**

B. OCCUPATIONAL ACTIVITIES: (WRK01A)

“Now, some questions about your employment situation.”

8. Did you work for pay or do volunteer work during the past year? **(PA8)**

Y _____ Yes

N _____ No

If No, go to item 12

9. In comparison with other women of your age, do you think your work (volunteer work) is physically much lighter, the same as, heavier, or much heavier? **(PA9)**

A _____ Much lighter

B _____ Lighter

C _____ The same as

D _____ Heavier

E _____ Much heavier

10. After work are you physically tired? **(PA10)**

A _____ Never

B _____ Seldom

C _____ Sometimes

D _____ Often

E _____ Always

11. When you are working (doing volunteer work) how often do you do each of the following?

11a. Sit: **(PA11A)**

A _____ Never

B _____ Seldom

C _____ Sometimes

D _____ Often

E _____ Always

APPENDIX B (Continued)

ID Number _____

- 11b. Stand: **(PA11B)**
A_____ Never
B_____ Seldom
C_____ Sometimes
D_____ Often
E_____ Always
- 11c. Walk: **(PA11C)**
A_____ Never
B_____ Seldom
C_____ Sometimes
D_____ Often
E_____ Always
- 11d. Lift heavy loads: **(PA11D)**
A_____ Never
B_____ Seldom
C_____ Sometimes
D_____ Often
E_____ Always
- 11e. Sweat from exertion: **(PA11E)**
A_____ Never
B_____ Seldom
C_____ Sometimes
D_____ Often
E_____ Always

APPENDIX B (Continued)

ID Number _____

C. HOME, FAMILY, YARD AND GARDEN: (HFY01)

“Now, we want to know about your activities at home, not including activities you may do at your home or other people’s home for pay or volunteer work.”

12. During the past year (12 months) how much time did you spend caring for children under 5 years of age or for a disabled child or elderly person? **(PA12)**

- A_____ Less than 1 hour per week
- B_____ At least 1 but less than 20 hours per week
- C_____ More than 20 hours per week

13. During the past year (12 months) how much time did you spend preparing meals or cleaning up from meals? **(PA13)**

- A_____ Less than ½ hour per day
- B_____ At least ½ hour but less than 1 hour per day
- C_____ At least 1 hour but less than 1 ½ hours per day
- D_____ At least 1 ½ hours but less than 2 hours per day
- E_____ 2 or more hours per day

14. During the past year (12 months) how much time did you spend doing major cleaning activities such as shampooing carpets, waxing floors, washing windows or washing a car or other vehicle? **(PA14)**

- A_____ Less than once a month
- B_____ Once a month
- C_____ 2-3 times a month
- D_____ Once a week
- E_____ More than once a week

15. During the past year (12 months) how much time did you spend doing routine cleaning such as dusting, laundry, vacuuming, changing bed sheets or grocery shopping and pushing a cart? **(PA15)**

- A_____ Less than once a month
- B_____ Once a month
- C_____ 2-3 times a month
- D_____ Once a week
- E_____ More than once a week

APPENDIX B (Continued)

ID Number _____

16. During the past year (12 months) how much time did you spend doing gardening or yard work, such as mowing lawn or raking leaves? **(PA16)**

A_____ Less than once a month

B_____ Once a month

C_____ 2-3 times a month

D_____ Once a week

E_____ More than once a week

17. During the past year (12 months) how much time did you spend doing heavy outdoor work such as chopping wood, tilling soil, shoveling or bailing hay? **(PA17)**

A_____ Less than once a month

B_____ Once a month

C_____ 2-3 times a month

D_____ Once a week

E_____ More than once a week

18. During the past year (12 months) how much time did you spend doing major home decoration or repair, such as plumbing, tilling, painting or building? **(PA18)**

A_____ Less than once a month

B_____ Once a month

C_____ 2-3 times a month

D_____ Once a week

E_____ More than once a week

APPENDIX B (Continued)

ID Number _____

SPORTS AND EXERCISE LIST**AEROBIC ACTIVITIES**

- 001 Aerobic Dance
- 002 Bicycling
- 003 Crew/Rowing Machine
- 004 Cross Country Skiing, Ski Machine
- 005 Hiking/Back Packing
- 006 Running/Jogging
- 007 Stairclimber
- 008 Stationary Bike
- 009 Swimming
- 010 Treadmill
- 011 Vigorous Walking

CONDITIONING EXERCISES

- 012 Calisthenics
- 013 Circuit Training
- 014 Nautilus
- 015 Stretching/Yoga
- 016 Weight Lifting

RACQUET SPORTS

- 017 Badminton
- 018 Racquetball
- 019 Tennis

WATER SPORTS

- 020 Canoeing/Kayaking
- 021 Diving
- 022 Sailing
- 023 Waterskiing
- 024 Windsurfing/Bodysurfing

DANCE

- 025 African, Haitian Dance
- 026 Ballet, Modern, Jazz
- 027 Folk or Social Dance
- 028 Other Dance

TEAM SPORTS

- 029 Basketball
- 030 Field Hockey/Lacrosse
- 031 Soccer
- 032 Softball
- 033 Volleyball

OTHER SPORTS

- 034 Bowling
- 035 Golf
- 036 Gymnastics
- 037 Horseback Riding
- 038 Martial Arts
- 039 Skating, ice
- 040 Skiing, downhill

OTHER ACTIVITIES

- 041 Walking (non-vigorous)
- 042 Water Aerobics
- 043 Officiating Sports
- 044 Sit to be fit & Chair class
- 045 Home Aerobic Machine
- 046 Hunting
- 047 Stretching Around House
- 048 Baseball
- 049 Ping Pong (table tennis)
- 050 Sit ups
- 051 Fishing
- 052 Taebo
- 053 Physical Therapy
- 054 Coaching Sports
- 055 Climb Bleachers
- 056 Push ups
- 057 Hot Air Ballooning
- 058 Ab Machine (slider)
- 059 Gazelle Elliptical Machine
- 060 Total Gym
- 061 Kick Boxing
- 062 Football
- 063 Cardio training
- 064 Leg pressor
- 065 Spinning
- 066 Glider
- 067 Step aerobics
- 068 Low impact aerobics
- 069 Arm &/or leg exercises
- 070 Flag football
- 071 Drumming

APPENDIX B (Continued)

ID Number _____

D. SPORTS AND EXERCISE (SPT01)

“In this last section, we want to know if you were involved in any sports or exercise.”

Please use the SPORTS AND EXERCISE LIST on the previous page.

19. During the past year did you participate in any of these activities or in any other similar activities not included on the **SPORTS AND EXERCISE LIST?** (PA19)

Y _____ Yes

N _____ No

If No, go to item 31

20. How often did you play sports or exercise during the past year? (PA20)

A _____ Never or less than once a month

B _____ Once a month

C _____ 2-3 times a month

D _____ Once a week

E _____ More than once a week

21. Which sport or exercise did you do most frequently? [REFER TO LIST] (SSS01_A)

21a. Is this activity on the SPORTS AND EXERCISE LIST? (PA21A)

_____ Yes

_____ No

If No, go to item 21c

21b. Code for most frequent sport or exercise (PA21B)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Go to item 22

21c. If the activity is not on the list, please specify the activity on the following lines: (PA21C)

APPENDIX B (Continued)

ID Number _____

22. How many months in the past year did you do this activity? **(PA22)**

A _____ Less than one month

B _____ 1 to 3 months

C _____ 4 to 6 months

D _____ 7 to 9 months

E _____ More than 9 months

23. How many hours a week did you do this activity? **(PA23)**

A _____ Less than 1 hour

B _____ At least 1 but less than 2 hours

C _____ At least 2 but less than 3 hours

D _____ At least 3 but less than 4 hours

E _____ 4 or more hours

24. What was the second most frequent sport or exercise you did? **[REFER TO LIST] (SSS01_B)**

IF NONE, GO TO ITEM 30

24a. Is this activity on the SPORTS AND EXERCISE LIST? **(PA24A)**

Y _____ Yes

N _____ No

If No, go to item 24c

24b. Code for the second most frequent sport or exercise **(PA24B)**

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

Go to item 25

24c. If the activity is not on the list, please specify the activity on the following lines: **(PA24C)**

APPENDIX B (Continued)

ID Number _____

25. How many months in the past year did you do this activity? **(PA25)**

A _____ Less than one month

B _____ 1 to 3 months

C _____ 4 to 6 months

D _____ 7 to 9 months

E _____ More than 9 months

26. How many hours a week did you do this activity? **(PA26)**

A _____ Less than 1 hour

B _____ At least 1 but less than 2 hours

C _____ At least 2 but less than 3 hours

D _____ At least 3 but less than 4 hours

E _____ 4 or more hours

27. What was the third most frequent sport or exercise you did? **[REFER TO LIST] (SSS01_C)**

IF NONE, GO TO ITEM 30

27a. Is this activity on the SPORTS AND EXERCISE LIST? **(PA27A)**

Y _____ Yes

N _____ No

If No, go to item 27c

27b. Code for the third most frequent sport or exercise **(PA27B)**

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

Go to item 28

27c. If the activity is not on the list, please specify the activity on the following lines: **(PA27C)**

APPENDIX B (Continued)

ID Number _____

28. How many months in the past year did you do this activity? **(PA28)**

A_____ Less than one month

B_____ 1 to 3 months

C_____ 4 to 6 months

D_____ 7 to 9 months

E_____ More than 9 months

29. How many hours a week did you do this activity? **(PA29)**

A_____ Less than 1 hour

B_____ At least 1 but less than 2 hours

C_____ At least 2 but less than 3 hours

D_____ At least 3 but less than 4 hours

E_____ 4 or more hours

30. In comparison with others of your own age, do you think your recreational activity is much less, the same as, more, or much more? **(PA30)**

A_____ Much less

B_____ Less

C_____ Same as

D_____ More

E_____ Much more

31. THIS IS THE END OF THE PHYSICAL ACTIVITY SURVEY. THANK YOU FOR YOUR PARTICIPATION.

APPENDIX B (Continued)

ID Number _____

Racial Identity Scale

1. People have different ways of describing their race or ethnicity. Which describes you best? (Please write answer on line below)

2. Do you have a reason for choosing that description? (Please write answer on lines below)

APPENDIX B (Continued)

ID Number _____

Black Identity Classification Scale

Instructions: The next statements ask about your feelings and opinions about being Black and African American. These statements may be sensitive for you, and you may even find some of them disturbing. We are interested in looking at them in relationship to physical activity in Black and African American women. Please remember that we are asking because there are a very wide variety of attitudes, backgrounds, and opinions about race within our community. Please tell us how much you personally agree or disagree with the statements below by circling a number to the right of the statement. There is no right or wrong answer. We appreciate your honest opinion. Please rate each item on the following scale:

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
Strongly Disagree							Strongly Agree
01. Being Black is an important part of my self-image. (BICS01)	1	2	3	4	5	6	7
02. Many things that make me happy are connected to the fact that I am Black. (BICS02)	1	2	3	4	5	6	7
03. Being Black has a lot to do with how I feel about myself. (BICS03)	1	2	3	4	5	6	7
04. Many things that are important to me are connected to my Black identity. (BICS04)	1	2	3	4	5	6	7
05. Both in my public and private thoughts, race is an important part of who I am. (BICS05)	1	2	3	4	5	6	7
06. I think of myself as African American more than American. (BICS06)	1	2	3	4	5	6	7
07. It is important to me to celebrate Kwanzaa. (BICS07)	1	2	3	4	5	6	7
08. Black people should give their children African names. (BICS08)	1	2	3	4	5	6	7
09. I feel a strong emotional connection to Africa. (BICS09)	1	2	3	4	5	6	7
10. I am involved in Black political activities. (BICS10)	1	2	3	4	5	6	7
11. I believe that it is important for African Americans to learn about spiritual beliefs in Africa. (BICS11)	1	2	3	4	5	6	7
12. It is important for African Americans to get back to their African roots. (BICS12)	1	2	3	4	5	6	7
13. It is important to learn about African culture. (BICS13)	1	2	3	4	5	6	7
14. I respect the cultural traditions of many groups—for example Native Americans, Whites, Latinos, and Asian Americans. (BICS14)	1	2	3	4	5	6	7
15. I care deeply about the needs of other groups such as Native Americans, Whites, Latinos, and Asian Americans. (BICS15)	1	2	3	4	5	6	7
16. I feel strongly about human rights issues in the Middle East and Tibet. (BICS16)	1	2	3	4	5	6	7
17. I feel strongly about American social issues such as women's rights, the environment, and animal rights. (BICS17)	1	2	3	4	5	6	7
18. When I listen to the radio, I usually listen to Black radio shows. (BICS18)	1	2	3	4	5	6	7
19. When I read magazines, I read mostly Black magazines such as Jet and Ebony. (BICS19)	1	2	3	4	5	6	7
20. When I watch television, I usually watch Black television shows. (BICS20)	1	2	3	4	5	6	7
21. Most of my friends are Black (BICS21)	1	2	3	4	5	6	7
22. A thorough knowledge of Black history is very important for Blacks today. (BICS22)	1	2	3	4	5	6	7
23. I have a strong sense of belonging to the Black community. (BICS23)	1	2	3	4	5	6	7
24. It is important to be involved in the Black community. (BICS24)	1	2	3	4	5	6	7
25. It is important for Black people to educate their children about Black art, music, and literature. (BICS25)	1	2	3	4	5	6	7
26. I feel comfortable in both worlds (Black and White). (BICS26)	1	2	3	4	5	6	7
27. I feel comfortable interacting with both Blacks and Whites. (BICS27)	1	2	3	4	5	6	7

APPENDIX B (Continued)

1	2	3	4	5	6	7	8	9	10	11
Not important to me										Most important to me

APPENDIX B (Continued)

ID Number _____

Task 2

Now I would like you to decide how well each item describes you. Using the scale below, rate each item according to how well it describes you.

1	2	3	4	5	6	7	8	9	10	11
Not Me										Me
A _____			N _____			AA _____			NN _____	
B _____			O _____			BB _____			OO _____	
C _____			P _____			CC _____			PP _____	
D _____			Q _____			DD _____			QQ _____	
E _____			R _____			EE _____			RR _____	
F _____			S _____			FF _____			SS _____	
G _____			T _____			GG _____			TT _____	
H _____			U _____			HH _____			UU _____	
I _____			V _____			II _____			VV _____	
J _____			W _____			JJ _____			WW _____	
K _____			X _____			KK _____			XX _____	
L _____			Y _____			LL _____			YY _____	
M _____			Z _____			MM _____			ZZ _____	

APPENDIX B (Continued)

ID Number _____

Task 3

Now please decide how much each item matters to the way you think about yourself. Using the scale below, rate each item according to how much it matters to you.

1	2	3	4	5	6	7	8	9	10	11
Not important										Most important
A _____			N _____			AA _____			NN _____	
B _____			O _____			BB _____			OO _____	
C _____			P _____			CC _____			PP _____	
D _____			Q _____			DD _____			QQ _____	
E _____			R _____			EE _____			RR _____	
F _____			S _____			FF _____			SS _____	
G _____			T _____			GG _____			TT _____	
H _____			U _____			HH _____			UU _____	
I _____			V _____			II _____			VV _____	
J _____			W _____			JJ _____			WW _____	
K _____			X _____			KK _____			XX _____	
L _____			Y _____			LL _____			YY _____	
M _____			Z _____			MM _____			ZZ _____	

APPENDIX B (Continued)

ID Number _____

Task 4

Now please decide whether you see each item as something good about you, something bad about you, or something that is neither good nor bad.

Please make a: (+) for something good
 (-) for something bad
 (0) for something neither good nor bad

A _____	N _____	AA _____	NN _____
B _____	O _____	BB _____	OO _____
C _____	P _____	CC _____	PP _____
D _____	Q _____	DD _____	QQ _____
E _____	R _____	EE _____	RR _____
F _____	S _____	FF _____	SS _____
G _____	T _____	GG _____	TT _____
H _____	U _____	HH _____	UU _____
I _____	V _____	II _____	VV _____
J _____	W _____	JJ _____	WW _____
K _____	X _____	KK _____	XX _____
L _____	Y _____	LL _____	YY _____
M _____	Z _____	MM _____	ZZ _____

APPENDIX B (Continued)

ID Number _____

Physical Activity Self-Efficacy

Below is a list of things women might have to overcome when trying to be physically active on a regular basis. Please read and give an answer to every question about how confident you are about overcoming these barriers to physical activity.

Please choose one answer for each item: 0 (Not very confident) to 10 (Very confident)

*How confident are you **right now** that you could engage in physical activity 3 times per week for 20 minutes if:*

	Not very confident										Very confident											
1. The weather was bad (PASE1)	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
2. You were bored by the activity (PASE2)	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
3. You felt pain when participating (PASE3)	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
4. You had to participate alone (PASE4)	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
5. You did not enjoy it (PASE5)	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
6. You were too busy with other activities (PASE6)	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
7. You felt tired (PASE7)	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
8. You felt stressed (PASE8)	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
9. You felt depressed (PASE9)	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10

APPENDIX B (Continued)

ID Number _____

Physical Activity Social Support

Below is a list of things people might do or say to someone who is trying to be physically active on a regular basis. If you are not trying to be physically active, then some of the questions may not apply to you, but please read and give an answer to every question.

Please rate each question on the scale of 1 to 5. When using the term **family**, rate how often anyone living in your household has said or done what is described during the last 3 months. Under **friends**, rate how often your friends, acquaintances, or co-workers have said or done what is described during the last 3 months.

Please choose one answer for each item: 1 (Strongly disagree) to 5 (Strongly agree) or 8 (Does not apply)

During the past 3 months, my family, or friends:

Strongly Disagree 1	2	3	4	Strongly Agree 5	Does not Apply 8	
			Strongly Disagree		Strongly Agree	Does not Apply
1. My family and friends discussed my physical activities with me. (PASS1)	1	2	3	4	5	8
2. My friend(s) gave me encouragement to stick with my physical activity. (PASS2)	1	2	3	4	5	8
3. My friend(s) offered to join me in my physical activity. (PASS3)	1	2	3	4	5	8
4. My family gave me encouragement to stick with my physical activity. (PASS4)	1	2	3	4	5	8
5. My family offered to join me in my physical activity. (PASS5)	1	2	3	4	5	8

APPENDIX B (Continued)

ID Number _____

Neighborhood Factors for Physical Activity

There is an increasing interest in barriers in the neighborhoods that prevent women from being physically active. Below are a few statements that may or may not apply to you or your neighborhood.

Please choose one answer for each item: 1 (Strongly disagree) to 4 (Strongly agree) or 8 (Does not apply)

1. There is so much traffic on the streets that it makes it difficult to walk in my neighborhood. **(NF1)**

Strongly Disagree				Strongly Agree	Does not Apply
1	2	3		4	8

2. The number and quality of streetlights makes it difficult to walk in my neighborhood. **(NF2)**

Strongly Disagree				Strongly Agree	Does not Apply
1	2	3		4	8

3. There are so many dogs running loose, that it makes it difficult to walk in my neighborhood. **(NF3)**

Strongly Disagree				Strongly Agree	Does not Apply
1	2	3		4	8

4. The crime rate makes it unsafe to go on walks in my neighborhood. **(NF4)**

Strongly Disagree				Strongly Agree	Does not Apply
1	2	3		4	8

5. My neighbors can be trusted so that I can take walks in my neighborhood. **(NF5)**

Strongly Disagree				Strongly Agree	Does not Apply
1	2	3		4	8

6. There are public places (e.g., parks, walking/biking trails, playgrounds) that are safe in my neighborhood. **(NF6)**

Strongly Disagree				Strongly Agree	Does not Apply
1	2	3		4	8

7. I see people being physically active (e.g., walking, jogging, biking) in my neighborhood. **(NF7)**

Strongly Disagree				Strongly Agree	Does not Apply
1	2	3		4	8

APPENDIX B (Continued)

ID Number _____

Demographics

Tell us about yourself: Please answer the following questions based on your present situation. Please select the best response from the choices and mark the correct answer.

1. What is your current age? **(DEM1)** _____
 - a. What is your date of birth? **(DEM1A)** _____
2. Where were you born (indicate the state)? **(DEM2)** _____
3. Where do you currently live (indicate the city, and state)? **(DEM3)** _____
 - a. How long have you lived in your current city? **(DEM3A)** _____
4. Please indicate the highest level of school that you completed. **(DEM4)**

_____ Grade School (1) _____ Some high school (2) _____ High school diploma/GED (3)

_____ Some college (4) _____ College degree (5) _____ Graduate Degree (6)
5. What is your marital status? Please circle only one answer. **(DEM5)**

Single/Never Married Married Widowed Divorced/Separated Cohabiting
6. Do you have children? **(DEM6)**

_____ Yes How many? _____ Ages? _____

_____ No
7. Which of the following best describes your current employment status? **(DEM7)**

_____ Unemployed (1) _____ Homemaker (2) _____ Student (3)

_____ Retired (4) _____ Employed full-time (5) _____ Employed part-time (6)
8. What is your total yearly household/family income from all sources? **(DEM8)**

_____ \$0-10,000 (1) _____ \$10,001-30,000 (2) _____ \$30,001-50,000 (3)

_____ \$50,001-70,000 (4) _____ \$70,001 and above (5) _____ Refused to answer (6)
9. How would you rate your health today? Please circle only one answer **(DEM9)**

Excellent (4) Good (3) Fair (2) Poor (1)
10. What is your current height and weight? **(DEM10)**

Height _____ feet _____ inches (A) Weight _____ pounds (B)

APPENDIX B (Continued)

ID Number _____

11. Have you ever smoked cigarettes? **(DEM11)**

_____ Yes

_____ No

Do you currently smoke? **(DEM11A)**

_____ Yes

_____ No

(If Yes) How many years/months have you been smoking? **(DEM11B)** _____ years _____ months12. Has your doctor ever said that you have any of the following conditions? Please mark yes, or no, and indicate how long (months, years), and indicate if a family member has the disease. **(DEM12)**

	Yes	No	How long since diagnoses?	Please indicate with an X if a family member has the disease.
Heart condition				
High blood pressure				
High cholesterol				
Muscle, bone, joint problem				
Diabetes				
Cancer: Type?				
Multiple Sclerosis				
Asthma or chronic lung disease				
Other: Type?				

13. On average, during high school did you participate in vigorous physical activity (such as basketball, swimming, running, aerobics)? **(DEM13)**

_____ Yes

_____ No

a) (If yes) How many hours each week did you participate? **(DEM13A)**

_____ Less than 1 hour

_____ 1-2 hours

_____ 3-4 hours

_____ 5-6 hours

_____ 7-9 hours

_____ 10 or more hours

APPENDIX B (Continued)

ID Number _____

Your Feelings

I greatly appreciate your participation in this research. I would like to give you the opportunity to tell me about your feelings on this research and the questionnaires that were used. There are no right or wrong answers, but your answers may be helpful in furthering our understanding of African American women, their beliefs and values, and participation in physical activity.

APPENDIX C

Recruitment/Phone Script

Hello, my name is Elaine Hardy; I am a graduate student from the University of Illinois in Chicago. The purpose of this research is to look at the beliefs, values, and attitudes of midlife African American women and physical activity. We estimate that approximately 252 participants will enroll in this study. You will be asked to complete a series of questionnaires. This should take about 45-55 minutes. There is a small chance that some of the questions may make you feel uncomfortable. Your participation in this study is completely voluntary. This means that you do not have to participate in this research unless you want to.

Would you be willing to answer some questions to help me determine if you are eligible for this study? (If yes, proceed; if no, thank them for their time and end the call).

Good. I will read off a list of questions. You can answer each question after I have read it. If you meet the criteria, then you are eligible to be in my study, if you are willing. Your decision to take part in my study is totally voluntary. The questions are as follows:

- Are you between the ages of 40 and 65 years?
- How do you identify your race or ethnicity?
- Were you born in the United States?

If the individual does not meet the eligibility criteria, then I would thank them for their time. If the individual meets the criteria, and is willing to complete the questionnaires, I would give them a time and place in which we could meet to complete the questionnaires (phone participants). All other participants would be asked to complete the questionnaires at this time. If they are unable to complete the questionnaires, then they will be given a time and place in which to meet and complete the questionnaires.

By completing the questionnaire you are agreeing to be in my study (oral consent). Your decision to take part in my study is totally voluntary. If you decide to take part, you are free to stop at any time. You may also refuse to answer any questions you don't want to answer and still remain a part of the study. As a participant in this research, I would ask you to do the following things:

1. **DO NOT** place your name on any of the forms.
2. You will fill out a form that asks questions about you for example your age, marital status, level of schooling, household income, health status, smoking status, and height and weight.
3. You will record your responses to the questions on the questionnaires included in the packet.
4. You will place the completed form and questionnaires in the packet provided and return the packet to me.
5. After completion of the packet you will be given \$15 for your participation in my study.

Privacy and confidentiality will be maintained throughout this research. The only people who will know that you took part in my research are the members of my research team and the Institutional Review Board at the University of Illinois at Chicago. No information about you, or provided by you, will be told or given to others without your written permission. Your name and number will not be recorded or retained. All other information gathered will be looked at collectively and stored in a locked cabinet. When the results of the research are published or discussed in conferences, no information will be included that would make known who you are. If you have any questions you can call Elaine Hardy at (708) 751-1340 or the Institutional Review Board at (312) 996-1711.

Do you have any questions?

APPENDIX C (Continued)
Participant Letter of Invitation

Dear Participant,

Thank you for considering being a part of this research study. I am conducting a study of “Beliefs, Values, and Attitudes of Midlife African American Women and Physical Activity” and invite you to participate in this study. I hope that as a result of participating, you will gain some insight into your beliefs and values about yourself, particularly as they relate to physical activity. I have a number of questionnaires that I ask you to thoroughly and honestly complete. The entire packet of questionnaires should take you approximately 50 minutes. Thanks again for your consideration to participate in this study.

Sincerely,

Elaine Hardy, PhD Candidate, RN
 College of Nursing, University of Illinois at Chicago
 ehardy3@uic.edu

FOR PARTICIPANT USE ONLY

Please read and answer the following questions:

1. Are you interested in participating in this study?

() Yes, I am interested in participating in this study.

2. Please provide your contact information.

First name _____ Last name _____

Phone number (where you can be reached) _____

Email address (if available) _____

Convenient time to be reached _____

APPENDIX C (Continued)
RESEARCH VOLUNTEERS NEEDED

Are you an African American female between the ages of 40 and 65?



The purpose of this study is to evaluate beliefs, values, and attitudes that may affect physical activity levels in African American females between the ages of 40 and 65. Volunteers will take part in a variety of surveys, which will take about 55 minutes.

Research Volunteers Requested Are:

- **40-65 years of age**
- **American born, African American /Black female**

Volunteers will receive \$15.00 for their participation and time.

For additional information, please contact:
Elaine C. Hardy, MS, CNS, RN
Doctoral Student, University of Illinois at Chicago
Contact phone (708) 751-1340
Email: ehardy3@uic.edu

CITED LITERATURE

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Banting, L.K., Dimmock, J.A., & Lay, B.S., 2009. The role of implicit and explicit components of exerciser self-schema in the prediction of exercise behavior. *Psychology of Sport and Exercise*, 10, 80-86.
- Bennett, G. G., & Wolin, K. Y. (2006). Satisfied or unaware? Racial differences in perceived weight status. *International Journal of Behavioral Nutrition and Physical Activity*, 3(40).
- Bowen, D. J., Christensen, C. L., Powers, D., Graves, D. R., & Anderson, C. A. M. (1998). Effects of counseling and ethnic identity on perceived risk and cancer worry in African American women. *Journal of Clinical Psychology in Medical Settings*, 5(3), 365-379.
- Bowen, D. J., Hickman, K., & Powers, D. (1997). Importance of psychological variables in understanding risk perceptions and breast cancer screening of African American women. *Women's Health: Research on Gender, Behavior & Policy*, 3, 227-242.
- Braveman, P. A., Egerter, S. A., Cubbin, C., & Marchi, K. S. (2007). An approach to studying social disparities in health and health care. *Journal of Epidemiology Community Health*, 61, 665-675.
- Brownson, R. C., Boehmer, T. K., & Luke, D. A. (2005). Declining rates of physical activity in the United States: What are the contributors? *Annual Review of Public Health*, 26, 421-443.
- Cachelin, F. M., Rebeck, R. M., Chung, G. H., & Pelayo, E. (2002). Does ethnicity influence body-size preference? A comparison of body image and body size. *Obesity Research*, 10(3), 158-166.
- Cardinal, B. J. (1995). The stages of exercise scale and stages of exercise behavior in female adults. *Journal of Sports Medicine and Physical Fitness*, 35(2), 87-92.
- Centers for Disease Control. (2001). Minority health and health disparities. Retrieved May 25, 2007, from <http://www.cdc.gov>.
- Centers for Disease Control. (2003). Prevalence of physical activity, including lifestyle activities among adults--United States, 2000-2001. *MMWR Weekly*, 52, 764-769.
- Centers for Disease Control. (2005). Behavioral risk factor surveillance system WEAT: Web enabled analysis tool.
- Centers for Disease Control. (2007a). Appendix A-2007 BRFSS report. Retrieved October 12, 2009, from <http://www.cdc.gov>.
- Centers for Disease Control. (2007b). Prevalence of regular physical activity among adults-United States, 2001-2005. *MMWR*, 54(46), 1209-1212.

- Centers for Disease Control. (2009). Behavioral risk factor surveillance system survey questionnaire. Retrieved October 12, 2009, from <http://www.cdc.gov>.
- Corte, C., & Stein, K. F. (2007). Self-cognitions in antisocial alcohol dependence and recovery. *Western Journal of Nursing Research, 29*(1), 80-99.
- Cox, K., Gorely, T., Puddey, I., Burke, V., & Beilin, L. (2003). Exercise behavior change in 40 to 65-year-old women: The SWEAT study (Sedentary women exercise adherence trial). *British Journal of Health Psychology, 8*, 477-495.
- Davis, R., Resnicow, K., Zhang, N., & Cross, J., W.E. (2007). Black Identity Classification Scale: University of Michigan.
- Dishman, R. K., Sallis, J. F., & Orenstein, D. R. (1985). The determinants of physical activity and exercise. *Public Health Reports, 100*(2), 158-171.
- Dunn, M. Z. (2008). Psychosocial mediators of a walking intervention among African American women. *Journal of Transcultural Nursing, 19*, 40-46.
- Evenson, K. R., & McGinn, A. P. (2005). Test-retest reliability of adult surveillance measures for physical activity and inactivity. *American Journal of Preventive Medicine, 28*(5), 470-478.
- Eyler, A. A., Brownson, R. C., Donatelle, R. J., King, A. C., Brown, D. W., & Sallis, J. (1999). Physical activity social support and middle-and older-aged minority women: Results from a US survey. *Social Science & Medicine, 49*, 781-789.
- Eyler, A. A., Vest, J. R., Sanderson, B., Wilbur, J., Matson-Koffman, D., Evenson, K. R., et al. (2002a). Environmental, policy and cultural factors related to physical activity in a diverse sample of women: The women's cardiovascular health network project-introduction and methodology. *Women & Health, 36*(2), 1-15.
- Eyler, A. A., Vest, J. R., Sanderson, B., Wilbur, J., Matson-Koffman, D., Evenson, K. R., et al. (2002b). Environmental, policy and cultural factors related to physical activity in a diverse sample of women: The women's cardiovascular health network project-summary and discussion. *Women & Health, 36*(2), 121-132.
- Fairchild, H. H. (1985). Black, Negro, or Afro-American? The differences are crucial. *Journal of Black Studies, 16*(1), 47-55.
- Frisby, C. M. (2004). Does race matter? Effects of idealized images on African American women's perceptions of body esteem. *Journal of Black Studies, 34*(3), 323-347.
- Ghee, K. L. (1990). The psychological importance of self definition and labeling: Black versus African American. *Journal of Black Psychology, 17*(1), 75-93.
- Grayman, N. (2009). "We who are dark." the black community according to Black adults in America: An exploratory content analysis. *Journal of Black Psychology, 35*(4), 433-455.

- Harley, A.E., Buckworth, J., Katz, M.L., Willis, S.K., Odoms-Young, A. & Heaney, C.A. (2009). Developing long-term physical activity participation: A grounded theory study with African American women. *Health, Education & Behavior*, 36, 97-113.
- Hays, L. M., Damush, T. M., & Clark, D. O. (2005). Relationships between exercise self-definitions and exercise participation among urban women in primary care. *Journal of Cardiovascular Nursing* (1), 9-17.
- Holloway, R.A., Waldrip, A.M., & Ickes, W. (2009). Evidence that a simpático self-schema accounts for differences in the self-concept social behavior of Latinos versus Whites (and Blacks). *Journal of Personality and Social Psychology*, 96(5) 1012-1028.
- Henderson, K. A., & Ainsworth, B. E. (2001). Researching leisure and physical activity with women of color: Issues and emerging questions. *Leisure Sciences*, 23, 21-34.
- Hooker, S. P., Wilson, D. K., Griffin, S. F., & Ainsworth, B. E. (2005). Perceptions of environmental supports for physical activity in African American and White adults in a rural county in South Carolina. *Preventing Chronic Disease*, 2(4), 1-10.
- Humpel, N., Owen, N., & Leslie, E. (2002). Environmental factors associated with adults' participation in physical activity: A review. *American Journal of Preventive Medicine*, 22(3), 188-199.
- Kendzierski, D., (1990). Exercise self-schemata: Cognitive and behavioral correlates. *Health Psychology*, 9(1), 69-82.
- Kendzierski, D., & Whitaker, D. J. (1997). The role of self-schema in linking intentions with behavior. *Personality and Social Psychology Bulletin*, 23(2), 139-147.
- King, A. C., Castro, C., Wilcox, S., Sallis, J. F., & Brownson, R. C. (2000). Personal and environmental factors associated with physical inactivity among different racial-ethnic groups of us middle-aged and older-aged women. *Health Psychology*, 19(4), 354-364.
- Kirtland, K. A., Porter, D. E., Addy, C. L., Neet, M. J., Williams, J. E., Sharpe, P. A., et al. (2003). Environmental measures of physical activity supports perception versus reality. *American Journal of Preventive Medicine*, 24(4), 323-331.
- Klonoff, E. A., & Landrine, H. (1997). Distrust of white, acculturation, and aids knowledge among African Americans. *Journal of Black Psychology*, 23(1), 50-57.
- Kruger, J., Kohl III, H.W., & Miles, I.J. (2008). Prevalence of regular physical activity among adults—United States, 2001 and 2005. *JAMA*, 299(1), 30-32.
- Krummel, D. A., Koffman, D. M., Bronner, Y., Davis, J., Greenlund, K., Tessaro, I., et al. (2001). Cardiovascular health interventions in women: What works? *Journal of Women's Health & Gender-Based Medicine*, 10(2), 117-136.
- Kumanyika, S. K., Gary, T. L., Lancaster, K. J., Samuel-Hodge, C. D., Banks-Wallace, J., Beech, B. M., et al. (2005). Achieving healthy weight in African-American communities: Research perspectives and priorities. *Obesity Research*, 13(12), 2037-2047.

- Kumanyika, S. K., Obarzanek, E., Stevens, V. J., Hebert, P. R., & Whelton, P. K. (1991). Weight-loss experience of Black and White participants in NHLBI-sponsored clinical trials. *American Journal of Clinical Nursing, 156*, 1631S-1638S.
- Landrine, H., & Klonoff, E. A. (1994). The African American acculturation scale: Development, reliability, and validity. *Journal of Black Psychology, 20*(2), 104-127.
- Landrine, H., & Klonoff, E. A. (2004). Culture changes and ethnic-minority health behavior: An operant theory of acculturation. *Journal of Behavioral Medicine, 27*(6), 527-555.
- Larkey, L. K., Hecht, M. L., & Martin, J. (1993). What's in a name? African American ethnic identity terms and self-determination. *Journal of Language and Social Psychology, 12*(4), 302-317.
- Lewis, B. A., Marcus, B. H., Pate, R. R., & Dunn, A. L. (2002). Psychosocial mediators of physical activity behavior among adults and children. *American Journal of Preventive Medicine, 23*(2S), 26-35.
- Longshore, D. (1979). Color connotations and racial attitudes. *Journal of Black Studies, 10*(2), 183-197.
- Loukaitou-Sideris, A. (2006). Is it safe to walk? Neighborhood safety and security considerations and their effects on walking. *Journal of Planning Literature, 20*, 219-232.
- Marcus, B. H., Williams, D., Dubbert, P. M., Sallis, J. F., King, A. C., Yancey, A. K., et al. (2006). Physical activity studies: What we know and what we need to know. *Circulation, 114*, 2739-2752.
- Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*(9), 954-969.
- Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology, 38*, 299-337.
- Markus, H. R. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology, 35*, 63-78.
- Martin, P. D., & Dutton, G. R., Brantley, P.J. (2004). Self-efficacy as a predictor of weight change in African American women. *Obesity Research, 12*, 646-651.
- Mayo, K. (1992). Physical activity practices among American Black working women. *Qualitative Health Research, 2*(3), 318-333.
- McAuley, E., Jerome, G. J., Elavsky, S., Marquez, D. X., & Ramsey, S. N. (2003a). Predicting long-term maintenance of physical activity in older adults. *Preventive Medicine, 37*, 110-118.
- McAuley, E., Jerome, G. J., Marquez, D. X., Elavsky, S., & Blissmer, B. (2003b). Exercise self-efficacy in older adults: Social, affective, and behavioral influences. *Annals of Behavioral Medicine, 25*(1), 1-7.

- Nies, M. A., & Kershaw, T. C. (2002). Psychosocial and environmental influences on physical activity and health outcomes in sedentary women. *Journal of Nursing Scholarship, 34*(3), 243-249.
- Oyserman, D. (2008). Racial-ethnic self-schemas: Multidimensional identity-based motivation. *Journal of Research in Personality, 42*, 1186-1198.
- Oyserman, D., Brickman, D., & Rhodes, M. (2007b). Racial-ethnic identity: Content and consequences for African American, Latino, and Latina youths. In A. J. Fugligni (Ed.), *Contesting stereotypes and creating identities: Social categories, social identities, and educational participation* (pp. 91-114). New York: Russell Sage Foundation.
- Oyserman, D., Kimmelmeier, M., Fryberg, S. A., Brosh, H., & Hart-Johnson, T. (2003). Racial-ethnic self-schemas. *Social Psychology Quarterly, 66*(4), 333-347.
- Oyserman, D., Yoder, N., & Fryberg, S. A. (2007a). Identity-based motivation and health. *Journal of Personality and Social Psychology, 93*(6), 1011-1027.
- Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, C. A., Bouchard, C., et al. (1995). Physical activity and public health: A recommendation from the centers for disease control and prevention and the American College of Sports Medicine. *JAMA, 273*(5), 402-407.
- Pereira, M. A., Folsom, A. R., McGovern, P. G., Carpenter, M., Arnett, D. K., Liao, D., et al. (1999). Physical activity and incident hypertension in Black and White adults: The Atherosclerosis Risk in Communities Study. *Preventive Medicine, 28*, 304-312.
- Peters, R. M., Aroian, K. J., & Flack, J. M. (2006). African American culture and hypertension prevention. *Western Journal of Nursing Research, 28*(7), 831-854.
- Phinney, J. S. (1996). Understanding ethnic diversity: The role of ethnic identity. *American Behavioral Scientist, 40*(2), 143-152.
- Resnick, B., & Jenkins, L. S. (2000a). Testing the reliability and validity of the self-efficacy for exercise scale. *Nursing Research, 49*(3), 154-159.
- Resnick, B., Palmer, M. H., Jenkins, L. S., & Spellbring, A. M. (2000b). Path analysis of efficacy expectations and exercise behavior in older adults. *Journal of Advanced Nursing, 31*(6), 1309-1315.
- Resnicow, K., Davis, R., Zhang, N., Strecher, V., Tolsma, D., Calvi, J., et al. (2009). Tailoring a fruit and vegetable intervention on ethnic identity: Results of a randomized study. *Health Psychology, 28*(4), 394-403.
- Roux, L., Pratt, M., Tengs, T. O., Yore, M. M., Yanagawa, T. L., Van Den Bos, J., et al. (2008). Cost effectiveness of community-based physical activity interventions. *American Journal of Preventive Medicine, 35*(6), 578-588.
- Rowland, M.L. (1990). Self-reported weight and height. *The American Journal of Clinical Nutrition, 52*, 1125-1133.

- Rucker, C. E., & Cash, T. F. (1992). Body images, body-size perceptions, and eating behaviors among African American and White college women. *International Journal of Eating Disorders, 12*, 291-300.
- Sallis, J. F., Grossman, R. M., Pinski, R. B., Patterson, T. L., & Nader, P. R. (1987). The development of scales to measure social support for diet and exercise behavior. *Preventive Medicine, 16*, 825-836.
- Sallis, J. F., & Saelens, B. E. (2000). Assessment of physical activity by self-report: Status, limitations, and future directions. *Research Quarterly for Exercise and Sport, 71*(2), 1-14.
- Sanchez-Johnsen, L. A., Fitzgibbon, M. L., Martinovich, Z., Stolley, M. R., Dyer, A. R., & Van Horn, L. (2004). Ethnic differences in correlates of obesity between Latin-American and Black women. *Obesity Research, 12*, 652-660.
- Sanders-Thompson, V. L., & Akbar, M. (2003). The understanding of race and the construction of African American identity. *The Western Journal of Black Studies, 27*(2), 80-88.
- Sanderson, B., Littleton, M., & Pulley, L. (2002). Environmental, policy, and cultural factors related to physical activity among rural, African American women. *Women & Health, 36*(2), 73-88.
- Seefeldt, V., Malina, R., & Clark, M. (2002). Factors affecting levels of physical activity in adults. *Sports Medicine, 32*(3), 143-168.
- Sharma, M., Sargent, L., & Stacy, R. (2005). Predictors of leisure-time physical activity among African American women. *American Journal of Health Behavior, 29*(4), 352-359.
- Smitherman, T. A., Dubbert, P. M., Grothe, K. B., Sung, J. H., Kendzor, D. E., Reis, J. P., et al. (2009). Validation of the Jackson Heart Study Physical Activity Survey in African Americans. *Journal of Physical Activity and Health, 6*(S1), S124-S132.
- Speck, B. J., & Harrell, J. S. (2003). Maintaining regular physical activity in women. *Journal of Cardiovascular Nursing, 18*(4), 282-291.
- Speight, S. L., Vera, E. M., & Derrickson, K. B. (1996). Racial self-designation, racial identity, and self-esteem revisited. *Journal of Black Psychology, 22*(1), 37-52.
- SPSS for Windows, Rel. 18.0.2010. Chicago: SPSS Inc.
- Stein, K. F., & Corte, C. M. (2007). Identity impairment and the eating disorders: Content and organization of the self-concept in women with anorexia nervosa and bulimia nervosa. *European Eating Disorders Review, 15*, 58-69.
- Stein, K. F., & Markus, H. (1996). The role of the self in behavioral change. *Journal of Psychotherapy Integration, 6*(4), 349-384.
- Sternfeld, B., Ainsworth, B. E., & Quesenberry Jr., C. P. (1999). Physical activity patterns in a diverse population of women. *Preventive Medicine, 28*, 313-323.
- Stevens, J., Juhaeri, Cai, J., & Jones, D. W. (2002). The effect of decision rules on the choice of a

- body mass index cutoff for obesity: Examples from African American and White women. *American Journal of Clinical Nutrition*, 75, 986-992.
- Treiber, F. A., Baranowski, T., Braden, D. S., Strong, W. B., Levy, M., & Knox, W. (1991). Social support for exercise: Relationship to physical activity in young adults. *Preventive Medicine*, 20, 737-750.
- Trost, S. G., Owen, N., Bauman, A. E., Sallis, J., & Brown, W. (2002). Correlates of adults' participation in physical activity: Review and update. *Medicine & Science in Sports & Exercise*, 1996-2001.
- United States Census Bureau. (2009). American Community Survey. Retrieved May 29, 2010 from, www.census.gov/acs/.
- United States Department of Health and Human Services. (1996). *Physical activity and health: A report of the surgeon general*. Atlanta, GA: Centers for Disease Control and Prevention.
- United States Department of Health and Human Services. (2000). *Healthy people 2010*: Centers for Disease Control and Prevention. Retrieved October 25, 2007, from <http://www.health.gov/healthypeople>.
- United States Department of Health and Human Services. (2003). Diabetes and African Americans: Centers for Disease Control and Prevention. Retrieved October 25, 2007 from, www.cdc.gov.
- United States Department of Health and Human Services. (2009). Physical activity guidelines for adults: Centers for Disease Control and Prevention, Division of Nutrition, Physical Activity, and Obesity. Retrieved October 25, 2007 from, <http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html>
- United States Department of Health and Human Services (2000). The practical guide: Identification, evaluation, and treatment of overweight and obesity in adults. NIH Publication No. 00-4084 www.nhlbi.gov.
- Welk, G. J. (Ed.). (2002). *Physical activity assessments for health-related research*. Champaign, IL: Human Kinetics.
- Whaley, D. (2003). Future-oriented self-perceptions and exercise behavior in middle-aged women. *Journal of Aging and Physical Activity*, 11, 1-17.
- Whitt, M., Kumanyika, S. K., & Bellamy, S. (2003). Amount and bouts of physical activity in a sample of African American women. *Medicine & Science in Sports & Exercise*, 35(11), 1887-1893.
- Wilbur, J. (2010). Women's walking program eligibility questionnaire: Rush University.
- Wilbur, J., Chandler, P., Dancy, B., Choi, J., & Plonczynski, D. (2002). Environmental, policy, and cultural factors related to physical activity in urban, African American women. *Women & Health*, 36(2), 17-28.

- Wilbur, J., Chandler, P., Dancy, B., & Lee, H. (2003a). Correlates of physical activity in urban Midwestern African-American women. *American Journal of Preventive Medicine*, 25(3Si), 45-52.
- Wilbur, J., McDevitt, J. H., Wang, E., Dancy, B., Briller, J., Ingram, D., et al. (2006). Recruitment of African American women to a walking program: Eligibility, ineligibility, and attrition during screening. *Research in Nursing & Health*, 29, 176-189.
- Wilbur, J., McDevitt, J. H., Wang, E., Dancy, B. L., Miller, A. M., Briller, J., et al. (2008). Outcomes of a home-based walking program for African American women. *American Journal of Health Promotion, Inc*, 22(5), 307-317.
- Wilbur, J., Miller, A. M., Chandler, P., & McDevitt, J. H. (2003b). Determinants of physical activity and adherence to a 24-week home-based walking program in African American and Caucasian women. *Research in Nursing & Health*, 26(3), 213-224.
- Wilbur, J., Vassalo, A., Chandler, P., McDevitt, J. H., & Miller, A. M. (2005). Midlife women's adherence to home-based walking during maintenance. *Nursing Research*, 54(1), 33-40.
- Wilson, D. K., Kirtland, K. A., Ainsworth, B. E., & Addy, C. L. (2004). Socioeconomic status and perceptions of access and safety for physical activity. *The Society of Behavioral Medicine*, 28(1), 20-28.
- Yancey, A.K., Ortega, A.N., & Kumanyika, S.K. (2006). Effective recruitment and retention of minority research participants. *Annual Review of Public Health*, 27, 1-28.
- Yore, M. M., Ham, S. A., Ainsworth, B. E., Kruger, J., Reis, J. P., Kohl III, H. W., et al. (2007). Reliability and validity of the instrument used in the BRFSS to assess physical activity. *Medicine & Science in Sports & Exercise*, 1267-1274.
- Young, D. R., Gittlesohn, J., Charleston, J., Felix-Aaron, K., & Appel, L. (2001). Motivations for exercise and weight loss among African-American women: Focus group results and their contribution towards program development. *Ethnicity & Health*, 6(3/4), 227-245.
- Young, D. R., He, X., Harris, J., & Mabry, I. (2002). Environmental, policy, and cultural factors related to physical activity in well-educated urban African American women. *Women & Health*, 36(2), 29-41.
- Zajonc, R. B. (1960). The process of cognitive tuning in communication. *Journal of Abnormal and Social Psychology*, 61, 159-167.

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- Zenk, S.N., Odoms-Young, A., Dallas, C., **Hardy, E.**, Watkins, A., Hoskins-Wroten, J., Holland, L. (in press). "You have to hunt for the fruits, the vegetables": Environmental variables and adaptive strategies to acquire food in a low-income African American community. *Health Education & Behavior*.
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