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Physical activity for African American females : salience of race, gender-role, and exercise identities

Jasmine M. Hamilton

Louisiana State University and Agricultural and Mechanical College

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PHYSICAL ACTIVITY FOR AFRICAN AMERICAN FEMALES: SALIENCE OF RACE, GENDER-
ROLE, AND EXERCISE IDENTITIES

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The School of Kinesiology

by

Jasmine M. Hamilton

B.S., Xavier University of Louisiana, 2004

M.A., Sam Houston State University, 2006

August 2013

This dissertation is dedicated to my daughter (Anyia), my parents (Maxine & Marlon Hamilton), and my grandfather (Edward Jacquet).

My favorite Anyia --- Sweetheart, you have been my muse and extra boost of energy. Throughout this process we have grown together and I have watched you blossom into such a beautiful young girl. Thank you for the impromptu play breaks, TV time, words of inspiration, and much needed laughs.

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Daddy --- You have always showed up when I needed you. Thank you for all of the real life lessons, analogies, and words of wisdom: “Achievement is the product of sacrifice.”

Papa Jacque --- I miss you so much. You started with me on this journey and I know that you and Big Mom are smiling in Heaven. Yes, your baby is a doctor! Thank you for these words: “When you’re determined to do something, you will do it.”

I love you all so dearly

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ABSTRACT

Social identity theory explores the process of self-identifications based upon perceived shared commonalities with others in order to positively affiliate with group membership and accounts for inter-group and intra-group behaviors (Deaux, 2001; Hogg & Abrams, 1999; Tajfel, 1982). Social identity is also dependent upon environment and situation dynamics (Turner, 1982). African American females are at risk for high levels of physical inactivity. Researchers have suggested the use of frameworks that move investigations beyond assessing social aggregates such as race and gender to understand why this is true. Racial identity, gender-role identity, and exercise identity (derived from social identity theory) provide a framework to go beyond categorical labels. The purpose of this dissertation was to explore intersections among racial identity, gender-role identity, and exercise identity on the physical activity participation of African American females, extending the current research regarding determinants of physical activity participation for African American females.

The first study used quantitative methods to investigate relationships among racial identity, gender-role identity, exercise identity, physical activity participation, and perceived social support within an African American college female sample population. Results indicated females who exercised more often had a stronger sense of exercise identity, displayed masculine gender-role identity and had higher perceived levels of social support. Perceived friend social support predicted exercise identity and frequency of physical activity participation. Study two qualitatively explored the intersection of racial identity, gender-role identity, and exercise identity of African American females who were considered regular exercisers by running group affiliation. The following themes emerged:

1) group membership advantages; 2) exercise as a catalyst for change; 3) perceived obstacles to physical activity. The findings indicated that exercise identity is more salient than racial and gender-role identities. Perceived cultural barriers such as hair, food, and body image had a diminished affect when exercise was accepted as part of identity. Taken together, findings support the conclusion that a focus on developing a strong exercise identity through cultural lenses of other identities such as race and gender is an important factor in efforts to promote physical activity in diverse populations.

CHAPTER 1 INTRODUCTION

Approximately 78.0% of African American women between the ages of 20-39 years are overweight and 47.2% are considered obese (Flegal, Carroll, Ogden, & Curtin, 2010). African American females are at a disproportionate risk for high levels of physical inactivity (Ainsworth, Berry, Schnyder, & Vickers, 1992; Chodzko-Zajko, et al., 2009; Colchico, Zybert, & Basch, 2000; Fahlman, Hall, & Lock, 2006; Hicks & Miller, 2006; Kimm et al., 2002; Nader, Bradley, Houtes, McRitchie, & O'Brien, 2008; Rensick, Luisi, & Vogel, 2008). Appropriate levels of physical activity can be an important factor in maintaining a healthy weight status (Centers for Disease Control and Prevention [CDC], 2012). Engaging in physical activity also aids in reducing the prevalence of other health issues such as diabetes and heart disease. In 2009, 30% of African Americans were more likely to die from heart disease (The Office of Minority Health [OMH], 2012). Additionally, African American women are affected by diabetes at higher rates (The Office of Minority Health [OMH], 2012). So, exploring the reasons for lower physical activity rates reported by African American females than other segments of the population is an important line of research.

An increased understanding of the dynamics of exercise and physical activity is needed to make physical activity programs culturally relevant and meaningful to African American females. Increasing their physical activity levels would increase the likelihood they receive the benefits associated with a physically active lifestyle. Exploring racial, gender-role, and exercise identity perceptions provides a framework to investigate physical activity participation of African American females that extends from the overarching social identity theory. Social identity theory, derived from the work of social psychologists Tajfel (1974; 1982) and Turner (1982), provides the context for explaining

the manner in which individuals identify with groups and organizations based upon perceived positive benefits from social and personal categorizations (Deaux, 2001; Tajfel, 1974; Tajfel 1982; Turner, 1982).

Theoretical Perspective

The focus of this study is social identity as constructed through racial, gender, and exercise identities. Racial identity has developed through the manifestations of social and cultural influences over time (Chavez & Guido-DiBrito, 1999). Using the nigrescence model (Cross, 1971), racial identity characterizes the levels of racial acceptance of African Americans from experiences throughout the lifespan (Buckley & Carter, 2005). Within the African American culture in the United States, there are biases and stereotypes regarding physical activity choice (Harrison, Harrison, & Moore, 2002; Harrison, Lee, & Belcher, 1999; Kumanyika, 2008). For example, activities such as football or basketball may be perceived as African American sports, while hockey and lacrosse are alleged to be European (Caucasian) American sports. These biases and stereotypes have can have a powerful effect on physical activity participation, perception of benefits, and the value associated with physical activity (Kumanyika, 2008).

Biases and stereotypes are also evident with respect to gender-role identity. Gender-role identity formation generally stems from the categorical perception of masculinity, femininity, and androgyny (Kark, Waismel-Manor, & Shamir, 2012). Furthermore, gender-role identity formulates from the culmination of three aspects: gender, self-perception, and stereotypes (Tobin et al., 2010). Gender-role identity for African American women has mainly been assessed through understanding and exploring levels of psychological well-being (Buckley & Carter, 2005; Littlefield, 2003). Since regular

participation in exercise has been attributed to increasing positive psychological well-being, research in this area can be beneficial. Further investigation is needed to understand the impact of the fluidity of gender-role (Sharp et al., 2007) and the pragmatic nature of race in the identity formation process of African American females regarding physical activity participation.

Exercise identity is the degree to which exercise is incorporated and accepted as a part of identity (Duncan et al., 2010; Wilson & Muon, 2008). It has rarely been studied with regard to race, outside of the notion of athletic identity and evaluation of physical activity participation. Although the relationship between exercise identity and physical activity has been established (Duncan et al., 2008; Duncan et al., 2010; Wilson & Muon, 2008), to date researchers have not thoroughly explored factors that foster the development of a strong exercise identity. Specific to this study, there is very little evidence concerning how racial and gender identities relate to exercise identity. The limited number of studies that have included samples of African American young adult females in the investigation of exercise identity has produced surface level analyses leading to suggestions and insinuations from quantitative data that may not represent an accurate picture. Targeting the young adult African American female population in assessing exercise identity in conjunction with racial and gender-role identities will increase understanding and exposure of this population considering physical activity behaviors and patterns.

Social support is an important consideration in the study of social identity. Insight into the effect of social elements such as social support (Henderson & Ainsworth, 2001; Komar-Samardzija, Braun, Keithley, & Quinn, 2012; Murrock & Madigan, 2008), the environment (Izumi & Hammonds, 2007; Komar-Samardzija et al., 2012; Sallis & Glanz,

2006; Ueshima et al., 2010), and social associations (Hewstone et al., 2001) through this framework can help us move beyond social aggregates as surface level variables. Social support of family and close friends can be instrumental in physical activity and exercise participation. The physical environment serves as an extension of the social support circle and is also influential, since behavior and opinions are learned through observation. The environment can become a barrier to physical activity thus decreasing participation (Komar-Samardzija et al., 2012) in the same manner as having “toxic” elements within social support groups.

In some instances the experiences and/or perceptions of racism and gender bias related to exercise, may function to perpetuate stereotypes and cultural biases and reinforce norms of physical activity levels and participation. Stereotypical behavior is reflected in physical activity choice based on race (Harrison et al., 2002; Harrison, Lee, & Belcher, 1999) or gender (Faridi et al., 2010; Hall, Kuga, & Jones, 2002; Hicks & Miller, 2006). For example, if African American male sport participation has been relegated to football, an individual may miss opportunities to play other sports such as hockey or lacrosse (sports deemed for European Americans). African American females are capable and do participate in physical activities exclusive of sport and intervention programs. These experiences tend to be overlooked and underreported in research studies.

Research regarding physical activity focused on African American females has included minimal representation of college-aged women and yielded less than substantial solutions, failing to go beyond providing suggestions for increasing physical activity. A majority of the research has relied on quantitative measures, whereas qualitative investigations can provide data that can increase our understanding of the decision that

individuals make concerning being physically active. In their efforts to identify answers, researchers and practitioners have often attempted to guide African American females of various ages to physical activity participation by implementing interventions and programs. Due to the convenience of captive African American populations, nursing homes, physical education classes, churches, and community centers have served as sources of recruitment, leaving young adult African-American females underrepresented in the majority of the physical activity (excluding sport) research. Often the “positive” effects or gains evident at the end of an intervention quickly dissolve after the delivery of the program is complete. This has left researchers with the same unanswered question: Why have African American females been displaying consistently low levels of physical activity participation?

Purpose

The purpose of this dissertation was twofold in using social identity theory to explore factors that are influential in African American females’ decisions about being physically active. The primary objective was to explore the intersectionality of racial identity, gender-role identity, and exercise identity and the physical activity participation of African American young adult females. The second objective was to extend the current research on the documented lack of physical activity participation of African American young adult females by providing interpretation from a person of similar racial/ethnic background. This was accomplished through two studies.

The first study is a quantitative study that evaluated the effect of racial identity, gender-role identity, exercise identity, social support, and the environment on physical activity participation levels in collegiate African American females. The second study is

qualitative in nature and investigated perceptions of racial identity, gender-role identity, and exercise identity of African American females who maintain sufficient levels of physical activity. Exploring the intersectionality of identities has the potential to further our understanding of young adult African American female physical activity participation.

CHAPTER 2

IDENTITY RELEVANCE OF AFRICAN AMERICAN COLLEGE FEMALES' PHYSICAL ACTIVITY PARTICIPATION

Introduction

African American females are at a disproportionate risk for high levels of physical inactivity (Ainsworth, Berry, Schnyder, & Vickers, 1992; Chodzko-Zajko, et al., 2009; Colchico, Zybert, & Basch, 2000; Fahlman, Hall, & Lock, 2006; Hicks & Miller, 2006; Kimm et al., 2002; Nader, Bradley, Houtes, McRitchie, & O'Brien, 2008; Rensick, Luisi, & Vogel, 2008). Approximately 78.2% of African American women 20 years and older are overweight and 49.6% are considered obese (Flegal, Carroll, Ogden, & Curtin, 2010). Achieving recommended levels of physical activity can assist in decreasing the prevalence of heart disease and diabetes, which affects African American women at higher rates than Caucasian women (The Office of Minority Health [OMH], 2012). As appropriate levels of physical activity can be an important factor in maintaining a healthy weight status as well as overall health (Centers for Disease Control and Prevention [CDC], 2012), understanding reasons African American females are less active than other segments of the population is important.

Declines in physical activity levels have been noted as early as adolescence (Colchico, Zybert, & Basch, 2000; Fahlman, Hall, & Lock, 2006; Kimm et al., 2002; Nader, Bradley, Houtes, McRitchie, & O'Brien, 2008). Within the college student population, these declines are more prevalent. Approximately 50% - 60% of college students do not participate in adequate levels of physical activity to gain health benefits (Irwin, 2004; Keating, Guan, Pinero, & Bridges, 2005). A closer look into demographic categories, reveal African American females generally report either low levels of physical activity or are

physically inactive (Hall, Kuga, & Jones, 2002). College students are in a period of transition (Scioli, Biller, Rossi, Riebe, & Scioli, 2009). Throughout the course of life, the role and value of exercise is likely to change (Duncan, Hall, Wilson, & Jenny, 2010). Attempts have been made to influence positive adjustments in physical activity behavior during this period of transition (Wallace, Buckworth, Kirby, & Sherman, 2000).

The African American college female population has been largely overlooked due to the heavy emphasis on adolescents (Colchico, Zybert, & Basch, 2000; Fahlman, Hall, & Lock, 2006; Kimm et al., 2002; Nader, Bradley, Houtes, McRitchie, & O'Brien, 2008; Robinson et al., 2003) and middle to older aged African American women (Chodzko-Zajko, et al., 2009; Rensick, Luisi, & Vogel, 2008). Even studies inclusive of collegiate African American females, have minimal representation within sample populations (Lowe et al., 2006; Scioli et al., 2009; Wallace et al., 2000). In previous research, African American females have been limited to the social aggregate (Henderson & Ainsworth, 2001) of the categorical reference of "race" (i.e. the physical appearance of what has been socially considered as "Black" in the United States; Knowles, 2005). The experiences and perceptions of these women cannot simply be relegated to a mere label of "race." Disparities in physical activity levels between African American females and other minority groups may be more complex than other racial/ethnic groups (Wiggins, 2011).

Theories such as social cognitive theory (SCT; Bandura, 1977; Murrock & Madigan, 2008; Wallace et al., 2000), self-determination theory (SDT; Deci & Ryan, 1985; Duncan et al., 2010), and theory of planned behavior (TPB; Ajzen, 1991; Blanchard et al., 2008; Hagger, Chatzisarantis, Biddle, & Orbell, 2001; Hamilton & White, 2008) have been used to understand factors of intent and motivation regarding physical activity participation.

These theories focus primarily on the cognitive processes of physical activity engagement, but investigations have had minimal diverse representation. Perhaps some of the theoretical components would render different meanings and outcomes with more diverse populations (Blanchard et al., 2008; Dishman, 1994; Wallace et al., 2000).

Social identity theory, derived from the work of social psychologists Tajfel (1974; 1982) and Turner (1982), provides a framework explaining the manner in which individuals identify with groups and organizations of shared commonalities based upon social and personal categorizations (Deaux, 2001; Tajfel, 1974; Tajfel 1982; Turner, 1982). Self-identifications, perceived benefits of group association, and intergroup behavior are key constructs in this theory. The core component of the theory, social identity consists of the global sense of the outward portrayal of self (Bourhis & Hill, 1982), and has been narrowed in scope to facilitate in depth analyses within particular social arenas such as athletics, race, academics, gender, etc.

Social identity is reflexive in nature (Turner, 1982) meaning the situation or environment may influence a person's decision to display certain traits or characteristics associated with a type of social identity. According to social identity theory, individuals strive to maintain a positive social identity through perceived beneficial memberships and associations that are socially and personally desirable (Stets & Bourke, 2000, Tajfel, 1982, Turner, 1982). Additionally, the theoretical lens of social identity theory provides an opportunity to move beyond the social labels of race and gender/sex (i.e. African American female) in order to understand personal perceptions of physical activity by exploring the importance of self-identifications. Three identities are of particular interest from the overall research using social identity theory: racial identity (Bimper & Harrison, 2011;

Harrison & Belcher, 2006), gender-role identity (Ashley, 2003), and exercise identity (Duncan et al., 2010; Wilson & Muon, 2008).

Racial identity

Racial identity is dynamic in nature and seeks to assess perceptions of racism and levels of internalized racism from experiences (Bimper & Harrison, 2011; Phinney & Ong, 2007). Racial identity has emerged through the manifestations of social and cultural influences over time (Chavez & Guido-DiBrito, 1999). Based on this conception, the Cross racial identity scale (CRIS; Cross 1971) was created using the nigrescence model as a theoretical framework. The nigrescence theory attempts to outline an African American's process of assimilation into dominant Caucasian American culture and personal acceptance. This process is not linear. Therefore, a person's status may be altered by experiences throughout the lifespan (Buckley & Carter, 2005).

The six subscales of the CRIS were derived from the expanded nigrescence theory are pre-encounter assimilation (PA), pre-encounter miseducation (PM), pre-encounter self-hatred (PSH), immersion/emersion anti-White (IEAW), internalization Afrocentricity (IA), and internalization multiculturalist-inclusive (IMCI). The first three subscales are characterized by a pro-American mentality in which race is not salient (PA), negative stereotypes of the Black community prevail (PM), and an unhealthy perspective of self as a result of race (PSH). The next subscales mark an entrance into a phase of self-acceptance where intense Black involvement in situations and an anti-White (IEAW) mentality may be present. If an individual reaches a certain level of self-acceptance and knowledge of other cultural affairs, then the person maintains a biculturalist (IA) or multiculturalist (IMCI)

mentality (Vandiver, Cross, Worrell, & Fhagen-Smith, 2002; Fhagen-Smith, Worrell, Vandiver, & Cross, 2010).

Gender-role identity

Gender-role identity consists of normative expressions of the socially accepted roles for males and females (Littlefield, 2003; Tobin et al., 2010). The formation of gender-role identity generally stems from the categorical perception of masculinity, femininity, and androgyny (Kark, Waismel-Manor, & Shamir, 2012). Furthermore, gender-role identity formulates from the culmination of three aspects: gender, self-perception, and stereotypes (Tobin et al., 2010). Comprehension of one's gender goes beyond simply male or female but rather encompasses personal and social attributes, values, and interests (Deaux, 2001; Littlefield, 2003). Gender-role identity compounded with racial identity, could greatly influence physical activity participation (Boyington et al., 2008; Henderson, 2009).

Identifying gender refers to the cognitive connections made between self and the categories of masculine and feminine. This aspect infers motivational properties to encourage individuals to behave in gender-consistent ways (Tobin et al., 2010). Self-perception has several dimensions in reference to gender-role identity. A person's perception can derive from characterizing attributes, interests, behavioral intentions, or self-efficacy. Lastly, gender stereotypes are individual notions of how the sexes differ or the manner in which the sexes should think or act (Littlefield, 2003; Tobin et al., 2010). All three aspects of gender-role identity fluctuated as a function of contextual influences. Based on these definitions and fluid nature, gender-role identity can influence participation in physical activities depending upon what is deemed socially acceptable for males and females.

Gender-role identity for African American women has mainly been assessed through understanding and exploring levels of psychological well-being (Buckley & Carter, 2005; Littlefield, 2003). Since regular participation in exercise has been attributed to increasing positive psychological well-being, research in this area may be relevant. Researchers have found that African American females who self-reported more masculine or androgynous attributes displayed higher levels of self-esteem (Buckley & Carter, 2005) and psychological well-being (Littlefield, 2003). In addition these same females displayed self-acceptance, growth, and maturity in their racial identity. Research is needed to understand the impact of the fluidity of gender-role (Sharp et al., 2007) and the pragmatic nature of race in the identity formation process of collegiate African American females regarding physical activity participation.

The effects of gender-role identity may also be different within the African American community due to the strong association of athletic and sport identity (Harrison et al., 2002; Singer, 2005). Altered or stereotypical views about culturally acceptable physical activity practices exist and are perpetuated. In some instances the experiences and/or perceptions of racism and gender bias related to exercise, may function to perpetuate stereotypes and cultural biases of physical activity levels and participation. The stereotypical behavior can manifest in physical activity choice based on race (Harrison et al., 2002; Harrison, Lee, & Belcher, 1999) or gender (Faridi et al., 2010; Hall, Kuga, & Jones, 2002; Hicks & Miller, 2006). For example, African American males play football, European American males play hockey, African American females participate in track and field, and European American females play soccer. Similar research within a collegiate population noted females with a high indication of athletic identity expressed more masculine gender-

role identity (Lantz & Schroeder, 1999). However, regarding physical activity, gender has been a better predictor of participation levels and choice of activity than race (Faridi et al., 2010; Hall, Kuga, & Jones, 2002) with males displaying higher levels of participation. These findings were also reflected in research including African American college students (Hicks & Miller, 2006). African American females are capable and do participate in physical activities exclusive of sport and intervention programs. These experiences tend to be overlooked and underreported in research studies.

Exercise identity

Unlike athletic identity (Chen, Snyder, & Magner, 2010; Martin, Adams-Mushett, & Smith, 1995), exercise identity of collegiate African American females has not been directly studied. Athletic identity is related to psychological effect of athletic involvement and a determinant of sustainability in sport (Chen, Snyder, & Magner, 2010), whereas exercise identity assesses the degree to which one positively self identifies as an “exerciser” (Duncan et al., 2010; Wilson & Muon, 2008). Research exploring athletic identity of African American male athletes (Singer, 2005) and, to a lesser extent, female athletes (Bimper & Harrison, 2011) has benefitted from the application of the concept of racial identity. Racial identity can be a powerful influence in broader contexts and should be extended to physical activities other than sport, beyond the realm of athletics. Additionally, broadening the scope beyond sports may provide a deeper understanding of the hindrances and motivations for physical activity behaviors in a consistently low participating demographic subgroup (Boyington et al., 2008; Flegal et al., 2010; Grieser et al., 2008; McArthur & Raedeke, 2009) such as African American females. Although the relationship between exercise identity and physical activity has been established (Duncan et al., 2008; Duncan et

al., 2010; Wilson & Muon, 2008), to date researchers have not thoroughly explored factors that foster the development of a strong exercise identity. Specific to this study, there is very little evidence concerning how racial and gender-role identities relate to exercise identity.

The instrumentation used to assess exercise identity and physical activity participation has been constructed and validated using samples that are primarily European (Caucasian) Americans, which may produce some measurement bias or error when used with African American participants (Blanchard et al., 2008). Terms used such as “free time” or “leisure” may be interpreted as a “luxury” that is not affordable for African American females, therefore generating bias (Henderson & Ainsworth, 2001). Exercise may not be perceived as a leisurely activity done in free time and this verbiage can introduce measurement error. In addition, there is often a misinterpretation of the definition of physical activity. Many do not understand physical activity beyond the scope of sport and exercise. The assumption that an individual understands this concept can negatively affect the accuracy of data collected, analyzed, and interpreted. The limited representation of African American young adult females in studies involving exercise identity assessment has produced surface level analyses leading to suggestions from quantitative data that may not represent an accurate picture. Targeting the young adult African American female population in assessing exercise identity in conjunction with racial and gender-role identities can increase understanding; thus, enhancing the current literature regarding this topic.

Social support

Social elements enhance or constrain physical activity choices (Boyington et al., 2008; Cradock, Kawachi, Colditz, & Buka, 2009; Hamilton & White, 2008; Henderson & Ainsworth, 2001; Murrock & Madigan, 2008; Laverie, 1998; Sallis & Glanz, 2006). Individuals displaying high levels of social determinants (i.e. support and club memberships) identified encouragement through social support as a direct positive influence on physical activity participation (Giles-Corti & Donovan, 2002). Influence from significant others is an important factor in the decision-making processes of physical activity participation (Chatzisarantis, Hagger, Wang, & Thøgersen-Ntoumani, 2009). Thus, social support has been documented as being a persuasive element in physical activity participation for females (Chatzisarantis et al., 2009; Hamilton & White, 2008; Henderson & Ainsworth, 2001; Laverie, 1998; Lawman, Wilson, Van Horn, Resnicow, & Kitzman-Ulrich, 2011; Sallis & Glanz, 2006; Ueshima et al., 2010). Despite the strong relationship between social support and participation in physical activity, the influence social support has on exercise identity has not been explored.

An increased understanding of the dynamics of exercise and physical activity is needed to make physical activity programs culturally relevant and meaningful to African American females. This, in turn, could increase the likelihood they will receive the benefits associated with a physically active lifestyle. Exploring racial, gender-role, and exercise identity perceptions provides a framework to investigate different aspects of the projected social self to more clearly understand physical activity participation behaviors of African American females. Insight into the effect of social elements such as social support (Henderson & Ainsworth, 2001; Komar-Samardzija, Braun, Keithley, & Quinn, 2012;

Murrock & Madigan, 2008) and social associations (Hewstone et al., 2001) through this framework can aid in moving beyond social aggregates as surface level variables. Social support of family and close friends can be instrumental in physical activity and exercise participation.

Research focused on African American females has included minimal representation of collegiate women and yielded less than substantial solutions, failing to go beyond suggestions. The scope of current research has focused on what is lacking and the implications for suggested solutions, instead of what is available and can produce favorable outcomes. In their efforts to identify answers, researchers and practitioners have often attempted to force physical activity participation on African American females of various ages by implementing interventions and programs (Boyington, et al., 2008; Resnick, Luisi, & Vogel, 2008). Nursing homes, physical education classes, churches, and community centers have served as sources of recruitment, leaving young adult and collegiate African-American females underrepresented in the majority of the physical activity (excluding sport) research. The purpose of the current study was to evaluate the effect of perceptions of racial identity, gender-role identity, exercise identity, and social support on physical activity participation within a sample of African American female college students. The research questions and hypotheses are:

1. What are the relationships among race, gender, and exercise identities and how do they influence physical activity participation?

H₁: Higher levels of racial identity and masculine gender identity would be associated with higher levels of physical activity and exercise identity

2. How does social support relate to physical activity participation and exercise identity?

H₂: Higher levels of social support would be associated with higher levels of physical activity and exercise identity

African American females reporting masculine or androgynous attributes expressed higher levels of self esteem (Buckley & Carter, 2005) and psychological well-being (Littlefield, 2003), which may translate through physical activity participation as well. Furthermore, these same females reported strong levels of internalization in their racial identity displaying self-acceptance, growth, and maturity. These aspects may also translate through physical activity participation and aid in cultivating an exercise identity. Social support has consistently been associated with high levels of physical activity (Hamilton & White, 2008; Henderson & Ainsworth, 2001; Murrock & Madigan, 2008; Laverie, 1998; Lawman, Wilson, Van Horn, Resnicow, & Kitzman-Ulrich, 2011; Sallis & Glanz, 2006; Ueshima et al., 2010), which may also extend to exercise identity.

Methods

Participants

The initial sample of participants consisted of 328 African American college-aged students (age: ≥ 18 years = 9.8%, 19-20 years = 40.9%, 21-22 years = 28.4%, 23+ years = 21%). Of the students in the sample population 63.4% lived off campus, 97% reported being single, 36.6% were not employed, and 81.1% had access to a personal vehicle for transportation. Within this sample 24.7% were freshmen, 21% were sophomores, 24.4% were juniors, and 29.9% were seniors. Some respondents did not complete all instruments and the final sample included 292 participants. African American college-aged females were recruited from 28 post secondary institutions of higher learning representing a range

of disciplines (Table 2.1). The majority (75.6%) of the respondents reported African American while 24.4% indicated being biracial with African American as one of the races/ethnicities.

Instrumentation

Cross Racial Identity Scale. The Cross racial identity scale (CRIS; Cross & Vandiver, 2001) is a 40-item scale that measures racial attitudes based on the six

Table 2.1 Majors of African American students (N=292)

Discipline/College	Percent	Example
Arts & Design	4	Architecture, Graphic Design, Theatre
Business Administration	11.6	Accounting, Economics, Management
Education	25.6	Early Childhood, Kinesiology, Secondary Education
Engineering	3	Civil, Industrial, Petroleum
General Studies	6.1	-----
Liberal Arts	21.6	Mass Communications, Psychology, Sociology
Nursing/Allied Health	14.6	Nursing, Dietetics, Health Information Systems
Science	7.9	Biology, Chemistry, Computer Science
Undeclared/None	1.5	-----
Other	4	Interdisciplinary Studies

constructs of the expanded nigrescence model (NT-E; Cross & Vandiver, 2001): pre-encounter assimilation (PA), pre-encounter miseducation (PM), pre-encounter self-hatred (PSH), immersion/emersion anti-White (IEAW), internalization Afrocentricity (IA), and internalization multiculturalist-inclusive (IMCI). Sample items of the six constructs include: "I am not so much a member of a racial group, as I am an American (PA)," "Blacks place more emphasis on having a good time than on hard work (PM)," "Privately, I sometimes have negative feelings about being Black (PSH)," "I have a strong feeling of hatred and disdain for all White people (IAW)," "I see and think about things from an Afrocentric perspective (IA)," and "I believe it is important to have both a Black identity and a multiculturalist perspective, which is inclusive of everyone (e.g. Asians, Latinos, gays & lesbians, Jews, Whites, etc; IM)."

The response scale is a 7-point Likert scale that ranges from 1 (strongly disagree) to 7 (strongly agree). Each of the six constructs is measured using five items, and the 10 remaining items are used as filters. The score is the mean of each subscale, with the higher score displaying a stronger sense of the attributes within a particular construct. The CRIS does not have a global score (Cross & Vandiver, 2001; Fhagen-Smith et al., 2010; Worrell, Vandiver, & Cross, 2004). Internal consistency was established with reliability coefficients ranging from .60 to .90 (Vandiver, Cross, Worrell, & Fhagen-Smith, 2002). The Cronbach alphas for each construct ranges from .76 to .83. This scale is commonly used across many disciplines (Fhagen-Smith, et al., 2010).

Bem Sex-Role Inventory. The Bem sex role inventory (BSRI; Bem, 1974) was designed in order to assess the perception of masculinity and femininity. The measure has been used and modified across various disciplines for psychometric purposes (Holt & Ellis,

1998). The original scale includes 60 items that are characteristic of the male or female gender. The measure is divided into 20 non-sex-typed items and two sets of 20 sex-typed items depicting concepts of masculinity and femininity. “How desirable is it in American society for a man (woman) to possess each of these characteristics,” is the overarching question that is used for the instrument. The items include terms such as “self-reliant,” “jealous,” and “has leadership abilities.” Participants respond by using a 7-point Likert scale that ranges from 7 (extremely desirable) to 1 (not at all desirable).

Bem (1981) revised the scale and produced a 30-item shorter version. This resulted in a higher internal consistency and a high correlation with the original instrument (Holt & Ellis, 1998). Although this measure has been commonly used, some concern is evident due to the possible outdatedness of concepts and perceptions of gender. This is attributed to the evolving change within society and cultural practices (Colley, Mulhern, Maltby, & Wood, 2009; Holt & Ellis, 1998).

Exercise Identity Scale. Anderson and Cychosz (1994) created and validated the 9-item exercise identity scale (EIS) in order to assess a person’s value and adherence to exercise participation through identity roles and view of self-concept. The measure uses a 7-point Likert scale that ranges from 1 (strongly disagree) to 7 (strongly agree). A sample question is, “Exercising is something that I think about often.” Scores range from 9 to 63 with a higher score indicating a stronger exercise identity. The scale has exhibited a strong test-retest reliability of 0.93 with a Cronbach’s alpha of 0.94 (Anderson & Cychosz, 1994; Anderson, Cychosz, & Franke, 2001).

Godin Leisure Time Exercise Questionnaire. Godin and Shephard developed the leisure time exercise questionnaire (LTEQ) in 1985 to have a simple assessment measuring

leisure time physical activity. Maximum oxygen consumption (VO₂ max) and body fat (BF) were used during the development and validation of the instrument. The self-report measure was later reassessed (Godin, Jobin, & Bouillon, 1986) and construct validity has been established for moderate and strenuous physical activity categories (Leslie, Johnson-Kozlow, Sallis, Owen, & Bauman, 2003). The LTEQ has been used in studies to evaluate leisure time physical activity levels within various populations (Barrett, Plotnikoff, Courneya, & Raine, 2007; Lustyk, Widman, Paschane, & Olson, 2004) including collegiate samples (McArthur & Radaeke, 2009), and has been used in studies assessing exercise identity (Duncan et al., 2010).

The brief four-item questionnaire requires an individual to recall physical activities from a typical seven-day period that lasted more than 15 minutes (Godin & Shepherd, 1985). The assessment is then scored using the following calculation: Weekly leisure activity = (9 x strenuous) + (5 x moderate) + (3 x light/mild). This formula converts the scores into units of metabolic equivalence (MET). The second question assesses the frequency of reported exercise.

Social Support and Exercise Survey. The social support and exercise survey (SSES; Sallis, Grossman, Pinski, Patterson, & Nader, 1987) measures perceptions of support from family and friends involving exercise behaviors. Sallis, Grossman, Pinski, Patterson, and Nader (1987) developed the 13-item scale in which each question is rated twice: once for family and friends. Each item is rated using a 5-point Likert scale that ranges from 1 (none) to 5 (very often). The scale was scored by adding questions one through six and ten through thirteen generating one score for family support and another for friend support.

Scores may range from 9-45 with higher scores depicting positive support from family and friends.

Criterion-related validity and construct validity was established by correlating social support factor scales and physical activity behavior which yielded Cronbach's alpha coefficients ranging from .61 - .91 (secondary source Sallis et al., 1987 from Komar-Samardzija, Braun, Keithley, & Quinn, 2012; Wallace, Buckworth, Kirby, & Sherman, 2000). Test-retest reliability from the original study was .84 for the friend support subscale and .91 for the family support subscale (Sallis, et al., 1987; Komar-Samardzija et al., 2012; Wallace et al., 2000). Similar results have been found in using collegiate (Wallace et al., 2000), African American (Komar-Samardzija et al., 2012), and female (Noroozi, Ghofranipour, Heydarnia, Nabipour, & Shokravi, 2011) populations.

Procedure and Data Analysis

Prior to data collection, approval from the Internal Review Board (IRB) was obtained from two institutions due to investigator affiliation. Participants were recruited through three methods. Electronically mailed letters were sent to the leaders of university-recognized student organizations including student government associations and social sororities, as well as influential individuals at seven universities. The electronic correspondence contained information about the study, hyperlink to the online survey, letter of informed consent with IRB approval number, and a request to forward information to qualifying participants. African American females were also recruited through convenience sampling of students in undergraduate classes from targeted universities. Two senior undergraduate students, trained by the researcher, assisted in

recruiting efforts to gain extra course credit. Participant recruitment and data collection occurred for seven months spanning the course of two semesters.

The initial page of the online survey was the letter of informed consent containing information about the study and ended with acknowledgement of consent. The survey consisted of demographic information and the CRIS, BSRI, EIS, LTEQ, and SSES and took 15-20 minutes to complete. Demographic information was assessed from self-reported responses, which consisted of race, age range, year of school, residence (on or off campus), marital status, employment status, and common mode of transportation. Data were collected via a web-based survey resource. A collection function within the survey system software enabled the conversion of responses into a numerical format necessary for data analysis. Once the numerical responses were in a spreadsheet format, the data were organized and properly labeled according to measurements and subscales.

Simple correlations were initially used to address the first research question to evaluate relationships between variables. Two multiple regression analyses were conducted to further address research question one. The subscales of the CRIS (racial identity) and BSRI (gender-role identity) were the predictors and the LTEQ (physical activity) and EIS (exercise identity) were the dependent variables. Since a global score is not acquired from the CRIS, the subscales were entered individually. Likewise the same process was used for assessing the BSRI and its masculinity and femininity subscales. Two multiple regression analyses were used to address the second research question. Family and friend social support were the predictors while self-reported physical activity (LTEQ) and exercise identity were the dependent variables. A multivariate analysis of variance approach (MANOVA) was used to test for group differences between self-reported

frequency of physical activity and racial identity, gender-role identity, exercise identity, and social support. Post hoc tests were conducted to further evaluate group differences.

Results

Means, standard deviations, and Cronbach's alpha coefficients were calculated for all instruments and are presented in Table 2.2. The reliability coefficients indicated all measures displayed acceptable levels of internal consistency. On the LTEQ, participants were asked to indicate their typical frequency of regular physical activity during a week.

Table 2.2 Cronbach's alpha for instrumentation

Measure	Subscale	Mean	SD	Alpha
CRIS	PA	4.31	1.39	(.77)
	PM	3.62	1.47	(.83)
	PSH	2.10	1.24	(.85)
	IEAW	1.49	0.85	(.84)
	IA	3.03	1.25	(.83)
BSRI	IMCI	5.71	1.06	(.78)
	M	4.92	1.27	(.91)
	F	5.75	1.09	(.93)
EIS	---	4.09	1.58	(.93)
SSES	FAM	23.13	10.73	(.93)
	FND	27.41	10.22	(.91)
Physical Activity	LTEQ1	71.02	137.46	---
	LTEQ2	1.86	0.73	---

M = masculine; F = feminine; FAM = family social support; FND = friend social support; LTEQ1 = METs; LTEQ2 = frequency of physical activity

This item was used to classify participants into categories reflecting their activity levels.

One hundred women indicated they were active often, 133 reported they were sometimes active, while 59 were never/rarely active.

Pearson's correlations were conducted to evaluate relationships among the variables (see Table 2.3). Because of the relatively large sample size, the alpha level for correlations was set at 0.01. Significant correlations were noted within the subscales of

Table 2.3 Correlations among study variables (N=292)

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. PA													
2. PM	.143												
3. PSH	.104	.356**											
4. IEAW	-.053	.170**	.463**										
5. IA	-.113	.281**	.373**	.475**									
6. IMCI	.204**	.021	-.049	-.225**	-.023								
7. M	.146	-.034	-.016	.001	-.095	.140							
8. F	.115	-.006	-.115	-.133	-.110	.338**	.441**						
9. EIS	.094	-.053	-.007	.035	.000	.193**	.197**	.108					
10. FAM	.049	-.139	-.032	.056	.001	-.018	.002	.027	.245**				
11. FND	-.008	-.104	-.080	.089	.018	.054	.006	.024	.381**	.607**			
12. LTEQ1	-.001	.016	-.035	-.061	-.076	-.040	.053	-.003	.188**	.101	.079		
13. LTEQ2	-.030	-.078	-.046	.028	-.063	.049	.065	.005	.530**	.235**	.324**	.225**	

LTEQ1 = physical activity participation (METs); LTEQ2 = frequency of physical activity; ** $p < .01$

racial identity, gender-role identity, self-reported physical activity, and social support. Within the CRIS subscales small positive correlations were found between PM and IEAW and IA and IMCI and PA. Pre-encounter self-hatred had a moderate positive correlation with pre-encounter miseducation and IEAW. IA was moderately positively correlated with PSH and IEAW. A small negative correlation existed between IMCI and IEAW. Moderate positive correlations were found between the masculine and feminine subscales of the BSRI and the family and friend subscales of social support. A small positive correlation existed between METs and frequency level as reported on the LTEQ.

Small to moderately significant correlations were found across the measures as well. Feminine gender-role identity was positively correlated with the final stage of racial identity (IMCI). Exercise identity had a small positive correlation with IMCI and masculine gender-role identity. Frequency of self reported physical activity had small to moderate positive correlations with exercise identity and perceived social support of family and friends. No correlations were found between racial identity and self-reported physical activity.

Results from the regression analysis partially supported the hypothesis addressing the first research question (see Table 2.4). Racial identity and gender identity did not predict physical activity participation. However, IMCI ($\beta = .192, p < .006$) and masculinity ($\beta = .187, p < .008$) were significant predictors of exercise identity and accounted for 9.0% of the variance. Results from the regression analysis, reported in Table 2.5, concerning the second research question partially supported the hypothesis that social support would predict physical activity participation and exercise identity. Perceived social support from friends was a significant predictor of exercise identity ($\beta = .368, p = .000$) and frequency of

Table 2.4 Multiple regressions on racial identity, gender-role identity, and physical activity (N=292)

Dependent Variables	Independent Variables	R ²	β	T Value	P
Physical Activity		.021			
	PA		-.064	-.936	.350
	PM		.060	.842	.400
	PSH		.039	.488	.626
	IEAW		-.060	-.744	.458
	IA		-.072	-.927	.355
	IMCI		.059	.815	.416
	M		.098	1.342	.181
Exercise Identity	F	.090	-.051	-.661	.509
	PA		.039	.586	.558
	PM		-.061	-.885	.377
	PSH		-.015	-.197	.844
	IEAW		.117	1.483	.139
	IA		-.009	-.125	.901
	IMCI		.192	2.764**	.006
	M		.187	2.675**	.008
	F		-.018	-.249	.804

Note. β values are standardized regression coefficients from the final stage of the regression analysis; ** $p < .01$.

physical activity participation ($\beta = .287, p = .000$), which accounted for 14.6% and 10.7% of the variance, respectfully. Neither perceived family nor friend social support were significant predictors of physical activity.

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To more closely investigate how racial, gender, and exercise identities and social support varied according to exercise behavior, a MANOVA was conducted. The categorical variable was generated from the self-reported frequency on the LTEQ (often, sometimes, rarely/never). The MANOVA yielded a significant effect for participation frequency [Wilks' Lambda = .643, $F = 5.19 (22, 462), p < .001$]. Follow-up univariate comparisons revealed there were no group differences for any level of racial identity and femininity. Based upon data, groups did differ on masculinity [$F = 3.95 (2, 241) p = .021$], exercise identity [$F = 51.35 (2, 241) p < .001$], family social support [$F = 10.16 (2, 241) p < .001$], and friend social support [$F = 15.41 (2, 241) p < .001$]. Student Newman Keuls (SNK) post hoc tests were

used to determine which groups were different from one another. The means and standard deviations by group are reported in Table 2.6.

Table 2.5 Multiple regressions on social support, physical activity, and exercise identity (N=292)

Dependent Variables	Independent Variables	R ²	β	T Value	P
Physical Activity (LTEQ1 – METs)	FAM	.011	.084	1.144	.253
	FND		.028	.385	.700
Physical Activity (LTEQ2 – Frequency)	FAM	.107	.060	.861	.390
	FND		.287	4.096**	.000
Exercise Identity	FAM	.146	.021	.315	.753
	FND		.368	5.400**	.000

Note. β values are standardized regression coefficients from the final stage of the regression analysis; ** $p < .01$.

Table 2.6 Means and standard deviations by frequency groups*

Frequency Group		PA	PM	PSH	IEAW	IA	IMCI	M	F	EIS	FAM	FND
Often	<i>M</i>	4.24	3.44	1.98	1.48	2.89	5.78	4.89 ^{ab}	5.75	5.02 ^a	26.63 ^a	31.75 ^a
	<i>SD</i>	1.52	1.59	1.25	.81	1.24	1.10	1.38	1.19	1.31	9.92	9.36
Some-times	<i>M</i>	4.33	3.69	2.18	1.54	3.07	5.71	5.08 ^a	5.80	3.99 ^b	21.95 ^b	23.11 ^b
	<i>SD</i>	1.24	1.46	1.27	.96	1.28	1.02	1.17	1.01	1.40	9.39	9.07
Rarely / Never	<i>M</i>	4.34	3.74	2.11	1.39	3.08	5.63	4.58 ^b	5.72	2.68 ^c	20.00 ^b	22.90 ^c
	<i>SD</i>	1.45	1.26	1.11	.65	1.08	.95	1.14	.98	1.24	13.32	11.56
Total	<i>M</i>	4.30	3.62	2.10	1.49	3.01	5.72	4.91	5.77	4.07	23.16	27.39
	<i>SD</i>	1.38	1.47	1.23	.85	1.23	1.04	1.25	1.06	1.58	10.75	10.26

*Column means with differing superscripts are significantly different.

As expected, participants who reported they exercised often had stronger exercise identities, family, and friend support than those who reported they rarely or never exercised. Women who reported they sometimes exercise were higher on the masculinity scale than those who rarely or never exercise. They reported less family and friend support and weaker exercise identities than those who exercised often.

Discussion and Future Research

The purpose of this study was to explore the influence of racial identity, gender-role identity and social support on exercise identity and physical activity participation of African American collegiate females. Investigating the intersection of these identities has increased our understanding of behavior in a segment of the population that is at risk to be physically inactive (Hall, Kuga, & Jones, 2002). Social identity theory was used to extend current research to explore physical activity patterns and behaviors of African American college students. Previous research focused on African American females has included only minimal representation of college-aged women (Bennett & Wolin, 2006; Gow, Trace, & Mazzeo, 2010; Scioli et al., 2009) and yielded less than satisfactory solutions. Few studies have primarily focused on this population using this theoretical context.

Identity and physical activity

Concerning the first research question, the findings partially supported the hypothesis that racial identity and masculine gender-role identity influence exercise identity and physical activity. Racial identity did not predict physical activity participation based upon reported METs and did not predict physical activity frequency level. There were no group differences among physical activity participation frequency levels on racial identity subscales. Although these findings do not support the hypothesis, the final stage of

the nigrescence theory, represented by the IMCI subscale, did predict exercise identity, which supports the hypothesis. The final stage of racial identity, IMCI, specifies self-acceptance and cultural awareness (Harrison, Harrison, & Moore, 2002; Want, Parham, Baker, & Sherman, 2004). Thus, identifying as an exerciser would be a sign of transcending noted stereotypical physical activity behavior. This information should be regarded with caution, as the relationship between variables reflects less than four percent of the shared variance.

To date, there has not been prior research on racial identity and exercise identity of African American females. The current investigation is among the first to focus on African American college females; therefore future studies may reveal different associations of racial and exercise identities within other contexts such as diverse age groups of African American females. Perhaps conceptual knowledge about racial identity has not been completely developed or self-assessed, due to the transitional nature of the college years of life (Scioli et al., 2009). Future investigations should further explore the relationship between exercise identity and physical activity participation within the African American female population due to the differences between METs and frequency levels. Information obtained may provide better culturally relevant implications for researchers and practitioners.

Similar to the racial identity findings, gender-role identity was also not a predictor of physical activity participation based upon reported METs. In support of the first hypothesis, masculine gender-role identity did significantly predict exercise identity. Previous research suggests gender is a better determinant than race in predicting physical activity participation within samples of predominantly Caucasian (Duncan et al., 2010) and

African American (Hicks & Miller, 2006) male and female college students. However, gender was determined by the biological factors specifying male and female. The categorical perception of masculinity, femininity, and androgyny outlines the formation of gender-role identity (Kark, Waismel-Manor, & Shamir, 2012). Gender-role can be perceived as a continuum ranging from masculine to feminine that encourage individuals to behave in gender-consistent ways (Tobin et al., 2010). Although the sample population was all female, it was hypothesized that females who exhibited stronger masculine identities would have increased levels of physical activity participation, which was not the case.

Females have previously reported preferences of light to moderate bouts of physical activity (Duncan et al., 2010; Hall, Kuga, & Jones, 2002), which is associated with lower levels of METs. Given the sample population was female, this may account for the physical activity levels as measured by METs. Future endeavors should explore associations between physical activity choices based upon METs and masculine and feminine gender-role identities of African American females in order to promote physical activity maintenance and cultivation of an exercise identity. Within the African American culture in the United States, there are biases and stereotypes regarding physical activity choice (Harrison et al., 2002; Harrison, Lee, & Belcher, 1999). For example, activities such as football or basketball may be perceived as African American sports, while hockey and lacrosse are alleged to be European (Caucasian) American sports. The same could be reflected in the physical activity choices based on gender-role identity of African American females.

The findings indicated that African American females who reported they often participated in physical activity had higher levels of exercise identity than those who indicated they were sometimes or rarely/never active. Exercise identity was directly related to the frequency of physical activity participation. Duration of exercise has been related to a stronger perception of exercise identity and motivation levels indicating a relationship with frequency of exercise (Duncan et al., 2010). The frequency of physical activity participation was identified as a descriptor (Anderson & Cychosz, 1994; Wilson & Muon, 2008) of exercise identity for their sample population of African American college females. Practitioners should increase the frequency and duration of physical activity opportunities to create environments and establish group behaviors (Kelly, 2009; Tajfel 1982; Turner, 1982) that foster an affinity to exercise identification.

Social support, exercise identity, and physical activity

The findings addressing the second research question also partially supported the hypothesis regarding social support, physical activity participation, and exercise identity. Perceived family and friend social support did not predict physical activity participation based upon METs, which did not support the hypothesis. This finding was inconsistent with previous research denoting perceived levels of social support as predictors and motivators of physical activity participation for African American females (Hamilton & White, 2008; Henderson & Ainsworth, 2001; Murrock & Madigan, 2008; Laverie, 1998; Lawman, Wilson, Van Horn, Resnicow, & Kitzman-Ulrich, 2011; Sallis & Glanz, 2006; Ueshima et al., 2010). However, majority of the studies did not include college-aged African American women and evaluated overall perceptions of social support. The issue of

the sensitivity of METs as the measure of physical activity discussed earlier has applicability here as well.

Participants who reported exercising often had higher levels of family and friend support than those who were active sometimes or rarely/never. High levels of social determinants (i.e. support and club memberships) as well as the intent of participation have been direct positive influences on physical activity participation from encouragement through social support (Giles-Corti & Donovan, 2002). Despite the established relationship between social support and physical activity participation, the association between social support and exercise identity had not been explored. Within the current investigation, perceived friend social support was a predictor of higher frequency of physical activity and stronger exercise identity. Influences from strongly identified significant others, such as friends, has an affect in decision-making processes regarding physical activity behaviors (Chatzisarantis, Hagger, Wang, & Thøgersen-Ntoumani, 2009). More so, college students are often disconnected from family support. Therefore, peers and friends become the sources of support and foundation of new inter-group relationships (Hicks & Miller, 2006; Tajfel, 1982). Consistent with social identity theory research, peer norms had a positive relationship with physical activity behavior from individuals who strongly identify with the group (Chatzisarantis et al., 2009; Tajfel, 1982).

Intersection of identities

In terms of identity intersection influences on physical activity, IMCI (racial identity) and the masculine gender-role identity were predictors of exercise identity. Exercise identity and masculine gender-role identity predicted frequency of physical activity engagement. Even though racial and gender-role identities had some influence on physical

activity engagement and exercise identity, conclusions about strong influences of these two identities cannot be drawn. However, there was evidence of possible influences of cultural perceptions of physical activity. Sport is part of an African American male's process of socialization, but not as emphasized with African American females (Hardin & Greer 2009; Harrison, Azzarito, & Burden, 2004; Harrison et al., 2002). Unless other examples are provided, sport equates to physical activity participation and is regarded as a male activity. Eventually, African American females may inherently associate masculine gender-role identity to physical activity participation.

Exercise identity was more closely related to frequency of physical activity participation than racial identity or gender-role identity. Increased opportunities for participation allow time to develop a level of comfort and integrate exercise into identity. Future investigations should move beyond the categorical references of race and gender for understanding determinants of physical activity and exercise identity (Henderson & Ainsworth, 2001; Wiggins, 2011). Researchers and practitioners should observe factors of importance regarding physical activity participation in terms of duration and frequency. Perhaps racial and gender-role identities would be more influential factors in physical activity choice, which should also be explored within the social identity theory framework.

Although minimal, feminine gender-role identity had a stronger relationship with IMCI (the final stage of racial identity) than masculine gender-role identity, which is inconsistent with racial identity research. In previous research, not related to physical activity or exercise identity, African American females reporting higher levels of self-esteem (Buckley & Carter, 2005) and psychological well-being (Littlefield, 2003) exhibited masculine or androgynous gender characteristics. Differences with the current findings

may be explained by the age of the participants and context (physical activity participation) of the study. To date, no prior research has addressed the influences of racial identity, gender-role identity, and exercise identity on physical activity participation.

Limitations

Despite the promising findings, this study contained limitations. The recruitment of participants was primarily a convenience sample of students from undergraduate classes. Some of the students were awarded extra credit for participation and recruitment of others, therefore selection bias may have occurred. The demographic information and physical activity assessment were self-reported. Social desirability may have been a factor as well as participant interpretation leading to possible inaccurate responses. While the use of an online instrument provides a potentially broader pool of participants and increases accessibility, it also diminishes personal interaction. Using a web-based survey system does enforce the confidentiality of information and sense of anonymity, however there is also the (possibly increased) risk of incomplete responses from participants.

No assessment of physical activity choice was obtained. Previous research indicated women are less likely to choose a sport when participating in physical activity and opt for moderate intensity level exercises (Duncan et al., 2010; Hall, Kuga, & Jones, 2002). Physical activity choice may yield further information to understand masculine versus feminine aspects of gender-role identity for African American women regarding exercise identity and physical activity participation. In light of the documented biases and stereotypes of physical activity choice according to race, further investigation would provide detailed aspects of culturally relevant activities. Age and maturity may have been a factor with assessing racial identity, due to the process of transition (i.e. self-learning and discovery)

for college students. Racial identity is a complex concept that is dependent upon the perception and interpretation of personal life experiences. Finally, the primary focus of the current investigation was the influence of identity on physical activity participation. However, the literature review suggested potential issues regarding the wording (i.e. leisure time) of physical activity measures. The wording of the questionnaires were not changed or adapted. Therefore future researchers may explore the possibility of modifying physical activity measures to account for possible cultural biases.

Conclusion

Contributions of this study are unique in that the investigation progressed beyond race and gender as social aggregates to understand determinants of physical activity participation of African American college females. Social identity theory was used as the primary theoretical framework to assess the salience of self-identifications (racial identity, gender-role identity, and exercise identity) related to physical activity participation. Furthermore, cultural biases exist in physical activity research related to *who* were the primary investigators and the targeted population (Gletsu & Tovin, 2010). Accounting for minimal differences in interpretation, a person of a similar racial and cultural background has the potential to reduce investigator bias. The current study accomplished that task by having an African American female as the primary investigator.

The findings of the current study extended the research by examining physical activity participation of African American females through the social identifications of race, gender-role, and exercise. In addition, the relationship was explored between social support and exercise identity within an African American female population, which had not been previously done with any population. Perceived friend social support, frequency of

physical activity participation, and masculine gender-role identity were indicators of higher levels of exercise identity. Although multiple identities exist and emerge dependent upon the situation (Deaux, 2001; Henderson, 2009; Stets & Burke, 2000; Turner, 1982), racial and gender-role identities were not directly influential on physical activity participation but provided insight into cultural behaviors. Negotiation and emergence of racial identity, gender-role identity, and exercise identity were not dependent upon one another. Taken together, findings support the conclusion that a focus on developing a strong exercise identity through cultural lenses of other identities such as race and gender identities is an important factor in efforts to promote physical activity in diverse populations.

CHAPTER 3
BLACK GIRLS *DO* RUN: PERCEIVED IDENTITY
ASSOCIATION OF FEMALE RUNNERS

Introduction

Previous research has consistently indicated African American females report lower levels of physical activity and experience higher rates chronic diseases related to physical inactivity (Centers for Disease Control and Prevention [CDC], 2012; Harley, et al., 2009). According to reports from the 1999-2008 National Health and Nutritional Examination Survey (NHANES), 47.2% of African American women 20-39 years of age were obese and 51.7% of those 40-59 years of age were classified as obese (Flegal, Carroll, Ogden, & Curtin, 2010). These figures were 3 to 13% higher than White and Mexican American women in the same age groups. The American Heart Association (2013) recommends 150 minutes of moderate physical activity participation on a weekly basis. Engaging in physical activity can promote physical and mental health and offset the ill effects of poor health. For African Americans, physical activity engagement could also decrease the prevalence of diabetes and heart disease, which greatly affect this demographic of the population (The Office of Minority Health [OMH], 2012). In light of these disparities, past and current research has sought to understand the determinants of the low prevalence of physical activity within the population of African American women (Faridi et al., 2010; Flegal et al., 2010; Flegal, Carroll, Kit, & Curtin, 2012; Gletsu & Tovin, 2010; Harley et al., 2009; Kirchoff, Elliott, Schiliching, & Chin, 2008). Of these studies, very few have primarily focused on African American women who have maintained adequate levels of physical activity (Harley et al., 2009; Kirchoff et al., 2008).

The emergence of programs and activities through social media such as “Black Women *DO* Workout,” other similar Facebook pages, and various electronically circulated exercise/weight loss challenges via Instagram, Twitter, e-mail, etc., warrants a deeper exploration into characteristics and socio-cultural aggregates as predictors of physical activity participation among African American women. In addition books such as “Shred” by Dr. Ian Smith (2012) have helped to bring awareness and exposure to African Americans on the importance of not only physical activity but healthy lifestyles as well. Lack of exposure and culturally slanted physical activity norms and beliefs have been outlined as challenges to participation among African American women (Harley et al., 2009).

Lifestyle decisions and choices are molded by perceptions of socio-cultural factors such as racial/ethnic identity and gender-role identity formation. Identity formation, an ongoing process, is influenced by individualized socialization (Coakley, 2009) through life experiences. Social identity expresses the sum of self-identifications, perceived group association benefits, and group behavior (Bourhis & Hill, 1982; Deaux, 2001; Tajfel, 1974; Tajfel 1982; Turner, 1982). Thus, perception of identity could guide the creation of positive physical activity habits with self-identity serving as a significant moderator of the relationship between social norms and the intent to exercise (Yun & Silk, 2011). Self-identifications are essential to an individual’s projection of social identities.

An individual’s social identity is dependent upon the environment or situation (Turner, 1982). Thus, one can choose which characteristics or traits to express or display. Social psychologists, Tajfel (1974; 1982) and Turner (1982), explain social identity theory as the manner in which individuals associate with groups and intergroup/intragroup

behavior (Billig & Tajfel, 1973). Individuals also strive to achieve and maintain socially and personally desirable positive levels of social identity (Stets & Bourke, 2000, Tajfel, 1982, Turner, 1982). Furthermore, social identity can be assessed through pinpointing types of identities that are displayed in various settings (Bourhis & Hill, 1982) such as, teacher identity (O'Connor & MacDonald, 2002), sexual identity (Ashley, 2003; Morrow & Gill, 2003; Paechter, 2003; Squires & Sparkes, 1996), athletic identity (Grove, Fish, & Eklund, 2004), organizational identity (Ashforth & Mael, 1989; Hogg & Terry, 2001), racial identity (Harrison & Belcher, 2006), ethnic identity (Fuligni, Witkow, & Garcia, 2005), gender identity (Ashley, 2003), exercise identity (Wilson & Muon, 2008), and personal identity (Layder, 2004; Turner, 1982).

The focus of this study is on racial identity, gender-role identity, exercise identity and their influence on African American females who are regular exercisers through running group membership. From the perspective of race, African American women are less likely to display dissatisfaction with their bodies or a desire to be thin than Caucasian women (Kelch-Oliver & Ancis, 2011). A shapely or curvaceous ideal body image is more prevalent in the African American community, which consequently produces a diminished emphasis on weight (Kelch-Oliver & Ancis, 2011). The perception of physical attractiveness (Gourdine & Lemmons, 2011) can alter the view of benefits from physical activity participation (Harley et al., 2009). If individuals avoid physical activity because they view losing weight as detrimental to their appearance, they also are denied the positive effects on their health independent of weight loss (Kumanyika, 2008). In addition African American women typically take on the role of “caregiver” of the family (Harley et

al., 2009). This cultural role can have a tremendous influence on discouraging physical activity perception and participation (Henderson & Ainsworth, 2001).

Racial identity has been previously assessed through the theoretical framework of the nigrescence theory (Cross, 1971), which seeks to chronicle an African American's assimilation into the dominant Anglo-Saxon European American culture in the United States. There are six stages of the process of assimilation: pre-encounter assimilation (PA), pre-encounter miseducation (PM), pre-encounter self-hatred (PSH), immersion/emersion anti-White (IEAW), internalization Afrocentricity (IA), and internalization multiculturalist-inclusive (IMCI).

The first three subscales are characterized by a pro-American mentality in which race is not salient (PA), negative stereotypes of the Black community prevail (PM), and an unhealthy perspective of self as a result of race (PSH). The next subscale marks an entrance into a phase of self-acceptance where intense Black involvement in affairs may be present along with possibly an anti-White (IEAW) mentality. If an individual reaches a certain level of self-acceptance and knowledge of other cultural affairs, then the person maintains a biculturalist (IA) or multiculturalist (IMCI) mentality (Fhagen-Smith, Worrell, Vandiver, & Cross, 2010; Vandiver, Cross, Worrell, & Fhagen-Smith, 2002). It is posited that as a person becomes comfortable with themselves and how they function within society and their ability to navigate and cope with experiences, they are better able to relate and assimilate into the dominant culture without compromising the essence of their personality. Therefore a person at the highest level of personal acceptance of race, IMCI, should display better levels of overall well being and mental health (Buckley & Carter, 2005; Littlefield, 2003; Williams & Williams-Morris, 2000).

As people age, conceptions of gender-role identity are formalized through a process of social cognitions that aid in identity construction, attributes of self-perceptions, and stereotypes, all of which are part of the progression of socialization (Tobin et al., 2010). It has been posited that Black girls are not socialized as having the same polarized views of gender as their white counterparts. Possible reasons have been referenced from the historical perspective of the residual effect of slavery (Buckley & Carter, 2005) and the roles of work assigned to males and females. Therefore, beliefs about femininity and masculinity in respect to physical activity may be different in African American culture than in other cultures.

Gender-role identity formation generally stems from the categorical perception of masculinity, femininity, and androgyny (Kark, Waismel-Manor, & Shamir, 2012). Personal cognitions of self and the relation to masculine or feminine characteristics lead individuals to behave in gender-consistent ways (Tobin et al., 2010). Gender stereotypes are individual notions of how the sexes differ or the manner in which the sexes should think or act (Littlefield, 2003; Tobin et al., 2010). All three aspects of gender-role identity have some level of fluctuation based upon contextual influences. Based on these definitions and the fluid nature, gender-role identity can influence participation in physical activities depending upon what is deemed socially acceptable for males and females.

Researchers have found that African American females who self-reported more masculine or androgynous attributes displayed higher levels of self esteem (Buckley & Carter, 2005) and psychological well-being (Littlefield, 2003). In addition these same females were found to be at the level of internalization in their racial identity displaying self-acceptance, growth, and maturity. Altered or stereotypical views about culturally

acceptable physical activity practices exist and are perpetuated through physical activity choice (Harrison, Harrison, & Moore, 2002).

Physical activity in the African American culture is synonymous with sports and athletics (Donner, 2005; Harrison et al., 2002; Singer, 2005). African American males usually report higher rates of participation (Murphy, 2005). Equating physical activity solely with sports, in which females are less active, creates a disparity in valuing the importance of exercise. Although previous articles have explored racial identity and athletic identity (Bimper & Harrison, 2011; Harrison et al., 2002; Steinfeldt, Reed, & Steinfeldt, 2010) few have explored exercise identity. Exercise identity is the degree to which an individual incorporates exercising as a part of their identity (Duncan, Hall, Wilson, & Jenny, 2010). Researchers have not examined physical activity patterns of African American females from this aspect.

Centering this investigation on identity rather than the categorical terms of “race” and “gender” facilitates a deeper understanding of African American female physical activity engagement (Henderson & Ainsworth, 2001). In addition, the qualitative approach provides an avenue for the expression of participants’ voices beyond quantitative instrumentation. Thus, the purpose of this study was to investigate the perceptions of racial identity, gender-role identity, and exercise identity of African American females who are regularly active through membership in a local running group. Two African American women created the running group in order to combat the obesity epidemic within the African American community. The duo sought to provide encouragement, resources, and access to make healthy living a priority. Since the inception of the organization, local

running groups have become more prominent. From this background and focus, the research questions were:

1. What are the perceptions of racial, gender-role, and exercise identities of “regular” African American female physical activity participators/exercisers?
2. What influence does the desired social association of group membership have on racial, gender, and exercise identity?
3. How have these individuals negotiated their identities to be active?

Methods

Participants

The participants were recruited by contacting the leaders of a local southeastern Louisiana running group to conduct the investigation. Study information was distributed to potential participants via the official electronic mailing list of the running organization. As a result, 11 current members responded and 10 completed the online questionnaire. Two of the participants were 22-34 years old and two were in the 45-54 year range. Six reported being 35-44 years of age. Six of the participants were married, while three were single and one was divorced. The levels of education were equally represented in having some college (three), obtaining a Bachelor’s degree (four), and obtaining a Master’s degree (three). Socioeconomic status was also evenly distributed: two at \$20,000-\$40,000, three at \$40,001-\$60,000, two at \$60,001-\$80,000, and three reporting an income above \$80,001. With regard to running group membership, two participants reported being active less than six months, three were involved between six months and a year, while the other half of the participants reported being active one year to 1 ½ years (see Table 3.1).

Instrumentation

Data were collected using an online web-based questionnaire. The demographic section consisted of self-reported data inquiring about race (open-ended), socioeconomic status (income range), education level, age, marital status, past physical activity experiences (i.e. sports, running, exercising) and levels (i.e. high school, college, etc.),

Table 3.1 Profile of participants

	Self-reported Demographic Information						
	Race	Age	Marital Status	Education	Income	Length of Time	Prior Levels of PA
Jocelyn	AA	22-34	Single	Some College	\$20,001 – 40,000	Less than 6 months	MS, HS
Mary	AA	35-44	Married	Bachelor's	\$40,001 – 60,000	Less than 6 months	MS, HS, College
Liz	AA	45-54	Married	Some College	\$60,001 – 80,000	6 months – 1 year	HS
Rachel	AA	45-54	Divorced	Some College	\$40,001 – 60,000	6 months – 1 year	MS, HS
Brenda	AA	35-44	Married	Bachelor's	\$20,001 – 40,000	1 year – 1.5 years	HS
Tameka	Black	35-44	Married	Master's	\$80,001+	6 months – 1 year	MS, HS, College, PC
Diedra	Black	35-44	Married	Master's	\$80,001+	1 year – 1.5 years	MS, HS, College, PC
Crystal	Black	35-44	Single	Bachelor's	\$40,001 – 60,000	1 year – 1.5 years	PC
Jackie	AA	35-44	Married	Bachelor's	\$60,001 – 80,000	1 year – 1.5 years	HS, College, PC
Tanya	Black	22-34	Single	Master's	\$40,001 – 60,000	1 year – 1.5 years	HS, College, PC

Note. PA = physical activity, AA = African American, MS = middle school, HS = high school, PC = post college

length of time with the running group, and social support (Darlow & Xu, 2011). At the conclusion of the demographic section participants completed an identity salience activity, which involved simply ordering the perceived level of importance of the three identities: racial, gender-role, and exercise. This was accomplished through a ranking system of least important (1), neutral (2), or most important (3).

The online open-ended interview questions were derived from quantitative instrumentation targeting the intersection of race and gender-role identity and their relationships with group membership and physical activity participation. Racial identity was assessed through a series of questions inspired by the Cross racial identity scale (CRIS: Cross & Vandiver, 2001; Vandiver, Cross, Worrell, & Fhagen-Smith, 2002). The CRIS subscales were derived from the expanded nigrescence theory, which outlines stages of racial understanding in terms of self and worldview (Fhagen-Smith et al., 2010; Vandiver et al., 2002). Consequently, the open-ended questions regarding race strategically sought to assess a general, conceptual understanding of race targeting the range from negative racial stereotypes to the complete embracing of self.

The interview questions were arranged to follow a structured format (Harrell & Bradley, 2009; Henderson & Ainsworth, 2001). To account for the lack of interaction between interviewer and interviewee, follow-up questions and key words were used to prompt deeper thought and greater substance from the participant. For example a sample question inquired, "How important is it for [the running group] to be multicultural and accepting of other groups (i.e. White, Latino, Asian, Jewish, Lesbian, etc.)? Please explain your answer." The follow-up question was: "Would you be opposed to someone of another

race or ethnicity joining the group? Why or why not?" The online interview format ensured the ease of participants and was conducive to the initial interview protocol (see Table 3.2).

Data analysis

Both deductive (confirming or refuting research questions) and inductive (searching for emerging themes) analysis approaches were used to completely evaluate the

Table 3.2. Open-ended interview questions

Question 1	Why did you join [running group]?
Question 2	What types of activities/events does the group host?
Question 3	Besides [the running group], what other physical activities do you participate?
Question 4	As a female, what barriers/obstacles/set-backs do you encounter related to maintaining consistency in physically activity participation?
Question 5	How does the African American culture encourage (or hinder) females to participate in physical activities?
Question 6	The name of your organization is "Black" [running group]. Would you feel differently if the term "African American" were used? Why or why not?
Question 7	Which term is your personal preference? Why?
Question 8	How do you feel your racial identification influences your participation in any type of physical activity?
Question 9	How important is it for BGR to be multicultural and accepting of other groups (i.e. White, Latino, Asian, Jewish, Lesbian, etc.)? Please explain your answer.
Question 10	Would you be opposed to someone of another race or ethnicity joining the group? Why or why not?
Question 11	If you had a sister/mother/aunt/daughter/friend who is not physically active, what would you do or say to get her to become more physically active?

data. The three types of investigated identities, race, gender-role, and exercise, served as the structural framework in which the data were analyzed. An initial category tree based upon the questions guided the evolution of the analysis process (Harrell & Bradley, 2009), which maintained investigator focus and organization. Verbatim transcription of interview data was retrieved from the online survey interview system and pseudonyms were assigned to maintain confidentiality. Data were arranged and organized for the purposes of coding and interpretation to identify emerging themes and patterns within the data. Free coding of the text was completed, organized, and then entered into the coding tree. An analysis matrix was constructed based on the attribute (demographic information) and substantive (content of interview) codes (Harrell & Bradley, 2009).

Results

When asked about the types of events and activities of the group, participants responded with a wide range of activities. Activities included daily running and circuit training sessions, social meet and greets, post-race celebrations, group participation in running events, swim clinics, and educational sessions providing information on health and wellness. These events display a triangular approach to improving the health status of African American females by implementing, the social aspect, practical application (i.e. active participation), and educational components.

All of the participants reported a history of participating in physical activity during high school, while five mentioned involvement during collegiate years. Four of the ten women (Jocelyn, Mary, Brenda, and Jackie) were not physically active immediately prior to joining the running group. Of the women who were active prior to becoming a member, four (Liz, Tameka, Diedra, and Crystal) were involved in "Exercise (i.e. aerobics classes-

Zumba, Step, etc; cycling, walking, jogging, cardio training)” as the type of physical activity, Rachel indicated “Hobbies (i.e. gardening, art, dance, carpentry/upholstery, etc.),” and Tanya reported both “Exercise (i.e. aerobics classes-Zumba, Step, etc; cycling, walking, jogging, cardio training)” and “Sports (i.e. basketball, softball, track and field, tennis, golf, volleyball, soccer, bowling, etc.).”

To explore the perception of social support, participants were asked to indicate how much support they received for participating in regular physical activity from the people closest to them by selecting a response ranging from “Not at all” (1) to “Very much” (5). All of the participants identified some level of perceived social support. Three (Jocelyn, Tameka, and Tanya) reported “A little”, the responses “Some” and “Neutral” were selected by two participants each (Mary/Liz and Rachel/Diedra, respectively), and three (Brenda, Crystal, and Jackie) indicated “Very much.”

Participants were also asked to indicate the length of time they had been a member of the running group. The frequency count of perceptions of social support by the length of group membership is reported in Table 3.3. Women who reported they had “A little” social support spanned the range of length of involvement. Jocelyn has been a member for “Less than 6 months,” Tameka specified her membership length as “6 months to 1 year,” and Tanya has been involved for “1 year – 1 ½ years.” In contrast, the 3 women who reported they received “Very much” social support had been members for “1 year – 1 ½ years.” The frequency count provides some support for the conclusion that strong social support facilitated maintaining group membership.

Table 3.3. Frequency of length of time in running organization and social support

How much support do you receive for participating in regular physical activity from the people closest to you?	None	A little	Neutral	Some	Very much
Less than 6 mos.	—	1		1	
6 mos. to 1 year	—	1	1	1	
1 year to 1.5 years	—	1	1		3

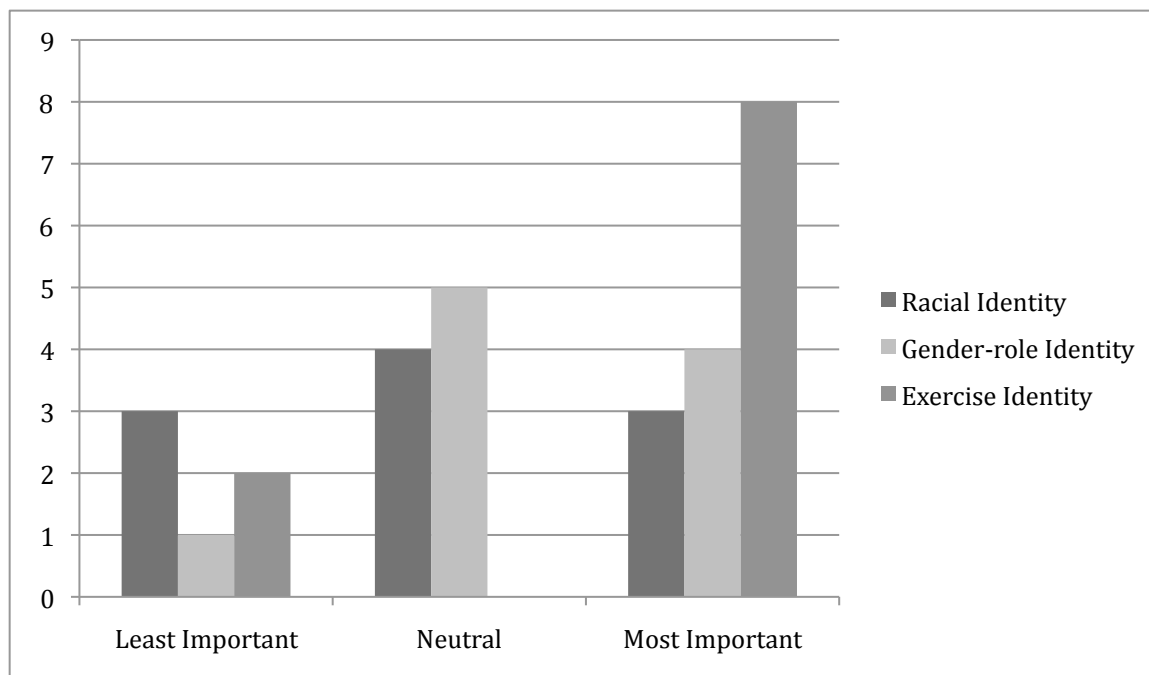


Figure 3.1 Identity salience task

Identity salience

An identity salience task was included in the survey to contrast the value of one identity with the others (i.e. which one was more important out of race, gender-role, and exercise). Eight out of the ten participants selected exercise identity as “Most Important (see figure 3.1).” Of the two who indicated exercise identity as “Least Important,” Mary, who had been involved with the group less than six months, reported racial identity as “Most Important,” while Rachel, a member for 6 months to a year, selected gender-role as

“Most Important.” Overall racial identity and gender-role identity were mostly selected as “Neutral.”

The identity salience task suggests that for a majority of the participants, being physically active was integrated into their personal identity. The remainder of the results section is structured to present themes related to the participants’ exercise identities and the ways that racial and gender-role identities intersect with exercise identity to enhance or constrain physical activity. Three major themes emerged that represent the participants’ voice relevant to decisions to be physically active: a) group membership advantages; b) exercise as a catalyst for change; and c) perceived obstacles to physical activity. Subthemes are embedded within these higher order themes.

Group membership advantages

A focus on the powerful influence of being part of a group was evident in the responses. The social aspect of the running group held great appeal for the participants. Socially, the women expressed an overall enjoyment of belonging in a homogenous group of women who shared similar goals and provided support. As Mary indicated “[I was] referred by a friend. [There are] other ladies at the same fitness levels [and] physical appearance as me.” The notion of having membership in a running group with women who mostly resembled the same phenotypical appearance of “Black” and who were “like-minded” also served as reasons for the maintenance of physical activity through group membership. Two subthemes encompassed in this theme were the importance of encouragement to participate and the issue of the term indicating race and organizational identity.

Encouragement to participate. Encouragement to modify behavior for positive outcomes emerged as a recurrent theme throughout the data regarding the influence of gender and race on physical activity. This notion was manifested through references to the lack of exposure African American physical activity participation and by the affirmations of modeling positive lifestyle behaviors. Tameka acknowledged how the use of social media has created a means for more exposure and awareness, “It’s only because of Facebook and talking to other people who have lost a noticeable amount of weight, that I learned about the group. I assume that if I didn’t ask, I may have never known about the group.” Lack of exposure may hinder participation for African American females. A few of the other participants also mentioned the lack of entities targeting African American females to promote exercise *and* health in an effective manner.

The participants also expressed the need to model better behavior in order to motivate and encourage other African American women to join the running group and/or take an active interest in a healthier lifestyle. When asked about ways to encourage physically inactive African American women to exercise, Diedra said “I would say ‘Look at me! Who would [have] ever thought that I would ever run marathons.’ Simply being “an example” (Rachel) and inviting others to “come out and join us” (Brenda), were also offered as suggestions to get others to embrace the positive change. As a result of group membership, the participants voiced satisfaction with the current structure and components of the running group.

“This survey really made me think how appreciative I am for this group and all of the efforts that the leaders take on no matter what they always do it with a smile and no hesitation. I love our group, it holds me accountable (Tanya).”

Some of the participants also observed the value of intrinsic motivation. “Encourage them to join and lead by example. I’ve tried to get many people out but until they decide THEY want it for themselves, there is no need to continue to waste my breath (Jackie).”

“Black” and organization identity. Another subtheme related to group membership relates to the term used to indicate the racial make-up of the group. When asked about preferential use of a term to self racially identify, Jackie stated, “I interchange them. I was raised “Black” and evolved into incorporating the term AA [African American].” Jocelyn also commented, “I would not feel differently because I embrace both terms equally.” In response to the use of the term “Black” in relation to the group name, many preferred the term “Black” because it is more concise, inclusive, and easier to incorporate. Tameka stated, “I would prefer Black because African American is too long and [the running group] has established itself as a brand.” Mary also stated, “I like the use of the term Black. It’s actually more inclusive.” However, not all shared those sentiments.

“No. But truthfully, I kind of wish it did not say ‘Black Girls.’ I’m kind of tired of the word “Black” being attached to titles such as ‘Black Women Do WorkOut’ or ‘Black Girls Workout too.’ Just say Women, Ladies...whoever joins the organization will know it’s founded by two Black women (Diedra).”

As previously stated, two African American women with the intent to encourage other African American women to become active established the running group. When asked about their willingness to racially/ethnically diversify the group most of the participants (nine) expressed the desire and willingness to “agree with diversity (Rachel)” because “we are all human (Liz).” The reasons mentioned were not having “the racial stigma of being a biased group (Jocelyn) and “exercise is not race defined (Brenda).” Although Mary was not opposed to women of other races/ethnicities joining, she expressed concern for the identity of the group, “This group should not feel pressure to include those

groups as it may lessen the ability to continue to attract and identify with those who identify themselves as black women.” However, Diedra revealed an interesting dynamic to the group,

“To my understanding [the running group] is multicultural. For example, at our location one of our group runs is spearheaded and led by a White woman. Also, our location has another White woman involved with the runs as well.”

Further reiterating the more global sense of multiculturalism, when asked about welcoming someone of another race or ethnicity joining the group, Jackie commented,

“Absolutely not opposed!! The group leader who helped inspire me to keep trying when I first joined the group was not Black or AA [African American]. I credit her with being my biggest influence in the beginning. It had nothing to do with her race just the fact that she was a caring, encouraging positive woman.”

The use of the term “Black” is a direct distinction of membership and organization identity, but there is a desire for the group to “embrace any woman who is looking to embrace a healthier lifestyle (Jackie).”

Exercise as a catalyst for change

This second higher order theme that emerged relates to the underlying belief that participation in physical activity provides a means to get better, or an avenue to achieving goals and improving the quality of life. A desire for change in exercise routine was a dominant motivating force for running group involvement. For example, Jocelyn expressed a desire “to become more physically active.” Brenda indicated her motivation to be in the group was “to increase my ability to jog,” while Diedra wanted to “to challenge myself.”

Another subtheme that emerged with regard to exercise as a way to get better was a concern for health. Jackie wanted “to regain a level of health and physical activity that I had over a decade before.” Diedra emphatically stated, “The point is to encourage health awareness by being actively involved and encouraging others to do the same.” This

statement represents the value placed on the perceived benefits of physical activity. One component or aspect of the running group was to emphasize the importance of health. As a result of group membership, participants have expressed becoming healthier and increasing awareness.

In response to perceived African American cultural influences on physical activity, improper eating habits surfaced as a health concern. Jackie stated,

“The African American culture has an obsession with food and doesn't always see the relationship between obesity and poor health. They also make it almost a curse to change the diet from fat heavy, greasy, artery clogging foods and frown on healthy choices. It's very difficult to change a lifetime of habits and sometimes they would rather die doing what they're used to than to put one foot after the other to do the hard work of being active.”

Tameka also expressed, “I think dietary changes are an important factor with the African American community.”

Perceived obstacles to physical activity

The third higher order theme centers around barriers or obstacles that are cited by African American women function to lower the likelihood they will be physically active. Three subthemes are embedded in this theme: race and a disconnect with physical activity, physical and environmental conditions, and family and work.

Disconnect with Physical Activity. When asked about their perception of the influence of racial identity on physical activity participation, Liz, Rachel, Brenda, and Crystal simply stated, “No” or “It doesn't.” Other participants, however, identified inconsistencies with participation and limiting the characterization of physical activity to certain sports. Tameka explained, “Most Blacks don't participate in consistent physical activity.” Sporadic bouts of exercise or activity are not enough to maintain a healthy lifestyle. Jocelyn commented, “I feel that certain sports are more inclined to certain races

(i.e. tennis and golf).” This represents a hindrance from stereotypical beliefs about physical activity for African American females.

Physical and environmental conditions. In terms of perceived barriers, hair maintenance surfaced a major concern. Liz recounted, “Most African American ladies don't like to get their hair messed up.” Brenda also added, “I think the hair limits a lot of female activity.” When asked about perceived African American cultural influences on physical activity Diedra admitted, “Well as I Black woman, I know some of us tend to let our hair-dos and manicures get in the way of working out. I was once guilty of this.” In response to the same question Jocelyn revealed, “I haven't seen much encouragement, but there is some hindering when portraying the ideal body of an African American woman with a small waist and large hips and butt.”

One participant, Tameka, identified additional perceived barriers, “Weather conditions when they unfavorable; Physical condition (menstruation); and Hair.” Generally, Louisiana has a humid semi-tropical climate that remains constant throughout the year with little variation of seasons (wordtravels.com, 2013). Running times have been relegated to mainly early mornings or evenings when conditions are more favorable and less of a danger to health. Unique to this study menstruation was included as a perceived barrier. Although this is often an issue of concern for many women, it has generally not been identified as a reason to disrupt physical activity habits. Her concern for hair is related to the physical appearance concerns of Liz, Brenda, and Deidra.

Negotiating family and work. The generally accepted societal role of women being the predominant caregivers of the household and balancing professional work surfaced as an influential barrier to physical activity. “Having to tend to my 3 children and

husband. I feel guilty when I don't spend what I feel is adequate time with them. For example, doing homework with kids at such a late time, cooking/cleaning being neglected (Diedra).” Seven of the ten women expressed concerns navigating family responsibilities, professional pursuits, and the desire to maintain positive levels of health through running group membership. Two of the participants, Tanya and Crystal, reported no perceived barriers to physical activity however, both women indicated “Single” as their marital status.

Discussion

The purpose of this study was to explore the perceptions of racial identity, gender-role identity, and exercise identity of regular physically active African American females in order to gain deeper understanding of social and cultural contexts (Harley et al., 2009, Henderson & Ainsworth, 2001). The findings of this study suggest exercise identity was more important than racial identity and gender-role identity for African American women who were physically active. Consistent with previous research, individuals who align values with exercising and physical activity as part of the lifestyle embrace an exercise identity (Duncan et al., 2010; Harley et al., 2009). Additionally, longer bouts of physical activity and higher levels of motivation are associated with exercise identity (Duncan et al., 2010; Son, Kerstetter, & Mowen, 2009).

Murphy (2005) also found limited evidence of a relationship between athletic identity, racial identity, and gender identity, suggesting a level of racelessness due to generational effects. It is possible these women have learned to successfully negotiate race and gender as aspects of identity. Although race (African American) and gender-role (female) are social constructions produced by society and culture, “I’m an African American woman” may not be a unique perceived benefit. Perhaps identifying as an exerciser is

perceived as a more desirable benefit within a demographic sub group that has consistently reported low levels of physical activity. When individuals are part of a socially unfavorable group, members within that faction restructure and find positive distinctions within the unit (Kelly, 2009; Tajfel, 1982). Identifying as an exerciser makes the person unique and within the top levels of the new hierarchal structure.

The first higher order theme highlights the important role that being a member of a group can play in adopting and maintaining a high level of physical activity. Results revealed an association between individuals and increased social support within healthy activities through length of membership (Kawachi, Subramanian, & Kim, 2008). Social support has been identified as a predictor of increasing and maintaining physical activity within African American populations (Eyler et al., 2002; Kirchoff, Elliot, Schlichting, & Chin, 2008; Komar-Somardzja, Brown, Keithley, & Quinn, 2010; Zoellner et al., 2011). Social support was embodied through the narrations of celebrations after events, the health informational component, and encouragement from other members. However, when directly asked about social support, the relationship between the length of time in the organization and social support was not clear. Perhaps level of involvement (which was not assessed) and individual perception of group membership benefits may reveal a better relationship. According to social identity theory (Tajfel, 1982), positive association of perceived group benefits increases the value of a person's social identity and self-categorizations (Bourhis & Hill, 1982).

Another aspect of the importance of group membership that emerged in this study was the racial composition and characterization of the group. Historically there has been an evolution of terms used to designate race for African Americans in the United States of

America (Knowles, 2005). Currently, the terms “African American” and “Black” are used interchangeably to refer to a wide range of folk. This application of the terms overlooks the fact that all Black people are not African American and vice versa (McClendon, 2005). Therefore, the preferential use of either term may be a reflection of the level of racial identity, personal decision, or a product of society. Although, no patterns emerged from the self-reported data of race/ethnicity, some distinctions could be derived from provided responses. Diedra questioned the need for distinction by use of the term “Black,” while Jackie voiced comfort using either term interchangeably. Referencing the research on racial identity and the nigrescence model (Cross, 1971), these women have displayed various levels of racial identity. For example Deidra’s statement may place her in the early stages of the nigrescence model while Jackie’s statement can be viewed as an evolution into self-acceptance, the later stages of the theory (Fhagen-Smith et al., 2010; Vandiver et al., 2002; Worrell, Cross, & Vandiver, 2001).

Nonetheless, the reasons and desire for use of either term are as varied as the person’s life experiences of being an African American woman. The use of the term “Black” enables the running group to operate through collective action and maintain organizational identity and structure (Kelly, 2009), thus influencing intergroup behavior. The power of homogenous grouping was positive in the adoption of physical activity through the running group membership. Organization identity is an essential influence for effectiveness and membership structure (Holzinger & Dhalla, 2007). An individual’s social identification as a member allows a psychological bond or emotional awareness to the group, which maintains an intangible connection and demand for the organization (Ashforth & Mael, 1989; Holzinger & Dhalla, 2007; Tajfel, 1982). The influence of homogenous groups of

African American females may potentially encourage higher levels of exposure and awareness regarding physical activity.

Although race and gender play a role in perceptions of health and physical activity, not all African American women have the same subjective reasons for belonging (Becker & Wagner, 2008). The strength of the homogenous grouping emits from the positive perceived benefits of group association. However, within in this study, group membership is not strictly exclusive but inclusive to accept women at various skill levels and provide a wide range of events and activities (Duncan et al., 2010). Once any event is completed, the success is celebrated with others who “looked the same.” Membership in the running group allows access to opportunities once relegated as “White Space” (Walton & Butryn, 2006).

Viewing exercise as a means to improve health and quality of life was the focus of the second higher order theme. Health has been both a predictor and constraint to physical activity participation (Murphy, 2005; Son, Kerstetter, & Mowen, 2009). However, addressing health from an educational perspective (Fernandez, Scales, Pineiro, Schoenthaler, & Ogedegbe, 2008; Robinson et al., 2003) aids in increasing awareness and accurately associating benefits with exercise. Proper nutrition is an essential component of health and wellness in addition to physical activity. Traditionally African American culture has foods that are not healthy. Foods such as soul food have become a staple in African American culture (Covey & Eisnach, 2009). Unfortunately, these foods are a contributing factor to increasing risks for diseases associated with physical inactivity and unhealthy weight status. The findings from this study reinforce the notion that emphasizing the health benefits of physical activity, along with tailoring educational programs to highlight

the importance of good nutrition and physical activity, are important in efforts to increase physical activity levels of African American women.

Perceived barriers and obstacles to physical activity participation were the focus of the third higher order theme. Participants identified cultural perceptions of ideal body images as a hindrance to incorporating physical activity and proper nutrition into lifestyles. African American women are less likely to be dissatisfied with their bodies (Kelch-Oliver & Ancis, 2011), however the ideal body image is fuller, curvier frame (Kumanyika, 2008). Hair maintenance also surfaced as a perceived barrier due to cultural influences (Gletsu & Tovin, 2010; Henderson & Ainsworth, 2001; Hesse-Biber, Livingstone, Ramirez, Barko & Johnson, 2010; Kirchoff et al., 2008; Kumanyika, 2008). Cultural norms and media images heavily influence decisions and perceptions regarding physical activity (Segar, Spruijt-Metz, & Nolen-Hoeksema, 2006). If the majority of media images depicting African American females participating in physical activity are through sport, this creates a disconnect with physical activity and limits exposure.

Previous exposure to physical activity early in life may be a predictor of continuing participation later in life (Britton et al., 2000). All of the participants had some type of exposure to physical activity during adolescence, but those with family responsibilities cited family and work obligations as barriers (Henderson & Ainsworth, 2001). Although physical activity participation decreases with age (Barnekow-Bergkvist, Hedberg, Janlert, & Jansson, 1996; Cleland, Dwyer, & Venn, 2012), engaging in regular exercise can minimize physiological effects and produce psychological and cognitive benefits for African American females. These results support the notion that empowering women to successfully negotiate family and professional responsibilities (Chodzko-Zajko et al., 2009), identified as

perceived barriers to physical activity, is an important component in efforts to promote physical activity in this population.

Limitations

Although the written responses were informative and insightful, personal interaction with participants was not possible. Personal interaction could have allowed richer data and added depth to the analysis. The participants were not asked about previous health conditions, which may have served as motivation for participation and maintenance of group membership. Likewise, lifestyle decisions were also not assessed (i.e. smoking, alcohol consumption, etc.), which may have also been influences of participation or simply added to the profile of individuals in the study. Lastly, maintenance of exercising was determined by group membership. Although many of the women reported participating in other activities outside of the group, the levels of activity were not assessed. The levels of group activity may account for the responses regarding social support.

Conclusion and Future Research

The contributions from this study provide insight into understanding socio-cultural components and precepts of physical activity participation among a demographic group consistently labeled as inactive. Unique to this study a disconnect with physical activity for African American women was identified as a barrier to physical activity, which may be explained by strong cultural associations with sport. Additionally, the lack of exposure and awareness of African American women hinder opportunities for these females to become physically active. The prevalence of cultural barriers such as hair maintenance, soul food, and ideal body image continue to be issues for females in this demographic. When exercise

is integrated into an individual's identity, perceived cultural barriers diminish in importance. Exercise identity was more salient than racial identity and/or gender-role identity for these physically active participants. Researchers and practitioners need to reconsider the effect and implementation of culturally relevant activities. Focusing on enhancing exercise identity is essential to increasing physical activity participation for African American women (Duncan et al., 2010; Harley et al., 2009). The educational, practical, and social structure of the running group allow African American women of various fitness levels to become active and increase health awareness. According to the women in this study, the model provided by the running organization would give insight to effectively keep African American females physically active and adopt healthier lifestyles.

Further efforts need to explore the value of African American homogenous groups of women in terms of exposure and awareness. Group membership dynamics are influential in encouraging motivation, adherence, and exercise identification. The sample population in this study was of varying educational levels, income ranges, ages, and marital statuses. Researchers need to employ mechanisms to further understand the social and cultural value of each of the "labels" (i.e. race and gender) to the individual.

CHAPTER 4

GENERAL DISCUSSION: SUMMARY, IMPLICATIONS AND CONCLUSIONS

The objective of this dissertation was to assess the potential influence of interactions of racial identity, gender-role identity, and exercise identity on physical activity participation of African American females. This demographic subgroup of the population has been consistently been identified as at risk to be physically inactive in many government reports and studies (Centers for Disease Control and Prevention [CDC], 2012; Flegal, Carroll, Ogden, & Curtin, 2010; Flegal, Carroll, Kit, & Curtin, 2012) across age groups. Social identity theory served as the theoretical framework for the investigation. This theory has not been used to explore physical activity behaviors and patterns. Physical activity has an inherent social element; therefore evaluating participation from a socially driven framework has the potential to yield a new dynamic of understanding.

Social identity theory explains the process of individuals using personal and social categorizations to form group and organization affiliations based upon perceived positive benefits from association (Deaux, 2001; Tajfel, 1974; Tajfel 1982; Turner, 1982). Based on these group membership affiliations, social identity theory also accounts for intergroup and intragroup behaviors (Tajfel, 1982). Two studies were conducted to explore the possible intersections of identity and physical activity participation. The first study used quantitative methods to investigate relationships among racial identity, gender-role identity, exercise identity, physical activity participation, and perceived social support within an African American college female sample population. Study two qualitatively assessed the intersection of racial identity, gender-role identity, and exercise identity of

African American females who were considered regular exercisers by running group affiliation.

Summary

Findings from the first study indicated that racial identity and gender-role identity were not predictors of physical activity participation based upon METs. The final stage of racial identity, IMCI, friend social support, and masculine gender-role identity were significant predictors of exercise identity. Participants who reported they participated often participated in physical activity had higher levels of exercise identity and perceived social support from family and friends. Masculine gender-role identity was higher for participants participating in physical activity often or sometimes than those who never or rarely were active. Frequency of physical activity participation had moderate positive relationship with exercise identity. Feminine gender-role identity had a small positive relationship with IMCI, the subscale relating to self-acceptance and awareness.

The following themes regarding African American females and physical activity participation emerged in the qualitative study: 1) group membership advantages; 2) exercise as a catalyst for change; and 3) perceived obstacles to physical activity. The findings indicated that even in the presence of perceived racial and gender-role influence barriers, exercise identity was more salient than racial identity or gender-role identity. Women who reported strong social support were those who had been in the running group for a long period of time. Support through group activities, such as post event celebrations and meet and greets, was evident throughout the data. The structural components of the running group (i.e. events for all skill levels, social gatherings, and informational meetings) aided in fostering physical activity participation maintenance. Finally, the homogeneous

aspect of the group (i.e. majority African American females) was a source of encouragement to participate in physical activities with women of shared interests and physical appearances.

Implications

The first implication relates to the influence of homogenous factors on social support. Perceived social support from friends was important for exercise identity and physical activity participation in study one. Additionally, in study two, social support was associated with the length of time in the running group, member interactions, and group activities. Individuals choose friends based upon perceived social and personal benefits and shared commonalities, which is congruent with group associations. These studies are consistent with previous literature on perceived social support and physical activity behaviors (Henderson & Ainsworth, 2001; Hicks & Miller, 2006; Murrock & Madigan, 2008). The findings also demonstrate the association between social support and exercise identity in the presence of shared commonalities. In the context of this dissertation, the homogeneous factors consisted of African American women, approximately the same age, similar education levels, socioeconomic status (only assessed in study two), and desire for physical activity. Regarding the second study, the women engage in running events with predominantly Caucasian participants. Therefore, support from others, of similar physical features, who are actually participating encouraged physical activity participation.

The second implication concerns the factors associated with incorporating exercise into individual identity. Findings from study one indicated frequency of physical activity had a moderately positive relationship with exercise identity. Likewise, results from study two suggested consistent physical activity efforts produce exercise identity salience. From

both studies, racial identity and gender-role identity had minimal influence on exercise identity. Individuals have multiple identities that emerge dependent upon situation or environment (Deaux, 2001, Henderson, 2009; Stets & Burke, 2000; Turner, 1982). The current investigation focused on physical activity patterns of African American females and exercise identity emerged as a prevailing identity associated with being physically active. The salience of exercise identity outside the context of physical activity is dependent upon the anchoring effect to lifestyle importance (i.e. exercise as a permanent lifestyle activity). A strong sense of exercise identity enables individuals to be physically active in the presence of perceived hindering cultural influences. Increasing the frequency of physical activity opportunities for African American females should serve to strengthen exercise identity, which could provide strategic components for interventions and programs.

Participants from study two expressed a perceived lack in exposure of African American females participating in physical activities. Although there has been an increase in physical activity promotion through social media sources (i.e. www.mrshutupandtrain.com, Facebook, Twitter, & Instagram), images of African American females participating in physical activities have minimal representation in mass media. In fact, media images of physical activity participation for African American females are mostly relegated to sport, which unfortunately translates to minimal representation (Davis & Harris, 2002). These portrayed images formulate physical activity associations and foster psychological connections made with race or culture (Segar, Spruijt-Metz, & Nolen-Hoeksema, 2006), insinuating the production of certain cultural behaviors or values (Murphy, 2005). This creates a barrier to encouraging a value for physical activity. Visibility of African American females engaging in physical activity should become more

prevalent. Likewise an increase in opportunities and duration of physical activity is also needed to encourage exercise identity (Duncan et al., 2010; Li, Harrison, & Solmon, 2004; Wilson & Muon, 2008). Exercise identity is dependent upon increased awareness of benefits (physical and overall health) from physical activity participation and frequent opportunities to develop active patterns. Practitioners should develop programs to enhance exercise-related identity to increase physical activity participation (Sharp et al., 2007).

The next implication concerns the role of racial and gender-role identities, which were minimally regarded as influential factors for exercise identity. Although race and gender are inextricably bound together, gender may carry different meanings across race and ethnicity (Deaux, 2001). Furthermore, racial and gender-role identities are influenced by underlying cultural meanings and values. In previous research, investigators have noted issues with participants' abilities to conceptualize perception of race applicable to physical activity behaviors (Gletsu & Tovin, 2010; Henderson & Ainsworth, 2001), while others indicate no influence on decisions (Murphy, 2005). However, cultural influences were identified and affected physical activity behaviors. Cultural influences such as body image, hair maintenance, inconsistency of physical activity patterns, sport participation, and masculine gender-role for participation were evident. All of these factors are relevant to socialization processes in terms of what is considered racially and gender-appropriate. Cultural influences from subcultures such as geographic regions and socioeconomic levels may also affect the perception of racially and gender-appropriate behaviors for African American females. Researchers and practitioners should account for cultural meanings when assessing and interpreting racial and gender-role identities in influencing behaviors.

This should yield better choices for culturally relevant physical activities according to gender (Blanchard et al., 2008; Solmon, Lee, Belcher, Harrison, & Wells; 2003) and race.

The final implication is an observation regarding the theoretical framework chosen for the dissertation. By its definition, social identity conveys an understanding of the decision-making process of group membership based upon personal and social self-identifications (Deaux, 2001; Tajfel, 1982; Turner, 1982). The premise of the theory is the assumption that the choice of group affiliation is driven by perceived positive benefits associated with identification and also accounts for behaviors within and between groups (Stets & Burke, 2000; Tajfel, 1982). Pertaining to the current investigations, understanding the function of identity for African American women was a fundamental step in exploring underlying reasons for the current unacceptable state of physical activity levels. In light of the significance of friend social support from study one and the structure and value of group identity from study two (i.e. African American female running group), further explorations of the influence of associated group behavior are warranted.

Using social identity theory as a lens to interpret these results yields valuable information regarding social behaviors and possible group interactions. To further understand the value and importance of these factors, however, an additional framework is needed. Social capital theory evaluates social affiliations among people and the levels of reciprocity and trustworthiness that are generated from relationships (Clopton & Finch, 2008), while maintaining a sense of communal involvement resulting from group memberships (Kramer, 2001; Ueshima et al., 2010). Within social capital theory the components of bridging and bonding are key elements. Bonding refers to the formation of connections between individuals who share similarities within a community, whereas

bridging refers to the connections formed due to differences among individuals (Ueshima et al., 2010).

Clopton and Finch (2008) combined the theories to assess team identification in order to enhance the social aspects. Bonding and bridging can also aid in the comprehension of identity negotiation due to its reflexive (Deaux, 2001) within the context of physical activity behaviors. This may further explain the salience of exercise identity of the women in the running group from study two. The bonding and bridging components of social capital have been used to promote physical activity participation (Ueshima et al., 2010). Physical activity participation is inherently social, whether a person engages with a group (i.e. workout buddies, running groups, aerobic class) or participates alone (i.e. trail running, gym attendance). In-group versus out-group assessments can still be observed.

In study two, the appeal of running group membership centered on the aspects of organization identity: African American females who shared common goals and experiences. Many of the women indicated joining the group through invitations from friends and other associations, which is representative of bridging. Once a member of the running group, the bonding occurs through running events, celebrations, and other social gatherings. This generated the construction of healthy beneficial cultural norms within African American female running group members. Race and gender initiate observations, while racial identity and gender-role identity further assess the of value associations with social behavior. Examination of bridging and bonding from social capital has the potential to extend comprehension of physical activity patterns and group behavior.

Conclusion

Despite the prevalence of physical inactivity in the African American female population, there are African American women who are physically active and express the desire to continue to be physically active. Their decisions to be active are influenced on perceived levels of social support, availability of opportunities to participate, frequency of activity, and personal and social factors that facilitate the development of a strong exercise identity. Exercise identity and physical activity participation are integrated into the lifestyles of African American females. Although racial and gender-role identity did not have a strong direct influence on physical activity in the statistical analysis in the quantitative study, cultural references in study two provided insight into underlying meanings associated with racially and gender appropriate behaviors.

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APPENDIX A
EXTENDED REVIEW OF LITERATURE

Understanding African American Females' Physical Activity Participation Through Social
Identity Theory

General Examination

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by
Jasmine M. Hamilton
B.S. Xavier University of Louisiana, 2004
M.A. Sam Houston State University, 2006

Understanding African American Females' Physical Activity Participation Through Social Identity Theory

Introduction

The preventable decline of health among African Americans, especially women and girls, has been the target of extensive investigation in various disciplines and social arenas, such as education, nutrition, health care, and fitness and wellness. Trends analyzed from 1999-2008 National Health and Nutritional Examination Survey (NHANES) data show higher percentages of obese and overweight non-Hispanic Black women in comparison to non-Hispanic White, Mexican American, and all Hispanic women (Flegal, Carroll, Ogden, & Curtin, 2010). Of the non-Hispanic Black women greater than 20 years of age, 78.2% are overweight and 49.6% are obese. Within this same demographic group, 27.9% display the prevalence of having a body mass index (BMI) of ≥ 35 (Flegal et al., 2010). Furthermore, in updated research from 2009-2010 NHANES data, non-Hispanic Black women with a BMI of ≥ 35 increased to 30.9% (Flegal, Carroll, Kit, & Ogden, 2012). Although these statistics are based upon BMI and do not take into account fat and lean mass percentages, they still provide a reasonable estimate of overweight and obese non-Hispanic Black women.

Physical activity participation can offset the ill effects of a sedentary lifestyle (Chakravarthy, Joyner, & Booth, 2002; Matthews et al., 2008; Nelson & Gordon-Larson, 2006) within the African American population, just as it can for other subgroups. Physical activity decline for minority females has been a focal point in literature through adolescents (Colchico, Zybert, & Basch, 2000; Fahlman, Hall, & Lock, 2006; Kimm et al., 2002; Nader, Bradley, Houtes, McRitchie, & O'Brien, 2008) and older women (Chodzko-Zajko, et al., 2009; Rensick, Luisi, & Vogel, 2008). Minority adolescents have been studied

relevant to the effects on morbidity and mortality rates associated with obesity, while older individuals have been studied due to their change in body composition (Polednak, 2006). Understanding precepts and components of physical activity participation can yield valuable information to slow the decline in health across race, gender, and socioeconomic status. Exploring demographic variables provide an initial point of comparison and insight needed for a richer understanding of these issues (Henderson, 2009). Comparisons drawn along socially constructed racial lines can facilitate comprehension of cultural attitudes and practices that affect the health of African American females (Boyington et al., 2008).

Researchers have provided valuable empirical information regarding the role of physical activity in disease prevention, health maintenance (Faridi et al., 2010), weight management (Flegal et al., 2010; Rajaram & Vinson, 1998), and interventions (Boyington, et al., 2008; Resnick, Luisi, & Vogel, 2008) addressing health concerns among African American females, other minorities, and individuals classified as low socioeconomic status (SES). Race and ethnicity are significant predictors of body mass index (BMI) and percent body fat when controlling for socioeconomic status (Fahlman, Hall, & Lock, 2006). Furthermore, larger percentages of African American females have reported engaging in no physical activity in comparison to males (Ainsworth, Berry, Schnyder, & Vickers, 1992; Hicks & Miller, 2006). Although this wealth of literature has provided insight in understanding and documenting the decline of health and prevalence of sedentary lifestyles, more exploration is needed in order to address concerns about the health and wellness of this segment of the population.

The social aspect of physical activity is an essential element in exploring ways to facilitate participation (Boyington et al., 2008; Cradock, Kawachi, Colditz, & Buka, 2009).

Giles-Corti and Donovan (2002) found that individuals who display high levels of social determinants such as support from significant others, intent of physical activity participation, and sport, recreation or outdoor club membership, are more likely to participate in physical activity. They identified encouragement through social support as one of five direct determinants of physical activity. Furthermore, a decline in physical activity is less evident when it is socially valued (Webber et al., 2008) within a person's belief system. Therefore studying participation from a sociological reference should be beneficial among African American populations, considering the governance of social interactions as motives for behavior.

Theories that incorporate self and social expression can facilitate efforts to promote health through physical activity. Social identity theory refers to the interactions of an individual through group memberships and social behavior (Tajfel, 1974; Henderson, 2009; Turner, 1982). Individual identifications and categorizations are at the foundation of the theory. These concepts create implications for behavior (i.e. physical activity participation) in which people who strongly identify with a group's values will display actions associated with group membership (Deaux, 2001). This conceptual framework can provide insight regarding physical activity participation patterns and lifestyle choices. Although its conceptual beginnings are rooted in social psychology, social identity theory has been widely explored. Applying this theory under the scope of social interactions within physical activity participation has not been done. Exploring the intersectionality of racial/ethnic identity and physical activity decisions can extend research in this area.

Overall, identity is a reflection of the perception of self that involves most aspects of self-concept; a multifaceted system in the mind that changes based upon the situation

within the social environment and behavior (Turner, 1982). Our social identity reflects the fashion in which we present ourselves to others, has a reflexive nature (Stets & Burke, 2000), and is dependent upon situational effects (Turner, 1982). Multiple identities including social identity serve as the summation in which one defines self, people, and involvement in activities (Henderson, 2009). Given that social identities provide a glimpse into a person's desires, and values, this concept is instrumental in the study of motivational determinants of social behavior choices, such as developing and maintaining a healthy lifestyle through physical activity participation (Laverie, 1998).

Purpose

The purpose of this literature review is to explore the applicability of social identity theory as a framework to guide research examining the social aspects of physical activity participation among African American females. Interpreting the participation in physical activities among demographic subgroups of declining levels reported through a psycho-social lens has the potential to yield a unique perception into this important problem. This literature review provides an overview of current research and historical references to accentuate the need for an investigation focused on female physical activity participation.

The first section provides a rationale for the focus of the paper and clarification of terms that are used in relation to physical activity, race, and ethnicity. This is followed by an explanation of social identity theory along with its parallel concepts and supplemental theories within the literature. Next, the methods by which social identity theory is measured are presented, followed by a review of physical activity participation among African American females including the influence of stereotypes and social support. I

conclude with a synopsis of reviewed literature, implications for practice, and directions for future research.

Delimitations

Rationale for focus. The extensive amount of literature regarding physical activity and ethnic minority populations dictates that the focus of this paper be narrowed in scope. The delimitations of the review include a focus on African American females and physical activity participation, excluding participation in professional, elite (intense primary pursuit of athletic endeavors), and collegiate supported sport teams. To further clarify, physical activity refers to regular bouts of exercise and movement that go beyond activities of daily living or functional physical activity (Chakravarthy, Joyner, & Booth, 2002). In addition, pertinent information regarding overall female physical activity participation is explored in order to understand the relative status of this population.

The exclusion of research related to professional athletes and those individuals receiving some type of compensation for sport participation is purposeful to avoid the inclusion of sports and its role in identity and physical activity participation. In comparison to their male counterparts, African American female athletes' experiences investigated through research are limited and requires more attention (Bimper & Harrison, 2011). For example Black collegiate male athletes have been the focus in studying racial inequalities in relation to treatment (social interactions), academics, and environmental experiences (attending a predominately white university) (Singer, 2005). Lines of investigation regarding sport literature are currently saturated regarding the topic of male racial experiences pertaining to sport, but have been limited in extending to female experiences.

Adolescence to young adulthood represents a period of substantial life style transitions (Scioli, Biller, Rossi, Riebe, & Scioli, 2009) for a female and ensues possible identity formation: moving into adulthood through the completion of formal education, entering the work force, and becoming an active member of the community. Identity formation through socialization is an ongoing process (Coakley, 2009), which is molded during experiences at particular points throughout life. Thus, the establishment of certain practices and habits is also adjusted, solidified, or created during this time, which may enhance or constrain identification with being physically active.

Declines reported in females occur during adolescence and continue into young adulthood, some of them may participate in various forms of physical activity. Culturally specific activities such as dance and activities of daily living are being used to evaluate the amount of physical activity. For example, while participating in culturally relevant activities, Latina adolescent girls decreased in sedentary behaviors, but this yielded no increase in physical activity (Spruijt-Metz et al., 2008). Duncan, Duncan, and Schofield (2008) used pedometers to assess physical activity through active transport (walking to and from school) during weekdays and over a weekend in adolescent girls. All females reported fewer steps over the weekend, but a greater difference was seen in older girls of lower socioeconomic status. Although not always a precise measure, the use of pedometers can indicate minimal levels of physical activity that may be greater than sedentary but less than the daily-recommended levels of physical activity. In a slightly older population, 52.5% of collegiate females reported non-active stages of exercise: precontemplation, contemplation, and preparation (Scioli et al., 2009). The focus of the study was only on exercise not any other forms of physical activity. If all forms of physical

activity are considered, females and other minority groups may have higher rates of physical activity participation. Overall the sample population was 84.4% White, with only 3.9% of African American representation (Scioli et al., 2009). These studies highlight the need for a better understanding of physical activity choices regarding African American females.

Use of racial and ethnic terms. Clarification of terminology used in this review regarding race, culture, and ethnicity is needed. Even though these terms at times are used interchangeably, there are distinctions among these terms and equating them does not accurately represent groups of people. Race is a “system of social meanings and cultural classifications, which is created and sustained through relationships of power and hierarchy (Knowles, 2005, p.11).” The term race has been loaded into a system that has viewed the concept in terms of Black and White with associated notions concerning mannerisms, speech, dress/attire, education, vocation, activities and other lifestyle decisions. Differences of “race” and its formation have been pragmatic, existing as a junction of morphology and culture (MacMullan, 2009) and heavily relying on visible, observable physical characteristics (Knowles, 2005). Roelofs (2005) characterized racial formations as an aesthetic phenomenon derived from racialized structures. Currently “race” in terms of Black and White retains the socially accepted definition based upon skin color, hair texture, and other phenotypical characteristics, which can be blurred due to the mixing of slaves of African descent and European Americans (McClendon, 2005). Therefore race is a social construction (Alston, 2005) that has relied upon biological factors such as visual indicators that are at times inconclusive and judgmental. The social construction of

race also involves a level of knowing, becoming, and valuing of Blackness or Whiteness (Alston, 2005).

The concepts of Blackness (Birt, 2005) and Whiteness do not only consider ethnicity but are also defined within human relations (MacMullan, 2009), which can contribute to the understanding of physical activity participation. Blackness is a concept derived from African descent (non-White), which involves the situations of Black people, and in some cases, serving as a measure of authenticity of identity (Birt, 2005). Meanwhile, Whiteness has been the measure utilized to organize societal concepts, values, and structure (MacMullan, 2009). These two polar notions provide a basis and lens to evaluate social relations and actions among White and non-White regarding the current scope of investigation. However, Blackness and Whiteness is a social system based on shifting values and perceptions. Furthermore Blackness or the art of “being Black” is normally associated with people who display the physical characteristics of people with an African ancestry, which denotes more of a national identity rather than racial identity (Alston, 2005; McClendon, 2005). Nonetheless the moniker “African American” is bestowed upon people with physical features that are considered “Black” in the United States. This perception overlooks the fact that all Black people are not African American and vice versa (McClendon, 2005).

Ethnicity “refers to a cultural heritage that people use to identify a particular population not based on biological or genetic traits (Coakley, 2009, p. 276).” This concept also takes into account other factors that differ among minority groups in addition to that of White populations. Race and ethnicity include aspects of culture, which is “the shared ways of life and ...understandings that people develop as they live together (Coakley, 2009,

p. 5).” Differing factors that influence culture include geographical region or degree of urbanization, family size and household composition, health related behaviors, and neighborhood characteristics such as degree of racial/ethnic segregation (Kumanyika, 2007). Based upon the previous information, the terms “race” and “ethnicity” should not be used interchangeably, but may overlap with culture. Therefore, the term African American is used to retain the focal point of the exploration of the literature and in comparison to other demographic groups. “Race” references its socially accepted definition, which acknowledges the separation or grouping of people primarily by physical characteristics, based upon its use in previous research. Even though there is debate regarding the current classification of physical traits, the factor of relatedness between individuals is essential in thoroughly examining past literature. The use “African American” has also been debated due to the evolution of terms denoting this demographic group in the United States. This country has a history of degrading references and constant reclassification of Blackness. In this review, the term African-American is used to refer to “Black” Americans and White, encompassing European Americans and Caucasian, is used in comparison to understand physical activity participation.

Any other demographic group from a “racially classified” background will identified through the context of the research. In addition clarifications are provided to alleviate any assumptions through explanation and its relation to the current proposed investigation. “Human groupings are historically dynamic, culturally ordered, and contingent social

realities (Outlaw, 1996, p. 137),” which provide a basis for exploration and comparison. This literature review culminates in exposing weaknesses in the literature regarding African American females and physical activity participation and their diverse counterparts.

Social identity theory

Origin and definition

Social identity theory is derived from the work of experimental social psychological researchers (Tajfel, 1982; Turner, 1982). The theory provides an explanation of the manner in which individuals identify with groups and organizations based on social and personal categorizations (Deaux, 2001; Turner, 1982). Social identity theory explore the reasons people seek and associate themselves with social group memberships and organizations. These self-identifications are often created from external social influences, which are static in nature and are perceived as beneficial to the person (Turner, 1982). The perceived benefits include social acceptance into a group or organization or successful portrayal of self within society for some valued intrinsic and/or extrinsic gain (Stets & Burke, 2000). Social identity theory is an inherent theory of collective action (Kelly, 2009), thus influencing intergroup behavior. Underlying causes of a lack of engagement in physical activity may be explained through social interactions as a collective behavioral act dependent upon social group associations.

The social component of physical activity can be very influential in understanding the intent, motives, and behavior for participation. The application of a theory that incorporates self and its social expression can facilitate efforts to improve health from physical activity. Social identity theory (Tajfel, 1974) is a conceptual framework that

provides insight into this social component. The theory was developed within social psychology, in which it “addresses phenomena such as prejudice, discrimination, ethnocentrism, stereotyping, intergroup conflict, conformity, normative behavior, group polarization, crowd behavior, organizational behavior, leadership, deviance, and group cohesiveness (Hogg, 2006, p. 111).” The concept has been widely explored through its applications and functionality under the psychological umbrella.

Social identity theory is comprised of four components: social categorization, social identity, social comparison, and psychological distinctiveness (Bourhis & Hill, 1982). Each of these components has been studied individually and has a distinct purpose or role in the formation of the theory. Social categorization serves as the cognitive component of social identity within psychological salience of self. The categories or groups reflect attributes such as perceptions, attitudes, feelings, and behaviors (Abrams, 1999; Hogg, 2006) through a systematic approach of inclusion and exclusion (Turner, 1982).

Social identity is comprised of the identifications and categories used to define the self (Deaux, 2001; Turner, 1982) in which positive social identity is reinforced and accomplished through the appropriate intergroup social comparisons (Tajfel, 1982). Therefore the notion of positive and negative group memberships and associations is relational in nature (Tajfel, 1982) and contingent upon the salience of an individual’s perception. Social comparison is the process of selection in social identity and group membership to result in self-enhancement (Festinger, 1954; Stets & Burke, 2000) by comparing self with desired traits of a valued group. Psychological distinctiveness is the perceptual or cognitive basis (Turner, 1982) that explains the detailed processes for the

underpinnings of group life (Bourhis & Hill, 1982). This characterizes the ways in which group membership are constructed and organized (Hogg & Terry, 2001).

Parallel concepts

In exploring social identity theory and its components, references and connections to other concepts are evident. Concepts such as identity (social and personal), self-concept, and self-schema share similar theoretical premises. Although variant meanings exist, identity is a sense of integration of unified aspects of the self (Deaux, 2001). Furthermore, social identity reflects the meaningful methods in which individuals self-identify with groups and shared characteristics with others (Deaux, 2001; Turner, 1982). Social identity is reflexive in nature through situational dependency (Turner, 1982). Social identities provide a glimpse into an individual's desires, values systems, and self-concept through outward depictions of actions and behaviors. This gives instrumental insight into studying motivations of social behavior choices, such as developing and maintaining a healthy lifestyle through physical activity participation.

Social identity can be separate from personal identity however, the personal aspect stems from the psychological understanding of the formation of identity. This functions as a subsystem of self-concept through mediation under appropriate circumstances between social environment and behavior (Turner, 1982). Self-concept is a multifaceted system in the mind that is contingent upon the situation (Turner, 1982) and is invested through the view of self through evaluations of worth, confidence, and esteem. The social aspect of identity, however, is influenced and used as a basis for recognizing and identifying qualities of self through an external lens that fosters intrinsic and extrinsic rewards of self-satisfaction. Thus, the combination of self-concept and intergroup relations are

dynamically involved within social identity theory (Abrams, 1999). Conceptually, this can provide insight into understanding the actions of participating in physical activity that may otherwise be overlooked by other theories.

Self-concept is a personal self-description based on a multitude of roles and characteristics that comprise the self (Fox, 1997). Therefore using labels or identifiers such as “I am a mother,” “I am a student,” or “I am an athlete” are used to identify and describe an individual while additionally providing a way of belonging to various social groups and associations. In the sense of being physically active, concentration on one’s physical self-concept is shown through the psychological model for physical activity participation (Fox, 1997). The model illustrates the interaction between a person’s self-esteem and estimation of physical ability, which leads to the attraction of the idea and concept of being physically active. Social identity can function as a subsystem of self-concept (Turner, 1982) because it illustrates the degree to which physical activity participation is used as a descriptor for a person’s self-concept (Anderson & Cychosz, 1994; Wilson & Muon, 2008).

Self-schema refers to domain specific cognitive generalizations about self, based upon past experiences or socialization processes that guide self-perception (Clement-Guillotin & Fontayne, 2011; Markus, 1977; Solomon & Lee, 2008). In relation to social identity and self-concept, self-schema can also be multifaceted and malleable. For example Clement-Guillotin and Fontayne (2011) evaluated French undergraduate students’ gender schema in competitive sport settings. Findings show that competitive sport affects gender self-description and gender self-information due to the down play of feminine traits with in this context. Self-schema can also affect not only sporting and physical activity choices, but

in association with identity, may transfer into other social and personal areas (Harrison, Harrison, & Moore, 2002).

Supplemental theories utilized in literature

Physical activity within the context of social identity theory has seldom been explored. Athletic identity and exercise identity, however, have been studied to assess social identity within the contexts of sport (Ansari, 2004; Chen, Snyder, & Magner, 2010; Fink, Parker, Brett, & Higgins, 2009; Harrison et al., 2002; Martin, Adams-Mushett, & Smith, 1995) and leisure activities (Anderson, Cychosz, & Franke, 2001; Duncan, Hall, Wilson, & Jenny, 2010; Wilson & Muon, 2008). In previous research, investigators have incorporated social identity into theories such as the theory of planned behavior, self-efficacy, and social capital to enhance the understanding of the social influence on physical activity.

The theory of planned behavior (Ajzen, 1991) provides a framework to change and predict deliberate behavior. It contends that human action is guided by cognitive aspects affected by external social influences, which are determined by the three constructs of attitudes (overall positive or negative evaluations), subjective norms (perceived social pressure), and perceived behavioral control (believed amount of control; Hamilton & White, 2008). Social identity theory has been used in the context of the theory of planned behavior to further understand predictors of participation in physical activity and to assess influences of self-identity and group norms. Hamilton and White (2008) noted a narrow focus on perceived social pressure through the subjective norms construct yielded consistently poor results and inadequate perceptions of the social impact of others. This was also noted in an investigation of adolescent physical activity participation (Hagger, Chatzisarantis, Biddle, & Orbell, 2001). Therefore, Hamilton and White (2008)

incorporated social identity and its effect on intergroup behavior (social support) through perceived membership to strengthen the assessment of behavioral intentions in their study to predict moderate-vigorous physical activity in adolescents. It was found that self-identity, past behavior, and intentions were significant predictors of physical activity as opposed to social support (family and friends) and group norms (actions of peers).

Chatzisarantis, Hagger, Wang, and Thøgersen-Ntoumani (2009) used the social identity construct from social identity theory coupled with the perceived autonomy support construct from self-determination theory (SDT; Deci & Ryan, 1985) to assess attitudes, intentions, and behavior within the theory of planned behavior. These concepts were incorporated to address the inadequate assessment of social influence on physical activity participation. Perceived autonomy support and social identity both displayed unique effects on attitudes, intentions and health behavior. A hierarchical regression analysis of data collected from 13-16 year old students showed that perceived autonomy support predicted attitudes, intentions, and physical activity behavior. Consistent with social identity theory research, there was a positive effect from peer norms on physical activity behavior from individuals who strongly identified with the group. The effects from perceived autonomy support did not depend on social identity. Therefore influences from strongly identified significant others, such as teachers, had an influence in decision-making processes regarding participation of physical activity behaviors (Chatzisarantis et al., 2009).

The investigation of self-efficacy within a social cognitive framework has also yielded insight in the physical activity participation patterns of African American females. Aspects of social support through environmental, behavioral, and personal elements

predicted outcome expectancies. Murrock and Madigan (2008) tested the effectiveness of an intervention. Participants were 101 African American church-going women ranging in the ages between 36-82 years who were assigned to either an experimental group (eight week dance program) or comparison group (provided health literature). Age, education, socioeconomic status, comorbidity, body weight (kilograms and pounds), body fat, marital status, and body mass index were statistically controlled for in the regression analysis. At the end of the eight-week intervention, culturally specific gospel dance, the act of dancing had no influence on lifestyle physical activity. Outcome expectations (health benefits from physical activity) and social support were mediators that affected lifestyle physical activity. The participants were not confident in initiating a dance program (efficacy expectancy), but preferred being led by a trained individual. They also believed in the physical and mental benefits of dance (outcome expectancy). In line with similar research, social support was a significant predictor for adherence to the intervention in the regression analysis.

Human beings are social individuals (Haslam, Jetten, Postmes, & Haslam, 2009), even though the ease and convenience of technology has altered the methods of socializing (Skoric, Ying, & Ng, 2009). The use of social networking either online or in person has become more prominent and been studied through the scope of social capital. Social capital refers to the connections among people and the levels of reciprocity and trustworthiness that are generated from their relationships (Clopton & Finch, 2008). It is through these connections that trustworthiness, through a collective level (cognitive social capital), is desired to promote and maintain a sense of communal involvement, while a structural or behavioral component of social capital results from group memberships (Kramer, 2001; Ueshima et al., 2010). Bonding and bridging between individuals through

these connections are also a part of social capital. Bonding refers to the formation of connections between individuals who share similarities within a community, whereas bridging refers to the connections formed due to differences among individuals (Ueshima et al., 2010).

Clopton and Finch (2008) used social identity theory as a framework to provide structure in studying team identification (stemming from social identity theory) as a connector of sport and social capital. They found that team identification does serve as a connector in which significant differences yielded through race, gender, age, and year (college classification). The differences in race suggest a level of hyperbonding revealing the occurrence of racial segmentation (i.e. team identity and social capital gained predominantly White or African American social networks). Further exploration is needed to understand gender characteristics of the reinforcement of male dominated values. Length of time in college (year) was a significant indicator of obtaining social capital and team identity. Further investigations exploring specific types of social capital through social networking are beneficial to “differentiate the bonding and bridging construction of social capital within sports and sporting communities (Clopton & Finch, 2008, p. 396).”

Fink, Parker, Brett, and Higgins (2009) explored the effects of team identification on fan identification through “unscrupulous” off-field acts of athletes. They found that the disapproval of athletes’ behavior negatively impacted the levels of team identification for fans. This notion demonstrates the impact on the social well being through the collective reactions based upon the behavior of an individual perceived to be part of the connecting aspect of the group association. Although social capital focuses on society through inter-group and intra-group relations pertaining to accruing social status and a sense of social

success, social identity theory is used as a factor in driving decision-making and creation of perceptions. Overall social capital can also be used to promote physical activity participation through informal social control, collective efficacy among group members, and the diffusion of healthy norms through social interactions (Ueshima et al., 2010). A collective level of social identities can generate trustworthiness due to the psychological and sociological underpinnings while rendering feelings of satisfaction and accomplishment to bring a sense of honor to the group as well as the individual associated with the group (Kramer, 2001).

Measurement of social identity theory

Clinical methods

Measurement of social identity theory was initially conducted within clinical and laboratory environments. Most of the methodologies used were exploratory in nature, providing empirical knowledge based upon social interactions observed through intergroup and intra-group associations and behaviors. Status levels (high versus low) were assigned to groups through various scenarios and created environments (Tajfel, 1974). The actions and reactions through intergroup and intragroup interactions were observed and qualitatively analyzed to understand resulting behavior from group affiliation. Ranges of cognitive distortion through perceived realities transpired in order to favor or align with the in-group and discriminate against the out-group (Billig, 1991; Tajfel, 1974).

Group associations and behaviors are a result of self-categorization. It was concluded that social categorizations may generate conflict through biased assessments based on in-group and out-group perceptions (Kelly, 2009). Therefore groups were

strategically diversified in the clinical setting by variables such as gender, information, culture, value, and age to create sources of conflict. Too much diversity within a group can hinder the progression and success of an organization or members associated with the group (Hogg & Terry, 2001). Low levels of diversity among group members can promote social advancement and serve as a resource for creativity, innovation, and problem solving (Hewstone, Martin, Hammer-Hewstone, Crisp, & Voci, 2001; Hogg & Terry, 2001). For example, the body image of a slender white female may not be an accepted or desired body type (Kumanyika, 2008) but rather a thicker frame with curves (coke bottle shape) serves as a physical distinction and at times a visible display of pride for African Americans. It has been commonly found that members of a perceived low status group (based on achievement), such as physically inactive individuals, create new identities or new parameters for group formation (Kelly, 2009; Tajfel, 1974), which is referred to as social creativity (Kelly, 2009).

Identity scales

To advance the understanding of social identity, researchers began to develop quantitative methods of measuring global social identity. In addition, concentrating on specific components of identity may produce a more precise measurement. Deaux (2001) outlined five distinct types of social identity, which include ethnicity and religion (i.e. Asian American, Jewish), political affiliation (i.e. Feminist, Republican), vocations and avocations (i.e. Athlete, Artist), relationships (i.e. Mother, Teenager), and stigmatized identities (i.e. Homeless, Alcoholic). Each of the above mentioned categorizes social relations in a manner that explain the dynamics of the forms of identity.

To further explore social identity, scales outlining aspects of identity such as teacher identity (O'Connor & MacDonald, 2002), sexual identity (Ashley, 2003; Morrow & Gill, 2003; Paechter, 2003; Squires & Sparkes, 1996), athletic identity (Grove, Fish, & Eklund, 2004), organizational identity (Ashforth & Mael, 1989; Hogg & Terry, 2001), racial identity (Harrison & Belcher, 2006), ethnic identity (Fuligni, Witkow, & Garcia, 2005), gender identity (Ashley, 2003), exercise identity (Wilson & Muon, 2008), and personal identity (Layder, 2004; Turner, 1982) have been developed. Identity scales and instruments evaluating exercise adherence and participation, race (socially accepted definition), and ethnicity that are of relevance include the Aspects of Identity Questionnaire (AIQ-IV), Exercise Identity Scale (EIS), leisure time exercise questionnaire (LTEQ), Multigroup Ethnic Identity Measure (MEIM), Cross Racial Identity Scale (CRIS), and the Racial Identity Attitude Scale (RIAS) which includes variations: Black Racial Identity Attitude Scale (BRIAS) and the White Racial Identity Attitude Scale (WRIAS).

Aspects of Identity Questionnaire. Objective methods of measuring social identity have sought to obtain a global sense of social identity in addition to understanding specific characteristics of identity. The Aspects of Identity Questionnaire (AIQ; Cheek & Briggs, 1982) was developed to objectively evaluate a holistic view of identity. The sub-scales evaluated include personal identity characteristics (an individual's psychological personal attributes) and social identity characteristics (how an individual perceive and behave interpersonally). More recently, the sub-scales of collective identity (how an individual understands him or herself as part of a group) and relational identity (how an individual operates within intimate relationships) have been validated to comprise the AIQ-IV (Cheek, Smith, & Tropp, 2002; del Prado et al., 2007). This measurement is a 45-item scale that

uses a five point Likert system that ranges in “not important to my sense of who I am” to “extremely important to my sense of who I am.”

The AIQ-IV has been used to assess cross-cultural differences among various populations. Studies have also incorporated the effects of self-concept. Del Prado and colleagues (2007) used the scale to assess trait, individual self-primacy, and cultural psychology perspectives on self-concepts between individualistic cultures (United States and Australia) and collectivistic cultures (Mexico and the Philippines). The scale was used to examine the interactions of individual perspectives through the evaluation of types of identity and the relevance to the overall group culture. The results of both cultures, collective and individual, yielded a higher correlation with personal and relational identity than with social or collective identity (del Prado et al., 2007). Therefore the perception and value of self is of significant value and is salient with identity. Church (2009) summarized research on traits and cultural psychology in which the AIQ-IV was used to evaluate the concepts of culture, behavior, and self-concept. The results yielded similar complications with understanding differences between individualism and collectivism. The contribution of the AIQ-IV to research has enabled the concept of identity to be explored and applied to disciplines outside of social psychology. However, the subscales (relational identity, personal identity, social identity, collective identity) only reveal interactions within a given sample and may not account for underlying occurrences within cross-cultural populations.

Exercise Identity Measurements. Exercise identity scales have been developed to further understand the intent and behavior of exercise participation. The measurement of physical activity levels was an important prerequisite for the development of these scales. Godin and Shephard created the leisure time exercise questionnaire (LTEQ) in 1985 to

have a simple questionnaire that measures leisure time physical activity. Maximum oxygen consumption ($\text{VO}_2 \text{ max}$) and body fat (BF) were used during the development and validation of the instrument. The self-report measure was later assessed (Godin, Jobin, & Bouillon, 1986) and construct validity has been established for moderate and strenuous physical activity categories (Leslie, Johnson-Kozlow, Sallis, Owen, & Bauman, 2003). The LTEQ has been used in studies to evaluate leisure time physical activity levels within various populations (Barrett, Plotnikoff, Courneya, & Raine, 2007; Lustyk, Widman, Paschane, & Olson, 2004) and has been used in studies assessing exercise identity.

Anderson and Cychosz (1994) created and validated the 9-item exercise identity scale (EIS) in order to assess a person's value and adherence to exercise participation through identity roles and view of self-concept. There have been systematic attempts to establish construct validity and consistency reliability for this scale (Anderson, Cychosz, & Franke, 1998; 2001). Wilson and Muon (2008), however, identified some concerns with EIS throughout the literature focusing on the lack of confirmatory factor analysis of the instrument and the limited use within prior studies. Even though these concerns were present, Wilson and Muon (2008) used the EIS, in conjunction with the psychological need satisfaction in exercise scale (PNSE: Wilson, Rogers, Rodgers, & Wild, 2006), and LTEQ (Godin & Shephard, 1985) to conduct a confirmatory factor analysis and found that the originally proposed unidimensional analysis model was insufficient. They proposed a 2-factor analysis delineating role-identity and exercise beliefs to produce a more beneficial and sufficient examination of identity issues in exercise contexts.

To assess exercise identity, Duncan, Hall, Wilson, and Jenny (2010) investigated exercise-related identity by using the LTEQ and the behavioral regulation in exercise

questionnaire – version 2 (BREQ-2; Markland & Tobin, 2004). Self-determination theory was used as a theoretical framework, similar to Wilson and Muon (2008), in evaluating exercise motivation in college-aged individuals who self-reported being regular exercisers (at least two sessions per week for previous six months). The LTEQ and BREQ-2 assessed the factors of exercise behavior, frequency, and intensity and duration in order to assess exercise-related identity. Findings support the conclusion that the combined factors are influential in determining exercise behavior and important in the development of programs to increase exercise participation. For women in this age group, perception of caloric expenditure had an effect on activity participation (Wilson & Muon, 2008), rather than overall health or functional benefits of participating in physical activity.

Ethnic and Racial Identity Assessments. Ethnic identity is a dynamic, multidimensional part of social identity that involves commitment and a sense of belonging through a shared cultural heritage (Phinney & Ong, 2007). The multigroup ethnic identity measure (MEIM; Phinney, 1992) is a single scale 14-item measurement, which has been used in understanding ethnic identity development within adolescent, college, and adult populations from a variety of backgrounds (Phinney & Ong, 2007). Although studies using this instrument produced results replicating the findings (the scales assesses ethnic identity across different ethnic groups) of Phinney (1992), some weaknesses regarding the measurement of the constructs and mediocre results concerning validity and factor analysis have been noted (Ponterotto, Gretchen, Utsey, Stracuzzi, & Saya, 2003; Worrell, 2000). Phinney and Ong (2007) investigated the criticisms and developed the multigroup ethnic identity measure – revised (MEIM-R). The revised scale is comprised of six items and two subscales, exploration and commitment. It is recommended, however, that other

assessments be used in addition to the MEIM-R in order to evaluate group-specific values, attitudes, and behaviors (Phinney & Ong, 2007).

Racial identity, like ethnic identity, is dynamic (Bimper & Harrison, 2011; Phinney & Ong, 2007) and its assessment evaluate responses to racism and experiences related to internalized racism. The Cross racial identity scale (CRIS) was developed from the nigrescence theoretical work of Cross (1971), which outlines the model of Black racial identity through stages of integration and assimilation into dominant culture (White Anglo-Saxon) and ideologies. The nigrescence model initially had four stages: preencounter, encounter, immersion/emersion, internalization/internalization-commitment. The preencounter stage involves attitudes that range from race neutral/insignificant to anti-Black or self-hatred and may encompass or display negative stereotypes (lazy, unemployed). During the second stage of encounter an individual may experience a situation that challenges their perception and produces a search for a new identity or outlook. Immersion/emersion signifies a point of formation of pro-Black or Afrocentric and anti-White ideals as the individuals emerge themselves into Black culture. The final stage of internalization and commitment denotes a status of self-pride and self-acceptance in which the person can experience the world from a Black perspective with a global sense of awareness (Harrison et al., 2002; Want, Parham, Baker, & Sherman, 2004).

Upon further investigation, however, the model was revised (Cross, 1991) expanding the initial four stages of Black identity development. The expanded nigrescence theory subscales of the CRIS are categorized into Pre-encounter Assimilation (PA), Pre-encounter Miseducation (PM), Pre-encounter Self-Hatred (PSH), Immersion/Emersion Anti-White (IEAW), Internalization Afrocentric (IA), and Internalization Multicultural

Inclusive (IMCI). After phases (Vandiver, Fhagen-Smith, Cokley, Cross, & Worrell, 2001) of instrument construction, validation, and establishment of reliability, the CRIS (Cross & Vandiver, 2001; Vandiver, Cross, Worrell, & Fhagen-Smith, 2002) provides a more informative assessment of assessing Black racial identity. Piloting and validation was established using predominantly female, college-aged African Americans attending a northeastern predominantly White institution, which limits the generalization (Vandiver, et al., 2002). The CRIS has also been used to examine the relationship between ethnic identity and racial identity (Worrell & Gardner-Kitt, 2006).

The racial identity attitude scale (RIAS; Parham & Helms, 1981), also developed from the work of Cross's nigrescence model (1971), is a 50-item scale that uses the original four stages. Ponterotto and Wise (1987) sought to establish construct validity of the RIAS, however they found issues with the subscales just as Cross (1991) with the original subscales of the nigrescence theory. A shorter form of the scale was created, Racial identity attitude scale-B (RIAS-B), which is comprised of 30-items. Other variations such as the Black racial identity attitude scale (BRIAS; Helms, 1990) and White racial identity attitude scale (WRIAS; Helms & Carter, 1990) are similar in nature. Research has found the BRIAS to be positively related to ethnic identity subscales (Lemon & Waehler, 1996). The distinction between the RIAS-B and the BRIAS within the literature, however, is unclear. The measures were at times used interchangeably or the RIAS-B was the only referenced scale. The WRIAS did not demonstrate any relation to ethnic identity and was inconsistent with the four subscales modified from the nigrescence theory (Behrens, 1997; Lemon & Waehler, 1996). Helms (1997) contested Behrens' (1997) criticism, acknowledging some error but disputing the validity construction. The criticisms may be relevant regarding the

development of the scale, as it was based upon Cross's nigrescence theory. The theory outlines stages of African Americans' process of assimilation into a predominantly White culture.

Attempting to understand the social construct of race through quantification has presented challenges with trying to encompass a process that may not be the same for all. Race is a dynamic concept based upon an evolving society, whereas ethnicity seems to be more concrete in outlining experiences of assimilation into a dominant group. This may be an explanation for the problems experienced within the 50-item scale of the RIAS and then 30-item scale of the RIAS-B. The meaning and perception of "Blackness" varies among African Americans, if the group is marginalized by age, gender, socioeconomic status, or educational level. Exploring how race and ethnicity, beyond the point of mere labels and descriptors, relate to physical activity can add the depth needed to explore the intersectionality of these identities. Using both ethnicity and race scales may better accomplish this goal.

Overall the AIQ-IV, EIS and LTEQ are easier to administer and apply to a general population than other measures. However, these scales have been established through processes using predominantly White participants and may exhibit some bias. In order to understand the effects within specific populations, other scales, such as CRIS, RIAS-B or MEIM-R, are needed as a supplement depending upon the nature of the investigation. An argument can be made that people generally go through the same processes of forming self-identifications. Consequently, the self-identifications are applied to various components of life such as physical activity.

Race and physical activity

Racial and ethnic identity

The exploration of racial identity has stemmed from much of W. E. B. Dubois' (as cited in MacMullan, 2009) writings and Cross' nigrescence model (1971). MacMullan (2009) recounts Dubois' constructivist approach in that race is an interactive pragmatic product of inquiry that cannot be reduced to biology or morphology. Prejudice, stereotypes, Blackness, Whiteness, and the influence on identity formation are explored using this perspective. Racial and ethnic identity development is derived from individual and collective identity, which manifests from social and cultural influences (Chavez & Guido-DiBrito, 1999). Each individual goes through a socialization process of personal and social identification that have meanings embedded in racial group associations in addition to family, school, community, and other social group memberships (Harrison et al., 2002). Worrell, Cross, and Vandiver (2001) referred to the subscales of the nigrescence model as identities which help to serve as a frame of reference for understanding racial development and how the world is viewed.

Pre-encounter is the first stage of the original nigrescence model where attitudes are characterized as being pro-White to anti-Black (Harrison et al., 2002; Vandiver et al., 2001). This process involves total assimilation of the White culture and self-hatred, which can lead to the internalization of negative stereotypes. For example, Blacks are lazy and not educated, which can be applied to the prevalence of physical inactivity. The Encounter phase outlines a time of a paradigm shift in which the individual begins to have experiences to change perception to associating goodness with Black and becoming more anti-White (Harrison et al., 2002; Vandiver et al., 2001). Immersion/Emmersion consist of the

destruction of the previous identity in lieu of obtaining “Blackness.” It is at this point in which physical activity participation is associated with race, such as certain activities (i.e. basketball, football, and track and field) (Harrison et al., 2002; Solmon & Lee, 2008) that outwardly portray a social acceptance of a new form of Afrocentrism (Harrison et al., 2002). The point at which an individual is transitioning between Encounter and Immersion/Emmersion may be the most salient time to enable an individual to identify as an exerciser and value physical activity participation. At this point the individual begins to transform old views and ways of thinking (Harrison et al., 2002) that will strengthen a person’s self-identity while becoming comfortable with being “Black.” Activities that identify with the perception of “Blackness” are sought after, while White/European American activities such as golf and hockey (Solmon & Lee, 2008) are ignored (Harrison et al., 2002).

The final stage, Internalization, expresses a person’s full commitment to a racial identity that is not radical and no longer feels threatened or separation for not being associated with “Black” activities (Vandiver et al., 2001). Therefore an African American female can “view physical activity as a ‘mode’ of exercise or recreation rather than a source of [racial] identity (Harrison et al., 2002, p. 124).” The expanded model of this theory explores and pries deeper into the meanings and salience of its application. However, racial identity and ethnic identity have been studied through the assessment of psychological aspects of mental health of African Americans (Williams & Williams-Morris, 2000). Mental health has been explored in work, family, and learning environments. The increase or decrease on the levels of stress is affected by the feelings of comfort (Chavez & Guido-DiBrito, 1999) in relation to the comprehension of an individual’s racial identity.

Although race and ethnicity are used interchangeably, ethnicity is more closely tied to nationality within research (Izumi & Hammonds, 2007; Fulgini, Witkow, & Garcia, 2005). Racial identity is a surface-level manifestation with deeper implications, whereas ethnicity identity development is an individual's transition to a higher level of identification through connections with segments of the larger society based upon cultural belief systems (Chavez & Guido-DiBrito, 1999). For African Americans, racial identity and ethnic identity are considered closely associated due to historical references and social status within the United States. The ethnic sense of belonging through cultural traditions and values has been produced from the concept of race and the effects from slavery for African Americans.

Blacks were viewed as second-class citizens who have struggled to gain equality in education, economics, politics, and other societal institutions. Other racial groups have not experienced such widespread oppression within the United States. These experiences have linked racial and ethnic identity for African Americans. Music, dancing and food have been outlets of expression for African Americans. Foods that African Americans typically eat such as chitterlings (pig intestines), turkey necks, and ham hocks were parts of the animals that the slave owners threw out. Other foods known as "soul food" (Covey & Eisnach, 2009) (i.e. collard greens, cornbread, black eyed peas, fried chicken) were cooked from portions available to slaves. Many of these foods are consumed today and this is a factor that also increases risks for diseases associated with physical inactivity and unhealthy weight status.

African American females are in a minority level demographic that may have a strong sense of racial and/or ethnic connections. Unfortunately, this group may lack value in physical activity participation due to socially desired and accepted norms. These norms

(for African American youth) hinder the positive progression of health and maintain negative race and socioeconomic stereotypes (Woods, Kurtz-Costes, & Rowley, 2005). Preconceived ideas, thoughts, and feelings from past physical activity experiences may affect current participation of African American females. The perpetuation of these stereotypes is learned and observed from social environments (Izumi & Hammonds, 2007) and can lead to social inclusion and/or exclusion (Elling & Knoppers, 2005). For African American females the stereotypes are racially and gender driven. Stereotypical behavior also manifests through the choice of type of physical activity across racial lines (Harrison et al., 2002; Harrison, Lee, & Belcher, 1999). For example girls do not play football and Black girls do not work out because of hair maintenance. Therefore the development of an individual's self-concept (Elling & Knoppers, 2005) or self-schema (Harrison, Lee, & Belcher, 1999) may be limited through stereotypes of traditionally perceived European American physical activities (i.e. swimming, tennis, rowing, long distance running) as well as gender stereotypes. More research is needed to further assess racial and ethnic identity within the context of physical activity participation of African American females. The prevalence of physical inactivity may go beyond stereotypical activity choices, race, and gender.

Race and body image

Although physical activity participation is the focal point, other issues such as body image and culturally accepted practices also influence or hinder participation in physical activity among African American females (Kumanyika, 2008). In terms of body image, a little extra weight is not perceived as an unattractive attribute, whereas thinness may be viewed as having an illness, use of drugs, or no economic means to obtain food for

nourishment (Fujioka, Ryan, Agle, Legaspi, & Toohey, 2009; Kumanyika, 2008). Perspiring is perceived as a barrier to an attractive appearance and hinders physical activity participation for African American females. In contrast White females view physical activity as a means to gain an attractive appearance (Fahlman, Hall, & Lock, 2006).

Fahlman, Hall, and Lock (2006) completed a study examining physical fitness and barriers to exercise among White, African American, and Hispanic high school females during regularly scheduled physical education classes. Race/ethnicity was a significant predictor of BMI and percent fat when controlling for socioeconomic status. Fifty seven percent of African American high school females had poor aerobic fitness levels, in comparison to Whites (29%) and Hispanics (72%) (Fahlman, Hall, & Lock, 2006). The promotion of physical activity from the standpoint of decreasing percent body fat may have little relevance or meaning with a population in which thinness may not be viewed as a desirable attribute. Additionally, upward social mobility is associated with the material possessions such as the ability to purchase a car (not using public transportation), a television for the children's room, or high fat and high sugar foods for everyday consumption or social events (Kumanyika, 2008). These cultural attitudes within the African American community are socially reaffirmed and may result in the predisposition of sedentary behaviors and contribute to the misperception of a healthy or desirable weight status (Bennett & Wolin, 2006).

Another understanding of social identity theory implies that individuals attempt to maintain a positive social identity through interactions and group affiliations (Kelly, 2009; Tajfel, 1982; Wetherell, 1982). Since African Americans (are at times) socially perceived as a low status group, other socially desirable in-group categories are created through social

creativity (Kelly, 2009). A curvy or “thicker” framed body image (Kumanyika, 2008) may be more desirable than the typical ideal slender body type of European American women. Therefore exercising is perceived as a means of losing the appearance for racial self-identification. The curvy body type distinguishes the person from Whites, especially if she is cognitively operating in the early stages of nigrescence model of assimilation. The development of programs or interventions with the African American community that seek to integrate exercise into an individual’s personal value and belief system may help to self-identify as being an “exerciser” (Duncan et al., 2010). Social identity theory provides a framework to guide efforts to promote value of physical activity participation between the self and socially. This theory can explore the external manifestation of the social desire by forming a socially created in-group category of physical activity participators within African American females.

Women are less likely to choose a sport when participating in physical activity and opt for moderate intensity level exercises (Hall, Kuga, & Jones, 2002). In addition these researchers found that 60 % of African American women studied reported low to very low levels of physical activity. Gender proved to be more influential than race in physical activity participation (Hall, Kuga, & Jones, 2002), especially among African American females (Hicks & Miller, 2006). Generally African American females believe that physical activity can be beneficial, however the perception of opportunities to participate in physical activity were hindered by historical, social, and personal references such as discriminatory practices, opportunity, level of comfort, and preference (Henderson & Ainsworth, 2001). The researchers also found that the African American women had active

lifestyles through their occupations and hobbies (i.e. dance, gardening), but may be considered “sedentary” by physical activity assessments.

College students are transitioning from late adolescence to young adulthood (Scioli et al., 2009), and perceptions about physical activity participation evolve during this period. A supportive social environment may foster an increase in the value of physical activity to a point of self-identification. Previous studies have not targeted an ethnically diverse group in investigating weight gain in the first year of college (Gow, Trace, & Mazzeo, 2010). Physical activity can deter the “freshman fifteen,” which refers to the possible weight gain during the first year of college. Weight gain during this time is heavily attributed to nutritional habits and physical inactivity (Bennett & Wolin, 2006; Gow, Trace, & Mazzeo, 2010). These studies targeted college-aged females due to increases in obesity rates, but have generally ignored underrepresented diverse populations. It is important to determine how race affects physical activity choices during this transition.

Social support

In comparison to their White counterparts, the decline in physical activity participation and social support is more dramatic among minority adolescent girls (Boyington et al., 2008; Grieser et al., 2008). Social support and the perception thereof have been noted as beneficial not only within African American female populations, but among other demographic groups as well such as non-White Hispanic females. Establishing a positive level of participation while identifying with healthy behaviors early in life can possibly slow the rate of decline of physical activity participation among females.

Ueshima and colleagues (2010) suggest that higher levels of cognitive social capital are associated with lower probability of physical inactivity within a neighborhood

community. Although the amount of social support may vary, women who participate in physical activity had a sense of empowerment through family, friends (Henderson & Ainsworth, 2001), and environment (Sallis & Glanz, 2006; Ueshima et al., 2010). There is power within social groups and organizations. Homogeneous groupings can positively or negatively affect social identity (Hewstone et al., 2001). African American females, statistically defined as at risk for unhealthy behaviors (Flegal et al., 2010), can benefit from positive social environments through the creation of new in-group identities.

Younger African American females' participation in physical activity may be affected through the transition from young adolescence to young adulthood, while older African American females are affected by other changes throughout life. Times of transition can be viewed as a time in which new social support systems can be established and influence behaviors (Hicks & Miller, 2006). In terms of physical activity, motivational factors resulting from social support have been studied through other theories and assessments (Chatzisarantis et al., 2009; Hamilton & White, 2008; Laverie, 1998; Lawman, Wilson, Van Horn, Resnicow, & Kitzman-Ulrich, 2011). Social identity theory provides a framework for the evaluation of social behavior and the possible effects on physical activity through understanding social interactions and their effect on intrinsic values. Therefore a person's social identity is essential in forming these relationships while acquiring a desired level of social capital, which is a way of increasing social support within health (Kawachi, Subramanian, & Kim, 2008), social status, and socioeconomic status.

Conclusion

A rationale for the application of Social Identity Theory as a framework to guide research efforts is needed to address concerns about physical activity levels of African

American females. The evidence presented makes the case that using this framework in the investigation of this issue can make a contribution to the knowledge base by providing unique insight with regard to social influences on physical activity that are related to race. Based on this review, several implications for practice are supported and directions for future research are suggested.

Implications for practice

A primary implication for practice demonstrated in this review is the need for practitioners to be aware of social bias and social awkwardness (Li, Harrison, & Solmon, 2004) toward physical activity participation that may persist for young adult African American females. Since social interactions are a component of social identity, activities conducted or created by persons of similar backgrounds (African Americans in this case; Li, Harrison, & Solmon, 2004) to the target population of participants may yield positive results. This, however, does not insinuate that all African Americans relate in similar ways. Social identity denotes more than just salience in homogeneity of social influences. Neither does this suggest that individuals who are not African American cannot be effective instructors for that population. Being sensitive to issues surrounding race and physical activity and incorporating culturally appropriate and sensitive strategies and examples are ways that White practitioners can relate effectively to African American individuals.

Practitioners should also allow students/clients sufficient time to gain confidence and create an environment that fosters identification with being physically active (Duncan et al., 2010; Li, Harrison, & Solmon, 2004; Wilson & Muon, 2008). The value and importance of an individual's physical activity background is essential regardless of demographics or setting (Kumanyika, 2008; Li, Harrison, & Solmon, 2004). Cultural

sensitivity to what is valued in the home environment is critical in the development or manipulation of school-based curriculums and programs. The home is the first influential environment during an individual's process of socialization (Kumanyika, 2008).

School based programs often target low-income minorities through various interventions. Findings show that gender is a better predictor than race of physical activity levels and types of activities (Faridi et al., 2010; Hall, Kuga, Jones, 2002). Although some interventions yielded a reduction in sedentary behaviors, no increase in physical activity was noted (Spruijt-Metz et al., 2008). Differences in gender and race regarding the levels of physical fitness are established by sixteen years of age (Fahlman, Hall, & Lock, 2006) at which a notable decline is evident (Nader et al., 2008). Therefore early exposure (Fahlman, Hall, & Lock, 2006) and physical activity valued in the home environment (Kumanyika, 2008) may generate a positive identity with physical activity. Investigating behavior and the degree to which individuals incorporate exercise into identity (Duncan et al., 2010; Wilson & Muon, 2008) may provide a clearer understanding of the role that race plays in this process. Individuals aligning with the role of exerciser through the characteristics of exercise (frequency, intensity, duration) may also be beneficial through evaluation of physical activity and social identity (Duncan et al., 2010).

Practitioners who create a social environment catering to identity development and sensitive to cultural values for African American females should have a more powerful influence on physical activity behaviors than programs dominated by White perspectives. Understanding social identity may help to overcome social awkwardness among African American females and enable them to develop skills and dispositions needed to remain

active through various stages of life. This may foster a healthy sense of self and identification through healthy associations within social interactions.

Directions for future research

Theoretical focus. Studying participation in physical activity through cognitive theoretical frameworks such as theory of planned behavior, social cognitive theory, self-determination theory and social capital, have provided empirical evidence regarding motives and intent for participation in physical activity. These theories have been used to frame investigations of the influence of many variables such as gender, race, socioeconomic status, and age on physical activities from a personal perspective. Researchers have incorporated the social aspects of identity to further assess intentions, but not behavior, through social interactions (Chatzisarantis et al., 2009; Clopton & Finch, 2008; Hamilton & White, 2008). Motives and intent predict behavior, but studying actions instead of predictions may yield a better assessment of the issue. Although social identity can be fluid and dependent upon the situation and environment, it encompasses a person's values and beliefs that are reflected through personal and social affiliations. Investigations that explore the interaction of social identity, motives and participation levels would make a contribution to the knowledge base in this area.

Critical race theory, the nigrescence model, and the multidimensional model of racial identity are the theoretical frameworks that describe and explain racial identity and its components. There is no theoretical framework, however, to guide research in ethnic identity (Phinney & Ong, 2007). Racial identity and ethnic identity are often used interchangeably within the context of African Americans. Cultural beliefs, traditions, and language are used in describing racial identity phenomena (Hesse-Biber, Livingstone,

Ramirez, Barko, & Johnson, 2010) instead of ethnic identity. Racial identity assessment often produces information regarding racism and internalized racism (Phinney & Ong, 2007), which can provide insight into the intersectionality of multiple identities.

Intersectionality of identities. African Americans are in the minority and suffer unfair treatment within different institutions in the United States. Perceptions of discriminatory treatment are products stemming from historical events. Therefore delving deeper into the effects of racism will facilitate understanding differences between African American females regarding physical activity participation and activity choice. This requires investigation beyond race as a social aggregate (Henderson, 2009; Henderson & Ainsworth, 2001). Additionally, not all individuals understand their own racial identity and its impact on physical activity participation (Henderson & Ainsworth, 2001). In order to obtain a more complete picture, theory and research are reciprocally necessary to “peel the layers” and understand physical activity participation through social identity and racial identity (Vandiver et al., 2001). Questions, lack of depth, and limited research produces a fertile environment for racial identity research (Worrell, Cross, & Vandiver, 2001). Racial identity within the context of physical activity for African Americans, especially females, has been widely ignored.

Social identity theory provides an understanding of racial, ethnic, and exercise identity as parameters, but also expresses the relevance and influence at a deeper level of social interactions. Racial identity and its development have been studied in academic and work-related settings addressing the effects on mental health (Mandara, Gaylord-Harden, Richards, & Ragsdale, 2009; Williams & Williams-Morris, 2000), and sport (Bimper & Harrison, 2011; Harrison et al., 2002). Social identity theory’s notion of self-reflection and

consideration of the effects of self-concept in response to others provides the means to look at race and physical activity participation from a socio-cultural perspective (Henderson & Ainsworth, 2001). Self-concept was widely referenced and discussed throughout the literature in terms of determinants and predicting physical activity behavior. However there was no mention of physical self-concept, the manner in which an individual perceives confidence in physical ability. Physical activity requires physical ability. The investigation of the relationships between racial identity, exercise identity, and physical self-concept is an important area for future study.

Sample size. Previous research regarding physical activity and African American females has used undersized participant samples or populations that are not representative of diverse demographics. For example, Scioli and colleagues (2009) researched collegiate females and stages of exercise. Within the participants, 84.4% were White and only 3.9% were African American. College student samples have been assessed to explore differences in racial identity between Black and White young adults. Investigations of ethnic identity have generally focused on adolescent and college populations from a variety of races and ethnicities (Phinney & Ong, 2007). Consequently, much of this research may not be generalized to larger groups of African American females, college students attending historically Black colleges and universities (Hicks & Miller, 2006), or individuals who do not attend college. A focus on African American collegiate females is warranted due to the lack of information regarding physical activity behaviors for their age group (Hall, Kuga, & Jones, 2002). Research involving this age group may provide insight in evaluating social support and other socio-cultural factors such as the effects of race and/or ethnicity on exercise identity.

Poor health choices have been associated with stress, causing many of African Americans to drop out of school (Hicks & Miller, 2006). More information focusing on racial identity and exercise identity may enable physical activity to become a priority for African Americans (Hick & Miller, 2006). Study of larger and more diverse samples of African American females is needed to further gain knowledge of physical activity participation (Hicks & Miller, 2006). This can be obtained by evaluating social identity and other socio-cultural aspects such as attitudes that may predispose African American females to sedentary behaviors (Kumanyika, 2008).

With the onset of the obesity epidemic many research efforts have focused on sedentary individuals making unhealthy choices. The focus has been largely on athletics and/or physical education, and African American females who are physically active on a regular basis are often been overlooked. Additionally, the exploration of adolescent African American girls and older adult African American women is included in the review in order to ascertain a need to focus on the young adult population.

The relationship between intrinsic motivation (Spruijt-Metz et al., 2008), social creativity (Kelly, 2009), or cultural attitudes (Kumanyika, 2008) of physically active African females, and how those variables relate to decreasing the prevalence of physical inactivity has not been studied. Learning more about the physically active population could provide insight into effective strategies to encourage sedentary African American females to become more active. The personal identity and self-concept elements within social identity theory may assist in explaining physical activity behaviors. Phinney and Ong (2007) suggested that behaviors be evaluated separately to distinguish the implications of identity from possible group specific outcomes that may occur.

Race, racism, or ethnicity? Researchers should evaluate the inherent content of identity measurements (Wilson & Muon, 2008) due to the static nature of social identity and social group interactions. The effects of racism through racial identity evaluation (Phinney & Ong, 2007) produce a clearer understanding of physical activity behaviors. It has been found that some people may not fully understand racial identity and its effect on decisions and behaviors (Henderson & Ainsworth, 2001; Hesse-Biber et al., 2010). The use of ethnic identity measurements can yield varying information within African American females depending upon the individual's understanding of race and ethnicity. Multilevel analyses have been proposed to assess environmental effects and multiple identity effects (Henderson & Ainsworth, 2001; Ueshima et al., 2010). In addition, longitudinal studies have been suggested due to the decline during the adolescent years (Nader et al., 2008) and changes in racial attitudes and identity (Worrell, Cross, & Vandiver, 2001).

This information leads up to three main questions that can guide research in this area: "Does race matter?," "Does the intersection between personal values and cultural values affect physical activity participation or exercise identification?," and "How does exercise identity vary across stages of racial or ethnic identity?"

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APPENDIX B
STUDY ONE INSTRUMENTATION

Cross Racial Identity Scale

(Cross & Vandiver, 2001)

Read each item and indicate to what degree the statement reflects your own thoughts and feelings, using the 7-point scale below. There are no right or wrong answers. Base your responses on your opinion at the present time. To ensure that your answer can be used, please respond to the statements as written, and place your numerical response on the line provided to the left of each question.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree

- ___ 1. As an African-American, life is good for me.
- ___ 2. I think of myself primarily as an American, and seldom as a member of my racial group.
- ___ 3. Too many Blacks “glamorize” the drug trade and fail to see opportunities that do not involve crime.
- ___ 4. I go through periods when I am down on myself because I am Black.
- ___ 5. As a multiculturalist, I am connected to many groups (Hispanics, Asian Americans, Whites, Jews, gays & lesbians, etc.).
- ___ 6. I have a strong feeling of hatred and disdain for all White people.
- ___ 7. I see and think about things from an Afrocentric perspective.
- ___ 8. When I walk into a room, I always take note of the racial make-up of the people around me.
- ___ 9. I am not so much a member of a racial group, as I am an American.
- ___ 10. I sometimes struggle with negative feelings about being Black.
- ___ 11. My relationship with God plays an important role in my life.
- ___ 12. Blacks place more emphasis on having a good time than on hard work.
- ___ 13. I believe that only those Black people who accept an Afrocentric perspective can truly solve the race problem in America.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither	Somewhat	Agree	Strongly
Disagree		Disagree		Agree		Agree

- ___ 14. I hate the White community and all that it represents.
- ___ 15. When I have a chance to make a new friend, issues of race and ethnicity seldom play a role in who that person might be.
- ___ 16. I believe it is important to have both a Black identity and a multicultural perspective.
- ___ 17. When I look in the mirror at my Black image, sometimes I do not feel good about what I see.
- ___ 18. If I had to put a label on my identity, it would be "American," and not African American.
- ___ 19. When I read the newspaper or a magazine, I always look for articles and stories that deal with race and ethnic issues.
- ___ 20. Many African-Americans are too lazy to see opportunities that are right in front of them.
- ___ 21. As far as I am concerned, affirmative action will be needed for a long time.
- ___ 22. Black people cannot truly be free until our daily lives are guided by Afrocentric values and principles.
- ___ 23. White people should be destroyed.
- ___ 24. I embrace my own Black identity, but I also respect and celebrate the cultural identities of other groups (e.g., Native Americans, Whites, Latinos, Jews, Asian Americans, gays & lesbians, etc.).
- ___ 25. Privately, I sometimes have negative feelings about being Black.
- ___ 26. If I had to put myself into categories, first I would say I am an American, and second I am a member of a racial group.
- ___ 27. My feelings and thoughts about God are very important to me.
- ___ 28. African-Americans are too quick to turn to crime to solve their problems.
- ___ 29. When I have a chance to decorate a room, I tend to select pictures, posters, or works of art that express strong racial-cultural themes.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree

- ___ 30. I hate White people.
- ___ 31. I respect the ideas that other Black people hold, but I believe that the best way to solve problems is to think Afrocentrically.
- ___ 32. When I vote in an election, the first thing I think about is the candidate's record on racial and cultural issues.
- ___ 33. I believe it is important to have both a Black identity and multicultural perspective, because this connects me to other groups (Hispanics, Asian Americans, Whites, Jews, gays & lesbians, etc.).
- ___ 34. I have developed an identity that stresses my experiences as an American more than my experiences as a member of a racial group.
- ___ 35. During a typical week in my life, I think about racial and cultural issues many, many times.
- ___ 36. Blacks place too much importance on racial protest and not enough on hard work and education.
- ___ 37. Black people will never be free until we embrace an Afrocentric perspective.
- ___ 38. My negative feelings toward White people are very intense.
- ___ 39. I sometimes have negative feelings about being Black.
- ___ 40. As a multiculturalist, it is important for me to be connected with individuals from all cultural backgrounds (Latinos, gays & lesbians, Jews, Native Americans, Asian-Americans, etc.).

Bem Sex-Role Inventory – Short Form
(Bem, 1974)

Please use the following characteristics to describe yourself. Use the scale (1 – 7) below to answer your true representation of each characteristic.

Never True	Usually Not true	Sometimes True	Occasionally True	Often True	Usually True	Always True
1	2	3	4	5	6	7

Defends own beliefs		Affectionate	
Conscientious		Independent	
Sympathetic		Moody	
Assertive		Sensitive to the needs of others	
Reliable		Strong Personality	
Understanding		Jealous	
Forceful		Compassionate	
Truthful		Has leadership abilities	
Eager to soothe hurt feelings		Secretive	
Willing to take risks		Warm	
Adaptable		Dominant	
Tender		Conceited	
Willing to take a stand		Loves children	
Tactful		Aggressive	
Gentle		Conventional	

Exercise Identity Scale
(Anderson & Cychosz, 1994)

The following questions concern your personal beliefs about exercise. Indicate the degree to which you agree or disagree with each statement.

1) I consider myself an exerciser.
<div style="display: flex; justify-content: space-between;"> STRONGLY DISAGREE STRONGLY AGREE </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 1234567 </div>
2) When I describe myself to others, I usually include my involvement in exercise.
<div style="display: flex; justify-content: space-between;"> STRONGLY DISAGREE STRONGLY AGREE </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 1234567 </div>
3) I have numerous goals related to exercising.
<div style="display: flex; justify-content: space-between;"> STRONGLY DISAGREE STRONGLY AGREE </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 1234567 </div>
4) Physical exercise is a central factor to my self concept.
<div style="display: flex; justify-content: space-between;"> STRONGLY DISAGREE STRONGLY AGREE </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 1234567 </div>
5) I need to exercise to feel good about myself.
<div style="display: flex; justify-content: space-between;"> STRONGLY DISAGREE STRONGLY AGREE </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 1234567 </div>
6) Others see me as someone who exercises regularly.
<div style="display: flex; justify-content: space-between;"> STRONGLY DISAGREE STRONGLY AGREE </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 1234567 </div>
7) For me, being an exerciser means more than just exercising.
<div style="display: flex; justify-content: space-between;"> STRONGLY DISAGREE STRONGLY AGREE </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 1234567 </div>
8) I would feel a real loss if I were forced to give up exercising.
<div style="display: flex; justify-content: space-between;"> STRONGLY DISAGREE STRONGLY AGREE </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 1234567 </div>
9) Exercising is something I think about often.
<div style="display: flex; justify-content: space-between;"> STRONGLY DISAGREE STRONGLY AGREE </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 1234567 </div>

Leisure Time Exercise Questionnaire
(Godin & Shepherd, 1985)

Considering a **7-day period** (a week), how many times on the average do you do the following kinds of exercise for **more than 15 minutes** during your free time (write on each line the appropriate number).

1)

	Number of Times per Week
STRENUOUS EXERCISE (HEART BEATS RAPIDLY) (i.e. running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling)	
MODERATE EXERCISE (NOT EXHAUSTING) (i.e. fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)	
MILD EXERCISE (MINIMAL EFFORT) (i.e. yoga, archery, fishing from river bend, bowling, horseshoes, golf, snow-mobiling, easy walking)	

2) Considering a 7-day period (a week), during your leisure time, how often do you engage in any regular activity long enough to work up a sweat (heart beats rapidly)? Put an "X" next to the most appropriate choice.

a) _____OFTEN

b) _____SOMETIMES

c) _____NEVER/RARELY

Social Support and Exercise Survey

(Sallis et al., 1987)

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

Please rate each question *twice*. Under *Family*, rate how often anyone living in your household has said or done what is described during the last three months. Under *Friends*, rate how often your friends, acquaintances, or coworkers have said or done what is described during the last three months.

Please write *one* number from the following rating scale in each space:

None	Rarely	A few Times	Often	Very often	Does not apply
1	2	3	4	5	8

During the past three months, my family (or members of my household) or friends:

1. Exercised with me.
2. Offered to exercise with me.
3. Gave me helpful reminders to exercise
("Are you going to exercise tonight?").
4. Gave me encouragement to stick with my exercise
program.
5. Changed their schedule so we could exercise together.
6. Discussed exercise with me.
7. Complained about the time I spend exercising.
8. Criticized me or made fun of me for exercising.
9. Gave me rewards for exercising (bought me
something or gave me something I like).
10. Planned for exercise on recreational outings.
11. Helped plan activities around my exercise.
12. Asked me for ideas on how *they* can get more exercise.
13. Talked about how much they liked to exercise.

Family	Friends
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	

APPENDIX C
STUDY TWO ONLINE SURVEY QUESTIONNAIRE

Informed Consent

Study Title: The Impact of Identity Intersectionality on African American Female
Physical Activity Participation

Performance site: Online

Investigators: The following investigators are available for questions about this study, M-F,
8:00 am – 4:30 pm Phone: 225.578.2913
Email: Jasmine Hamilton, M.A. jhami23@tigers.lsu.edu
Melinda Solmon, Ph.D. msolmo1@lsu.edu

Purpose of the study: The purpose of this research is to investigate the associations
between identity and physical activity.

Subject Inclusion: You must be an African American female at least 18 years of age
and a member of a running group.

Number of Subjects: Approximately 30

Study Procedures: You will complete a demographic questionnaire. Then
participate in a focus group interview session, which will cover topics including racial
identity, gender-role identity, exercise identity, social support, and physical activity. The
process should take about 10-20 minutes to complete.

Benefits: This study may yield valuable information about the influence of identity on physical
activity participation.

Risks: There are no established risks related to online surveys. All information regarding the study
is kept confidential. Each participant will be assigned pseudonyms to ensure anonymity.

Right to Refuse: You may choose not to participate or to withdraw from the study at any time without
penalty or loss of any benefit to which they might otherwise be entitled.

Privacy: Results of the study may be published, but no identifying information will be included in the
publication. Your identity will remain confidential unless law requires disclosure.

Financial

Information: There will be no compensation for participating in this study.

By submitting the survey, you acknowledge that you have read this information and agree to participate in
this research, with the knowledge that you are free to withdraw your participation at any time without
penalty. Any further questions can be forwarded to Robert C. Mathews, Institutional Review Board, (225)
578-8692, irb@lsu.edu, www.lsu.edu/irb.

Demographic Information

This survey should take about 10-20 minutes to complete. Answer the questions to the best of your ability.

1. How do you classify yourself in terms of racial or ethnic heritage?

2. What is your age?
 - a. 21 and under
 - b. 22-34
 - c. 35-44
 - d. 45-54
 - e. 55-64
 - f. 65 and over
3. What is your marital status?
 - a. Single
 - b. Married
 - c. Separated
 - d. Divorced
 - e. Widowed
 - f. Domestic Partnership
4. What is your highest level of education?
 - a. High School Diploma/GED
 - b. Some College
 - c. Associates Degree
 - d. Bachelors Degree
 - e. Masters Degree
 - f. Doctorate (in any field)
5. Please provide your household income information.
 - a. >\$20,000
 - b. \$20,001 - \$40,000
 - c. \$40,001 - \$60,000
 - d. \$60,001 - \$80,000
 - e. \$80,001<
6. How long have you been a member of Black Girls Run?

 - a. Did you participate in any other type of physical activity (exercise or sport) prior to joining Black Girls Run?
 - b. Yes
 - c. No
7. If yes, mark the activities that you have previously participated?
 - a. ____ Exercise (aerobics classes-Zumba, Step, etc.; cycling; walking; jogging; cardio training)
 - b. ____ Sports (basketball, track and field, tennis, golf, volleyball, soccer, bowling, etc.)
 - c. ____ Hobbies (gardening, art, carpentry)

8. Please indicate the levels in which you have participated in physical activity.

- a. _____ Middle School
- b. _____ High School
- c. _____ College
- d. _____ Post College/High School

9. How much support do you receive for participating in regular physical activity from the people closest to you?

1 2 3 4 5
Not at all Neutral Very much

10. Identity Salience: Indicate which identity is most important (1) to least important (3) as a part of whom you are.

Gender-Role Identity	
Racial Identity	
Exercise Identity	

Open-Ended Questions

<p>The next part of this survey is a series of questions that will discuss your participation in Black Girls Run and understanding the nature of the group.</p>
<ol style="list-style-type: none"> 1. What is Black Girls Run? 2. Why did you join Black Girls Run? 3. What types of activities/events do you host? 4. Besides BGR, what other physical activities do you participate?
<p>During the next topic we will discuss ideas about gender-role and exercising with BGR.</p> <ol style="list-style-type: none"> 1. As a female, what barriers/obstacles/set-backs do you encounter related to being physically active? 2. How does the African-American culture encourage (or hinder) females to participate in physical activities?
<p>The next set of questions focus on the influence of race on physical activity participation.</p> <ol style="list-style-type: none"> 1. The name of your organization is “Black” Girls Run. Would you feel differently if it the term “African American” was used? Why or Why not? 2. What is your personal preference? Why? 3. How do you feel your racial identification influences your participation in any type of physical activity? 4. How important is it for BGR to be multicultural and accepting of other groups (White, Latino, Asian, Jewish, Lesbian, etc.)? Please explain your answer. 5. Would you be opposed to someone of another race or ethnicity joining the group? Why or why not?
<p>Final Thoughts</p> <ol style="list-style-type: none"> 1. If you had a sister/mother/aunt/friend who was not active, what would you do or say to get her to become more physically active? 2. Please, share any other closing remarks or additional thoughts.
<p>Thank you for participating and sharing your opinions during this discussion.</p>

APPENDIX D
RAW DATA-STUDY ONE

LTEQ1	LTEQ2	PA	PM	PSH	IEAW	IA	IMCI	M	F	EIS	FAM	FND
37.00	1.00	5.60	2.00	1.00	1.00	1.60	7.00	5.20	3.80	4.89	21.00	21.00
420.00	2.00	3.20	2.00	!	1.40	2.60	4.40	3.20	5.00	2.67	24.00	27.00
17.00	2.00	4.80	4.20	4.40	!	3.20	4.00	5.30	5.60	4.89	26.00	23.00
21.00	3.00	4.20	4.80	1.40	2.80	3.60	3.60	5.50	5.50	2.22	10.00	10.00
75.00	1.00	3.80	4.60	2.20	1.60	3.40	4.20	3.70	4.00	2.33	30.00	28.00
30.00	3.00	5.40	6.80	2.20	1.00	3.80	!	5.40	5.20	1.00	10.00	10.00
100.00	2.00	5.00	4.20	3.60	4.40	!	4.60	4.30	4.70	4.00	32.00	35.00
0.00	3.00	5.00	3.00	3.20	1.00	3.20	5.40	4.10	5.20	2.00	10.00	10.00
37.00	2.00	4.40	2.20	2.60	!	3.80	5.60	4.10	4.10	3.67	10.00	20.00
66.00	1.00	4.80	4.00	4.20	3.60	4.80	4.20	4.70	5.50	4.00	10.00	41.00
3.00	3.00	4.00	2.80	1.60	1.00	3.80	5.40	3.10	6.00	2.00	10.00	24.00
85.00	1.00	4.40	5.60	4.60	1.80	5.00	5.60	4.60	5.10	5.67	23.00	30.00
5.00	3.00	4.00	3.00	1.20	1.00	3.00	4.80	3.40	6.00	2.22	10.00	14.00
0.00	2.00	4.60	3.00	1.00	1.00	2.80	6.40	4.80	6.10	4.89	21.00	17.00
68.00	1.00	3.40	2.20	1.00	1.00	4.00	5.00	3.70	5.90	5.78	35.00	37.00
19.00	2.00	6.40	5.60	2.60	1.00	3.80	6.60	3.60	7.00	4.22	21.00	28.00
0.00	3.00	3.00	3.40	3.40	4.40	4.20	4.20	3.60	4.40	1.56	10.00	10.00
40.00	3.00	4.00	3.00	3.60	1.80	4.00	!	4.30	5.10	3.56	28.00	35.00
19.00	2.00	3.00	3.20	1.60	3.60	5.40	5.40	4.20	4.20	4.89	33.00	33.00
39.00	1.00	3.00	2.80	2.40	2.00	2.80	5.20	4.90	5.40	5.22	35.00	37.00
0.00	3.00	5.20	2.40	1.80	1.00	!	!	5.10	5.30	2.22	34.00	47.00
0.00	3.00	5.80	4.20	2.20	1.00	2.20	7.00	3.90	5.30	1.22	10.00	16.00
34.00	1.00	5.60	3.20	3.20	1.40	2.40	4.60	2.70	5.60	5.22	21.00	30.00
80.00	2.00	6.40	4.00	1.60	1.60	2.80	5.80	2.80	2.00	3.67	26.00	29.00
11.00	3.00	6.00	2.40	2.60	1.00	3.80	7.00	4.70	5.50	1.44	13.00	20.00
79.00	2.00	4.80	3.20	1.40	1.00	4.20	5.20	3.40	3.30	4.56	50.00	45.00
0.00	3.00	6.00	2.60	2.80	1.00	!	7.00	4.50	5.50	2.00	12.00	13.00
95.00	1.00	2.80	5.60	2.60	1.00	3.60	6.00	4.50	7.00	5.78	21.00	41.00
960.00	1.00	4.00	2.80	1.60	1.00	3.20	6.00	4.10	4.90	5.44	42.00	33.00
12.00	2.00	4.80	5.60	2.80	1.00	1.20	6.80	5.90	6.30	4.67	22.00	27.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
270.00	2.00	5.00	1.40	1.00	1.00	2.40	6.00	6.80	6.50	4.22	10.00	20.00
48.00	2.00	3.80	2.40	1.60	1.00	3.00	5.60	4.10	5.10	5.44	10.00	27.00
98.00	1.00	6.80	3.20	1.00	1.00	1.60	6.60	4.30	6.20	6.89	22.00	15.00
435.00	2.00	2.20	2.80	1.40	1.00	2.00	3.80	4.90	5.00	2.89	23.00	25.00
225.00	2.00	3.40	4.20	1.80	1.00	4.80	5.60	5.30	5.70	3.33	19.00	17.00
65.00	1.00	2.80	5.80	1.00	1.60	2.20	6.60	6.60	5.20	6.89	12.00	41.00
930.00	1.00	4.00	2.60	1.80	1.00	2.80	6.20	4.00	5.30	6.11	38.00	31.00
9.00	3.00	3.00	2.40	1.80	1.00	3.20	5.40	6.40	6.10	3.89	22.00	21.00
90.00	3.00	3.20	2.60	1.00	1.00	2.60	7.00	5.90	5.90	2.67	13.00	22.00
74.00	1.00	3.00	3.40	1.00	1.00	1.20	5.60	5.50	3.50	3.33	14.00	22.00

28.00	2.00	5.20	2.60	3.20	1.00	2.80	6.60	6.30	7.00	5.67	22.00	27.00
900.00	2.00	6.00	5.20	1.60	1.00	2.20	6.60	6.00	6.10	3.56	10.00	15.00
85.00	2.00	4.00	5.20	3.60	2.60	3.60	4.60	5.20	4.40	4.44	13.00	18.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
0.00	2.00	3.80	3.40	1.40	1.00	4.20	6.20	5.40	6.50	4.00	22.00	10.00
139.00	2.00	6.40	1.20	1.00	1.40	1.80	7.00	5.80	6.80	6.00	24.00	32.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
103.00	2.00	4.00	4.00	4.00	4.00	4.00	4.00	5.00	5.00	7.00	50.00	50.00
35.00	2.00	5.60	5.60	5.00	1.20	4.20	6.20	4.70	4.90	3.89	14.00	18.00
34.00	1.00	2.60	1.00	1.00	1.00	2.60	6.80	5.00	5.20	3.78	16.00	30.00
119.00	1.00	5.80	2.80	3.80	1.60	2.40	3.80	7.00	7.00	4.00	50.00	50.00
0.00	2.00	5.60	1.40	1.00	1.00	2.00	4.20	5.80	6.60	2.11	23.00	23.00
35.00	2.00	2.80	2.40	3.00	1.00	3.60	6.40	5.90	6.20	2.00	31.00	27.00
92.00	1.00	4.80	5.40	1.40	1.60	5.00	6.20	4.70	5.50	6.33	29.00	29.00
59.00	1.00	5.80	1.20	1.80	1.00	1.20	5.60	4.60	6.60	6.78	30.00	32.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
70.00	1.00	4.60	4.80	4.20	3.20	4.00	4.60	5.90	5.80	7.00	33.00	36.00
19.00	1.00	5.40	1.60	1.00	1.00	1.00	5.00	6.40	6.70	5.22	48.00	41.00
23.00	1.00	6.40	1.00	1.00	1.00	1.00	5.20	6.00	6.00	6.00	37.00	40.00
57.00	2.00	5.00	3.40	2.20	2.00	4.60	6.00	5.20	5.40	4.33	30.00	30.00
88.00	2.00	6.40	6.40	6.40	6.20	6.00	6.40	7.00	7.00	6.33	10.00	30.00
0.00	!	6.60	1.60	2.00	1.00	!	7.00	7.00	7.00	7.00	15.00	29.00
0.00	!	1.80	2.00	1.60	!	!	1.60	!	!	!	!	!
0.00	!	4.20	5.00	4.40	3.40	5.20	5.40	6.30	6.20	5.56	!	!
17.00	2.00	5.00	2.80	2.80	2.20	!	4.40	2.40	6.00	2.22	13.00	13.00
37.00	2.00	4.40	5.20	2.80	1.00	3.20	6.00	6.20	5.30	3.89	28.00	26.00
58.00	2.00	2.40	2.40	3.40	1.00	4.20	7.00	3.10	6.30	3.11	35.00	39.00
97.00	2.00	4.80	5.60	5.20	!	!	!	3.70	3.80	5.11	26.00	38.00
73.00	3.00	6.80	2.60	1.80	1.20	!	5.40	4.30	5.90	5.44	34.00	27.00
23.00	2.00	4.20	3.80	1.00	1.20	3.20	5.40	4.50	5.50	3.56	24.00	27.00
12.00	2.00	3.60	1.40	4.00	1.00	2.60	6.20	4.90	6.20	4.56	39.00	27.00
8.00	3.00	3.00	3.20	2.20	1.60	3.00	5.80	4.40	5.70	3.67	16.00	25.00
91.00	1.00	4.60	5.20	1.80	1.00	4.40	5.40	7.00	7.00	7.00	43.00	39.00
39.00	1.00	3.20	2.80	2.40	1.80	3.40	4.80	3.80	5.10	4.89	32.00	43.00
50.00	2.00	6.20	5.20	1.80	1.00	4.20	6.60	4.00	6.00	4.00	30.00	30.00
26.00	2.00	3.60	2.60	1.00	1.00	3.20	4.00	6.40	6.10	2.89	11.00	26.00
77.00	1.00	5.80	3.00	3.40	2.00	1.40	6.00	2.80	6.00	4.89	19.00	38.00
12.00	3.00	4.40	4.40	4.60	2.20	3.00	4.20	5.00	5.00	4.00	12.00	13.00
48.00	2.00	5.60	6.80	1.40	1.00	3.00	7.00	4.50	5.20	5.44	13.00	32.00
43.00	1.00	6.80	3.40	1.00	1.00	!	7.00	6.40	6.50	3.56	26.00	17.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
28.00	2.00	4.80	4.60	2.80	1.20	!	6.00	5.20	6.40	4.00	18.00	31.00
40.00	2.00	4.20	6.20	1.00	1.00	2.40	6.00	5.90	5.50	4.67	14.00	28.00
33.00	2.00	3.80	4.80	1.80	2.00	4.00	6.00	6.70	6.10	4.44	19.00	31.00
24.00	1.00	3.60	2.20	2.40	1.80	!	6.60	2.20	6.50	4.67	14.00	28.00
42.00	2.00	4.80	3.80	3.80	2.40	5.20	5.60	5.60	5.90	4.44	25.00	26.00

29.00	1.00	3.60	5.60	1.80	1.40	2.80	5.60	4.80	6.10	3.56	18.00	12.00
29.00	2.00	3.40	5.80	1.40	2.00	4.60	5.00	6.60	6.30	4.78	15.00	29.00
0.00	3.00	5.60	2.80	1.20	1.60	2.60	6.00	5.40	5.60	4.00	60.00	60.00
39.00	2.00	3.80	4.00	3.60	3.20	6.60	7.00	7.00	7.00	7.00	10.00	10.00
43.00	2.00	5.00	4.20	4.60	1.60	4.60	7.00	6.50	6.90	5.00	43.00	37.00
136.00	1.00	3.60	1.80	1.20	1.00	2.80	7.00	7.00	7.00	5.56	26.00	44.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
58.00	1.00	4.80	6.40	1.00	1.60	2.80	3.80	6.30	7.00	3.44	36.00	41.00
54.00	2.00	6.40	1.80	1.20	1.00	2.60	6.40	5.10	5.20	4.11	26.00	34.00
0.00	2.00	2.80	1.60	2.40	1.80	2.20	7.00	6.40	7.00	2.00	16.00	16.00
90.00	3.00	1.20	4.60	2.80	2.20	3.00	6.60	4.10	5.70	3.44	21.00	20.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
0.00	3.00	1.60	2.60	1.00	1.20	1.80	6.20	5.00	4.20	4.78	11.00	19.00
45.00	1.00	1.00	1.80	1.00	1.20	1.20	6.80	1.40	7.00	7.00	22.00	34.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
0.00	!	!	!	!	!	!	!	!	!	!	!	!
23.00	3.00	4.40	2.00	1.40	1.00	1.60	5.40	4.60	6.00	4.33	10.00	24.00
72.00	2.00	3.80	2.80	2.80	2.00	2.60	!	4.00	4.00	4.00	30.00	30.00
49.00	3.00	4.80	5.00	1.00	1.20	1.80	7.00	4.80	6.00	2.56	12.00	27.00
63.00	2.00	3.40	3.80	1.40	1.00	2.20	6.40	4.30	4.60	3.89	21.00	33.00
36.00	2.00	4.60	5.20	!	1.00	2.40	4.40	6.10	5.90	3.89	23.00	16.00
30.00	3.00	7.00	3.40	2.00	1.00	2.80	6.20	3.70	4.40	1.56	29.00	13.00
28.00	2.00	3.80	3.60	2.40	1.80	!	5.40	5.90	5.90	4.11	28.00	28.00
55.00	3.00	4.20	5.20	3.40	1.20	4.40	4.60	4.30	6.20	2.22	24.00	21.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
12.00	2.00	4.80	5.60	2.20	1.00	2.00	6.40	1.80	4.90	3.22	15.00	26.00
39.00	2.00	4.60	4.20	4.60	4.20	4.60	4.20	4.80	4.70	4.67	35.00	40.00
750.00	1.00	4.60	3.60	3.00	2.40	3.00	4.40	6.00	6.00	4.00	28.00	20.00
14.00	1.00	5.80	5.60	!	4.40	5.40	5.40	3.30	3.40	3.78	34.00	40.00
535.00	2.00	4.40	4.40	1.00	1.00	1.40	6.60	6.10	6.30	4.78	34.00	34.00
45.00	2.00	6.00	3.80	1.80	1.00	2.80	3.00	4.10	4.00	2.56	21.00	18.00
0.00	!	5.80	4.20	2.00	1.00	2.40	4.80	!	!	!	!	!
53.00	1.00	3.20	5.40	1.00	1.20	2.40	6.60	2.40	5.90	3.44	28.00	22.00
825.00	1.00	4.00	6.40	4.60	1.20	3.40	5.40	5.10	5.40	5.22	31.00	30.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
50.00	2.00	3.80	2.80	!	3.20	4.00	4.20	6.20	5.90	1.00	20.00	19.00
54.00	2.00	3.00	1.40	1.00	1.00	2.40	6.00	3.70	6.50	3.67	10.00	10.00
69.00	2.00	3.00	4.80	4.40	3.00	4.80	6.60	4.20	5.00	4.33	16.00	22.00
67.00	1.00	6.00	5.20	5.20	3.00	4.80	6.00	2.90	4.40	5.33	31.00	35.00
30.00	2.00	4.80	5.40	4.60	2.40	!	6.00	5.50	5.90	5.44	30.00	32.00
5.00	3.00	3.60	6.20	4.20	1.00	3.20	5.00	4.40	5.40	2.00	14.00	27.00
46.00	1.00	7.00	2.20	2.40	1.00	1.80	6.40	6.10	6.80	6.11	20.00	37.00
0.00	3.00	6.60	4.40	1.00	1.00	2.00	6.80	4.40	4.90	1.00	10.00	10.00
134.00	3.00	3.80	2.80	2.60	1.80	2.60	5.60	2.00	4.10	2.33	10.00	10.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
101.00	1.00	6.40	4.00	1.00	1.00	1.40	6.80	6.30	6.60	6.11	17.00	31.00

0.00	3.00	6.20	4.20	!	1.00	3.40	7.00	5.20	5.00	3.11	12.00	10.00
85.00	1.00	4.40	2.20	1.00	1.00	4.00	6.00	3.60	6.00	5.11	42.00	36.00
21.00	2.00	5.80	6.20	2.00	1.00	3.20	5.40	6.00	6.80	5.00	18.00	10.00
76.00	1.00	3.60	2.60	1.00	1.00	3.40	5.80	3.60	5.90	5.22	33.00	35.00
61.00	2.00	3.80	1.60	1.00	1.00	1.60	3.80	5.50	6.00	2.00	16.00	22.00
15.00	3.00	5.00	3.40	1.00	1.00	1.80	4.40	5.80	6.00	6.22	13.00	11.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
39.00	1.00	3.40	2.40	2.60	1.00	2.80	!	6.20	6.70	5.11	29.00	24.00
74.00	1.00	4.00	5.40	1.80	1.00	4.20	6.60	3.40	7.00	3.56	19.00	33.00
34.00	2.00	6.40	1.00	1.00	1.00	1.00	6.20	4.50	5.00	4.00	26.00	26.00
51.00	1.00	4.00	1.20	1.00	1.00	1.80	5.20	4.90	7.00	5.78	33.00	41.00
87.00	1.00	1.80	1.40	2.20	1.40	2.40	5.40	5.30	5.30	4.78	14.00	28.00
0.00	!	3.20	5.60	4.40	1.00	4.40	7.00	4.80	5.20	3.67	22.00	31.00
42.00	3.00	5.80	4.60	1.80	1.60	3.20	!	3.10	6.40	4.44	60.00	39.00
88.00	2.00	4.80	3.00	1.40	1.60	2.20	5.80	4.60	5.50	3.89	25.00	25.00
80.00	1.00	4.00	4.80	4.00	2.80	3.40	4.00	3.80	3.90	3.22	33.00	37.00
101.00	3.00	3.80	1.60	1.00	1.00	3.60	6.40	5.20	6.10	3.44	11.00	23.00
870.00	1.00	2.60	5.80	2.00	1.20	2.80	6.20	5.70	5.10	7.00	13.00	39.00
33.00	1.00	2.80	4.00	!	1.20	2.40	6.00	2.80	6.40	5.89	28.00	32.00
0.00	2.00	3.20	3.60	!	1.00	3.40	6.80	4.80	5.90	3.56	12.00	13.00
40.00	3.00	3.00	5.40	3.60	1.60	!	4.60	5.20	6.80	3.33	19.00	16.00
51.00	2.00	3.60	3.20	4.60	3.20	4.00	4.00	4.00	3.60	4.00	30.00	41.00
57.00	2.00	6.60	6.60	5.00	1.00	1.60	4.80	5.80	7.00	1.67	10.00	10.00
720.00	2.00	6.00	3.60	1.00	1.00	!	6.80	5.10	6.50	5.22	21.00	25.00
65.00	2.00	5.60	5.40	3.40	1.60	4.00	4.60	4.00	4.00	4.33	29.00	31.00
67.00	2.00	4.60	3.80	3.20	1.00	4.80	7.00	5.20	7.00	4.56	14.00	42.00
84.00	1.00	2.60	2.00	1.00	1.00	5.80	6.00	4.20	5.30	5.00	23.00	26.00
46.00	2.00	6.40	1.00	1.00	!	2.60	4.20	5.40	6.00	5.33	17.00	26.00
31.00	1.00	4.60	1.00	2.00	1.40	1.00	7.00	7.00	7.00	6.67	19.00	29.00
63.00	1.00	1.40	1.60	1.00	4.60	4.20	4.60	3.20	5.20	4.22	21.00	39.00
119.00	1.00	4.60	4.00	1.00	1.00	1.00	7.00	6.00	7.00	5.67	42.00	37.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
29.00	2.00	4.20	4.00	2.00	2.40	6.20	6.80	6.80	7.00	1.67	18.00	21.00
230.00	1.00	3.20	!	2.60	3.40	4.40	4.60	5.40	6.00	4.67	34.00	32.00
52.00	1.00	4.60	!	1.00	1.00	4.00	5.20	3.30	5.90	5.33	23.00	31.00
36.00	1.00	3.40	1.40	5.60	1.00	3.80	6.20	3.60	6.90	2.00	26.00	25.00
0.00	3.00	4.00	3.60	!	1.00	!	5.60	5.30	6.20	2.00	10.00	12.00
42.00	1.00	3.80	4.00	1.00	1.20	2.20	5.80	7.00	7.00	6.00	19.00	33.00
119.00	2.00	4.00	3.80	2.80	1.60	4.40	6.20	5.90	6.00	6.33	31.00	40.00
85.00	1.00	!	!	5.00	1.00	2.20	6.80	5.30	4.00	3.89	10.00	26.00
58.00	2.00	5.00	3.00	2.00	1.60	2.40	6.00	4.80	6.00	2.56	24.00	18.00
31.00	2.00	4.20	4.20	1.00	1.00	1.60	6.40	5.40	4.90	3.56	10.00	12.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
85.00	1.00	6.80	2.40	5.00	1.00	1.40	7.00	5.70	5.80	4.00	12.00	21.00
88.00	1.00	4.00	3.80	1.40	1.40	1.40	6.40	3.60	6.90	4.33	38.00	32.00
0.00	!	2.60	4.80	1.40	2.00	3.00	6.00	!	!	!	!	!

83.00	1.00	4.60	2.00	1.00	1.00	4.00	6.80	6.60	7.00	2.67	20.00	29.00
15.00	3.00	3.60	!	4.80	1.00	2.60	5.00	5.70	6.90	2.22	17.00	11.00
45.00	1.00	3.40	5.00	3.60	1.00	4.00	7.00	6.10	7.00	4.22	28.00	15.00
68.00	1.00	6.00	!	1.40	1.00	2.40	6.80	6.40	6.40	3.00	40.00	27.00
31.00	1.00	2.00	3.00	1.00	1.00	2.60	5.20	4.40	3.90	7.00	24.00	29.00
10.00	3.00	5.40	4.80	4.40	1.80	5.00	6.20	5.40	6.10	1.44	14.00	14.00
0.00	3.00	2.00	2.60	1.60	1.60	2.60	6.60	3.00	6.30	1.00	48.00	53.00
64.00	2.00	7.00	6.40	6.80	6.60	7.00	6.80	6.50	7.00	5.22	17.00	26.00
42.00	2.00	1.60	2.80	2.60	2.80	5.00	6.80	6.50	6.00	2.78	23.00	19.00
24.00	2.00	4.00	3.00	1.20	1.60	3.80	5.80	5.70	6.90	2.22	26.00	28.00
42.00	2.00	4.40	4.60	1.80	1.00	3.20	4.80	5.70	7.00	4.67	19.00	36.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
15.00	2.00	4.40	4.40	2.80	1.60	3.20	5.20	4.10	4.20	2.11	17.00	10.00
45.00	1.00	6.00	3.00	1.00	1.60	3.60	6.60	6.40	5.20	7.00	19.00	27.00
195.00	2.00	6.00	4.40	1.00	1.20	1.60	6.80	6.80	7.00	3.33	12.00	29.00
70.00	1.00	3.00	2.00	1.00	1.00	2.80	5.80	4.90	6.00	6.11	11.00	27.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
46.00	1.00	3.80	2.00	1.00	1.00	1.60	6.80	4.30	6.50	4.44	21.00	15.00
65.00	2.00	3.80	4.20	3.20	2.20	3.00	4.20	4.30	4.10	4.67	10.00	10.00
0.00	3.00	3.00	2.80	1.00	1.00	1.00	5.80	6.90	3.70	1.11	15.00	36.00
40.00	2.00	5.40	4.20	2.00	1.00	4.40	4.80	5.00	5.00	5.00	23.00	25.00
23.00	3.00	4.20	3.60	1.80	1.00	3.20	3.60	3.90	5.50	3.44	14.00	27.00
15.00	3.00	5.80	4.20	4.20	1.00	3.40	5.60	5.70	4.80	2.11	29.00	29.00
390.00	2.00	3.20	1.60	1.40	1.00	3.00	6.60	3.50	7.00	1.00	19.00	19.00
51.00	1.00	7.00	1.80	1.00	1.00	2.80	7.00	5.90	7.00	6.00	16.00	17.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
63.00	2.00	3.40	2.80	1.80	1.00	3.40	6.00	3.50	5.80	4.00	14.00	29.00
9.00	3.00	4.20	2.80	3.00	2.80	3.40	3.40	2.80	3.10	3.33	10.00	12.00
42.00	2.00	5.00	3.60	2.40	1.20	2.40	6.20	5.70	6.10	5.56	38.00	25.00
21.00	2.00	5.80	6.20	1.00	1.00	1.00	7.00	3.20	6.90	4.56	16.00	40.00
31.00	2.00	5.00	3.60	4.00	2.20	1.00	7.00	6.90	5.60	1.67	13.00	21.00
53.00	1.00	3.20	3.60	1.00	1.20	3.00	3.40	6.40	5.10	4.56	18.00	27.00
87.00	1.00	5.60	5.80	4.60	4.60	5.80	5.40	7.00	7.00	7.00	43.00	32.00
0.00	2.00	6.20	2.80	1.00	1.00	1.80	4.80	5.40	5.50	2.89	11.00	25.00
43.00	2.00	2.60	2.40	1.40	1.00	3.80	5.80	4.50	5.20	4.44	27.00	30.00
40.00	2.00	4.60	5.20	1.60	1.20	2.40	5.20	3.80	4.80	2.67	17.00	27.00
21.00	2.00	5.20	6.00	2.00	1.00	1.20	6.40	3.90	6.90	4.78	19.00	40.00
33.00	3.00	4.80	2.60	1.20	1.20	2.80	6.40	5.40	7.00	4.00	10.00	26.00
61.00	2.00	3.00	3.00	1.40	1.00	4.80	5.80	4.30	5.10	4.44	25.00	36.00
56.00	2.00	3.40	5.40	3.40	1.80	2.80	6.80	5.50	6.70	3.33	38.00	37.00
79.00	2.00	2.00	2.40	1.00	1.00	1.00	7.00	6.10	7.00	6.22	32.00	34.00
51.00	1.00	6.20	5.40	3.40	1.20	1.60	4.40	6.30	6.70	4.67	22.00	30.00
170.00	2.00	6.40	2.20	2.00	1.00	1.80	7.00	5.90	7.00	6.67	32.00	30.00
27.00	3.00	3.00	3.40	3.40	1.00	2.60	6.60	5.30	5.90	4.00	22.00	21.00
34.00	2.00	5.00	3.40	2.00	1.00	3.20	6.00	2.50	2.50	2.78	30.00	31.00
165.00	2.00	4.60	3.40	1.00	1.00	3.40	4.60	6.40	7.00	3.00	10.00	16.00

26.00	3.00	4.80	5.00	1.00	1.00	2.20	5.00	4.00	2.90	1.22	14.00	15.00
56.00	2.00	4.80	5.40	1.00	1.00	1.80	4.60	4.20	4.90	3.67	15.00	21.00
16.00	2.00	5.60	5.80	3.60	1.40	2.00	6.20	5.60	5.70	3.22	15.00	22.00
19.00	2.00	4.80	1.80	1.00	!	2.60	5.60	5.70	7.00	4.33	37.00	20.00
22.00	2.00	2.80	3.60	3.20	1.80	4.40	5.60	4.20	4.20	5.56	30.00	28.00
37.00	2.00	!	2.40	1.80	1.00	3.60	5.60	4.80	5.20	4.44	23.00	31.00
84.00	1.00	3.00	2.80	1.80	1.00	!	5.80	4.30	5.10	5.11	26.00	29.00
28.00	2.00	3.00	4.80	3.60	1.00	5.20	5.60	4.90	6.70	4.00	18.00	30.00
83.00	1.00	4.20	5.80	2.20	1.00	4.80	7.00	4.50	6.00	2.44	24.00	19.00
26.00	3.00	!	5.80	1.80	1.00	2.40	5.00	6.10	6.40	4.56	11.00	11.00
58.00	2.00	1.40	3.20	1.00	1.00	1.00	1.80	6.70	7.00	3.11	10.00	10.00
61.00	2.00	3.20	1.00	1.00	1.00	2.00	7.00	7.00	7.00	7.00	46.00	41.00
85.00	2.00	4.20	1.40	1.60	1.20	1.80	6.20	7.00	6.80	7.00	27.00	20.00
41.00	2.00	!	3.00	3.20	1.80	2.60	5.80	4.60	6.00	1.11	14.00	15.00
19.00	2.00	!	3.20	1.20	!	1.60	5.40	5.50	6.20	3.67	42.00	20.00
53.00	2.00	2.80	3.20	1.00	1.00	2.60	5.60	6.00	4.90	3.00	22.00	32.00
65.00	2.00	3.00	!	2.60	1.20	2.80	6.40	4.50	5.40	3.11	10.00	24.00
58.00	1.00	3.80	3.80	1.20	2.20	4.00	5.20	4.30	5.00	4.00	20.00	29.00
39.00	1.00	3.80	3.20	1.00	1.40	4.80	6.80	6.60	7.00	6.00	34.00	34.00
30.00	2.00	4.20	1.40	1.00	1.20	2.80	4.00	4.70	5.90	4.22	48.00	57.00
9.00	2.00	1.60	3.40	1.20	1.80	1.00	4.80	4.60	5.90	1.11	21.00	26.00
71.00	1.00	3.20	2.60	1.80	1.60	2.20	5.20	6.00	5.40	5.56	11.00	43.00
36.00	2.00	2.40	2.80	1.00	!	2.40	4.40	5.40	5.10	1.44	11.00	21.00
0.00	3.00	1.00	3.00	1.40	1.80	2.80	4.00	4.30	7.00	1.00	10.00	10.00
70.00	1.00	3.40	1.00	1.00	1.00	1.00	6.80	6.20	6.20	3.67	34.00	10.00
82.00	2.00	5.20	1.20	1.00	1.00	1.00	4.60	5.90	5.50	6.22	18.00	21.00
15.00	2.00	6.00	2.00	1.20	1.00	1.80	6.40	4.80	5.00	4.11	22.00	15.00
34.00	3.00	6.00	2.00	1.00	1.00	2.60	5.60	7.00	7.00	2.00	36.00	36.00
42.00	1.00	2.20	3.60	1.00	2.20	3.80	4.20	3.10	3.10	4.44	19.00	41.00
28.00	1.00	1.40	2.20	1.80	2.00	1.80	1.40	2.70	2.80	4.67	42.00	46.00
85.00	1.00	3.40	2.40	2.40	2.60	3.00	5.40	4.00	4.00	4.44	22.00	24.00
39.00	2.00	2.40	5.00	2.00	2.20	4.00	6.20	5.50	6.10	3.56	27.00	32.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
51.00	2.00	3.80	5.60	1.80	1.20	3.40	7.00	1.80	6.80	6.89	10.00	12.00
9.00	3.00	5.20	4.00	3.00	1.60	4.60	6.20	4.40	6.60	3.33	12.00	24.00
16.00	3.00	4.80	2.60	2.00	2.80	3.40	5.80	2.40	7.00	3.78	18.00	21.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
79.00	1.00	3.40	3.40	1.20	1.00	4.20	5.60	3.90	4.50	4.78	27.00	32.00
55.00	3.00	5.40	5.80	2.20	1.20	3.80	5.00	5.50	7.00	1.67	14.00	12.00
79.00	1.00	3.00	3.20	1.40	1.00	4.20	5.80	4.00	4.60	4.56	27.00	36.00
33.00	2.00	2.40	6.20	2.00	1.00	4.40	5.80	3.70	6.50	3.44	18.00	21.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
83.00	1.00	2.20	4.60	2.00	1.00	4.80	6.80	3.70	5.10	5.89	10.00	23.00
58.00	3.00	5.60	5.20	2.00	2.20	5.00	6.60	5.80	5.20	2.33	29.00	23.00
40.00	1.00	6.00	7.00	3.40	1.60	4.80	5.20	5.70	6.40	4.44	10.00	13.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!

46.00	1.00	3.00	5.80	4.00	2.40	3.20	4.80	4.70	4.60	6.00	39.00	11.00
68.00	2.00	5.60	4.40	1.00	1.20	1.80	6.00	6.40	6.60	4.11	10.00	20.00
81.00	1.00	!	!	!	!	!	!	4.60	3.60	5.56	26.00	27.00
22.00	2.00	2.60	3.20	2.40	1.00	3.00	7.00	6.30	6.10	2.89	26.00	25.00
56.00	1.00	1.40	2.40	1.80	2.00	2.20	2.00	1.00	1.00	1.00	20.00	14.00
0.00	!	5.60	3.60	1.00	!	6.00	5.60	!	!	!	!	!
61.00	3.00	2.80	2.00	1.00	1.00	5.20	5.40	4.30	4.90	3.89	26.00	30.00
40.00	2.00	6.00	4.00	1.00	1.00	1.00	6.40	6.00	6.10	5.78	16.00	27.00
70.00	1.00	3.80	3.20	1.00	1.00	4.40	5.40	4.00	5.00	5.22	32.00	46.00
19.00	3.00	4.80	2.60	1.00	1.00	1.00	4.80	6.90	6.90	1.22	29.00	29.00
64.00	1.00	4.60	3.60	3.40	1.40	3.20	5.60	4.60	4.40	5.11	35.00	39.00
675.00	1.00	5.80	!	1.00	1.00	1.80	4.20	4.60	4.80	6.11	34.00	39.00
119.00	1.00	6.20	3.40	3.40	1.00	1.80	7.00	7.00	6.70	6.67	21.00	42.00
76.00	1.00	6.20	3.60	1.20	1.00	1.20	6.60	5.90	6.80	7.00	42.00	47.00
87.00	2.00	3.40	2.00	1.00	1.00	2.00	5.40	5.30	5.80	5.56	36.00	35.00
101.00	1.00	5.00	3.00	1.80	1.60	3.40	6.60	4.50	6.00	6.00	30.00	48.00
119.00	1.00	5.00	5.80	4.20	1.00	2.00	6.00	5.00	4.80	6.00	28.00	39.00
73.00	2.00	4.80	2.60	1.20	1.00	2.20	5.80	5.60	7.00	5.22	13.00	26.00
25.00	3.00	2.20	4.80	2.20	1.60	4.20	5.80	3.30	6.70	1.44	10.00	31.00
13.00	2.00	4.60	4.60	4.40	1.00	!	4.20	4.90	6.80	1.44	25.00	10.00
31.00	2.00	3.20	5.00	2.80	1.20	4.40	7.00	5.50	5.60	5.89	16.00	39.00
38.00	3.00	3.40	4.00	3.80	1.00	1.20	6.00	4.80	5.30	3.33	19.00	24.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
83.00	2.00	4.40	3.20	1.20	1.20	3.80	5.60	5.00	5.70	5.33	29.00	29.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
35.00	3.00	4.20	5.80	1.00	1.00	3.80	6.00	4.50	5.10	3.89	23.00	23.00
55.00	1.00	4.00	1.00	1.00	2.80	2.60	5.40	5.30	6.50	4.00	37.00	38.00
46.00	2.00	3.80	6.00	1.60	2.00	3.40	5.20	5.20	5.40	3.78	16.00	18.00
83.00	1.00	6.80	4.60	1.00	1.00	2.00	6.60	5.70	7.00	3.33	20.00	19.00
78.00	2.00	2.60	1.40	1.00	2.00	2.40	6.60	6.30	5.80	3.44	36.00	38.00
83.00	2.00	4.40	3.20	2.00	1.20	4.00	5.20	3.90	5.20	5.22	30.00	37.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
0.00	!	6.20	2.20	4.20	1.40	6.20	5.60	1.10	1.30	!	!	!
43.00	2.00	5.40	2.40	1.00	2.20	3.60	6.40	7.00	7.00	4.00	25.00	39.00
53.00	1.00	1.20	4.80	1.00	1.00	2.20	7.00	5.80	7.00	6.33	31.00	34.00
58.00	1.00	4.00	1.20	1.00	1.00	2.20	6.60	7.00	7.00	6.44	52.00	49.00
15.00	3.00	4.40	4.60	1.20	2.00	!	6.20	4.00	7.00	1.33	56.00	49.00
73.00	1.00	6.00	2.20	1.00	2.20	1.60	5.60	5.80	6.30	2.78	25.00	47.00
9.00	2.00	5.60	5.60	!	1.00	2.00	5.20	5.60	6.80	3.22	20.00	19.00
110.00	1.00	7.00	7.00	1.00	1.00	1.00	7.00	3.50	6.70	4.33	44.00	48.00
204.00	3.00	6.80	4.80	1.80	1.00	1.80	6.40	3.40	7.00	3.22	20.00	31.00
40.00	3.00	5.00	4.60	1.00	1.00	4.00	5.60	2.30	5.80	2.00	56.00	38.00
18.00	2.00	3.20	5.00	1.40	1.00	3.40	6.60	3.10	6.00	2.33	12.00	11.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
0.00	!	!	!	!	!	!	!	!	!	!	!	!
535.00	1.00	1.40	1.60	2.00	1.20	2.00	6.60	6.50	6.80	5.89	25.00	29.00

15.00	2.00	2.40	3.60	1.00	1.00	2.20	3.80	5.70	6.10	1.11	14.00	21.00
0.00	3.00	1.00	5.80	1.00	2.20	6.00	5.20	4.10	7.00	1.22	10.00	34.00
10.00	2.00	3.20	3.20	1.80	1.80	3.40	4.80	3.50	6.80	3.11	17.00	29.00
81.00	1.00	6.00	3.40	1.00	1.00	3.20	7.00	6.10	6.20	7.00	13.00	38.00
25.00	2.00	4.40	3.00	1.40	1.00	1.60	6.20	3.10	5.60	5.22	14.00	34.00
40.00	3.00	5.00	2.20	1.00	1.00	1.40	6.40	3.00	7.00	2.00	28.00	22.00
58.00	2.00	4.40	4.60	1.00	2.40	4.80	6.00	6.50	6.90	3.44	11.00	30.00
60.00	1.00	5.80	5.40	1.20	1.00	1.80	6.80	2.80	6.90	3.11	17.00	23.00
0.00	!	!	!	!	!	!	!	!	!	!	!	!
32.00	2.00	3.60	2.00	2.00	2.20	2.20	!	3.50	5.40	1.00	17.00	21.00
59.00	1.00	5.60	2.20	1.00	1.00	2.40	7.00	5.40	6.90	4.56	21.00	32.00

APPENDIX E
RAW DATA-STUDY TWO

<i>Descriptive Info</i>							
	Race	Age	Marital Status	What is your highest level of education?	Income	Time In	Social Support
Jocelyn	african American	22-34	Single	Some College	\$20,001 - \$40,000	less than 6 months	A little
Mary	African american	35-44	Married	Bachelor's Degree	more than \$80,001	less than 6 months	Some
Liz	African American	45-54	Married	Some College	\$60,001 - \$80,000	6 months - 1 year	Some
Rachel	African American	45-54	Divorced	Some College	\$40,001 - \$60,000	6 months - 1 year	Neutral
Brenda	African american	35-44	Married	Bachelor's Degree	\$20,001 - \$40,000	1 year - 1 1/2 years	Very much
Gail	Black	55-64	Single	Bachelor's Degree	\$20,001 - \$40,000	less than 6 months	Very much
Tameka	Black	35-44	Married	Master's Degree	more than \$80,001	6 months - 1 year	A little
Diedra	Black	35-44	Married	Master's Degree	more than \$80,001	1 year - 1 1/2 years	Neutral
Crystal	Black	35-44	Single	Bachelor's Degree	\$40,001 - \$60,000	1 year - 1 1/2 years	Very much
Jackie	African American	35-44	Married	Bachelor's Degree	\$60,001 - \$80,000	1 year - 1 1/2 years	Very much
Tanya	Black	22-34	Single	Master's Degree	\$40,001 - \$60,000	1 year - 1 1/2 years	A little

6 AA	2@22-34	3 single	3 some college	2@\$20-\$40K	2 less than 6mos	3 A little
4 Black	6@35-44	6 married	4 bachelor's	3@\$40-\$60K	3 6mos-1yr	2 Some
	2@45-54	1 divorced	3 master's	2@\$60-\$80K	5 1yr-1.5yrs	2 Neutral
				3@\$80K+		3 Very much

Physical Activity Info					
	Prior Participation	Type of Prior	Prior Levels of PA	Time In	Social Support
Jocelyn	No	Exercise Hobbies	MS, HS	less than 6 months	A little
Mary	No		MS, HS College	less than 6 months	Some
Liz	Yes		HS	6 months - 1 year	Some
Rachel	Yes		MS, HS	6 months - 1 year	Neutral
Brenda	No		HS	1 year - 1 1/2 years	Very much
Gail	No	Exercise	HS	less than 6 months	Very much
Tameka	Yes		MS, HS, College PC	6 months - 1 year	A little
Diedra	Yes		MS, HS, College PC	1 year - 1 1/2 years	Neutral
Crystal	Yes		PC	1 year - 1 1/2 years	Very much
Jackie	No		HS, College, PC	1 year - 1 1/2 years	Very much
Tanya	Yes	Exercise & Sports	HS, College, PC	1 year - 1 1/2 years	A little

4 no	1 post college	3 A little
6 yes	2 HS, College, Post	2 Some
	2 MS, HS, College, Post	2 Neutral
	1 MS, HS	3 Very much

<i>Identity Salience</i>			
	Gender- Role	Racial Identity	Exercise Identity
Jocelyn	Neutral	Least important	Most important
Mary	Neutral	Most important	Least important
Liz	Most important	Most important	Most important
Rachel	Most important	Neutral	Least important
Brenda	Most important	Least important	Most important
Gail	Least important	Least important	Most important
Tameka	Neutral	Most important	Most important
Diedra	Neutral	Neutral	Most important
Crystal	Least important	Least important	Most important
Jackie	Most important	Neutral	Most important
Tanya	Neutral	Neutral	Most important

5 neutral
4 most
1 least

4 neutral
3 most
3 least

8 most
2 least
0 neutral

APPENDIX F IRB APPROVAL

Application for Exemption from Institutional Oversight

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/ projects using living humans as subjects, or samples, or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.

LSU

Institutional Review Board
Dr. Robert Mathews, Chair
131 David Boyd Hall
Baton Rouge, LA 70803
P: 225-578-8692
F: 225-578-5983
irb@lsu.edu
lsu.edu/irb

— Applicant, Please fill out the application in its entirety and include the completed application as well as parts A-F, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB Office or to a member of the Human Subjects Screening Committee. Members of this committee can be found at <http://research.lsu.edu/CompliancePolicies/Procedures/InstitutionalReviewBoard/2014IRB%20Item24737.html>

— A Complete Application Includes All of the Following:

- (A) Two copies of this completed form and two copies of parts B thru F.
- (B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1&2)
- (C) Copies of all instruments to be used.
*If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
- (D) The consent form that you will use in the study (see part 3 for more information.)
- (E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB. Training link: (<http://phip.nih.gov/training.com/users/login.php>)
- (F) IRB Security of Data Agreement: (<http://research.lsu.edu/files/Item26774.pdf>)

1) Principal Investigator: Jasmine M. Hamilton, M.A. Rank: Doctoral Candidate
Dept: Kinesiology Ph: 337-315-7014 E-mail: jham123@tigers.lsu.edu

2) Co Investigator(s): please include department, rank, phone and e-mail for each
*If student, please identify and name supervising professor in this space

Melinda Solomon, Ph.D.
Roy Paul Daniels Professorship - Director
School of Kinesiology
Phone: 225-578-2913
E-mail: msolmo1@lsu.edu

IRB # E7076 LSU Proposal #

- ☒ Complete Application
- ☒ Human Subjects Training

3) Project Title: Identity Intersectionality of African American Female Physical Activity Participation

Study Exempted By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
225-578-8692 | www.lsu.edu/irb
Exemption Expires: 10/14/2015

4) Proposal? (yes or no) ☒ No If Yes, LSU Proposal Number

Also, if YES, either
☐ This application completely matches the scope of work in the grant
OR
☐ More IRB Applications will be filed later

5) Subject pool (e.g. Psychology students)

African American females >18 years of age

*Circle any "vulnerable populations" to be used: (children <18; the mentally impaired, pregnant women, the aged, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature [Signature] Date 9 Oct 12 (no per signatures)

** I certify my responses are accurate and complete. If the project scope or design is later changes, I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

Screening Committee Action: Exempted ☒ Not Exempted ☐ Category/Paragraph 2a

Signed Consent Waived?: Yes ☐ No ☒

Reviewer [Signature] Signature [Signature] Date 10/15/12

Study Title: The Impact of Identity Intersectionality on African American Female Physical Activity Participation

Performance site: Online

Investigators: The following investigators are available for questions about this study, M-F, 8:00 am – 4:30 pm
Phone: 225.578.2913
Email: Jasmine Hamilton, M.A. jhami23@tigers.lsu.edu Melinda Solmon, Ph.D. msolmo1@lsu.edu

Purpose of the study: The purpose of this research is to investigate the associations between identity and physical activity.

Subject Inclusion: You must be an African American female at least 18 years of age and currently enrolled as a student at a college or university.

Number of Subjects: Approximately 480

Study Procedures: You will complete a survey, which will cover topics including racial identity, gender-role identity, exercise identity, social support, and physical activity. The survey should take about 20 minutes to complete.

Benefits: This study may yield valuable information about the influence of identity on physical activity participation.

Risks: There are no established risks related to taking surveys. All information regarding the study is kept confidential. Participants will be assigned numbers to ensure anonymity.

Right to Refuse: You may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which you might otherwise be entitled.

Privacy: Results of the study may be published, but no identifying information will be included in the publication. Your identity will remain confidential unless law requires disclosure. We will NOT know your IP address when you respond to the internet survey.

Financial

Information: There will be no compensation for participating in this study.

By submitting the survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty. Any further questions can be forwarded to Robert C. Mathews, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb.

Study Exempted By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
225-578-8692 | www.lsu.edu/irb
Exemption Expires: 10/14/2025

Study Exempted By:

Dr. Robert C. Mathews, Chairman

Institutional Review Board

Louisiana State University

103 B-1 David Boyd Hall

(225) 578-8692 | www.lsu.edu/irb

Exemption Expires: 10/1/2015
Study Title: The Impact of Identity Intersectionality on African American Female Physical Activity Participation

Performance site: In-person

Investigators: The following investigators are available for questions about this study, M-F, 8:00 am – 4:30 pm Phone: 225.578.2913

Email: Jasmine Hamilton, M.A. jhami23@tigers.lsu.edu Melinda Solomon, Ph.D. msolmo1@lsu.edu

Purpose of the study: The purpose of this research is to investigate the associations between identity and physical activity.

Subject Inclusion: You must be an African American female at least 18 years of age and a member of a running group.

Number of Subjects: Approximately 30

Study Procedures: You will complete a demographic questionnaire. Then participate in a focus group interview session, which will cover topics including racial identity, gender-role identity, exercise identity, social support, and physical activity. The process should take about 45 minutes to complete.

Benefits: This study may yield valuable information about the influence of identity on physical activity participation.

Risks: There are no established risks related to interviews. All information regarding the study is kept confidential. Each participant will be assigned pseudo names to ensure anonymity.

Right to Refuse: You may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

Privacy: Results of the study may be published, but no identifying information will be included in the publication. Your identity will remain confidential unless law requires disclosure.

Financial

Information: There will be no compensation for participating in this study.

I acknowledge that I have read this information and agree to participate in this research, with the knowledge that I am free to withdraw participation at any time without penalty. Any further questions can be forwarded to Robert C. Mathews, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb.

Signature: _____ Date: _____

MEMORANDUM**The University of Louisiana at Lafayette****IRB 00001474****Institutional Review Board****FWA00000758**

to: Ms Jasmine M. Hamilton (KNES)
from: Nicole Müller, DPhil, Professor, IRB Chair
re: Approval of Proposal (FA12-45 LSU / KNES) "The Impact of Identity Intersectionality on African American Female Physical Activity Participation"
date: December 7th, 2012

Your application for IRB review of the study at the Level of: XX exempt has been approved by the U.L. Lafayette Institutional Review Board.

Congratulations, you may begin collecting data.

Yearly reviews of IRB Status are not done for Exempt proposals. If, however, there are any changes in your data collection procedures, treatments, or subject population, please inform the IRB Chair in writing since substantive changes in the project will need to be reviewed. (Form accompanies this approval)

If there is any type of injury to any participant of this research you must notify the IRB within 24 hours. Failure to inform the IRB of injury to participants is grounds for suspension of the research.

When your project is complete, please contact the IRB chair to document the completion of the study using the enclosed form.

We wish you well with your project. If you have any questions about revisions and the need for re-review, please call me at 482-6489, or e-mail me at nmueller@louisiana.edu .

**from the desk of:
Nicole Müller, DPhil
Professor, Communicative Disorders
University of Louisiana at Lafayette
P.O. Box 43170
Lafayette, LA 70504-43170
(337) 482-6489 email: nmueller@louisiana.edu**

THE VITA

Jasmine M. Hamilton, a native of Lafayette, Louisiana, was an inaugural recipient of the Bill Gates Millennium Scholarship. While attending Xavier University of Louisiana, Jasmine was the captain of the Golden Girls' Pom Pom Dance Team and a member of Tulane University's Shockwave Dance Team. She was also an active member in the Gamma Alpha Chapter of Delta Sigma Theta Sorority, Inc. She received her Bachelor's of Science degree in Biology from Xavier University of Louisiana in 2004. Thereafter, Jasmine matriculated at Sam Houston State University. While pursuing her graduate degree, she taught high school science and coached track and field in Huntsville, Texas. Jasmine received her Master's of Arts degree in Kinesiology in August 2006. She then continued to enjoy coaching (track and field, basketball) and teaching (high school science) in Sugar Land, Texas. After surrendering to the desire to obtain her doctorate, Jasmine made the decision to attend the School of Kinesiology at Louisiana State University. She will receive her doctorate in August 2013 and plans to pursue employment in academia.