THE RELATIONSHIP OF PERSONAL AND ENVIRONMENTAL FACTORS AND PHYSICAL ACTIVITY IN PARENTS OF YOUNG AFRICAN AMERICAN CHILDREN

by

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SIGNED: Kashica J. Webber-Ritchey
ACKNOWLEDGEMENTS

This truly has been a journey that has changed me as a person. I can fully comprehend what tenacity means and where it can take you. I would like to give honor and praise to God and his son, Jesus Christ, who strengthen me. This strength has provided me with the courage to overcome all hurdles. I am most of all thankful to God for putting family and friends in my life to keep me encouraged. Although there were some trials and unexpected turns along this path, the Lord has blessed me with my husband, Barton Ritchey and endless love from my daughter, Marley Ritchey, which has motivated me to do my best. I am forever grateful to my mother for sharing her wisdom and understanding with me to continue to walk by faith and persist on no matter what.

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ABSTRACT

Regular physical activity engagement is associated with decreased risk of obesity; however, interventions to increase physical activity targeting African Americans have not been effective in achieving increased physical activity participation. The purpose of this cross-sectional study was to describe self-reported physical activity in parents of young (ages 6-12 years) African American children, personal and environmental factors related to these parents’ physical activity, and parents’ perceptions of the outcomes of their own physical activity behaviors. The Social Cognitive Theory provided the theoretical framework for this study. A convenience sample of 130 African American parents of young children were recruited from community sites and a local organization. Of those, 127 (87 females, 40 males) completed the online study survey. Following data cleaning according to the International Physical Activity Questionnaire (IPAQ) scoring protocol, 96 subjects were included in the analyses for this study. Subjects completed an IPAQ-short form (IPAQ-S), Knowledge of Physical Activity Guidelines Questionnaire, Multidimensional Self-Efficacy for Exercise Scale (MSES), Multidimensional Outcome Expectations for Exercise Scale (MOEES), the MacArthur Subjective Social Status (SSS) Scale, Physical Activity Neighborhood Environmental Scale (PANES), and African American Acculturation Scale-Revised (AAAS-R)-Preference for African American Things subscale.

The majority of parents/caregivers were female (59 %) under the age of 45 (91%) residing in South Side, Chicago. Over 20% had more than one child ages 6-12 years in their household with reported incomes more than $75,000 annually (60%).
The correlations using Spearman’s rho correlation coefficient between the variables of knowledge, physical environment, and physical activity were moderate to weak. There was a moderate negative agreement found between knowledge and physical activity. Knowledge was significantly related to parents/caregivers’ levels of activity (METs/week), $r_\varsigma =-.30$, $p<.05$. There was a weak positive association found between physical environment and physical activity. Physical environment was significantly related to parents/caregivers’ level of activity (METs/week), $r_\varsigma =.25$, $p<.05$.

Predictors of physical activity participation in this population were perceived self-efficacy and physical environment. Almost 33% of variance in physical activity levels were explained by perceived self-efficacy $b=0.12$, $SE b=0.05$, $\beta=.21$, $t(84)=2.20$, $p=.030$; physical environment $b=0.73$, $SE b=0.21$, $\beta=.33$, $t(84)=3.56$, $p=.001$; and a significant inverse relation with knowledge $b=-2.26$, $SE b=0.94$, $\beta=-.25$, $t(84)=-2.42$, $p=.018$. Findings indicate the strength of self-confidence and physical environment in influencing physical activity behavior. Findings support the need for more research in identifying predictors of physical activity participation among African American parents of young children.
Chapter 1: BACKGROUND AND SIGNIFICANCE

This chapter will describe physical activity among African Americans and discuss its relationship to obesity risk. In this chapter, physical activity concerning healthy weight management, the potential for parents’ engagement in physical activity as an influence on their young African American children, the purpose of research, research aims, and significance of the research will be described. The conceptual framework of social cognitive theory (SCT) to explain parents’ physical activity through its constructs of knowledge, perceived behavioral self-efficacy, outcome expectations, and environment would be presented.

Background

Obesity in African American Adults

Physical activity engagement aids in decreasing the risk of obesity among African American adults (Berry et al., 2009; Li et al., 2012). Despite the potential benefit of physical activity in reducing obesity, African Americans are not physically active (Li et al., 2012). Over 72 million U.S. adults are obese (Centers for Disease and Prevention, 2010a). Overweight and obesity attribute to high medical costs causing a significant economic impact on the U.S. health care system (Payas, Budd, & Polansky, 2010). In 2003, obesity-related medical expenses within the U.S. reached $75 billion (Sealy, 2010). Obesity and its associated health problems have a significant economic impact on the U.S. health care system. In 2008, medical care costs of obesity were approximately $147 billion within the U.S. (Centers for Disease and Prevention, 2010b).

Obesity is defined as abnormal or excessive fat accumulation (World Heath Organization, 2013). For adults, obesity ranges are determined by "body mass index" (BMI), which is a
number using one’s weight and height. BMI correlates with an individual’s amount of body fat. Obesity in adults is defined as a BMI of 30 or higher (Centers for Disease and Prevention, 2010a). Obesity increases risk for coronary artery disease, hypertension, high cholesterol, and stroke (Dhoble & Odoms-Young, 2008). Several factors contribute to obesity. These include having at least one parent who is overweight or obese, lack of physical activity, unhealthy eating patterns resulting in excess calorie intake, or a combination of lack of physical activity and unhealthy eating patterns (U.S. Dept. of Health & Human Services, 2008). Socioeconomic status (SES) plays a role in obesity prevalence among African American women. For example, African American women with lower income and lack of a college degree are more likely to be obese (Ogden, Lamb, Carroll, & Flegal, 2010).

Obesity is a major public health problem that affects all races. However, obesity affects some races more than others. Obesity rates in African Americans are higher when compared to Mexican Americans, all Hispanics, and non-Hispanic whites. Table 1 depicts the disproportionate rates of African Americans affected by obesity, with the prevalence of obesity being greater among African Americans when compared to whites (Flegal, Carroll, Kit, & Ogden, 2012). In 2011, African Americans were 1.5 times as likely to be obese as non-Hispanic whites (U.S. Dept. of Health & Human Services, 2013.).
Table 1. Adult Obesity Prevalence Rates

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Prevalence of Obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Americans</td>
<td>49.6%</td>
</tr>
<tr>
<td>Mexican Americans</td>
<td>39.6%</td>
</tr>
<tr>
<td>All Hispanics</td>
<td>37.9%</td>
</tr>
<tr>
<td>Non-Hispanic Whites</td>
<td>34.9%</td>
</tr>
</tbody>
</table>

*Note.* Based on information retrieved from Flegal, Carroll, Kit, & Ogden, 2012.

The prevalence of obesity is higher in African American women than in African American men providing evidence for gender disparity (Robinson, Gordon-Larsen, Kaufman, Suchindran, & Stevens 2009). One in 10 middle-aged black women is reportedly morbidly obese (Walker-Sterling, 2005). Table 2 depicts gender disparity in obesity prevalence among African Americans when compared to non-Hispanic whites.

Table 2. Gender Disparity in Obesity in African Americans

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Gender</th>
<th>Prevalence of Obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Americans</td>
<td>Female</td>
<td>49%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>27.9%</td>
</tr>
<tr>
<td>Non-Hispanic Whites</td>
<td>Female</td>
<td>30.7%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>28.2%</td>
</tr>
</tbody>
</table>

*Note.* Based on information retrieved from Robinson et al., 2009.

Obesity increases one’s risk of developing a chronic disease (e.g., diabetes, stroke, cerebrovascular diseases, arthritis, sleep disturbances, and some cancers). African Americans also develop chronic diseases earlier, these diseases are often more severe, and are more likely to
be fatal at an early age (Walker-Sterling, 2005).

Decreased physical activity is a major contributing factor for obesity (Carter-Parker, Edwards, & McCleary-Jones, 2012). Regular physical activity engagement reduces risk of obesity when added to any weight-loss strategy (Haskell et al., 2007). Physical inactivity and sedentary behaviors contribute to the growing rate of obese adults (Casagrande, Whitt-Glover, Lancaster, Odoms-Young, & Gary, 2009), and comprise the main risk factor for obesity among African American adults (Berry et al., 2009).

**Physical Activity for Maintaining Healthy Weight**

Physical activity is defined as any bodily movement produced by skeletal muscles resulting in energy expenditure (Reiser & Schlenk, 2009). Physical activity comprises caloric expenditure per week in all exercise-related activities, caloric expenditures per week in moderate-intensity exercise related activities, frequency per week of all exercise-related activities, and frequency per week of all moderate-intensity exercise-related activities (Stewart, Mills, King, Haskell, Gillis, & Ritter, 2001). Energy expenditure is a well-known physiologic effect of physical activity. A metabolic equivalent (MET) is useful for describing the energy expenditure of a specific activity. A MET is defined as the ratio of the rate of energy expended during an activity to the rate of energy expended at rest. Physical activity guidelines suggest that adults achieve 500 to 1,000 MET-minutes per week (METs/week) or more; however, it is appropriate to express the guidelines in terms of minutes of moderate-intensity activity, and minutes of vigorous-intensity activity that are easier to understand (Office of Disease Prevention and Health Promotion, 2014).
Federal physical activity guidelines suggest that adults engage in at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate and vigorous intensity aerobic activity (U.S. Department of Health and Human Services, 2008). Despite these recommendations, more than 50% of adults and children do not engage in the recommended levels of physical activity (Berry, Turner, Biederman, & Flanagan, 2009). Davis (2007) discussed how physical activity consists of engaging in at least 60 minutes of moderate to vigorous physical activity (MVPA) daily. Engaging in MVPA daily offers the benefit of minimizing weight gain, which decreases one’s risk for obesity (Davis et al., 2007).

There are a number of factors contributing to lack of participation in physical activity or increased participation in physical activity. Barriers to parents’ physical activity include work schedules that contribute to a lack of energy and time to engage in physical activity (Gordon-Larsen et al., 2004), other time pressures, and preferences for sedentary activities (e.g., television viewing) (Burnet et al., 2007; Steffen, Dai, Fulton, & Labarthe, 2009). Motivation, energy, and knowledge regarding the recommended amount and type of physical activity, time, affordability, and neighborhood safety contribute to engaging in physical activity (Gordon-Larsen et al., 2004; Styles, Meier, Sutherland, & Campbell, 2007). Socio-economic status (e.g., education and income), self-efficacy, and environmental factors also influence physical activity engagement (Bopp et al., 2006; Affuso, Cox, Durant, & Allison, 2011).

Another reason for not participating in physical activity may be lack of knowledge of recommended guidelines. Barradas, Fulton, Blanick, & Hubman (2007) used a cross-sectional study design to explore parents’ knowledge of the American Academy of Pediatrics (AAP)
recommendations in limiting television (TV) viewing time. These authors found that parents’ knowledge of TV-viewing-limiting behaviors was not associated with TV viewing. However, they also stated that there was a need to further study the effect of parents’ knowledge about TV viewing and home environment in promoting healthy behaviors (e.g., physical activity engagement) (Barradas et al., 2007).

Physical activity is one the best predictors of successful long-term weight maintenance (Berry et al., 2009). As physical activity increases, the amount of weight loss increases. In fact, physical activity is essential in maximizing long-term weight loss and preventing weight regain (President’s Council on Fitness, Sports, & Nutrition, 2013). However, adults have decreased their physical activity and increased their sedentary behavior (e.g., TV viewing and playing video or computer games) over recent years (Berry et al., 2009). TV viewing is a highly prevalent sedentary activity in the United States. Americans watch approximately 4 hours of TV each day. In fact, TV viewing is the most time-consuming activity of Americans. African Americans spend longer amounts of time watching TV (Clark, 2005). Watching TV has been positively associated with excess body weight among both children and adults (Bennett et al., 2006). Parents are not knowledgeable about the recommended amount of daily physical activity participation and TV viewing that aids in reducing obesity risk (Olvera et al., 2010).

**Physical Activity in African Americans**

Physical activity levels are low among African American adults and children (Whitt-Glover & Kumanyika, 2009). African Americans are less likely than non-Hispanic whites to meet the recommended amounts of physical activity and more likely to spend greater time engaging in sedentary activities (Bopp et al., 2006; Baskin, Ahluwalia, & Resnicow, 2001; Ickes
Approximately 24.8% of African Americans are sedentary and approximately 38.9% of African Americans are not meeting the national recommendations for physical activity (Bopp et al., 2006). For example, the percentage of African Americans who engage in physical activity during leisure time is lower (48.8%) compared to whites (64.9%) (Ickes & Sharma, 2011).

African Americans participate in lower levels of physical activity (exercise or sport-related activities) leading to obesity among African Americans. However, African Americans tend to engage in more occupational physical activity (physical activity related to regular job duties, housework, and transportation) (Li, Torabi, Peng, Kay, & Kolbe, 2012). Studies of physical activity among African American women have increasingly examined the barriers to physical activity engagement such as financial limitations, lack of physical activity-related health education, lack of access to physical activity facilities, neighborhood safety issues, ascription to a larger ideal body image, and hair maintenance (e.g., ruining hairstyle as a result of sweating hair while engaging in physical activity) (Harley, Odoms-Young, Beard, Katz, & Heaney, 2009). Research is needed to explore the associations between physical environment, culture, and physical activity among African Americans (Harley et al., 2009; Li et al., 2012).

A systematic review addressing individual barriers and enabling factors of physical activity among African Americans summarized individual, social, and environmental barriers to physical activity among African American women and men ages 18-50 years (Siddiqi, Tiro, & Shuval, 2011). These authors found that individual barriers were lack of motivation and lack of knowledge. Social and environmental barriers were lack of childcare, family responsibilities, monetary costs associated with gym membership or purchasing physical activity equipment, long
work hours, hard manual labor, lack of access to parks and open space, neighborhood crime and violence, heavy traffic, and the presence of unleashed and dangerous dogs. The authors summarized the enabling factors of physical activity among African American adults. Positive overall health and mental health benefits associated with physical activity included stress reduction, physical activity that encourages being active for fun, personal enjoyment, weight loss, body shape maintenance, social support, presence of children in the household, and accessibility to parks and recreational facilities. The remaining gaps in knowledge regarding African Americans and physical activity engagement are understanding the factors associated with increasing physical activity to address the specific needs of the African American community (Siddiqi et al., 2011).

Lower socio-economic status (SES) attributes to the disparities in physical activity among African American women. However, gaps in physical activity persist among all income groups for African American women (Harley et al., 2009). Lower SES influences physical activity because it impacts geographic region of residence, family size, household income, and accessibility to recreational facilities and parks (Kumanyika, 2007). Lower SES creates barriers to participation in physical activity or exercise because it decreases exercise options (e.g. gym membership). Lower SES impacts neighborhood safety and accessibility to exercise or recreational facilities. As a result, walking and jogging or running as exercise options are less desirable because of concerns about crime in neighborhoods (Clark, 2005).

Culture plays a major role in shaping physical activity behavior among African Americans and preference for sedentary behavior (Harley et al., 2009; Kumanyika, 2007). Cultural value for TV watching predisposes sedentary behavior. Individuals with cultural values
emphasizing physical activity engagement as work possibly seek sedentary preferences (Kumanyika, 2007). However, investigation of the cultural factors related to physical activity participation is needed to encourage long-term integration of physical activity engagement (Harley et al., 2009).

In summary, physical activity participation is important in reducing obesity. Sedentary behaviors hinder adults from engaging in physical activity. A greater understanding of the factors influencing physical activity engagement in African Americans is needed. In particular, research is needed to explore the associations among personal factors, physical environment, culture, and physical activity among African Americans (Harley et al., 2009; Li et al., 2012).

**Why Study Physical Activity Levels of Parents of Young Children?**

Parents’ physical activity behaviors are important for their own health promotion and reducing risk of obesity. Parents’ behaviors are also likely an important influence on the physical activity behaviors and weight control of their young children. Physical activity behaviors are established early and are often modeled by family (Hudson, 2008, Odoms-Young & Fitzgibbon, 2008; Stevens, 2010). Parents who are able to adopt or implement changes to their own physical activity tend to have children with healthy weight (Dalton, Kitzmann, Burghen, Mallare, & Stender, 2010). Parents can demonstrate adequate physical activity by discouraging sedentary behaviors and being visibly engaged in physical activity (Lindsay et al., 2006). To accomplish this, parents must understand the importance of physical activity in reducing their own obesity to prevent childhood obesity and to provide their children with opportunities to engage in physical activity (Lindsay et al., 2006; Wright, Wilson, Griffin, & Evans, 2010).
Little is known about parents’ expectations of the outcomes of their physical activity on their young African American children. This gap in knowledge is important to consider because African American children are at the highest risk of obesity compared to other racial groups. Table 3 depicts obesity prevalence among African Americans children ages 6-11 years when compared to non-Hispanic white children. African American children ages 6 years and older are 1.3 times as likely to be overweight or at risk for being overweight compared to non-Hispanic white children (Skelton, Busey, & Havens, 2006; Glover, 2011). Childhood obesity is a major concern among African Americans because being overweight as a child tends to continue throughout the life span, and ultimately contributes to adulthood obesity (Odoms-Young & Fitzgibbon, 2008). Obese African American children face increased risk of developing chronic diseases during adulthood. African Americans are 2.2 times more likely to die of diabetes when compared to non-Hispanic whites. African Americans are 30% more likely to die from heart disease when compared to non-Hispanic whites (Ickes & Sharma, 2011). Approximately 33% of African American children are diagnosed with Type 2 Diabetes when compared to non-Hispanic whites (6%) (Caprio et al., 2008). Physical activity behaviors of parents of young African American children merit further study because ultimately, these parents may be the key to modeling behaviors to their children and reducing the vicious cycle of obesity in African Americans. Learning more about factors associated with physical activity behaviors of parents is a first step in better understanding this phenomenon.

Table 3. Children (ages 6-11) Obesity Prevalence Rates

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Prevalence of Obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Americans</td>
<td>22%</td>
</tr>
</tbody>
</table>
Non-Hispanic Whites 17.1%

Note. Based on information retrieved from Ickes & Sharma (2011)

**Significance of Research**

There are insufficient studies that have established the associations of personal factors, environmental factors, and physical activity behavior. In determining this association, the relationship among parents’ personal and environmental, and self-reported physical activity ultimately can yield more effective interventions to reduce or prevent obesity.

A better understanding of physical activity among African Americans is warranted to design targeted and tailored interventions (Bopp et al., 2006). Minimum extant literature targets African American parents of children ages 6-12 years, personal and environmental factors, and physical activity behavior. Specific factors that influence parents’ physical activity and delineation of the strength of the associations with parents’ physical activity behavior must be examined. This research will contribute to further understanding parents’ physical activity behavior to provide a foundation for development of more culturally appropriate obesity interventions and successful family-based treatments that increase physical activity among African Americans (Barr-Anderson, Adams-Wynn, DiSantis, & Kumanyika, 2013).

Webber & Loescher (2013) concluded in a systematic review of studies on physical activity of parents of young African American children that there is a dearth of literature on this topic. More studies are needed that focus specifically on African American parents of children in this age group, rather than interpreting data based on African American parents as a subset of parents.
Research pinpointing the factors that influence or prohibit parents’ physical activity can aid nurses in helping parents increase physical activity. Nurses are well positioned to remedy deficient knowledge of physical activity by assessing parents’ attitudes, beliefs, and healthy physical activity behaviors. Adults should engage in at least 150 minutes a week of moderate-intensity, 75 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous intensity aerobic activity to meet physical activity guidelines (U.S. Department of Health and Human Services, 2008). Given the reported low levels of physical activity among African Americans, it is essential to identify and implement interventions aimed at increasing physical activity. Moreover, research findings can lead to innovative interventions aimed at increasing physical activity to reverse the rising trends of obesity among African Americans. Obesity is a major financial issue within the U.S. healthcare system. The reduction of the rising trends of obesity among African Americans can offer a solution (American Heart Association, 2010).

**Social Cognitive Theory Overview**

Albert Bandura developed Social Cognitive Theory (SCT) for application to health behavior. The five constructs of SCT are knowledge, perceived self-efficacy, outcome expectations, goal formation, and socio-structural factors in the context of health promotion. Bandura identified knowledge as a precondition for behavior change, perceived self-efficacy as perceived confidence and ability to adopt a particular health behavior, and outcome expectations as the individual’s anticipated positive outcomes that stem from engaging in a behavior (Bandura, 1998; Bandura, 2004). Content knowledge and procedural knowledge are two different types of knowledge. The definitions of the theory constructs and concepts, and the
corresponding definitions as proposed in this research are in Table 4. According to Bandura, knowledge, perceived self-efficacy, outcome expectancies, and socio-structural factors (facilitators and impediments) influence behavior.
Table 4. Definitions of Constructs, Concepts, and Corresponding Study Variables

<table>
<thead>
<tr>
<th>Constructs (Cs) and Concepts (Cc)</th>
<th>Theoretical Definitions</th>
<th>Conceptual Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Person</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge (Cs)</td>
<td>Knowledge is a precondition for behavior change (Bandura, 2004). Content knowledge (understanding of the advantages and disadvantages of engaging in a given health behavior) and procedural knowledge (understanding of the steps to engage in a given health behavior).</td>
<td>Parents’ content and procedural knowledge of recommended physical activity for health benefits.</td>
</tr>
<tr>
<td>• Content Knowledge</td>
<td>Beliefs in one’s capability to control challenging demands and own functioning. Required for the adoption and maintenance of health behavior. Self-efficacy beliefs underpin human motivation, well-being, and personal accomplishment (Bandura, 1998; Bandura, 2004).</td>
<td>Parents’ confidence in their ability to adopt and maintain physical activity, and overcome barriers to physical activity engagement.</td>
</tr>
<tr>
<td>• Procedural Knowledge</td>
<td>Anticipated positive outcomes and general beliefs related to engaging in a behavior. Three forms of outcome expectations are physical (refer to the anticipation of what will be experienced after behavior change—participation in physical activity takes place e.g., weight loss); social (anticipated social responses after behavior change), and self-evaluative (anticipation of experiences) (Bandura, 1998; Bandura, 2004).</td>
<td>Parents’ anticipated outcomes and beliefs to engaging in physical activity in the forms of physical (physical experiences), social (approval and disapproval from interpersonal relationships), and self-evaluative outcomes (self-worth and satisfaction).</td>
</tr>
<tr>
<td>Perceived self-efficacy (Cs)</td>
<td>Supporting (facilitators) and impeding factors (impediments) of a person’s environment (social, economic, policy, legal, or physical influence) that enable and limit a person’s ability to effectively engage in a goal-directed behavior (Bandura, 1997; Bandura, 2001). Social conditions, economic conditions, income, occupation status, and educational level influencing person and behavior (Bandura, 2001; Socioeconomic Status, n.d.). Physical surroundings influencing human behavior (Bandura, 1986; Bandura, 1997).</td>
<td>Environmental factors (SES, &amp; physical environment) that impede or support parents’ physical activity.</td>
</tr>
<tr>
<td>Environment</td>
<td>Values, beliefs and practices of a particular group influencing behavior (Boyington et al., 2008).</td>
<td>Values, beliefs, and practices; traditions and preferences of the dominant society.</td>
</tr>
<tr>
<td><strong>Behavior</strong></td>
<td>Any bodily movement produced by skeletal muscles resulting in energy expenditure (Reiser &amp; Schlenk, 2009).</td>
<td>Parents’ self-reported MVPA. TV viewing.</td>
</tr>
</tbody>
</table>
Bandura proposes that human behavior is a product of a dynamic interplay of personal, behavioral, and environmental influences, which is known as triadic reciprocal determinism (Bandura, 1986). Internal personal factors (cognitive, affective, and biological events), environment, and behavior interact and influence one another bi-directionally (Bandura, 2001). Reciprocal determinism (Figure 1) depicts environmental factors and personal factors and behavior in a constant reciprocal relationship, wherein one factor influences the other. Reciprocal determinism suggests that people have the ability to alter or construct environments to suit purposes they devise for themselves (Bandura, 1986).

Figure 1: Bandura’s Conception of Reciprocal Determinism (Bandura, 1986)

This investigator posits that SCT can guide the understanding of parents’ physical activity behavior through its focus on (1) knowledge (e.g., parents’ knowledge of physical
activity), (2) parents’ environment (sociostructural factors and culture), (3) parents’ perceived self-efficacy for physical activity engagement, (4) parents’ outcome expectations of physical activity, and (5) behavior (parents’ behavior—physical activity behavior). Using SCT as a foundation, this investigator proposes that parents’ knowledge, perceived self-efficacy (confidence), outcome expectations, and environment promoting physical activity are associated with parents’ physical activity. Parents with enhanced knowledge of physical activity, increased self-efficacy, environment that aids in promoting physical activity and positive outcome expectations will be able to engage in physical activity. Figure 2 depicts the reciprocal relationship of parents’ personal factors (knowledge, self-efficacy, and outcome expectations), environment, and parents’ behavior (physical activity behavior). SCT’s personal factors (knowledge, self-efficacy, and outcome expectations) and environmental factors (SES, physical environment, and culture) on physical activity behavior of African American parents of young children will be further explained in the literature review.
Purpose of Research and Study Aims

The purpose of this research was to describe self-reported physical activity in parents of young (ages 6-12 years) African American children, factors related to these parents’ physical activity, and parents’ perceptions of the outcomes of their own physical activity behaviors. The primary aims of the study were the following:

Aim 1: To describe self-reported physical activity behaviors in parents of young African American children.

Aim 2: To describe the association among personal factors (physical activity knowledge, task, scheduling, and coping self-efficacy, outcome expectations for exercise), environmental factors (socioeconomic status [SES], perceived physical environment, and
culture), TV viewing and self-reported physical activity of parents of young African American children.

Aim 3. Explore potential personal and environmental predictors of physical activity.

A secondary aim was to explore parents’ outcome expectations of their physical activity relevant to their children. Looking at outcome expectations is a first step to obtaining preliminary data that will inform future studies of parent-focused interventions for modeling physical activity to young children.

**Summary**

Obesity is steadily increasing especially among African Americans. Sedentary behavior and insufficient physical activity are responsible for a large proportion of the increasing rates of obesity among African Americans. It is essential to understand how to effectively increase physical activity to reduce or prevent obesity among African Americans. This study will identify the personal and environmental factors associated with physical activity behavior of African American parents/caregivers, which could guide the development of interventions aimed at increasing physical activity to prevent or reduce parents/caregivers’ risk for obesity. The increasing rates of obesity among African Americans also support investigation of the physical activity behavior of parents of young children who ultimately may be influenced by their parents. An enhanced understanding of the personal factors and environmental factors associated with parents’ physical activity behavior may provide a foundation for the development of interventions to increase their physical activity. The SCT provides the theoretical framework for this research. The main variables of interest—parents’ physical activity, knowledge, self-efficacy, outcome expectations, and environment (sociostructural factors and culture) pertaining
to parents’ physical activity were defined. The relationship among these main variables of interest that are associated with physical activity of parents of young African American children are unclear and require further study.
Chapter 2: Literature Review

This chapter describes the state of the science concerning physical activity engagement among African American parents of young children (ages 6-12 years). A synthesis of literature on parents’ personal factors (knowledge, perceived self-efficacy, and outcome expectations) and environmental factors (SES, culture, and physical environment) as they relate to parents’ physical activity is presented.

Literature Review

Literature Review Methods

To identify literature on physical activity among African American parents of young children (ages 6-12 years) and the main variables of interest, an online search was performed using PubMed, Ovid Medline, Web of Science, CINAHL, and PsycINFO databases. The keywords used were African Americans, blacks, physical activity, exercise, parents, knowledge, self-efficacy, culture, environment, socio-economic status (SES), and outcome expectations. The combinations of keywords were African Americans or blacks, parents or parent or mother or father, exercise or physical activity; African Americans or blacks, parents or parent or mother or father, exercise or physical activity and knowledge or health knowledge, attitudes, practice; African Americans or blacks, parents or parent or mother or father, exercise or physical activity, and outcome expectations or outcomes or parental expectations; African Americans or blacks, parents or parent or mother or father, exercise or physical activity, and socioeconomic status or socioeconomic factors or social class; African Americans or blacks, parents or parent or mother or father, exercise or physical activity, and environment or built environment or home environment; African Americans or blacks, parents or parent or mother or father, exercise or
physical activity, and culture. The limits placed on the search were research published from 2003 to 2013, which is a ten-year time frame to yield current research evidence (Kamienski, Carman, Wolf, Henderson, & Manton, 2013). A ten-year time frame can be used when time parameters yield very little current literature (Kamienski et al., 2013). A limit of parents of young children (ages 6-12 years) was placed on search to obtain literature on African American parents of young children. The search resulted in 1,238 references. Duplicates and research outside of the United States were removed. The literature search was further limited by reviewing article abstracts for main variables of interest among African American parents of children ages 6-12 years in which a total of fifteen articles were selected for support of main study variables.

**Literature Supporting the Main Study Variables**

**Physical activity.** The literature review yielded three studies of physical activity behavior in parents of young African American children. Each study had a different focus (i.e., TV watching, promotion of physical fitness activity, and relationships of physical activity behaviors with obesity). These studies used exploratory (qualitative and quantitative) and cross-sectional designs. Mâsse et al. (2012) used a cross-sectional design to explore TV watching and physical activity engagement among parents and their children ages 9-18 years (N=1,685; 59% African American). Olvera (2010) used a one-group pretest, posttest design to assess parent-daughter intervention in promoting selected physical fitness and activity (N=37 parent-child dyads, African American (N=10), mean age of child was 10.8 years). Polley, Spicier, Knight, & Hartley (2005) used an exploratory design to describe overweight African American three-generation families (42% African American) to examine relationships among the individual variables of BMI, TV viewing hours, and activity levels.
In a systematic review of these studies, Webber and Loescher (2013) summarized that parents and caregivers limit outdoor physical activities as a way to provide safe supervision of their children versus encouraging outdoor physical activities; parents are unaware about the recommended time for sedentary behavior (e.g., TV viewing); parents’ and grandparents’ physical activity and sedentary behavior (increased TV viewing) correlated with children’s physical activity behavior as major findings regarding parents’ physical activity among African American parents of children ages 6-12 years. Webber & Loescher (2013) concluded that the remaining limitations and gaps in current knowledge of physical activity were the need to study additional factors that influence parents to engage in physical activity. Such factors include motivation for physical activity, preference for inactivity, affordability as well as accessibility of culturally appropriate recreational programs for parents to serve as physical activity facilitators, parenting skills on physical activity practices, and parents’ confidence for facilitating physical activity engagement. Table 5 summarizes these gaps.

**Knowledge of physical activity.** Parents express strong interest in learning general skills related to healthy behavior supporting the importance of physical activity knowledge increasing physical activity engagement (Burnet et al., 2007). The literature search yielded one article pertaining to physical activity in parents of young African American children. In the qualitative study, Reinhardt-Kapsuk, Smith-Edge, White, Childs, & Geiger (2013) focused on family behaviors and barriers to physical activity (Phase I: N=8 families; 25% African Americans and Phase II: N=49 parents of children aged 2-17 years; 41% African Americans). The authors reported that parents’ perceived cost, time, accessibility, lack of motivation, and knowledge as perceived barriers to being physically active. These perceived barriers also influenced physical
activity-related decisions (Reinhardt-Kapsuk et al., 2013). Social desirability, generalizability of results only to further qualitative research, and videotaped focus group without transcription limiting use of qualitative software programs to verify threads of main findings were the limitations (Reinhardt-Kapsuk et al., 2013). Another gap in parents’ knowledge of physical activity was the need to establish causality between families’ knowledge of physical activity and being physically active (Reinhardt-Kapsuk et al., 2013).

**Perceived self-efficacy of physical activity.** In a systematic review of the literature on physical activity in African American parents, Webber and Loescher (2013) summarized that parents with increased self-efficacy for influencing children’s physical activity behavior had greater beliefs in engaging in physical activity for their children (Nsiah-Kumi, Ariza, Mikhail, Feinglass, & Binns, 2009). The literature search yielded two studies focusing on parents’ perceived self-efficacy or parents’ self-confidence of physical activity. Using a cross-sectional design, Adkins, Sherwood, Story, & Davis (2004) examined girls’ physical activity and its associations with body mass index (BMI), parents’ reported self-efficacy for helping daughters be active, parents’ support for helping daughters be active, and girls’ perceptions of parent support for physical activity (N=52 urban African American girls ages 8-10 years and their primary caregiver, 96% female and 4% male). Parents and girls completed items from Girls Health Enrichment Multisite Studies (GEMS) Activity-Related Psychosocial Measures (alpha=0.69-0.90) and Family Environment Scale (FES) for Family & Environment items (alpha=0.41-0.71). Girls’ height and weight were obtained and their activity level was measured using an activity monitor. The main findings of this study were the association between parents’ self-efficacy for being active with daughters with daughters’ physical activity, and girls’
perceptions of parent support for physical activity were not correlated with girls’ activity level (Adkins et al., 2004).

Taveras, Mitchell, & Gortmaker (2009) surveyed parents (n=446, 17% African American parents of children ages 2-12 years, 55% male and 45% female) to determine their confidence in making obesity-related behavior changes for their family (e.g., encouraging physical activity, limiting TV watching). The range of self-confidence for these behaviors ranged from 29 percent to 43 percent. The main findings of this study were the following: 29% of parents were not confident, or somewhat confident, in limiting TV viewing; 43% of parents were not confident, or somewhat confident in removing televisions from bedrooms; and 30% of parents were not confident, or somewhat confident, in changing family’s activity patterns to keep children from becoming obese; parents with lower confidence scores had children with greater exposure to TV viewing ($\beta=-0.360 [95\% \text{ CI:0.550 to -0.180}]$); and parents whose BMI was <25 kg/m$^2$ had higher parental confidence scores ($\beta=1.230 [95\% \text{ CI:0.540 to 1.920}]$) (Taveras et al., 2009).

The limitations of the studies pertaining to parents’ perceived self-efficacy and physical activity pertain to design, measures, bias, and external validity. Cross-sectional designs limit conclusions regarding causal inferences made about parents’ self-efficacy and physical activity (Adkins et al., 2004; Taveras et al., 2009). GEMS Activity-Related Psychosocial Measures of perceptions of parent support for physical activity were not validated for the target group of African Americans. These measures of perceptions of parent support also lacked sensitivity to identify differences because the majority of the girls chose the neutral response option and physical activity items previously used in predominantly white populations likely did not capture African American girls’ perceptions of parent support (Adkins et al., 2004). Self-selection bias,
self-report, social desirability, non-generalizability of study results and small percentage of African American study participants served as limitations of study results (Taveras et al., 2009).

The remaining gaps in knowledge for parents’ self-efficacy pertaining to physical activity include the need to study parents’ self-efficacy for altering their own physical activity behavior (Taveras et al., 2009) and for influencing their children’s physical activity behavior (Adkins et al., 2004).

**Outcome expectations.** Outcome expectations of physical activity refer to parents’ beliefs about the outcomes of engaging in physical activity. The literature review yielded six studies that discussed parents’ outcome expectancies pertaining to physical activity.

The majority of studies (n=4) (Chang, Nitzke, Guilford, Adair, & Hazard, 2008; Dalton et al., 2011; Hennessy, Hughes, Goldberg, Hyatt, & Economos, 2010; Nichols-English et al., 2006) used a cross-sectional design. Chang et al. (2008) used a qualitative, cross-sectional design to explore the motivators and barriers to physical activity among mothers (N=41 African Americans). Cross-sectional designs were used to examine the relationship between mothers’ and daughters’ BMI and physical activity behavior (N=133, African American girls (ages 8-12 years and their mothers) (Nichols-English et al., 2006); the association between parents’ adoption of physical activity and support for physical activity engagement and African American girls’ physical activity (ages 8-12 years) (Dalton et al., 2011); and the relationship between parents’ physical activity-related practices (N=99, 87% female) and their children’s physical activity level (ages 6-11 years) (Hennessy et al., 2010).

A secondary analysis examined parents’ perceptions and support (N=3175, 15% normal weight African Americans and 20% overweight African Americans) of physical activity on
children’s weight status (ages 2-17 years) (Zhao, Gao, & Settles, 2013). The randomized controlled trial design tested two culturally tailored interventions: (1) after-school, hip-hop, African, and step dance classes and a home-family based intervention aimed at reducing screen media use and (2) health-education information intervention among girls ages 8-10 years and their parents or guardians (N=261 African Americans) (Robinson et al., 2010).

The major findings of these studies involved parents’ outcome expectations were: mothers desired to be active to influence their children’s physical activity participation (Chang et al., 2008); parents’ support for physical activity was associated with children’s physical activity behavior (Dalton et al., 2011; Hennessy et al., 2010; Zhao et al., 2013); parents’ beliefs about physical activity were associated with children’s physical activity beliefs (Nichols-English et al., 2006); and parents involved in an intervention of dance and reduced screen media use were associated with their children’s reduced sedentary behavior (e.g., TV viewing) (Robinson et al., 2010). The limitations of the studies pertaining to parents’ outcome expectations and physical activity pertain to cross-sectional design (Chang et al., 2008; Dalton et al., 2011, Hennessy et al., 2010; Nichols-English et al., 2006), measures (Hennessy et al., 2010; Zhao et al., 2013; Robinson et al., 2010), bias (Dalton et al., 2011; Nichols-English et al., 2006; Zhao et al., 2013), and external validity (Chang et al., 2008; Hennessy et al., 2010). The remaining gaps in knowledge for parents’ outcome expectations pertaining to physical activity include: exploring parents’ sedentary behavior (e.g., TV viewing), parents’ physical activity behavior, parents’ outcome expectations of physical activity for their children (Robinson et al., 2010; Chang et al., 2008; Nichols-English et al., 2006), and parents’ influence and support of children’s physical activity engagement (Dalton et al., 2011; Hennessy et al., 2010; Zhao et al., 2013). Importantly
other outcome expectations held by parents of young African American children need to be ascertained.

**Environment (sociostructural and cultural factors).** In their systematic review of parent role modeling of healthy eating and physical activity, Webber and Loescher (2013) summarized that parents’ physical activity barriers to engagement in physical activity that potentially could influence their activity were perceived lack of affordable, accessible recreation facilities and low caregiver motivation. Time and resource constraints, limited social support, single-mother households, poverty, and residing in unsafe neighborhoods serve as physical and environmental barriers to physical activity (O’Neil et al., 2010). Parents with long workdays are more likely to be too busy and tired to engage in daily physical activity or promote this behavior for their children (Wright, Wilson, Griffin, & Evans, 2010). Time allocation and commuting time related to physical activity engagement can decrease physical activity (Williams, 2011). An environment that supports physical activity makes people more prone and eager to participate in physical activity (Stevenson, 2008).

The literature search yielded three studies of African American parents’ environment as it pertains to physical activity. Two qualitative studies explored neighborhood safety influences on outdoor physical activity among African American mothers of children (ages 9-13 years) (Dias & Whitaker, 2013) and the perceptions of sedentary behaviors, barriers to and facilitators of physical activity to guide intervention factors among African American girls (ages 6-9 years) and their female caregivers (N=11 caregiver-child dyads; 8 mother-daughter and 3 grandmother-granddaughter) (Gordon-Larsen et al., 2004). The grounded hermeneutic analysis study design explored family members’ perceptions of risk and protective factors for physical activity
engagement in the home environment of participants residing in inner-city neighborhoods (N=103; 26% African American adult males and 22% African American adult females; African American children ages 8-12 years, 18% male and 11% female (Berge, Arikian, Doherty, & Neumark-Sztainer, 2012).

The major findings of parents’ environment and physical activity were barriers and enabling factors to physical activity engagement. Mothers and families’ physical activity were restricted because they were concerned about unsafe neighborhoods (Dias & Whitaker, 2013; (Berge et al., 2012). Cost, safety, time barriers (e.g., parents’ work hours, children’s schedule, and personal obligations), family rules or limits about sedentary activities (e.g. TV viewing time, playing videogames), and collective family physical activities served as barriers to parents’ physical activity (Berge et al., 2012). Family and community support is important in family efforts to be physically active (Berge et al., 2012).

The limitations and remaining gaps in knowledge of parents’ environment pertaining to physical activity are summarized in Table 7. There were no studies focusing on socio-economic status and culture specifically as it relates to physical activity. Inclusion of parents’ cultural preferences for physical activity opportunities is very important (Caprio et al., 2008). Studies are needed to determine the socioeconomic status and cultural aspect of environment and physical activity.
Table 5. Articles reporting parents’ physical activity

<table>
<thead>
<tr>
<th>Author</th>
<th>Rationale/Purpose/Aims</th>
<th>Design/Target Population</th>
<th>Methods</th>
<th>Main findings</th>
<th>Limitations</th>
<th>Remaining Gaps in Current Knowledge</th>
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</thead>
<tbody>
<tr>
<td>Mâsse et al. (2012)</td>
<td>Explore whether children (ages 9-18 years) living in households with healthful family practices (e.g., limited TV watching, PA engagement) are associated with obesity.</td>
<td>Cross-sectional study</td>
<td>Parents’ self-report: Age, education, race/ethnicity, marital status, &amp; annual household income Youth Risk Behavior Surveillance System (YRBSS) survey’s TV watching and vigorous physical activity (VPA) (r = 0.36-0.47)</td>
<td>Children with less active families (OR=0.35) participated in about half as much VPA as children in more active families (OR=0.51); Children with less active families were more likely to have high self-reported BMI (OR=2.21).</td>
<td>Inability to infer causality; self-report, lack of validity for household healthful variables; Use of consumer opinion panel technique limits generalizability of study findings.</td>
<td>Further exploration on the household practices of families as they relate to TV watching, participation in VPA, &amp; obesity.</td>
</tr>
<tr>
<td>OlVERA et al. (2010)</td>
<td>Assess the efficacy of the Behavior Opportunities Uniting Nutrition Counseling &amp; Exercise (BOUNCE) parent-daughter intervention in promoting selected physical fitness measures &amp; activity (outcome variables: weight, BMI, body fat percentage (%)).</td>
<td>One group pretest, posttest design</td>
<td>Physical fitness measures &amp; activity assessed pre- and post-intervention (e.g., height, weight, waist circumference, body fat percentage, blood pressure, physical fitness &amp; activities)</td>
<td>BOUNCE reduced body weight, BMI, &amp; waist circumference for daughters. Parents implemented regimens of caloric restriction at home, dietary intake monitoring.</td>
<td>Small sample size: limits the generalizability of the results to Latino &amp; AA girls; Lack of control or comparison group.</td>
<td>Need to (1) provide information &amp; support to parents related to scientific recommendations &amp; the role of PA in the development of childhood obesity; (2) reduce barriers to participation in interventions aimed at childhood</td>
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<tr>
<td>Study</td>
<td>Objective</td>
<td>Methodology</td>
<td>Results</td>
<td>Conclusion</td>
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<td>Polley, Spicer, Knight, &amp; Hartley (2005)</td>
<td>Describe overweight in Native-American &amp; AA three-generation families and examine relationships among the individual variables of BMI, TV hours, and activity levels.</td>
<td>Exploratory and convenience sample: N= 84 three-generation families (N=44 Native American &amp; N=44 AA families)</td>
<td>Surveys: 32 items on socioeconomic, health, diet, &amp; physical activity information; Three-day, 24-hour food recall, 1-month food frequency questionnaire; Anthropometric measurements.</td>
<td>Parent &amp; child BMI correlated with TV viewing hours, grandparent &amp; child BMI; Grandparent &amp; parent activity correlated with child TV viewing hours; Sedentary caregivers facilitate more TV viewing and less activity in children.</td>
<td>Need to (1) explore the link between activity levels or weekly TV hours of children &amp; their primary caregiver (parents and grandparents); (2) design culturally appropriate PA &amp; dietary interventions.</td>
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Table legend: AA=African Americans; BMI= Body Mass Index; PA=Physical Activity; TV=television
Table 6. Article reporting parents’ outcome expectations and physical activity

<table>
<thead>
<tr>
<th>Author</th>
<th>Rationale/Purpose/Aims</th>
<th>Design /Target Population</th>
<th>Methods</th>
<th>Main findings</th>
<th>Limitations</th>
<th>Remaining Gaps in Current Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chang et al. (2008)</td>
<td>To explore overweight &amp; obese mothers’ motivators &amp; barriers to PA using social cognitive theory (SCT).</td>
<td>Qualitative, cross-sectional study N=41 AA mothers &amp; N=39 White mothers aged 18-35 years</td>
<td>Focus groups (N=8); using a series of eight semi-structured questions based on social cognitive theory (SCT)</td>
<td>Mothers wanted to actively participate in their children’s PA activities. Mothers understood the importance of healthful lifestyle behaviors to control their weight &amp; their outcome expectancies were to control children’s weight through participation in routine exercise.</td>
<td>Cross-sectional; Non-generalizability of main findings</td>
<td>Need to develop interventions that emphasize parents’ outcome expectations of physical activity for their children.</td>
</tr>
<tr>
<td>Dalton et al., 2011</td>
<td>Examine family environment pertaining to PA &amp; parents’ perceptions &amp; concerns for girls’ weight.</td>
<td>Cross-sectional N=303 African American girls &amp; their caregiver</td>
<td>Child measures: Body figure silhouettes (alpha=0.36-0.55); McKnight Risk Factor Survey (MRFS) (alpha=0.62-0.84); &amp; BMI Parent</td>
<td>Caregivers’ support for PA was significantly associated with children’s weight control behaviors (e.g., PA behavior). Social desirability in parent measures of caregiver support.</td>
<td>Social desirability in parent measures of caregiver support.</td>
<td>Further understanding of family influences on children’s health behaviors &amp; examination of family support versus family controlling children’s PA behaviors</td>
</tr>
</tbody>
</table>
| Hennessy et al. (2010) | Explore the relationship between parents’ PA-related practices, general parenting style, & children’s PA level. | Cross-sectional study  
N=99 parent-child dyads (49% AA) | Parenting dimensions inventory-short form (PDI-S)  
(alpha=0.66-0.96), Logistical support questionnaire  
(Alpha=0.55-0.67), Parenting Strategies for Eating and Activity Scale (PEAS)  
(Alpha=0.83), Accelerometer for children’s PA, Anthropometric measures for parents & children | Parents’ logistical support was associated with children’s moderate-to-vigorous physical activity (MVPA)  
(P=0.01); Parents providing above average levels of support have children participating in more minutes of MVPA  
(P=0.05); Higher parent monitoring of children’s PA is associated with greater PA among children  
(P=0.02); Parents that reinforce PA are associated with more minutes of MVPA among their children  
(P=0.01). | Convenient & small sample size, inability to infer causality; limited generalizability of main findings beyond mother-daughter dads, families living in under-resourced rural areas; PDI-S subscales using one-to-two items inadequately measuring attempted construct of interest (e.g., parents’ control, reinforcement, discipline, & monitoring as they relate to children’s PA), further evaluation of associations among family cohesion, parental engagement, parent-child communication, & children’s PA. | Greater understanding of parents’ goals, values, & general influence on their children’s PA; research resulting in the development of additional items to assess parents’ control, reinforcement, discipline, & monitoring as they relate to children’s PA. |
<table>
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<tr>
<th>Study</th>
<th>Objective</th>
<th>Methodology</th>
<th>Measures</th>
<th>Results</th>
<th>Limitations</th>
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</table>
| Nichols-English et al. (2006) | Examine the association between AA mothers’ & daughters’ body fatness, PA beliefs & levels of PA, & daughters’ PA behavior; Determine whether family sociodemographic factors influence these relationships. | Cross-sectional study  
N= 133 AA girls (8–12 years of age) & their mothers (24–66 years of age). | Body weight & height measured with an electronic scale & stadiometer & converted to BMI (kg/m²); PA assessed via 7-Day PA Recall, to provide average number of minutes of PA (moderate, hard, & very hard) per day over past seven days;  
**Instruments specific to Mothers:** 16-item FITVAL to assess the degree to which mothers valued participation in moderate-to-vigorous PA as alternatives to other activities (alpha=.89);  
Four scales measured mothers’ beliefs about the usefulness & | Positive relation between mothers’ and daughters’ BMI (P<.0001). Mothers’ & daughters’ PA beliefs were positive but not significantly related.  
There was an inverse relationship between vigorous PA & mothers’ body fatness, The BMI association was stronger when spouse lived in household.  
Daughters’ BMI was lower & intent to be active higher when more people lived in the household.  
Family income influenced the relationship between mothers’ belief in the usefulness of PA and daughters’ PA physical outcomes beliefs. | Cross-sectional design limits conclusions regarding causal inferences made about maternal influences on their daughters’ PA. Self-selection bias due to mothers being more concerned about their own weight as well as their daughter’s health Possibly having lifestyle patterns & beliefs about PA that are not representative of the population so the results may not be generalizable to all AA mothers & daughters.  
Need to explore family factors other than maternal influences on physically inactive young AA girls. |
| Study (2010) | Objective | Study Design | Measures | Findings | Methodological Limitations | Interventions
|--------------|-----------|-------------|----------|---------|---------------------------|----------------
| Robinson et al | To test a 2-year community-and family-based obesity prevention program, Stanford GEMS (Girls’ health Enrichment Multi-site Studies) for low-income AA girls. | Randomized controlled trial with follow-up measures scheduled at 6, 12, 18, and 24 months | BMI; weight, & height; waist circumference was measured with a non-elastica metric tape; resting blood pressure & heart rate; fasting serum insulin, glucose, & lipid levels; Accelerometer | Changes in BMI did not differ between groups (adjusted mean difference [95% Confidence interval]=0.04 [-0.18 to 0.27] per year); In exploratory moderator analysis; Intervention 1 | Psychometric properties were not reported of instruments, low attendance rates of at dance classes of Intervention 1. | Effective interventions targeting TV viewing & physical activity behavior among AA girls and their families to produce changes in BMI are needed. |
Families were randomized to one of the 2-year Interventions: (1) After-school hip-hop, African, and step dance classes & a home/family based intervention to reduce screen media use; (2) Information-based health education.

<p>| to measure physical activity; Self-report instrument to measure TV viewing, videotape viewing, video game use, &amp; computer use; 24-hour recall to measure dietary intake; McKnight Risk Factor Survey to access psychosocial measures; Female AA preadolescent silhouettes to measure self-perceived body shape &amp; body shape dissatisfaction; Children’s Depression Inventory 10-item short form to measure depression symptoms; 10-item Rosenberg Self-Esteem scale to measure self-esteem. | (dance &amp; screen time reduction) slowed BMI gain more than Intervention 2 (health education information) among girls who watched more TV at baseline ($P=.02$). |</p>
<table>
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<tr>
<th>Authors</th>
<th>Methodology</th>
<th>Findings</th>
<th>Discussion</th>
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<tr>
<td></td>
<td>Secondary Analysis using multivariate regressions of parents’ perception of children’s weight status; Parental support</td>
<td>Parents’ support of children’s PA significantly predicted children meeting the</td>
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</table>
perception of children’s weight, parental support, & children’s PA.

N=3175 parents & children aged 2-17 years (approximately 15% normal weight AA parents & 20% overweight AA parents).

| Perception of Children’s PA | Recommendation of having at least 1 hour of PA daily (P<.0001); Parental support was positively associated with children’s PA (P<.0001); Parents that underestimated children’s weight status were more likely to meet PA guideline (P<.01) whereas parents that overestimated children’s weight status were 76% less likely to meet PA guideline (P<.01); Parents of children aged 6-11 years had higher parental support of PA than parents of older children (P<.0001). | spent engaging in PA; self-report of children’s PA; presence of confounding variables external to regression models; sample bias |

Table legend: AA=African Americans; BMI= Body Mass Index; FITVAL=Fitness Value Scale; PA=Physical Activity
Table 7. Articles reporting parents’ environment (sociostructural and cultural factors) of physical activity

<table>
<thead>
<tr>
<th>Author</th>
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<th>Methods</th>
<th>Main findings</th>
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<tr>
<td>Berge et al. (2012)</td>
<td>To explore family members’ perceptions of risk &amp; protective factors for PA in the home.</td>
<td>Grounded hermeneutic analysis</td>
<td>Focus groups</td>
<td>Families identified accessibility barriers (e.g., cost, safety, &amp; location) as challenges to being physically active; Families identified time barriers (e.g., work hours, children’s daily schedule, &amp; obligations) to engaging PA; Families reported increased PA being achieved by PA engagement involving the whole family.</td>
<td>Limited generalizability of study findings.</td>
<td>Need to identify opportunities for PA in the home among children; further investigation of family-level behaviors that encourage children’s PA.</td>
</tr>
<tr>
<td>Dias &amp; Whitaker (2013)</td>
<td>To understand if &amp; how neighborhood safety influences mothers’ decisions about allowing their daughters to play outdoors &amp; identify</td>
<td>Qualitative study</td>
<td>Individual interviews &amp; focus groups</td>
<td>Mothers reported that their perceptions of neighborhood safety strongly influences encouragement of daughters’ outdoor play;</td>
<td>Lack of generalizability of main findings to mothers with AA boys or all AA mothers; no measurement of daughters PA levels or weight.</td>
<td>Need for causal linkages between specific maternal safety fears, measures of outdoor PA for play, PA, &amp; obesity.</td>
</tr>
<tr>
<td>Gordon-Larsen et al., (2004)</td>
<td>Explore perceptions of sedentary behaviors, barriers to &amp; facilitators of PA among AA caregiver-daughter dyads.</td>
<td>Qualitative study N= 51 interviews: 12 AA girls (mean age 7.8 years) &amp; their 11 primary female caregivers (mean age 41.8 years): 8 mother–daughter dyads and 3 grandmother–granddaughter dyads.</td>
<td>Semi-structured interviews</td>
<td>Three themes (1) sedentary behaviors, (2) PA barriers, (3) potential intervention strategies; Girls clearly preferred sedentary, rather than active, behaviors; Caregivers were unaware of the amount of TV viewed &amp; found positive benefits of TV viewing, including safe supervision of their daughters; PA barriers were perceived lack of affordable &amp; accessible recreation facilities &amp; low caregiver motivation; Respondents’ PA strategies were walking for exercise &amp; transportation &amp; low-cost activities e.g. hopscotch, jump rope, &amp; dance).</td>
<td>Lack of direct measures of PA &amp; anthropometrics. Accurate behavior data from recall surveys with children is difficult.</td>
<td>Need to address individual barriers, such as motivation for PA, preference for inactivity; the affordability &amp; accessibility of culturally appropriate recreational programs for parents as PA facilitators to ensure PA engagement for their children.</td>
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</table>
Summary

Research is needed to further understand physical activity behavior among African American parents of young children. There is little focus of extant literature on parents’ physical activity as it pertains to their knowledge, perceived self-efficacy, outcome expectations, and environment. The literature review of knowledge, self-efficacy, environment (sociostructural factors and culture), and physical activity among African American parents of children ages 6-12 years provided minimal results. Very few studies focused on parents’ knowledge, self-efficacy, SES, and culture on physical activity among African Americans. Six studies specifically targeted African American participants. The results were variable in quality in terms of identifying associations and relationships. The environment (sociostructural factors and culture) increasing parents’ physical activity was unclear in literature. Prior to developing an SCT-guided intervention to increase physical activity among parents of young African American children, parents’ knowledge, self-efficacy, outcome expectations, and environment factors pertaining to physical activity need to be explored first.
Chapter 3: Methods

This chapter will describe the purpose, design and rationale for the chosen design, the sample setting and procedures for participant recruitment, the measures of the main study variables, the human subjects protection, and the procedures for data collection and analysis.

Design

This study used a cross-sectional design. Cross-sectional designs enable examination of factors that are associated with a particular characteristic of interest at one point in time. Cross-sectional designs are useful for identifying correlations and associated features of data gathered from respondents at one time (Kadzin, 2003; Shadish, Cook, & Campbell, 2002). Cross-sectional designs are commonly used and can generate descriptions, provocative findings, and hypotheses for further research (Kadzin, 2003). This study proposed to generate preliminary data based on theory to begin to uncover the relationships of factors associated with physical activity in parents of young African American children. A weakness of cross-sectional designs is that causal inferences cannot be made (Shadish et al., 2002). This study examined the associations among parents’ knowledge, self-efficacy, outcome expectations (relevant to themselves and their children), environmental factors, and self-reported physical activity while exploring the potential predictors of self-reported physical activity.

Sample and Setting

African American parents/caregivers of children ages 6-12 years residing in South Side, Chicago comprised the convenience sample for this study. The age criterion of age 18 years and older was used to meet the legal age of consent. A convenience sample is a type of non-probability sampling that does not involve random selection. An advantage of a convenience
sample is that it can be used with various research designs. However, the disadvantage of a convenience sample is likely to be biased and limits the generalizability of the study results (Trochim & Donnelly, 2008).

The inclusion criteria for the study were:

1. African-American man or woman
2. 18 years of age and older
3. Speak, read and write in English
4. Residence in the geographic South Side, Chicago
5. Parent, legal guardian, or primary caregiver of a child or children ages 6-12 years
6. Must live with child/children in the home
7. Access to computer, Internet, and electronic mail (e-mail) or ability to meet with PI to complete survey via tablet

The exclusion criteria were the following:

1. Non-African American
2. Parents or caregiver age under the age of 18 years
3. Inability to speak, read and write English
4. Residence outside of South Side, Chicago

The City of Chicago is a large city in the north central region of the U.S. that has a population of 2.7 million (Chicago, n.d.). The South Side of Chicago (Figure 3-yellow area) has a population of 752,496, of which over 93% is African American. Residents of South Side, Chicago range from affluent to impoverished (South Side Chicago, n.d.). In 2013, there were approximately 17,246 crimes with incidents of murder, criminal sexual assault, robbery,
aggravated battery, felony theft, and motor vehicle theft in South Side, Chicago neighborhoods (Chicago Police Department, 2013).

Burnham Park, Jackson Park, Washington Park, Midway Plaisance, and Harold Washington Park are Chicago Park District parks serving the South Side, Chicago (South Side Chicago, n.d.). However, the poorer neighborhoods in Chicago have less-safe parks and breed crime and safety issues, which inhibit children from playing, walking and exercising outside. According to the Illinois State Nutrition, Physical Activity and Obesity Profile, active parents lead to active kids and parents who implement evening walks and minimize TV-viewing time to encourage physical activity engagement (Lord, 2013).
Sample Recruitment Strategies

Eligible parents and caregivers were recruited in three ways. The principal investigator (PI) distributed at least two study information flyers (Appendix A) to community sites (e.g., grocery stores, neighborhood organizations, churches, and middle schools/afterschool programs). Flyers serve as one of the most effective recruitment strategies (Kennedy et al., 2008). Flyers are
a method of increasing study awareness and accessibility, and community sites and centers are key locations to increase study awareness (Patel, Doku, & Tennakoon, 2003). If eligible individuals were interested in learning more about the study, they were asked to contact the PI using the designated email address on the flyer.

Another strategy of recruitment used in this study was network sampling (snowball sampling), which consists of word-of-mouth (Trochim & Donnelly, 2008). Network sampling is cost-effective and easy to use (Kirchhoff, 2009). Network sampling can be used when dealing with populations that are not easily accessible or hard to find (Trochim & Donnelly, 2008). Individuals currently enrolled will spread the word about the study to friends, neighbors, and relatives (Kennedy et al., 2008).

A third strategy was obtaining support from local organizations such as the Black Star Project (Appendix B). The Black Star Project was founded in 1996 to improve the quality of life in the African American and Latino communities of Chicago by eliminating the racial academic achievement gap.

The PI assessed eligibility for the study by email once contacted by interested individuals. The PI provided eligible individuals with more information about the study. To decrease dropout rates, the PI provided participants with opportunities to discuss personal concerns about the study (Kadzin, 2003). A disclaimer, approved by the University of Arizona Institutional Review Board (IRB), was placed within the survey to obtain informed consent via Survey Monkey (Appendix C). Potential participants provided the PI with their email address. The PI provided each participant with a $5 Target gift card for completing the all the study procedures.
Sample Size

Power analysis can either be done before (*a priori* or prospective power analysis) data collection or after the study (post hoc). The PI conducted a sample size analysis before data collection. Alpha, power, and effect size are three parameters to determine sample size (Kadzin, 2003). An alpha level of .05 and power of .80 are traditionally used, and investigators conducting their first or second study use a medium effect size of .50 (Kadzin, 2003). Cohen (1988) described effect sizes as “small”, “medium”, and “large”. Effect sizes vary for different study designs (Prajapati, Dunne, & Armstrong, 2010). Pearson’s correlation coefficient test has a medium effect size of 0.30 (Prajapati et al., 2010). Sample size analysis using G*Power 3.1 1 (Appendix D) on power of .80, alpha level of 0.5, and a medium effect size (0.30), a sample size of 84 participants were needed. Attrition is generally 10%-20% in clinical research studies (Suresh & Chandrashekara, 2012). Based on 20% attrition, 105 participants were needed for recruitment. The PI recruited 130 participants.

Data Collection Procedures

Participants received access to the online questionnaire once eligibility was determined. Participants were provided with a web link to access the study survey in SurveyMonkey via e-mail. The online questionnaire provided a question and a space to provide appropriate responses (e.g., multiple choice and/or fill-in-the-blank style). The PI exported the responses from all participants from SurveyMonkey to SPSS for analysis. Participants completing the survey in SurveyMonkey via e-mail were provided with information on how to progress through the survey at the beginning of the survey.
There were only four participants without computer access that scheduled an appointment with the PI to complete the survey online using a tablet. The PI provided the four participants with a tablet for completion of the online questionnaire via SurveyMonkey and instructions on how to complete the survey. Researchers who use Tablets in clinical research are provided with the ability to collect data efficiently (Wilcox, Gallagher, Boden-Albala, & Bakken, 2012).

Tablets can be used in community-based studies for data entry when participants do not have direct access to their own computer and when access to a web browser is difficult in certain environments. In community-based studies, some participants may not own computers or have readily available Internet connections. A population solution is the temporary use of laptops because they are portable. However, laptops may lack touch screen capabilities that would make navigation intuitive for infrequent computer users. Tablets offer touch screen capabilities, provide a more readily understood method of data entry, and offer lower hardware costs than comparable options (e.g., laptops) (Singleton et al., 2011).

The PI was present to answer questions about the tablet operation. When using the tablet, the PI met with the four participants at an office room area provided by the Black Star Project. The Black Star Project provides educational services for children beginning pre-school age through college to succeed in academic pursuits. The organization works with parents, families, schools, and communities to accomplish this goal (The Black Star Project, n.d.).

**Study Measures**

**Overview**

The main variables for this study were parents’ physical activity knowledge, self-efficacy, outcome expectations, environmental factors (socio-economic status (SES), physical
environment, and culture), TV viewing and self-reported physical activity. Few instruments measuring SCT’s personal and environmental factors affecting physical activity behavior have been developed and validated for African Americans. Additionally, instruments measuring these factors influencing physical activity for this population are lacking. Thus, this study used previously validated measures in this population. Table 8 lists the questionnaires or scales that operationalized the main variables and how these correspond to the theoretical and conceptual definitions. All questionnaires were self-administered. The PI received permission to use all questionnaires (Appendix E).

All study measures were imported into a SurveyMonkey questionnaire (Appendix F). Permission was granted to use SurveyMonkey to import all study measures (Appendix G). SurveyMonkey is an online service that enables the creation of web browser based surveys. The advantages of using SurveyMonkey are the survey is inexpensive to administer and SurveyMonkey allows faster return of surveys. Disadvantages to using SurveyMonkey are lower response rates and increased rates of non-delivery of surveys when compared to paper-based surveys (Kirchhoff, 2009). Other disadvantages of using SurveyMonkey are that Internet access is required and the respondent must be able to use a computer (Necarc, 2006). Allowing participants to enter data on a tablet provided by the PI during data collection eased this barrier.

SurveyMonkey offers a basic plan consisting of 10 questions per survey and 100 responses for free. However, the survey that was used for this study exceeds 10 questions. The basic plus plan was more effective. This plan requires a monthly fee of $17 and offers the following features: unlimited questions, approximately 1,000 responses, and enhanced security. The PI purchased the basic plus plan with her own funds. To enhance survey completion, the
“Require Answer to Question” feature was used for all questions with the exception to one item. An open-ended format was used to answer the one item: Participants were asked “How many hours of TV watched each day” requiring participants to enter in the number of hours. Multiple imputations were used for missing data on the one item. Surveys that were collected through a Web Link were truly anonymous collection (SurveyMonkey, n.d.).

As a self-report measure, social desirability and non-response bias (respondents being different from those that did not respond) (Sax, Gilmartin, & Bryant, 2003) are disadvantages to using SurveyMonkey for data collection. Providing clear instructions on how to answer each question minimized response bias with the online version. Missing data were minimized by formatting the majority of the survey to require a response to every item prior to proceeding to the next item. The PI controlled for bias through ensuring confidentiality and conveying to the participant the importance of honest self-evaluation (Kadzin, 2003).

SurveyMonkey allows survey data to be readily analyzed as soon as a participant responds. The PI used SurveyMonkey technology to reduce the chance of missing data through SurveyMonkey’s response summary page to carefully review survey data in a bar graph presentation. The PI used multiple imputations to handle missing data for one item. The total response count, percentages, and response averages were carefully reviewed (SurveyMonkey, n.d.).
Table 8. Theoretical, Conceptual, and Operational Definitions of Constructs, Concepts, and Corresponding Study Variables

<table>
<thead>
<tr>
<th>Constructs (Cs) and Concepts (Cc)</th>
<th>Theoretical Definitions</th>
<th>Conceptual Definitions</th>
<th>Operational Definitions: Instruments</th>
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<tbody>
<tr>
<td><strong>Person</strong></td>
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<tr>
<td>Knowledge (Cs)</td>
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<tr>
<td>• Content Knowledge</td>
<td>Knowledge is a precondition for behavior change (Bandura, 2004). Content knowledge (understanding of the advantages and disadvantages of engaging in a given health behavior) and procedural knowledge (understanding of the steps to engage in a given health behavior).</td>
<td>Parents’ content and procedural knowledge of recommended physical activity for health benefits.</td>
<td>Knowledge of Physical Activity Guidelines Questionnaire: PA guidelines, traditional activities, and leisure activities subscales. Content knowledge (Physical Activity, You, and Your Environment Questionnaire Items 11 and 12) Procedural knowledge (Physical Activity, You, and Your Environment Questionnaire Items 9-10, 13-30)</td>
</tr>
<tr>
<td>• Procedural Knowledge</td>
<td></td>
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</tbody>
</table>
| Perceived self-efficacy (Cs)      | Individuals’ beliefs in their capability to control challenging demands and their own functioning. Required for the adoption and maintenance of health behavior. Self-efficacy beliefs underpin human motivation, well-being, and personal accomplishment (Bandura, 1998; Bandura, 2004). | Parents’ confidence in their ability to adopt, maintain, and overcome barriers to physical activity engagement. | Multidimensional Self Efficacy for Exercise Scale (MSES)  
  • Task-self efficacy (adoption of physical activity engagement) (3 items)  
  • Scheduling self-efficacy scale (maintenance and overcoming barriers to physical activity engagement) (3 items)  
  • Coping self-efficacy (ability to engage in physical activity in spite of environmental demands and challenges) (3 items) |
| Outcome expectations (Cs)         | Anticipated positive outcomes and general beliefs related to engaging in a behavior. Three forms of outcome expectations:  
  • physical (refer to the anticipation of what will be experienced after behavior change (participation in physical activity) takes place (e.g., weight loss);  
  • social (anticipated social responses after behavior change). | Parents’ anticipated outcomes and beliefs to engaging in physical activity in the forms of physical (physical experiences), social (approval and disapproval from interpersonal relationships), and self-evaluative outcomes (self-worth and satisfaction). | Multidimensional Outcome Expectations for Exercise Scale (MOES)  
  Physical (6 items)  
  Social (4 items)  
  Self-Evaluative (5 items)  
  Outcome Expectations Relevant to Children (3 items) |
<table>
<thead>
<tr>
<th>Environment</th>
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<tbody>
<tr>
<td><strong>Socio-structural factors (Cs)</strong></td>
<td><strong>Supporting (facilitators) and impeding factors (impediments) of a person’s environment (social, economic, policy, legal, or physical influence) that enable and limit a person’s ability to effectively engage in a goal-directed behavior (Bandura, 1997; Bandura, 2001). Social conditions, economic conditions, income, occupation status, and educational level influencing person and behavior (Bandura, 2001; Socioeconomic Status, n.d.). Physical surroundings influencing human behavior (Bandura, 1986; Bandura, 1997).</strong></td>
<td><strong>Personal factors (knowledge and outcome expectations) and environmental factors (SES and physical environment) that impede or support parents’ physical activity.</strong></td>
<td><strong>Physical Activity Neighborhood Environmental Survey (PANES) (17 items); MacArthur Scale of Subjective Social Status (9 items)</strong></td>
</tr>
<tr>
<td><strong>Socio-economic status (SES) (Cc)</strong></td>
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<td><strong>Physical environment (Cc)</strong></td>
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<tr>
<td><strong>Culture (Cc)</strong></td>
<td>Values, beliefs and practices of a particular group influencing behavior (Boyington et al., 2008).</td>
<td>Values, beliefs, and practices; traditions and preferences of the dominant society (e.g., acculturation).</td>
<td>African American Acculturation Scale-Revised (AAAS-R)—Preference for African American things (8 items)</td>
</tr>
<tr>
<td><strong>Behavior</strong></td>
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<tr>
<td><strong>Physical activity</strong></td>
<td>Any bodily movement produced by skeletal muscles resulting in energy expenditure (Reiser &amp; Schlenk, 2009).</td>
<td>Parents’ self-reported MVPA.</td>
<td>International Physical Activity Questionnaire Short Form (IPAQ-S) (7 items), TV viewing frequency (1 item)</td>
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</table>
Parents’ Physical Activity

The International Physical Activity Questionnaire (IPAQ) is a self-report physical activity questionnaire to provide a set of well-developed instruments that can be used internationally to obtain comparable estimates of physical activity, with short (suitable for use in national and regional surveillance systems) and long (provide more detailed information often required in research work or for evaluation purposes) versions for use by either telephone or self-administered methods. IPAQ is a practical instrument for measuring physical activity (walking, moderate-intensity activities, and vigorous-intensity activities) in large groups and populations. The short version consists of 4 generic items and can be used with young and middle-aged adults (ages 15-69 years), which were used for this research (International Physical Activity Questionnaire, n.d.). Response options entail fill-in-the-blank (days per week, hours per day, and minutes per day) or selection of “don’t know/not sure” and “refused” to the questions about the time spent being physically active in the last 7 days (International Physical Activity Questionnaire, n.d.). Briefly, the IPAQ is scored by summation of the duration (in minutes) and frequency (days) of walking, moderate-intensity and vigorous-intensity activities (International Physical Activity Questionnaire, n.d.). Both continuous and categorical scores can be obtained from the IPAQ short form. Continuous IPAQ scores are expressed as median metabolic equivalent (MET)-minutes/ week and the categorical scores are based on three levels of physical activity (low, moderate, and high) (International Physical Activity Questionnaire, n.d.).

IPAQ developers created the IPAQ with three categories of low (1), moderate (2), and high (3). A low categorical score (Category 1) is for individuals who do not meet the criteria for Categories 2 or 3. A moderate categorical score (Category 2) is for individuals with a pattern of
activity classified on the following criteria: a) 3 or more days of vigorous-intensity of at least 20 minutes per day; or b) 5 or more days of moderate-intensity activity and/or walking of at least 30 minutes per day; or c) 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum total physical activity of at least 600 MET-minutes/week. A high categorical score (Category 3) is for individuals with higher levels of physical activity participation based on two classifications: a) vigorous-intensity activity for at least 3 days achieving a minimum total physical activity of at least 1500 MET-minutes/week or b) 7 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum total physical activity of at least 3000 MET-minutes/week (International Physical Activity Questionnaire, 2005). The scoring protocol is described in Appendix H.

The test-retest Spearman reliability coefficients for the IPAQ short forms in the United States ranged from 0.66 to 0.88. The test-retest repeatability was assessed within the same week. The observed concurrent validity between IPAQ short and long forms showed reasonable agreement, with pooled $p$ for comparisons between long and short forms was 0.67 (95% CI 0.64-0.70). Criterion validity of IPAQ data and Computer Science and Application (CSA) accelerometers for short forms showed fair to moderate agreement (N=781, $p$=0.30, 95% CI 0.23-0.36). The IPAQ has been tested in both developed and developing countries and has demonstrated acceptable reliability and validity properties across both, especially in urban samples serving as an advantage. The IPAQ short form was generally better received in data collection sites that administered both the long and short IPAQ forms (Craig et al., 2003). The IPAQ-short form (IPAQ-S) has been used in African Americans (N=142; aged 24-70 years)
(Wolin, Heil, Askew, Matthews, & Bennett, 2008). IPAQ has been developed and tested in adults ages 15-69 years (International Physical Activity Questionnaire, n.d.). The estimated completion time was approximately 5 minutes.

**TV Viewing**

The PI developed one item to assess frequency of TV viewing. Response options for this item were not provided. Participants responded by entering the number of hours of TV watched daily. The estimated completion time was less than one minute.

**Parents’ Physical Activity Knowledge**

Knowledge of Physical Activity Guidelines Questionnaire was measured using the 20-item knowledge about traditional and lifestyle physical activities questionnaire (Morrow, Krzewinski-Malone, Jackson, Bungum, & FitzGerald, 2004). This questionnaire has been used to assess knowledge about physical activity guidelines, traditional activities, and leisure activities among men and women ages 18 to 61 years and older (n=2,002; 9% African American) (Morrow et al., 2004). Physical activity guidelines are defined as 150 minutes of activity per week for approximately 30 minutes duration for sufficient health benefit. Traditional physical activities are defined as the knowledge about the use of large muscle groups such as walking, jogging, biking, cycling, and rowing. Lifestyle activities are defined as knowledge about activities done during typical daily activities such as gardening, walking, transportation, and household tasks. This questionnaire consists of the following subscales: physical activity guidelines (n=6 items), traditional (n=8 items), and lifestyle (n=6 items). TV viewing and shopping was added to lifestyles subscale (n=8 items).
Response options for each item are 1=correct response and 0=incorrect responses or ‘I don’t know’. Scoring is determined by a mean of correct response percentage for the whole scale based on each subscale, which is done by dividing the individual’s physical activity guidelines and lifestyle activities by six and by eight for traditional activities.

For content validity, three content experts evaluated the items about knowledge of physical activity guidelines, traditional activities, and lifestyle activities. The Kuder-Richardson test was used to assess internal consistency, which was 0.59 (meaning low internal consistency) for all 20 items. Scores for all 20 items were negatively skewed (Z=-20.9, p<.001) per instrument developers, providing some evidence for the internal consistency value of 0.59 (morrow et al., 2004). All 20 items correlated positively with the total scale. However, the items showed low internal consistency; less than .20 for 7 of the items and less than .07 for 2 of the items (Morrow et al., 2004). The estimated completion time was about 5 minutes.

Parents’ Perceived Self-Efficacy

The Multidimensional Self-Efficacy for Exercise Scale (MSES) was used to measure parents’ perceived self-efficacy. MSES assesses three types of self-efficacy: task, scheduling, and coping (Rodgers, Wilson, Hall, Fraser, & Murray, 2008). Task self-efficacy is defined as an individual’s confidence in the ability to perform the elemental aspects of exercise. Scheduling self-efficacy is defined as an individual’s confidence to organize regular exercise. Coping self-efficacy is defined as an individual’s confidence to exercise under challenging conditions (Rogers, Hall, Blanchard, McAuley, & Munroe, 2002). The MSES measures three self-efficacy domains of exercise: task self-efficacy (n= 3 items), scheduling self-efficacy (n=3 items), and coping self-efficacy (n=3 items). The items are scaled using a 10-point confidence scale ranging
from 0 (not at all confident) to 10 (completely confident). The confidence scores for each subdomain are summed and divided by the total number of items giving a possible range of 0–10. Test-retest Intraclass Correlation Coefficient (ICC) was 0.85 to 0.91 (Rodgers et al., 2008). Discriminant validity was supported by theoretical distinctions among exercisers and non-exercisers in which correlations between task and coping were 0.57, between task and scheduling were 0.51, and between coping and scheduling were 0.55. The internal consistency of the MSES has a Cronbach’s alpha ranging from $\alpha=0.76$ to $\alpha=0.95$, signifying acceptable internal consistency (Rodgers et al., 2008). The estimated completion time was approximately 3 minutes.

**Parents’ Outcome Expectations for Exercise**

The 15-item Multidimensional Outcome Expectations for Exercise Scale (MOEES) was used to assess three forms of outcome expectations for exercise (e.g., physical, social, and self-evaluative outcome expectations). This scale has been used to test these expectations among middle-aged and older adults ($N=320$; $M$ age = 63.8; $n=28$ African Americans) (Wójcicki, White, & McAuley, 2009). However, the items did not need to be adapted for younger adults because the items transcend developmental age and stage. Physical outcome expectations ($n=6$ items) are defined as beliefs about pleasant and aversive physical experiences resulting from engagement in physical activity. Social expectations ($n=4$ items) are defined as beliefs about physical activity resulting in increased opportunities for socialization and attaining social approval. Self-evaluative outcome expectations ($n=5$ items) are defined as beliefs relative to the feelings of satisfaction and self-worth associated with involvement in physical activity.

Participants responded according to their agreement for each statement. (e.g., "Exercise will increase my muscle strength") on a scale of 1 (strongly disagree) to 5 (strongly agree). The
numerical ratings for each response are summed to provide a mean total score for each dimension. Higher scores indicate higher levels of outcome expectations for exercise (Wójcicki et al., 2009).

All three outcome expectations scales possess good internal consistency: physical (α = .82), self-evaluative (α = .84), and social (α = .81). All three sets of outcome expectations were associated with being active in older adults (physical: r = .32, p < .001; self-evaluative: r = .30, p < .001; and social: r = .20, p < .01) (Wójcicki et al., 2009).

The PI developed three additional items to address the Secondary Aim: Exercise will make me a better role model for my children; Exercise will allow my children to see me being active and they will become active; and Exercise will enable increased physical activity for me and my children. These items measured parents’ outcome expectations relevant to their children. Participants responded on a scale of 1 (strongly disagree) to 5 (strongly agree). The numerical ratings for each response to these items were summed to provide a subscale score (Wójcicki et al., 2009). The estimated completion time was approximately 5 minutes.

Environment (sociostructural and cultural factors)

Socioeconomic status. The MacArthur Scale of Subjective Social Status (SSS) was used to assess SES. This scale assesses self-perceived social ranking by capturing the common sense of social status across the SES indicators (income, education, and occupation). There are two ladders: SES ladder and community ladder. The SES ladder or US ladder is linked to traditional SES indicators and the community ladder is linked to standing in one’s community. The SES ladder showed robust associations with health, which are not simply due to confounding with response style or negative affect, supporting that the ladder rankings are capturing self-rated
health (Adler & Stewart, 2007). Respondents are given a drawing of the two ladders with 10 rungs that were described as representing where people stand in their communities (Community ladder) and in the United States (SES ladder). The scoring is by the location of “X” on the lowest rung or the space just above it as “1” and “2” for the next rung or in the space above, and is continued up to the top rung scored as “10” (Adler & Stewart, 2007). For the SurveyMonkey questionnaire, participants were asked to select a number between one and ten to identify the location of where they stand based on the pictorial ladders.

Only moderate intercorrelations exist among the different indicators of SES with each of these indicators showing relationships to health (Adler, Epel, Castellazzo, & Ickovics, 2000; Ostrove, Adler, Kupperman, & Washington, 2000; Singh-Manoux, Adler, & Marmot, 2002). Validity is supported by subjective status showing a strong and significant correlation with the objective status (e.g., employment, education, and income) (Singh-Manoux et al., 2002). The estimated completion time was approximately 2 minutes.

**Physical environment.** The Physical Activity Neighborhood Environmental Survey (PANCES) also known as the International Physical Activity Prevalence Study (IPS) Environmental Module were used to measure physical environment (Sallis et al., 2010). PANCES was previously referred to as International Physical Activity Environmental Module and has 17-items. PANCES is used to assess neighborhood attributes related to physical activity (Sallis et al., 2009; Sallis et al., 2010). Respondents select “strongly disagree”, “somewhat disagree”, “somewhat agree”, “strongly agree”, or “don’t know/not sure” for all items except the item on the main type of housing. The scale is scored by summing the responses, with higher scores indicating more neighborhood walkability (Sallis et al., 2010).
The test-retest Intraclass Correlation Coefficient (ICC) ranged from 0.52 to 0.88 for the PANES items (Sallis et al., 2010). Cohen’s Kappa ranged from 0.35 to 0.70 and percent agreement ranged from 74% to 93% for the PANES. The PANES items did not have floor or ceiling effects. However, PANES had limited discriminative validity based on some of the dichotomized items exhibiting limited variance (Sallis et al., 2010). The estimated time to complete the PANES was 5 minutes.

**Culture.** Phinney (1996) summarized how culture is often measured by focusing on acculturation because acculturation scales measure specific behaviors of cultural retention or involvement. Acculturation scales can measure behavioral indicators of cultural involvement (Phinney, 1996). The African American Acculturation Scale (AAAS) assesses the extent to which African Americans (N=183, 118 African Americans) remain immersed in the traditional cultural values, beliefs, and behaviors of their ancestors (Landrine & Klonoff, 1994). Klonoff & Landrine (2000) improved and revised the AAAS scale. The African American Acculturation Scale-Revised (AAAS-R) consists of eight subscales; for the purpose of this dissertation, one subscale of preference for things African American (8-items) was used. Preference for African American things subscale assesses one’s preference for their own culture’s music, art, and people in which a higher score in this subscale indicate more traditional African American cultural orientation and lower scores indicate a more mainstream orientation (more acculturated) (Landrine & Klonoff, 1994; Beech et al., 2004). Racial segregation (4-items) assesses segregation and how people reside in communities where they are exposed to their culture (Klonoff & Landrine, 2000). The 4-items of this subscale were not used in this study because all participants resided in South Side, Chicago, which over 93% is African American (South Side
Response options range from 1 (totally agree) to 7 (totally disagree). Scoring is the sum of items completed divided by the total number of items to obtain a mean total score. Reliability was estimated using Cronbach’s alpha for preference for things African American (α = .89) (Landrine & Klonoff, 2000). The estimated completion time was approximately 3 minutes.

**Data Analysis Procedures**

The PI calculated the internal consistency reliability of all study measures prior to analyses of the main variables. Descriptive analyses were performed on all main variables providing: frequencies, distribution, mean, mode, median, ± Standard Error (SE), range, percentiles, and standard deviations. The mean total score of study measures was entered for the planned analysis described below. As a result of only four participants requiring completion of the survey via Tablet, the differences between tablet and online survey were not analyzed. The four participants completing the survey via tablet were analyzed with participants completing the survey online. Study findings are generalized to South Side, Chicago. Because of a SurveyMonkey format error, participants were not forced to respond to item number 31, hours of TV watched per day. There were three missing responses to this item. Multiple imputations were used to provide responses on the three missing values to this item. According to Schlomer, Bauman, & Card, 2010, multiple imputation method is a practical strategy for handling missing data.

Respondent burden can occur with electronic surveys because of length of survey and lack of familiarity with personal computers (Downes-Le Guin, Baker, Mechling, & Ruylea, 2012; Denscombe, 2009). The PI used several questionnaires to measure main variables of
interest, which increased the survey’s length. The more effort required of participants in responding to questions decreases the likelihood of survey completion. Familiarity with computers and the Internet increases the response rate for electronic surveys (Denscombe, 2009). The PI ensured that instructions on survey completion were clear and that instruments presented the least burden to respondents. Preliminary testing of the SurveyMonkey survey found that the survey can be completed in 15 minutes. Another 5 minutes were added to that time for troubleshooting. The PI documented the form of administration for each survey. There were four participants that completed the survey on the PI-supplied tablet and all other participants completed the survey online via computer. As a result, the differences in demographics between the slightly different modes of administration were not compared.

**Analysis for Aim 1**

Aim 1 was to describe self-reported physical activity behaviors in parents/caregivers of young African American children. Descriptive analysis was used to address Aim 1 to obtain the frequencies, distribution, mean, mode, median, ± Standard Error (SE), range, percentiles (25th and 75th), ceiling and floor effects, and standard deviations of self-reported physical activity behaviors.

**Analysis for Aim 2**

Aim 2 was to describe the association among personal factors (knowledge, self-efficacy, outcome expectations), environmental factors (socioeconomic status (SES), physical, and culture), TV viewing, and self-reported physical activity in parents of young African American children. Data analysis for the Spearman’s correlation coefficient was used to address Aim 2 to assess the relationship between two variables (Trochim & Donnelly, 2008). The Spearman’s
correlation coefficient is appropriate because it can be used to determine correlation among data that have violated parametric assumptions (e.g., non-normally distributed data) (Fields, 2009).

**Analysis for Aim 3**

Aim 3 was to explore potential personal and environmental predictors of physical activity. Multiple linear regression was used to address Aim 3 in which the predictor variables were knowledge, perceived self-efficacy, outcome expectations, environment (socio-structural factors and culture) and TV viewing to examine which predictors contribute to a continuous score of physical activity. Predictor variables were entered into the full model (a model with all possible predictor variables of knowledge, perceived self-efficacy, outcome expectations, SES, physical environment, culture, and TV viewing included in the first block) (Fields, 2009).

**Analysis for Secondary Aim**

The Secondary Aim is to summarize parents’ outcome expectations of parents’ physical activity relevant to their children. The summed score of the three items of the MOESS was entered into analysis to address the Secondary Aim. The Spearman’s correlation coefficient analysis of the three items of the MOESS was used to address the Secondary Aim.

**Data Cleaning Procedures**

Trochim & Donnelly (2008) discussed two ways to clean data using data transformations and dealing with missing data. Data should be cleaned using the scoring manual of well-developed measures (Trochim & Donnelly, 2008). Data were cleaned according to the IPAQ scoring protocol by the developers of the IPAQ. Based on these procedures, responses to duration were converted into total minutes: certain cases were omitted from analysis per the protocol established by the developers of the IPAQ (International Physical Activity
Questionnaire, 2005). These cases included (1) cases where the respondent did not know the amount of time spent in physical activity, thereby preventing the calculation of an IPAQ score, (2) cases where the respondent claimed he or she performed physical activity more than seven days per week, and (3) cases where the average daily physical activity (walking, moderate and vigorous activity) exceeded 960 minutes. Response values less than 10 minutes were converted to 0. Instances where respondents listed a range of time (e.g., “5-6 hours”), the value was converted into the average of the minimum and maximum (e.g., “5.5”).

In cases where the respondents both provided information about hours and minutes of physical activity and selected “don’t know/not sure”, by marking the box, the information they did provide was upheld. The recommended adjustment to time variables exceeding three hours by recoding and truncating these values to equal 180 minutes were not adopted. This rule applies mainly to large data sets (International Physical Activity Questionnaire, 2005).

**Human Subject Procedures**

The PI followed the principle of voluntary participation and confidentiality. After approval to conduct the study by the UA-IRB (Appendix C), the PI began recruitment and data collection. The PI explained the study thoroughly to all participants (Trochim & Donnelly, 2008). An IRB-approved disclaimer (Appendix C) was used to obtain informed consent to each participant explaining the study purpose, procedures, risks, benefits, confidentiality, the right to withdraw from the study, contact information, and the amount of time required to participate in the study. Participants were informed that their decision to participate, not participate, or withdraw from this study could be decided at any given time. Informed consent was obtained for all interested participants who met the inclusion criteria before initiation of any study.
measurements. Informed consent was obtained online on the first page before beginning the survey. All data from participants was de-identified through SurveyMonkey.

**Summary**

Chapter 3 described the methodology of this cross-sectional study that will be used to explore African American parents’ physical activity behavior. Findings from this study examined the association of parents’ physical activity, knowledge, perceived self-efficacy, outcome expectations, and environment. This research will aid in the evaluation of instruments that address factors influencing physical activity that are culturally appropriate for African Americans.
Chapter 4: Results

This study examined the associations among parents’ knowledge, self-efficacy, outcome expectations (relevant to themselves and their children), environmental factors, TV viewing, and self-reported physical activity while exploring the potential predictors of self-reported physical activity. This chapter is organized to respond to the research aims:

Aim 1: To describe self-reported physical activity behaviors in parents/caregivers of young African American children.

Aim 2: To describe the association among personal factors (knowledge, self-efficacy, outcome expectations), environmental factors (socioeconomic status (SES), physical, and culture), TV viewing, and self-reported physical activity in parents of young African American children.

Aim 3: Explore potential personal and environmental predictors of physical activity.

The secondary aim is to summarize parents’ outcome expectations of their physical activity relevant to their children.

Sample Recruitment and Enrollment

Between May 17, 2014 and August 24, 2014, 130 African American parents residing in South Side, Chicago were screened for eligibility and recruited to participate in this study. A total of 128 out of 130 recruited (98 %) agreed to and consented to participate in this study. Of the 130 who agreed to participate, two formally withdrew by choosing agree to participate in the survey (consenting) and never beginning the survey questions after the disclaimer page; one person was omitted because she was 17 years of age (failure to meet study criteria). Reasons given for not participating in the study included “insufficient time to answer all of those
questions” and “I will try to do the survey at a more convenient time”. Approximately 30% (n=38) of participants were from the Black Star Project and 70% (n=89) of participants were from using network sampling (snowball approach).

Sample Characteristics

A sample of 127 participants completed the online survey. The sample consisted of 87 females (69%) and 40 males (31%), ranging in age from 25-56 years (M=36.1 years, SD=5.9). Based on the case exclusion criteria for the IPAQ (see Chapter 3), a subsample of 96 participants was eligible for analysis of Aims 2 and 3 based on the IPAQ analysis criteria. This sample consisted of 57 females (59 %) and 39 males (41%), ranging in age from 25-56 years (M=36.4 years, SD= 6.1). Both samples of respondents are presented separately.

As shown in Table 9, which displays the demographic variables for the full data set (N=127) a majority of the participants were women and consisted of female and male parents/caregivers under the age of 45 years (n=117, 92%). Many of the parents/caregivers had achieved a degree of higher learning, a majority (n=112, 88%), were currently employed full-time with a family income over $75,999 annually (n=76, 60%). Over two-thirds of participants (n=85, 67%) had one child aged 6 to 12 years living in the household and the other third had more than one child aged 6 to 12 years living in the household (n=42, 34%). The majority of participants reported that detached single-family housing (n=46, 36%); townhomes, row houses, apartments, or condos of 2-3 stories (n=26, 21%); or a mix of single-family residences and townhouses, row, houses, or condos (n=32, 25%) comprised the main type of housing in their neighborhood. Participants reported owning a home (n=88, 69%) or renting for money (n=23, 18%).
Table 9.

*Demographic Information (N=127)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>40</td>
<td>31</td>
</tr>
<tr>
<td>Female</td>
<td>87</td>
<td>69</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 to 34</td>
<td>67</td>
<td>52</td>
</tr>
<tr>
<td>35 to 44</td>
<td>50</td>
<td>39</td>
</tr>
<tr>
<td>45 to 54</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>55 to 64</td>
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<td>2</td>
</tr>
<tr>
<td>Declined to state</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Highest level of education completed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>High school diploma/GED</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Associate degree</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Technical degree</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>47</td>
<td>37</td>
</tr>
<tr>
<td>Master's degree</td>
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<td>24</td>
</tr>
<tr>
<td>Doctorate</td>
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<td>11</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed/laid off</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Looking for work</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Working part-time</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Working full-time</td>
<td>112</td>
<td>88</td>
</tr>
<tr>
<td>Keeping house/raising children full-time</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Home ownership</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owned or being bought by you</td>
<td>88</td>
<td>69</td>
</tr>
<tr>
<td>Rented for money</td>
<td>23</td>
<td>18</td>
</tr>
<tr>
<td>Occupied without payment</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Prefer not to respond/other</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td><strong>Main type of housing in neighborhood</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detached single-family housing</td>
<td>46</td>
<td>36</td>
</tr>
</tbody>
</table>
Townhouses, row houses, apartments, or condos of 2-3 stories | 26 | 21
---|---|---
Mix of single-family residences and townhouses, row houses, apartments, or condos | 32 | 25
Apartments or condos of 4-12 stories | 15 | 12
Apartments or condos of more than 12 stories | 3 | 2
Don’t know/Not sure | 5 | 4
Household income | N | %
Less than $5,000 | 2 | 2
$5,000-34,999 | 10 | 9
$35,000-49,999 | 11 | 9
$50,000-74,999 | 15 | 12
$75,000-99,999 | 37 | 29
$100,000 and greater | 39 | 31
Don't know | 2 | 2
Prefer not to answer | 10 | 8
Children ages 6-12 in household | N | %
1 child | 85 | 67
2 children | 39 | 31
3 children | 2 | 2
4 children | 0 | 0
5 children | 1 | 1

*Note: *Due to rounding, percentages may total more than 100.

The open-ended format to items about employment industry and job title yielded various responses. The PI organized participants’ responses to employment industry by categorizing employment into the U.S. Bureau of Labor Statistics’ major industry sector (U.S. Bureau of Labor Statistics, 2013). The PI organized participants’ responses to job title by categories of: educator, healthcare professional, lawyer manager, officer, and staff. Table 10 shows participants (N=127) characteristics of employment sector and job title. Participants reported that they are working in various employment sectors, with the majority working in manufacturing (n=29,
23%), educational services (n=19, 15%), financial services (n=15, 12%), and other services (n=13, 10%). The majority of participants reported job titles of staff (n=50, 39%) and manager (n=43, 34%).

Table 10.

Participants’ Type of Employment and Job Titles (N=127)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment Sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>29</td>
<td>23</td>
</tr>
<tr>
<td>Educational services</td>
<td>19</td>
<td>15</td>
</tr>
<tr>
<td>Financial activities</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Healthcare and Social assistance</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Other services</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Information</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Professional business services</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Retail trade</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Leisure and Hospitality</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Government</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Unemployed</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Publishing industries</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Construction</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Job Title</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>50</td>
<td>39</td>
</tr>
<tr>
<td>Manager</td>
<td>43</td>
<td>34</td>
</tr>
<tr>
<td>Healthcare Professional</td>
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<td>9</td>
</tr>
<tr>
<td>Officer</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Educator</td>
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<td>7</td>
</tr>
<tr>
<td>Lawyer</td>
<td>1</td>
<td>.8</td>
</tr>
</tbody>
</table>

*Note. Due to rounding, percentages may total more than 100.*

Table 11 displays the demographic variables for the study subsample (N= 96). Many of the participants possessed a degree of higher learning and were currently employed full-time
(n=84, 88%), with a family income over $75,999 annually (n=43, 45%). Over two-thirds of participants had one child aged 6 to 12 years living in the household (n=70, 73%) and over one-fourth of participants had more than one child aged 6 to 12 years living in the household (n=26, 27%). The majority of participants reported detached single-family housing (n=40, 42%); townhomes, row houses, apartments, or condos of 2-3 stories (n=20, 21%); and mix of single-family residences and townhouses, row, houses, or condos (n=20, 21%) as the main type of housing in their neighborhood. Participants reported owning a home (n=63, 67%) or renting for money (n=18, 19%).

Table 11.

**Demographic Information (N=96)**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>39</td>
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<tr>
<td>Female</td>
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<td>59</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 to 34</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td>35 to 44</td>
<td>42</td>
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<td>45 to 54</td>
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</tr>
<tr>
<td>55 to 64</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Declined to state</td>
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<td>1</td>
</tr>
<tr>
<td>Highest level of education completed</td>
<td></td>
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<tr>
<td>Less than high school</td>
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<td>High school diploma/GED</td>
<td>9</td>
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<td>Associate degree</td>
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<tr>
<td>Technical degree</td>
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<td>5</td>
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<tr>
<td>Bachelor's degree</td>
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<tr>
<td>Master's degree</td>
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<td>31</td>
</tr>
<tr>
<td>Doctorate</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>---</td>
<td>----</td>
</tr>
<tr>
<td>Unemployed/laid off</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Looking for work</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Working part-time</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Working full-time</td>
<td>84</td>
<td>88</td>
</tr>
<tr>
<td>Keeping house/raising children full-time</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Home ownership**

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owned or being bought by you</td>
<td>63</td>
<td>67</td>
</tr>
<tr>
<td>Rented for money</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>Occupied without Payment</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Prefer not to respond/other</td>
<td>13</td>
<td>14</td>
</tr>
</tbody>
</table>

**Main type of housing in neighborhood**

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached single-family housing</td>
<td>40</td>
<td>42</td>
</tr>
<tr>
<td>Townhouses, row houses, apartments, or condos of 2-3 stories</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Mix of single-family residences and townhouses, row houses, apartments, or condos</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Apartments or condos of 4-12 stories</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Apartments or condos of more than 12 stories</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Don’t know/Not sure</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**Household income**

<table>
<thead>
<tr>
<th>Income Range</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $5,000</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>$5,000-34,999</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>$35,000-49,999</td>
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<td>$50,000-74,999</td>
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<td>$75,000-99,999</td>
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<td>$100,000 and greater</td>
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<td>23</td>
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<tr>
<td>Don't know</td>
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<td>2</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>4</td>
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</tbody>
</table>

**Children ages 6-12 in household**

<table>
<thead>
<tr>
<th>Number of Children</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 child</td>
<td>70</td>
<td>73</td>
</tr>
<tr>
<td>2 children</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>3 children</td>
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<td>2</td>
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</table>

**Note.** Due to rounding, percentages may total more than 100.
As shown in Table 12, demographic characteristics of employment sector and job title for the subsample (N=96), shows type of employment by participants. Participants reported that they are working in various employment sectors, with the majority working in manufacturing (n=29, 30%), educational services (n=16, 17%), and other services (n=10, 10%). The majority of participants reported job titles of staff (n=43, 45%) and manager (n=27, 28%).

Table 12.

Study Population’s Type of Employment and Job Titles (N=96)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment Sector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>Educational services</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Other services</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Healthcare and Social assistance</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Information</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Professional business services</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Retail trade</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Government</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Unemployed</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Leisure and Hospitality</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Publishing industries</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Construction</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Job Title</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>43</td>
<td>45</td>
</tr>
<tr>
<td>Manager</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>Officer</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Healthcare Professional</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Educator</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Lawyer</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note.* Due to rounding, percentages may total more than 100.
Owing to the data cleaning procedures for the IPAQ explained in Chapter 3, 31 participants were removed from the correlational and regression analysis. There were no significant differences in age between those included (subsample N=96) and those excluded (n=31) from analysis, $t(62.32) = 1.18$, $p = .245$. A chi-square test confirmed a significant difference, however, in gender, $\chi^2(1, N=127) = 15.19$, $p < .001$, with proportionately more women than men providing incomplete data.

**Descriptive Results of Major Study Variables**

Descriptive statistics for each instrument are provided for both samples separately. Tables of the Knowledge of Physical Activity Guidelines Questionnaire, MSES, MOEES, PANES, and Preference for African American Things subscale list item results for each variable of interest (knowledge, self-efficacy, outcome expectations, physical environment, and culture) respectively. Mean scores for the entire sample (N=127) are summarized in Table 13.

<table>
<thead>
<tr>
<th>Table 13.</th>
</tr>
</thead>
</table>

**Descriptive Statistics of Main Study Variables** $(N = 127)$

<table>
<thead>
<tr>
<th>Variable (Scale Range)</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>Median</th>
<th>Mode</th>
<th>Range</th>
<th>Percentiles $(25^{th}$ and $75^{th}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge (0-1)</td>
<td>0.7</td>
<td>0.1</td>
<td>0.01</td>
<td>0.7</td>
<td>0.7</td>
<td>0.4-0.9</td>
<td>0.6,0.8</td>
</tr>
<tr>
<td>Perceived Self-efficacy (0-10)</td>
<td>6.4</td>
<td>1.9</td>
<td>0.17</td>
<td>6.8</td>
<td>6.9</td>
<td>0.2-10</td>
<td>5.2,7.7</td>
</tr>
<tr>
<td>Outcome expectations (1-5)*</td>
<td>4.0</td>
<td>0.6</td>
<td>0.05</td>
<td>4.0</td>
<td>3.9</td>
<td>1.3-5.0</td>
<td>3.8,4.4</td>
</tr>
<tr>
<td>o Social OE</td>
<td>3.7</td>
<td>0.7</td>
<td>0.07</td>
<td>3.8</td>
<td>4.00</td>
<td>3.25</td>
<td>3.3,4.3</td>
</tr>
<tr>
<td>o Physical OE</td>
<td>4.1</td>
<td>0.8</td>
<td>0.07</td>
<td>4.2</td>
<td>5.00</td>
<td>4.00</td>
<td>3.7,4.8</td>
</tr>
<tr>
<td>o Self-Evaluative OE</td>
<td>4.2</td>
<td>0.7</td>
<td>0.06</td>
<td>4.2</td>
<td>5.00</td>
<td>4.00</td>
<td>3.8,4.6</td>
</tr>
</tbody>
</table>
Following data cleaning (described above), participant performance (N=96) for the variables of interest including TV viewing are summarized in Table 14.

Table 14.

*Descriptive statistics of measure including all subscales; OE=Outcome Expectations; SSS=Subjective Social Scale; TV=television*
The internal consistency (Cronbach’s alpha) of variables of interest (knowledge, self-efficacy, outcome expectations, culture, and physical environment) are summarized in Table 15. Cronbach’s alphas ranged from 0.7-0.9 indicating acceptable reliability for the instruments measuring perceived self-efficacy, outcome expectations, culture, and physical environment with the exception of the instrument measuring knowledge. Cronbach’s alpha of 0.7 indicates acceptable reliability and 0.8 or higher indicates good reliability (Nunnally, 1978).

Table 15.

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Cronbach's alpha (α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>0.52</td>
</tr>
<tr>
<td>Perceived Self-efficacy</td>
<td>0.91</td>
</tr>
<tr>
<td>OE-Physical</td>
<td>0.92</td>
</tr>
<tr>
<td>OE – Social</td>
<td>0.79</td>
</tr>
<tr>
<td>OE – Self-Evaluative</td>
<td>0.88</td>
</tr>
<tr>
<td>Culture</td>
<td>0.81</td>
</tr>
<tr>
<td>Physical environment</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Note. OE=Outcome Expectations
Results from the MacArthur Subjective Social Scale’s SSS-US ladder or SES ladder were significantly correlated with income, \( r(93) = .27, p < .001 \) and education (highest grade level completed), \( r(94) = .26, p = .05 \), but not with employment, \( r(92) = .01, p = .946 \). There were only weak correlations between the SSS-US ladder or SES ladder with income and education. The SSS-community was not significantly correlated with education (highest grade level completed) correlation: \( r(94) = .15, p = .139 \) and employment, \( r(92) = -.01, p = .899 \). There was a weak significant relationship between SSS-community and income correlation: \( r(94) = .20, p = .05 \). The weak to no correlations of the SSS-US ladder (subjective SES) and objective SES (income, education, and employment) does not support the validity of this measure in this study.

TV viewing was based on response to one item developed by the PI; therefore, internal consistency could not be calculated. Zaiontz (2014) states that Cronbach’s alpha is superior to Kuder-Richardson reliability (K20) because it can be used with continuous and non-dichotomous data. The internal consistency scores for all scales were high with the exception of the Knowledge of Physical Activity Guidelines Questionnaire’s scores of 22 items (including shopping and TV viewing as additional items), which demonstrated poor reliability (Cronbach’s alpha = 0.52). K20 was also used to assess internal consistency because instrument developers used K20 to assess internal consistency (0.52). This reliability finding is further described in the subsequent discussion.

**Parents/Caregivers’ Physical Activity Knowledge**

Knowledge of physical activity guidelines scale’s mean score was \( M=0.7, SD=0.1 \). There were 22 items of this scale. The lowest mean scores were found with the following items: minimum length of time that one needs to be physically active throughout the day to achieve a
health benefit ($M=0.39$, $SD=0.49$); vigorous levels of physical activity are necessary to provide any health benefits ($M=0.22$, $SD=0.42$); and preparing meals is a physical activity that will provide a health benefit ($M=0.36$, $SD=0.48$). The mean scores by item are summarized in Table 16.

Table 16. Parents/Caregivers’ Knowledge of Physical Activity Guidelines Questionnaire’s Scores by item

<table>
<thead>
<tr>
<th>Item (correct response)</th>
<th>Mean Correct ($SD$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the minimum number of days per week you believe a person must be physically active? (3, 4, or 5 days)</td>
<td>0.63 (0.49)</td>
</tr>
<tr>
<td>What is the minimum length of time (in minutes) one needs to be physically active throughout a typical day in order to achieve a health benefit? (30 minutes)</td>
<td>0.39 (0.49)</td>
</tr>
<tr>
<td>Vigorous levels of physical activity are necessary to provide any health benefits. (False)</td>
<td>0.22 (0.42)</td>
</tr>
<tr>
<td>Moderate levels of physical activity do NOT provide any health benefits. (False)</td>
<td>0.65 (0.48)</td>
</tr>
<tr>
<td>Ten minutes of physical activity three times per day provide the same health benefits as a single session of 30 minutes. (True)</td>
<td>0.70 (0.46)</td>
</tr>
<tr>
<td>Everyone should get 30 minutes of moderate physical activity most days of the week. (True)</td>
<td>0.92 (0.28)</td>
</tr>
<tr>
<td>Aerobic class (Yes)</td>
<td>0.95 (0.22)</td>
</tr>
<tr>
<td>Biking (Yes)</td>
<td>0.93 (0.26)</td>
</tr>
<tr>
<td>Dancing (Yes)</td>
<td>0.86 (0.34)</td>
</tr>
<tr>
<td>Gardening and lawn work (Yes)</td>
<td>0.84 (0.37)</td>
</tr>
<tr>
<td>Jogging/running (Yes)</td>
<td>0.95 (0.22)</td>
</tr>
<tr>
<td>Playing a musical instrument (No)</td>
<td>0.42 (0.50)</td>
</tr>
<tr>
<td>Moving furniture (Yes)</td>
<td>0.74 (0.44)</td>
</tr>
<tr>
<td>Preparing meals (No)</td>
<td>0.36 (0.48)</td>
</tr>
<tr>
<td>Raking leaves (Yes)</td>
<td>0.88 (0.33)</td>
</tr>
<tr>
<td>Recreational sports (Yes)</td>
<td>0.91 (0.29)</td>
</tr>
<tr>
<td>Swimming (Yes)</td>
<td>0.95 (0.22)</td>
</tr>
<tr>
<td>Walking (Yes)</td>
<td>0.86 (0.34)</td>
</tr>
<tr>
<td>Weight lifting (Yes)</td>
<td>0.84 (0.37)</td>
</tr>
<tr>
<td>Childcare (No)</td>
<td>0.66 (0.48)</td>
</tr>
</tbody>
</table>
Shopping (No) & 0.70 (0.46) \\
TV viewing (No) & \text{ } \\
Total subscore* & 0.73 (0.12) \\

\textit{Note.} *Subscore consisted of the mean correct

Morrow et al. (2004) used Kuder-Richardson to assess internal consistency for the Knowledge of Physical Activity Guidelines Questionnaire. Internal consistency using Kuder-Richardson reliability (K20) and Cronbach’s alpha for the Knowledge of Physical Activity Guidelines Questionnaire in this study was 0.52. Item by item analysis showed that if two items included in addition to the 20 original items were excluded from analysis they would not dramatically change the reliability of the knowledge score. Excluding the item “Does shopping constitute as a physical activity providing a health benefit” only raised the Cronbach’s alpha to 0.55, whereas excluding the item, “Does TV viewing constitute as a physical activity providing a health benefit” further decreased the Cronbach's alpha to 0.41. The low reliability of the instrument in this study is consistent with the reliability estimated by the instrument’s developers.

\textbf{Parents/Caregivers’ TV Viewing}

Frequencies for TV viewing are provided in Table 17. Approximately 83% of the sample watched three hours or less of TV per day.

Table 17.

\textit{Frequency of Parents/Caregivers’ TV Viewing by Hours Per Day (N = 96)}
<table>
<thead>
<tr>
<th>Hours per day</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>38</td>
<td>41</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Parents/Caregivers’ Perceived Self-Efficacy**

The MSES had a mean score of $M=6.4$, $SD=1.9$. There are a total of nine items. The mean scores by item are summarized in Table 18. The item about one’s confidence to perform exercise when not feeling well had the lowest mean score $M=4.3$, $SD=3.1$. The highest mean score was for items about one’s confidence about following directions to complete exercise $M=7.6$, $SD=2.4$ and performing all the required movements $M=7.2$, $SD=2.3$. The internal consistency for this scale was $\alpha=0.91$, which is consistent with the instrument’s developers (Cronbach’s alphas ranged 0.76-0.95).

Table 18.

*MSES (Parents/Caregivers’ Perceived Self-Efficacy) Scores by item*

<table>
<thead>
<tr>
<th>Item (Response Option Range: 1-10)</th>
<th>M (SD)</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete exercise using proper technique</td>
<td>6.7 (2.3)</td>
<td>7</td>
</tr>
<tr>
<td>Follow directions to complete exercise</td>
<td>7.6 (2.4)</td>
<td>8</td>
</tr>
<tr>
<td>Perform all the required movements</td>
<td>7.2 (2.3)</td>
<td>8</td>
</tr>
<tr>
<td>Include exercise in your daily routine</td>
<td>6.7 (2.4)</td>
<td>7</td>
</tr>
<tr>
<td>Consistently exercise three times per week</td>
<td>6.7 (2.5)</td>
<td>7</td>
</tr>
<tr>
<td>Arrange schedule to include regular exercise</td>
<td>6.8 (2.5)</td>
<td>7</td>
</tr>
</tbody>
</table>
Exercise when you feel discomfort  5.1 (2.7)  5  
Exercise when you lack energy  5.2 (2.7)  5  
Exercise when you don't feel well  4.3 (3.1)  4  
Total subscore*  6.3 (2.0)  6.6  

*Subscore consisted of the mean of individual items

Parents/Caregivers’ Outcome Expectations

The MOESS consisted of three subscales. The mean scores for the subscales are the following: social outcome expectations ($M=3.6$, $SD=0.7$); physical outcome expectations ($M=4.1$, $SD=0.8$); and self-evaluative ($M=4.2$, $SD=0.7$). The mean scores by item are summarized in Table 19. The lowest mean score was for the item of “exercise will increase my acceptance by others” ($M=3.5$, $SD=1.0$). Wójcicki et al. (2009) reported acceptable internal consistency for this scale (Cronbach’s alphas ranged from 0.81-0.84). The internal consistency for each subscale in the dissertation study improved to Cronbach’s alphas ranging from 0.79-0.92, meaning high internal consistency.

There were three items (Exercise will make me a better role model for my children; Exercise will allow my children to see me being active and they will become active; and Exercise will enable increased physical activity for me and my children) added to the MOESS that addressed the secondary aim to summarize parents’ outcome expectations of their physical activity relevant to their children. On a scale of 1 to 5, the overall mean was $M=4.2$, $SD=0.8$ as shown in Table 26 on page 100, indicating strong levels of outcome expectations for exercise relative to their children.

Table 19.

<table>
<thead>
<tr>
<th>Item (Response Option)</th>
<th>Strongly Disagree</th>
<th>Neither</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>$M$ ($SD$)</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range: 1-5</td>
<td>disagree N (%) (1)</td>
<td>N (%) (2)</td>
<td>disagree or agree N (%) (3)</td>
<td>N (%) (4)</td>
<td>Agree N (%) (5)</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------</td>
<td>-----------</td>
<td>----------------------------</td>
<td>-----------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>Exercise will improve my ability to perform daily activities</td>
<td>5 (4)</td>
<td>0 (0)</td>
<td>13 (10)</td>
<td>62 (48)</td>
<td>48 (38)</td>
<td>4.2 (0.9)</td>
</tr>
<tr>
<td>Exercise will improve my social standing</td>
<td>4 (3)</td>
<td>7 (6)</td>
<td>36 (28)</td>
<td>52 (41)</td>
<td>29 (23)</td>
<td>3.7 (1.0)</td>
</tr>
<tr>
<td>Exercise will improve my overall body functioning</td>
<td>6 (5)</td>
<td>4 (3)</td>
<td>14 (11)</td>
<td>44 (34)</td>
<td>60 (47)</td>
<td>4.2 (1.1)</td>
</tr>
<tr>
<td>Exercise will help manage stress</td>
<td>3 (2)</td>
<td>0 (0)</td>
<td>17 (13)</td>
<td>53 (41)</td>
<td>55 (43)</td>
<td>4.2 (0.9)</td>
</tr>
<tr>
<td>Exercise will strengthen my bones</td>
<td>4 (3)</td>
<td>6 (5)</td>
<td>27 (21)</td>
<td>51 (40)</td>
<td>40 (31)</td>
<td>3.9 (1.0)</td>
</tr>
<tr>
<td>Exercise will improve my mood</td>
<td>2 (2)</td>
<td>3 (2)</td>
<td>20 (16)</td>
<td>51 (40)</td>
<td>52 (41)</td>
<td>4.2 (0.9)</td>
</tr>
<tr>
<td>Exercise will increase my muscle strength</td>
<td>3 (2)</td>
<td>2 (2)</td>
<td>18 (14)</td>
<td>47 (37)</td>
<td>58 (45)</td>
<td>4.2 (0.9)</td>
</tr>
<tr>
<td>Exercise will make me more at ease with people</td>
<td>2 (2)</td>
<td>4 (3)</td>
<td>33 (26)</td>
<td>54 (42)</td>
<td>35 (27)</td>
<td>3.9 (0.9)</td>
</tr>
<tr>
<td>Exercise will aid in weight control</td>
<td>3 (2)</td>
<td>4 (3)</td>
<td>17 (13)</td>
<td>50 (39)</td>
<td>54 (42)</td>
<td>4.2 (0.9)</td>
</tr>
<tr>
<td>Exercise will improve my psychological state</td>
<td>2 (2)</td>
<td>2 (2)</td>
<td>18 (14)</td>
<td>63 (49)</td>
<td>43 (34)</td>
<td>4.1 (0.8)</td>
</tr>
<tr>
<td>Exercise will provide companionship</td>
<td>1 (1)</td>
<td>10 (10)</td>
<td>34 (35)</td>
<td>34 (35)</td>
<td>17 (18)</td>
<td>3.7 (0.9)</td>
</tr>
<tr>
<td>Exercise will improve the functioning of my cardiovascular system</td>
<td>2 (2)</td>
<td>2 (2)</td>
<td>18 (19)</td>
<td>33 (34)</td>
<td>41 (43)</td>
<td>4.2 (0.9)</td>
</tr>
<tr>
<td>Exercise will increase my mental alertness</td>
<td>3 (3)</td>
<td>1 (1)</td>
<td>11 (12)</td>
<td>54 (56)</td>
<td>27 (28)</td>
<td>4.1 (0.8)</td>
</tr>
<tr>
<td>Exercise will increase my acceptance by others</td>
<td>3 (3)</td>
<td>15 (16)</td>
<td>38 (40)</td>
<td>28 (29)</td>
<td>12 (13)</td>
<td>3.5 (1.0)</td>
</tr>
<tr>
<td>Exercise will give me sense of personal accomplishment</td>
<td>2 (2)</td>
<td>2 (2)</td>
<td>11 (12)</td>
<td>47 (49)</td>
<td>34 (35)</td>
<td>4.2 (0.8)</td>
</tr>
<tr>
<td>Exercise will make me a better role model for my children</td>
<td>2 (2)</td>
<td>3 (3)</td>
<td>11 (12)</td>
<td>43 (45)</td>
<td>37 (39)</td>
<td>4.2 (0.9)</td>
</tr>
<tr>
<td>Exercise will allow my children to see me being active and they will become active</td>
<td>2 (2)</td>
<td>1 (1)</td>
<td>12 (13)</td>
<td>45 (47)</td>
<td>36 (38)</td>
<td>4.2 (0.8)</td>
</tr>
<tr>
<td>Exercise will enable</td>
<td>1 (1)</td>
<td>2 (2)</td>
<td>14 (15)</td>
<td>44 (46)</td>
<td>35 (37)</td>
<td>4.2 (0.8)</td>
</tr>
</tbody>
</table>
increased physical activity for me and my children

| Total subscore* | 4.0 (0.6) | 4 |

Note.*Subscore consisted of the mean of individual items

Parents/Caregivers’ Environment (sociostructural and cultural factors)

**SES.** The MacArthur’s Subjective Social Status (SSS) subscale for the community ladder had a mean subscale score of $M=7.0$, $SD=1.6$. MacArthur’s Subjective Social Status subscale for the US-SSS ladder or SES ladder had a mean subscale score of $M=6.6$, $SD=1.6$.

**Environment.** Parents’ physical environment using PANES had a subscale mean score of $M=2.9$, $SD=0.5$. The mean scores by item are summarized in Table 20. The highest mean score was for the item about sidewalks being present on most of the streets within the neighborhood ($M=3.6$, $SD=0.8$), which indicates an average built environment for physical activity. The lowest mean scores were for the items about crime rate making it unsafe to go for walks at night ($M=2.1$, $SD=1.0$); increased traffic making it difficult or unpleasant to walk in the neighborhood ($M=2.1$, $SD=1.1$); increased traffic on the streets making it difficult or unpleasant to ride a bicycle in the neighborhood ($M=2.2$, $SD=1.0$); and crime rate in the neighborhood making it unsafe to go on walks during the day ($M=2.3$, $SD=1.1$) indicating a decreased neighborhood walkability.

The internal consistency of this scale using Cronbach’s alpha was $\alpha=0.80$, which indicates acceptable internal consistency. Sallis et al. (2010) used test-retest ICC to assess inter-rater reliability, which ranged from 0.52 to 0.88.
Table 20.

**PANES (Parents/Caregivers’ Physical Environment) Scores by item**

<table>
<thead>
<tr>
<th>Item (Response Option Range: 1-4)</th>
<th>N</th>
<th>Strongly disagree N (%)</th>
<th>Disagree N (%)</th>
<th>Agree N (%)</th>
<th>Strongly Agree N (%)</th>
<th>Don’t know/Not sure N (%)</th>
<th>M (SD)</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many shops, stores, markets or other places to buy things I need are within easy walking distance of my home</td>
<td>95</td>
<td>18 (19)</td>
<td>15 (16)</td>
<td>23 (24)</td>
<td>39 (41)</td>
<td>1 (1)</td>
<td>2.9</td>
<td>3</td>
</tr>
<tr>
<td>It is within a 10-15 minutes walk to a transit stop (such as bus, train trolley, or tram) from my home</td>
<td>94</td>
<td>4 (4)</td>
<td>10 (10)</td>
<td>19 (20)</td>
<td>61 (64)</td>
<td>2 (2)</td>
<td>3.5</td>
<td>4</td>
</tr>
<tr>
<td>There are sidewalks on most of the streets in my neighborhood</td>
<td>94</td>
<td>6 (6)</td>
<td>3 (3)</td>
<td>18 (19)</td>
<td>67 (70)</td>
<td>2 (2)</td>
<td>3.6</td>
<td>4</td>
</tr>
<tr>
<td>There are facilities to bicycle in or near my neighborhood, such as special lanes, separate paths or trails, shared use paths for cycles and pedestrians</td>
<td>93</td>
<td>11 (12)</td>
<td>6 (6)</td>
<td>26 (27)</td>
<td>50 (52)</td>
<td>3 (3)</td>
<td>3.2</td>
<td>4</td>
</tr>
<tr>
<td>My neighborhood has several free or low cost recreation facilities, such as parks, walking trails, bike paths, recreation centers, playgrounds, public swimming pools, etc.</td>
<td>95</td>
<td>5 (5)</td>
<td>9 (9)</td>
<td>33 (34)</td>
<td>48 (50)</td>
<td>1 (1)</td>
<td>3.3</td>
<td>4</td>
</tr>
<tr>
<td>The crime rate in my neighborhood makes it unsafe to go on walks at night*</td>
<td>95</td>
<td>35 (37)</td>
<td>32 (33)</td>
<td>16 (17)</td>
<td>12 (13)</td>
<td>1 (1)</td>
<td>2.1</td>
<td>2</td>
</tr>
<tr>
<td>There is so much traffic on the streets that makes it difficult or unpleasant to walk in my neighborhood*</td>
<td>94</td>
<td>40 (42)</td>
<td>17 (18)</td>
<td>27 (28)</td>
<td>10 (10)</td>
<td>2 (2)</td>
<td>2.1</td>
<td>2</td>
</tr>
<tr>
<td>I see many people being</td>
<td>93</td>
<td>9 (9)</td>
<td>13 (14)</td>
<td>31 (32)</td>
<td>40 (42)</td>
<td>3 (3)</td>
<td>3.1</td>
<td>3</td>
</tr>
</tbody>
</table>
physically active in my neighborhood doing things like walking, jogging, cycling, or playing sports and active games

There are many interesting things to look at while walking in my neighborhood

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>Item</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
<td>13 (14)</td>
<td>13 (14)</td>
<td>38 (40)</td>
<td>31 (32)</td>
<td>1 (1)</td>
<td>2.9 (1.0)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are many four-way intersections in my neighborhood</td>
<td>93</td>
<td>9 (9)</td>
<td>10 (10)</td>
<td>26 (27)</td>
<td>48 (50)</td>
<td>3 (3)</td>
<td>3.2 (1.0)</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The sidewalks in my neighborhood are well maintained (paved, with few cracks) and not obstructed</td>
<td>95</td>
<td>9 (9)</td>
<td>3 (3)</td>
<td>45 (47)</td>
<td>38 (40)</td>
<td>1 (1)</td>
<td>3.2 (0.9)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Places for bicycling (such as bike paths) in and around my neighborhood are well maintained and not obstructed</td>
<td>91</td>
<td>13 (14)</td>
<td>4 (4)</td>
<td>29 (30)</td>
<td>45 (47)</td>
<td>5 (5)</td>
<td>3.2 (1.1)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is so much traffic on the streets that it makes it difficult or unpleasant to ride a bicycle in my neighborhood*</td>
<td>92</td>
<td>27 (28)</td>
<td>28 (29)</td>
<td>27 (28)</td>
<td>10 (10)</td>
<td>4 (4)</td>
<td>2.2 (1.0)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The crime rate in my neighborhood makes it unsafe to go on walks during the day*</td>
<td>95</td>
<td>29 (30)</td>
<td>26 (27)</td>
<td>25 (26)</td>
<td>15 (16)</td>
<td>1 (1)</td>
<td>2.3 (1.1)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are many places to go within easy walking distance at my home</td>
<td>95</td>
<td>7 (7)</td>
<td>17 (18)</td>
<td>40 (42)</td>
<td>31 (32)</td>
<td>1 (1)</td>
<td>3.0 (0.9)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. * Item is reverse scored, **Total subscore consisted of the mean of individual items

**Culture.** The AAAS-R-Preference for African American things subscale includes eight items. This subscale had a subscale mean score of $M=4.7, SD=1.1$. Item by item performance for this subscale is summarized in Table 21. The internal consistency of this subscale was $\alpha=0.80,$
which is consistent with the instrument’s developers for this subscale ($\alpha=0.89$) (Landrine & Klonoff, 2000).

Table 21.

*Parents/Caregivers’ Preference for African American Things Subscale Scores by item*

<table>
<thead>
<tr>
<th>Item</th>
<th>Totally disagree</th>
<th>Moderately disagree</th>
<th>Slightly disagree</th>
<th>Sort of agree</th>
<th>Sort of true</th>
<th>Slightly agree</th>
<th>Moderately agree</th>
<th>Totally agree</th>
<th>$M$ (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of the music I listen to is by Black artists.</td>
<td>4 (4)</td>
<td>7 (7)</td>
<td>10 (10)</td>
<td>13 (14)</td>
<td>28 (29)</td>
<td>26 (27)</td>
<td>8 (8)</td>
<td>4.7 (1.6)</td>
<td></td>
</tr>
<tr>
<td>I like Black music more than White music.</td>
<td>6 (6)</td>
<td>2 (2)</td>
<td>13 (14)</td>
<td>20 (21)</td>
<td>13 (14)</td>
<td>27 (28)</td>
<td>15 (16)</td>
<td>4.8 (1.7)</td>
<td></td>
</tr>
<tr>
<td>I listen to Black radio stations.</td>
<td>4 (4)</td>
<td>0 (0)</td>
<td>9 (9)</td>
<td>23 (24)</td>
<td>18 (19)</td>
<td>26 (27)</td>
<td>16 (17)</td>
<td>5.0 (1.8)</td>
<td></td>
</tr>
<tr>
<td>I try to watch all the Black shows on TV.</td>
<td>13 (14)</td>
<td>9 (9)</td>
<td>14 (15)</td>
<td>9 (9)</td>
<td>27 (28)</td>
<td>18 (19)</td>
<td>6 (6)</td>
<td>4.1 (1.7)</td>
<td></td>
</tr>
<tr>
<td>The person I admire the most is Black.</td>
<td>6 (6)</td>
<td>0 (0)</td>
<td>7 (7)</td>
<td>16 (17)</td>
<td>23 (24)</td>
<td>16 (17)</td>
<td>28 (29)</td>
<td>5.2 (1.7)</td>
<td></td>
</tr>
<tr>
<td>I feel more comfortable around Blacks than around</td>
<td>11 (12)</td>
<td>4 (4)</td>
<td>11 (12)</td>
<td>21 (22)</td>
<td>24 (25)</td>
<td>20 (21)</td>
<td>5 (5)</td>
<td>4.3 (1.7)</td>
<td></td>
</tr>
</tbody>
</table>
Whites.

When I pass a Black person (stranger) on the street, I always say hello or nod at them.

Most of my friends are Black.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Median</th>
<th>Mode</th>
<th>Range</th>
<th>Inter-quartile range (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>METs/week</td>
<td>3600.8</td>
<td>3265.9</td>
<td>333.3</td>
<td>2650.5</td>
<td>0, 990, 2034, 2274, 2556</td>
<td>1448.3-4590.8</td>
<td></td>
</tr>
<tr>
<td>Physical activity level</td>
<td>2.4</td>
<td>0.7</td>
<td>0.08</td>
<td>3.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0-3.0</td>
</tr>
</tbody>
</table>

Note. *Subscore consisted of the mean of individual items

Results for Aim 1: Parents/Caregivers’ Physical Activity

Table 22 summarizes the mean, standard deviation, median, mean, mode, range, and inter-quartile range (IQR) for the continuous and categorical scores for the IPAQ-S. With regard to physical activity, parents/caregivers reported a mean score for METs/week ($M=3600.8$, $SD=3265.9$), median score of 2650.5, and an IQR of 1448.3-4590.8 METs/week.
IPAQ developers created the IPAQ with three categories of low (1), moderate (2), and high (3). Frequencies for physical activity are provided in Table 23. Fifty-two respondents (54%) reported high levels of physical activity. The IPAQ also asked respondents to estimate the number of hours spent sitting each day. The IPAQ developers added sitting questions as separate indicators and excluded these from the physical activity score (Craig et al., 2003). The 96 respondents displayed a median of 300 minutes (or 5 hours) per day sitting ($IQR = 80 – 420$). These results suggest that respondents possibly overestimated their physical activity levels on the IPAQ-S.

Table 23.

<table>
<thead>
<tr>
<th>Physical Activity Levels (IPAQ-S) in Parent/Caregivers of Young African-American Children (N = 96)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of physical activity</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>Low</td>
</tr>
<tr>
<td>Moderate</td>
</tr>
<tr>
<td>High</td>
</tr>
</tbody>
</table>

Note. Low categorical score (Category 1) is for individuals who do not meet the criteria for Categories 2 or 3; Moderate categorical score (Category 2) is for individuals with a pattern of activity classified on the following criteria: a) 3 or more days of vigorous-intensity of at least 20 minutes per day, or b) 5 or more days of moderate-intensity activity and/or walking of at least 30 minutes per day, or c) 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum total physical activity of at least 600 MET-minutes/week; and High categorical score (Category 3) is for individuals with higher levels of physical activity participation based on two classifications: a) vigorous-intensity activity for at least 3 days achieving a minimum total physical activity of at least 1500 MET-minutes/week or b) 7 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum total physical activity of at least 3000 MET-minutes/week.

Results for Aim 2: Associations Among Major Study Variables

The objective of Aim 2 was to describe the association among personal factors (physical activity knowledge, task and scheduling self-efficacy, outcome expectations for exercise),
environmental factors (socioeconomic status (SES), perceived physical environment, and culture), TV viewing, and self-reported physical activity of parents/caregivers of young African American children (Table 24). An independent samples t-test revealed no significant difference between men and women in METs/week, \( t(94) = 0.23, p = .820 \). A chi-square test confirmed no significant difference in between men and women in level of activity (low, moderate, high), \( \chi^2(2) = 3.14, p = .208 \), nor was there any relationship between activity (METs/week) and age, based on calculated Spearman's rho correlation coefficient, \( r(93) = -.09, p = .369 \). The Spearman's rho correlation between income and METs/week was weak and non-significant, \( r(93) = .02, p = .841 \). The correlation between highest level of education and METs/week was also weak and non-significant, \( r (94) = .04, p = .669 \).

Knowledge was significantly related to parents/caregivers’ levels of activity (METs/week), \( r_\zeta = -.30, p<.05 \) suggesting a moderate negative agreement. This inverse association between knowledge and physical activity suggests that as knowledge about exercise increased in this population, physical activity decreased. Physical environment was significantly related to parents/caregivers’ level of activity (METs/week), \( r_\zeta = .25, p<.05 \) suggesting a weak positive agreement.
Table 24.

Spearman's Rho Correlation Coefficient Between Main Variables and Physical Activity (N = 96)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>- .30*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>.20</td>
<td>-.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome: physical</td>
<td>-.18</td>
<td>.52*</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome: social</td>
<td>.15</td>
<td>-.19</td>
<td>.06</td>
<td>.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome: self-evaluative</td>
<td>-.12</td>
<td>.46*</td>
<td>-.03</td>
<td>.75*</td>
<td>.31*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome: children</td>
<td>-.16</td>
<td>.38*</td>
<td>-.01</td>
<td>.75*</td>
<td>.28*</td>
<td>.68*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Culture</td>
<td>.12</td>
<td>-.30*</td>
<td>.30*</td>
<td>-.15</td>
<td>.23*</td>
<td>-.17</td>
<td>-.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical environment</td>
<td>.25*</td>
<td>-.02</td>
<td>.04</td>
<td>.10</td>
<td>.13</td>
<td>.05</td>
<td>.11</td>
<td>.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSS – Community ladder</td>
<td>.05</td>
<td>.07</td>
<td>-.01</td>
<td>.16</td>
<td>.24*</td>
<td>.24*</td>
<td>.16</td>
<td>.03</td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSS – US ladder</td>
<td>.18</td>
<td>-.07</td>
<td>.08</td>
<td>-.01</td>
<td>.22*</td>
<td>.10</td>
<td>.03</td>
<td>.16</td>
<td>.12</td>
<td>.59*</td>
<td></td>
</tr>
<tr>
<td>TV viewing</td>
<td>-.05</td>
<td>.34*</td>
<td>-.15</td>
<td>-.30*</td>
<td>-.16</td>
<td>.28*</td>
<td>.15</td>
<td>-.12</td>
<td>-.09</td>
<td>.12</td>
<td>-.11</td>
</tr>
</tbody>
</table>

Note. METs/week= MET (Metabolic Equivalent)-minutes per week; SSS=Subjective Social Scale; TV=television; * p < .05
TV viewing was not significantly related to parents/caregivers’ physical activity (Table 22). However, TV viewing was significantly related to parents/caregivers’ knowledge, $r_\text{G}=.34$, p<.05; parents’ outcome expectations (self-evaluative), $r_\text{G}=.28$, p<.05; and parents’ outcome expectations (physical), $r_\text{G}=-.30$, p<.05 (inverse).

**Results of Aim 3: Predictors of Physical Activity**

Aim 3 was to explore potential personal and environmental predictors of physical activity by using parents/caregivers’ self-reported physical activity as an outcome variable. Predictor variables were knowledge, TV viewing, perceived self-efficacy, outcome expectations, and environment (SES, culture, and physical environment). Multiple linear regression analysis was conducted to explore potential personal and environmental predictors of physical activity using IPAQ’s METs/week scores.

The PI used multiple linear regression analysis to develop a model for predicting parents’ physical activity (METs/week) from their knowledge, self-efficacy, outcome expectations, socio-structural factors (SSS-community, SSS-US, culture, physical environment), and hours of TV viewing. To ensure proper estimation of values, data were first assessed for evidence of linearity between the dependent and independent variables, statistical independence of the errors, homoscedasticity, and normality of error distribution. A plot of the standardized predicted values and standardized residuals indicated the presence of heteroscedasticity. Heteroscedasticity occurs when residuals at each level of the predictors have variances that are unequal (Fields, 2009). Therefore, a natural log transformation was applied to the outcome variable METs/week. A log transformation can be used to normalize skewed data and stabilize the variance of a sample. A log transformation is applied to the outcome or dependent variable (Fields, 2009). Erroneous
conclusions and misleading associations are made when highly skewed data are not transformed (Hubbard, 1978). Two respondents claimed zero physical activity. Their scores were transformed to half the METs/week of the next lowest value (METs/week = 99) to enable a log transformation of their scores and include those respondents in the analysis.

Regression coefficients are shown in Table 25. The multiple regression model with all eight predictors produced a predictor model accounting for 33% of the variance in physical activity (natural log of METs/week), $F(11, 84) = 3.73, p < .001, R^2 = .33$. Only knowledge, self-efficacy, and physical environment predictors had significant ($p < .05$) partial effects in the full model.

Table 25.

*Linear Model of Predictors of Parents/Caregivers' Physical Activity*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$b$ (95% CI)</th>
<th>$SE$</th>
<th>$β$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>6.29 (4.02, 8.57)</td>
<td>1.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>-2.26 (-4.12, -0.39)</td>
<td>0.94</td>
<td>-0.25</td>
<td>-2.42*</td>
<td>.018</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0.12 (0.01, 0.22)</td>
<td>0.05</td>
<td>0.21</td>
<td>2.20*</td>
<td>.030</td>
</tr>
<tr>
<td>Outcome: physical</td>
<td>0.01 (-0.47, 0.49)</td>
<td>0.24</td>
<td>0.01</td>
<td>0.05</td>
<td>.966</td>
</tr>
<tr>
<td>Outcome: social</td>
<td>0.13 (-0.19, 0.44)</td>
<td>0.16</td>
<td>0.09</td>
<td>0.86</td>
<td>.421</td>
</tr>
<tr>
<td>Outcome: self-evaluative</td>
<td>0.25 (-0.29, 0.80)</td>
<td>0.27</td>
<td>0.17</td>
<td>0.93</td>
<td>.355</td>
</tr>
<tr>
<td>Outcome: children</td>
<td>-0.35 (-0.80, 0.10)</td>
<td>0.23</td>
<td>-0.24</td>
<td>-1.63</td>
<td>.125</td>
</tr>
<tr>
<td>Culture</td>
<td>-0.06 (-0.26, 0.15)</td>
<td>0.10</td>
<td>-0.06</td>
<td>-0.61</td>
<td>.565</td>
</tr>
<tr>
<td>Physical environment</td>
<td>0.73 (0.32, 1.14)</td>
<td>0.21</td>
<td>0.33</td>
<td>3.56*</td>
<td>.001</td>
</tr>
<tr>
<td>SSS – Community ladder</td>
<td>-0.08 (-0.2, 0.06)</td>
<td>0.07</td>
<td>-0.13</td>
<td>-1.12</td>
<td>.258</td>
</tr>
<tr>
<td>SSS – US ladder</td>
<td>0.12 (-0.02, 0.27)</td>
<td>0.07</td>
<td>0.19</td>
<td>1.70</td>
<td>.096</td>
</tr>
<tr>
<td>TV viewing</td>
<td>0.07 (-0.06, 0.21)</td>
<td>0.07</td>
<td>0.11</td>
<td>1.24</td>
<td>.267</td>
</tr>
</tbody>
</table>

*Note. $R^2 = .24$, * Indicates $p < .05$; SSS=Subjective Social Scale; TV=television*
Table 25 shows knowledge significantly predicted parents/caregivers’ physical activity (METs/week) $b=-2.26$, $SE\ b=0.94$, $\beta=-.25$, $t(84)=-2.42$, $p=.018$; The Knowledge of Physical Activity guidelines scale has a significant negative correlation, indicating that after accounting for the other variables in the model, those with higher knowledge scores were expected to have lower physical activity. Self-efficacy significantly predicted parents/caregivers’ physical activity $b=0.12$, $SE\ b=0.05$, $\beta=.21$, $t(84)=2.20$, $p=.030$. Physical environment significantly predicted parents/caregivers’ physical activity $b=0.73$, $SE\ b=0.21$, $\beta=.33$, $t(84)=3.56$, $p=.001$.

The model works better than chance; the model is expected to estimate physical activity better than if each participant were assigned a mean score for the population represented by this sample. The model accounts for more than 30% of the variance suggesting that other influences not captured in the survey may better predict physical activity.

**Results of Secondary Aim**

The objective of the Secondary Aim was to describe parents' outcome expectations of physical activity relevant to their children. A mean score of outcome expectations of parents specific to their children was created, based on the average of the three variables related to children in the outcome expectations questionnaire (Table 26).

Table 26.

<table>
<thead>
<tr>
<th>Item (Response Option Range: 1-5)</th>
<th>Strongly disagree N (%)</th>
<th>Disagree N (%)</th>
<th>Neither disagree or agree N (%)</th>
<th>Agree N (%)</th>
<th>Strongly Agree N (%)</th>
<th>M (SD)</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise will make me a better role</td>
<td>2 (2)</td>
<td>3 (3)</td>
<td>11 (12)</td>
<td>43 (45)</td>
<td>37 (39)</td>
<td>4.2 (0.9)</td>
<td>4</td>
</tr>
</tbody>
</table>
The relationship between parents/caregivers’ physical activity as measured by METs/week and the items related to outcome expectations relevant to their children are shown in Table 27. The mean score of those three items was $M=4.2$, $SD=0.7$. The three items were not significantly related to physical activity (METs/week). There was also a non-significant weak negative correlation between the three items and parents’ physical activity continuous scores, $r_s = -0.16$, $p<0.05$.

Table 27.

*Spearman's Rho Correlation Coefficient for Parents/Caregivers' Outcome Expectations Relevant to their Children*

<table>
<thead>
<tr>
<th>Item</th>
<th>METs/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise will make me a better role model for my children.</td>
<td>-.15</td>
</tr>
<tr>
<td>Exercise will allow my children to see me being active and they will become active</td>
<td>-.14</td>
</tr>
<tr>
<td>Exercise will enable increased physical activity for me and my children</td>
<td>-.13</td>
</tr>
<tr>
<td>Outcome expectations related to children</td>
<td>-.16</td>
</tr>
</tbody>
</table>
(Mean Score)

*Note.* METs/week = MET (Metabolic Equivalent)-minutes per week
Chapter 5: Discussion

To the investigator’s knowledge, this is the first cross-sectional study examining self-reports of physical activity behavior guided by SCT among African Americans in South Side, Chicago. The purpose of this study was to describe physical activity in parents of young (ages 6-12 years) African American children, parents’ specific personal and environmental factors related to physical activity, potential predictors of physical activity and parents’ perceptions of the outcomes of their own physical behaviors.

This chapter presents the discussion of the sample characteristics, relationships among the main variables using SCT as a guide, main variables as predictors of physical activity, and exploration of the relationship of outcome expectations to physical activity. Remaining discussion includes study limitations and implications for nursing practice, theory, and future research.

Sample Characteristics

Demographic characteristics for this study were different from available information for the African American population in the US, wherein, approximately 13.7% of African Americans have achieved a college degree (U.S. Census, 2012a), 51% of African Americans are employed with a median family income of $40,946 (U.S. Bureau, 2012b). The sample in this study differed. Many participants were currently employed working part-time or full-time (93%), 70% of participants had achieved a bachelor’s degree or higher with an annual family income over $50,000 (65%). The majority of participants were recruited through network sampling (snowball sampling), which is associated with bias because there is likely an over-representation of individuals with numerous social connections who share similar characteristics.
The participants in this study were highly educated, earning high incomes, and employed full-time suggesting that these participants shared the survey link with people that shared the same demographic characteristics. South Side, Chicago is comprised with African American residents that range from affluent to impoverished (South Side Chicago, n.d.). The highly educated parents/caregivers with higher household income and working full-time in this sample is not unusual for South Side, Chicago; however, as a result of the participants with similar selected demographic characteristics, the results of this survey cannot be generalized to population with different sample characteristics such as impoverished residents.

The majority of parents/caregivers in this study were women. The recruitment of more women than men is not unique in research of African American parents. Females dominate samples in research among African American parents because African American women face the highest levels of single motherhood (Clark, 2005). This finding concurs with other studies related to physical activity among African Americans in which the majority of studies of targeting African American women and men included samples comprised of female participants (Whitt-Glover et al., 2009; Siddiqi et al. 2011; Li et al., 2012; McGee et al., 2014). Systematic reviews of physical activity among African American adults suggest that more research is needed to clarify physical activity behavior for both genders among African American parents. Bopp et al. (2006) discusses the importance of examining the correlates of physical activity behavior among African American men. The predominately female population in this study suggests the need to look at the personal and environmental factors influencing physical activity behavior of men among African American parents.
The subsequent discussion will focus on the findings of the analysis of Aim 1.

**Parents’ Physical Activity**

The unexpected finding in this study is high self-reported physical activity levels among African American parents. It is possible that participants who provided impossible levels of physical activity misinterpreted the questions regarding calculating physical activity. Finding high levels of physical activity is inconsistent with the low physical activity levels among African American parents as reported in the systematic review of Whitt-Glover & Kumanyika, 2009.

The majority of participants in this study were women with mean physical activity (IPAQ-S) scores greater than 600 METs/week. The mean IPAQ-S scores are similar to physical activity levels reported by Carter-Parker, Edwards, & McCleary-Jones (2012). These investigators focused solely on women who accounted for over 50% of participants and reported IPAQ scores greater than 600 METs/week, suggesting that African American women are physically active. However, the mean physical activity (IPAQ-S) scores for parents/caregivers for this dissertation study are in contrast to those the IPAQ-S scores reported by Wolin et al. (2008). These investigators evaluated the IPAQ-S among low-income African Americans ages 24-70 years (N=142) and found African Americans did not engage in vigorous physical activity. The finding of African Americans engaging in vigorous physical activity in this dissertation study is in contrast to Wolin et al. (2008). This dissertation finding is possibly a result of the majority of participants earned high-incomes suggesting that income may be a predictor of physical activity among African Americans; however, analysis of income in relation to physical activity was not the specific aim of the current study suggesting the need to use more items
assessing income to predict physical activity among African American parents/caregivers. Mâsse et al. (2012) found that 21% of families (N=59 African American families) were not physically active. Polley et al. (2005) found African American parents (N=40) to have an activity level mean score of $M=2.4$, $SD=1.3$ on a self-reported activity measure with 1 meaning the lowest activity level or no regular exercise program and 6 meaning the highest activity level or more than 3 hours weekly or 30 minutes daily of vigorous physical activity; indicating that parents had low to fair physical activity levels. The physical activity levels of parents and caregivers in this dissertation study is similar to Nicholas-English et al. (2006) who found that African American mothers (N=133) of children ages 8-12 years of age reported an average of 2.1 hours per day of moderate activity on an interviewer-administered seven-day physical activity recall. The reported daily average of hours of moderate activity engagement suggests mothers engaged in approximately 14 hours of moderate activity weekly. Nicholas-English et al. also reported that 19% of African American mothers reported participating in vigorous activity; however, these investigators did not use METs/week to determine parents’ activity level).

In summary, the demographic findings of this dissertation study did not reflect the literature, possibly because (a) the sample of parents/caregivers in the dissertation had higher incomes and most of the prior studies either targeted or had a higher proportion of low income participants; (b) this dissertation study measured physical activity levels with IPAQ-S; other less precise self-reported physical activity measures were used in prior studies (Mâsse et al., 2012 & Polley et al., 2005); (c) the sample of parents/caregivers in this study were highly educated, prior studies included participants not as educated or included a higher proportion of less educated participants; and (d) parents/caregivers’ high physical activity in this study could be a result of
full-time employment suggesting engagement in occupational physical activity (Li et al., 2012). Parents/caregivers in this study reported high physical activity levels suggesting the need to tap into physical activity outside work and into leisure-time related physical activities or lifestyle-related physical activity. Lifestyle physical activity is defined as exercise or sports-related activities such as physical activities outside of work (housework and transportation) (Li et al., 2012).

**Relationships Among the Main Variables**

**Parents’ Knowledge**

Results of this dissertation study showed a negative (inverse) association between knowledge and physical activity. A negative association means that as knowledge increased, physical activity levels decreased (Trochim & Donnelly, 2003). Parents/caregivers with increased knowledge in the dissertation study possibly interpreted the physical activity questions more carefully, meaning that he or she read the questions more thoroughly prior to responding.

The inverse association between parents/caregivers’ knowledge about physical activity guidelines and physical activity levels in this study is inconsistent with Reinhardt-Kapsuk et al. (2013) who found parents’ knowledge about the benefits of physical activity was associated with higher levels of physical activity. African American parents (N=86) in a qualitative (focus groups) study aimed at assessing perceptions of approaches for culturally tailoring an intervention to increase adherence to dietary and physical activity guidelines, reported being not familiar with physical activity guidelines and did not participate in physical activity (McGee, Richardson, Johnson, & Johnson, 2014).

**Parents’ TV Viewing**
An open-ended format of the question regarding TV viewing frequency failed to provide information about participants’ TV viewing. Rattray & Jones (2007) states open-format or open questions allow participants to expand upon answers and provide more in-depth responses; however, responses can cause difficulty in data analysis. Parents/caregivers (n=3) in this study did not provide responses to the open-ended formatted question. A specific limit could have been used to enable participants to answer the question (e.g. multiple choice options of the number of hours within a day, 0-24 hours). The frequency of TV viewing (one-item) was not significant in this study. Approximately 83% of the sample watched three hours or less of TV per day suggesting that sedentary behavior solely related to TV viewing is not an issue among African American parents of young children.

TV viewing is a common sedentary activity that replaces physical activity in the United States (Bennett et al., 2006; Polley et al., 2005). Parents in this sample (over 50%) reported watching three hours or less of TV per day. This amount is similar to findings reported by Bennett et al. (2006) who studied the association between TV viewing and physical activity among racial/minority residents ages younger than 30 years and older than 70 years (45% African American) of metropolitan Boston in which the average daily TV viewing was 3.6 hours. This finding among African American residents of Boston is also similar to that reported by Polley et al. (2005) who examined relationships among BMI, TV viewing hours, and activity among families in rural Oklahoma (N=40, African American parents) in which an average daily TV viewing was 2.8 hours. TV viewing in this sample was even less than the finding of 2.8 hours because the parents and caregivers engaged in more weekly physical activity. The one item assessing TV viewing suggests that African Americans that are highly educated, earning higher
incomes, and employed full-time do not spend much time watching TV. However, this dissertation study did not assess other forms of sedentary activities such as sitting in front of a computer or commuting to work.

**Parents’ Perceived Self-Efficacy**

Parents/caregivers’ perceived self-efficacy did not significantly relate to physical activity in the correlational analysis; however, parents/caregivers perceived self-efficacy serve as a predictor of physical activity in the regression model. High self-efficacy, using Spearman’s correlation coefficient, was not associated with higher physical activity levels among parents and caregivers in this study. This finding is inconsistent with the findings of Bopp et al. (2006) who reported that higher self-efficacy was associated with physical activity participation (walking OR=1.27, 95% CI=1.02-1.58, moderate or vigorous physical activity OR=2.47, 95% CI=1.48-4.13, and strength training OR=1.98, 95% CI=1.23-3.19) among African American men (N=165) and women (N=407). The self-efficacy findings derived from the correlational analysis in this dissertation study also differ from Nsiah-Kumi et al. (2009) who found that parents of children ages 12 years or younger with high self-efficacy for engaging in physical activity had a strong belief in physical activity engagement (N=386, 12% African American).

**Parents’ Outcome Expectations**

Research literature supports the role of outcome expectations in motivating or preventing physical activity. Bauman, Sallis, Dzewaltowski, & Owen (2002) found positive associations between outcome expectations and physical activity repeatedly documented. The lack of association between outcome expectations and physical activity of parents/caregivers in this study was unexpected and is discussed in the following discussion about predictors of physical activity.
activity. Parents’ outcome expectations were not associated with their physical activity, which is inconsistent with these findings. Parents and caregivers in this study do not require motivation to engage in physical activity because they were extremely physically active. The lack of association between outcome expectations and parents/caregivers’ physical activity is unexpected because outcome expectations or motivations to predict physical activity has been widely used in physical activity research (Li et al., 2012).

**Parents’ SES**

The investigator expected to find an association between parents’ SES and physical activity. The MacArthur’s Subjective Social Status (SSS) subscale for the community ladder had a mean score of 7.0±1.6 which differs from Allen, McNeely, Waldstein, Evans, & Zonkerman (2014) that found African Americans (N=924) had a mean score of 4.51±2.08 for the SSS-community ladder. MacArthur’s Subjective Social Status subscale for the SSS-US ladder had a subscale score of 6.6±1.6, which differs from the study of Ostrove et al. (2000) that reported a mean score of 5.01±1.97 for the SSS-US ladder among African American women (N=76-163). The population in this study possesses higher subjective status in the United States and in their communities. Wolff, Acevedo-Garcia, Subramanian, Weber, & Kawachi (2009) found that African Americans tend to report higher community SSS than the U.S. SSS when compared to Whites, which is similar to the African American parents in this study reporting a slightly higher score on the community-SSS ladder than the US-SSS ladder.

The findings of this study are inconsistent with the systematic review of Ferriera et al. (2006), which reported that those with lower income are possibly more restricted in their physical activity opportunities and options. The lack of association between parents’ SES and
their physical activity levels may possibly be a result of the higher income levels among the parents/caregivers in this study.

**Parents’ Culture**

Parents’ and caregivers’ subscale mean score was 4.7±1.1 suggesting that this population consist of more traditional African Americans or African Americans that are less acculturated (Landrine & Klonoff, 1994). Beech et al. (2004) found a similar mean score for this subscale (4.2±2.1) among African American parents/caregivers and their children ages 8-12 years (N=210). Harley et al (2009) qualitatively examined the influence of social and cultural contexts on physical activity participation among African American women using a grounded theory approach and found culture to play a role in physical activity participation. Kumanyika (2007) discussed how cultural influences are not static variables that occur independently of other environmental contexts in regard to individual behaviors suggesting that cultural influences interact with environmental factors. The lack of association between parents/caregivers’ culture and physical activity levels in this study may possibly be due to culture playing a role in parents/caregivers’ physical activity engagement only when other environmental variables (parents’ SES and physical environment) interact. There were no associations between parents’ SES and physical environment in this study. Nichols-English et al (2006) examined mothers’ and daughters’ physical activity levels (N=133) among African Americans. Culture plays a role in physical activity in terms of physical activity preferences (e.g. church-related or family fun activities) (Nichols-English et al., 2006). McGee et al. (2014) using a focus groups (N=86 African Americans) found cultural forces (parents’ physical activity habits, neighborhood safety, and busy schedules) affected physical activity behavior. This study did not uncover the role of
culture in influencing parents’ physical activity because the culture subscale possibly did not adequately measure additional cultural factors.

**Parents’ Physical Environment**

Parents/caregivers had low mean scores on the PANES scale’s items inquiring about the presence of increased crime and traffic influencing physical activity behavior. The low mean scores among parents and caregivers in this study coincides with the findings of the Siddiqi et al. (2011) systematic review of the impediments and enablers to physical activity among African Americans. African Americans reported unsafe neighborhoods and heavy traffic as barriers to physical activity (Siddiqi et al., 2011).

**Parents’ Outcome Expectations Relevant Their Children**

This study found no relationship between parents’ outcome expectations related to their children and parents/caregivers’ physical activity. This finding is inconsistent with parents engaging in physical activity because they are motivated in being active for their children as found by Siddiqi et al. (2011).

**Predictors of Parents’ Physical Activity**

Parents/caregivers’ perceived self-efficacy and physical environment are the most significant predictors of African American parents/caregivers’ physical activity among in many prior investigations. The similar findings in this dissertation study, which further validate these other studies. Anderson Gustat, & Becker (2014) concluded that several levels of influence including the social environment are important components of encouraging physical activity among African American adults (N=497 households, primarily African American). The main variables explained 33% of the variance in parents/caregivers’ physical activity suggesting that
other influences encourage African American parents to be physically active supports the findings of Anderson et al. (2014) and Bopp et al. (2006). Other influences outside of SCT’s personal and environmental factors may encourage physical activity such as social support of family and friends or social environment, demographic characteristics (e.g., marital status), psychosocial factors, behavioral factors, or multilevel influences of physical activity (e.g. social ecological models’ constructs) (Bopp et al., 2006).

A major finding was that parents/caregivers’ perceived self-efficacy predicted parents/caregivers’ physical activity only when controlling for other variables in the regression analysis. The weak and insignificant association between perceived self-efficacy scores and self-reported physical activity scores in the correlational analysis was unexpected because it has been found as the most important predictor of behavior and in adopting and maintaining regular physical activity (Bandura, 2004; Li et al., 2012). The MSES scores (perceived self-efficacy) predicting physical activity in the regression analysis confirm the importance of SCT’s perceived self-efficacy in the behavior change.

Another unexpected finding in this dissertation study was that parents/caregivers’ Knowledge of Physical Activity Guidelines questionnaire scores served as a significant predictor but was negatively correlated with parents’ physical activity levels. This negative association suggests that the measure of parents’ knowledge was poorly designed (Kimberlin & Winterstein, 2008). Therefore, in this dissertation study, knowledge of physical activity, may have been assessed with a measure lacking acceptable psychometric characteristics. However, Morrow et al. 2004 found a lack of association between knowledge of physical activities for health benefit and actual physical activity behavior suggesting that physical activity knowledge alone is not
sufficient to elicit behavior change if change is warranted, which many not have been in this higher functioning, higher income dissertation sample. This unexpected finding could also possibly be a result of the higher levels of parents’ physical activity levels. These results are consistent with Bauman et al. (2002) who examined the factors that correlated with, and may have a causal relationship to, physical activity. These authors found that knowledge of health and physical activity and physical activity behavior were not associated. McGee et al. (2014) found that recognition of physical activity guidelines did not signify increased knowledge in physical activity engagement that adheres to physical activity guidelines.

**Research Findings in Context of Theoretical Framework**

Social Cognitive Theory (SCT) as a theoretical framework to guide this study proved to be a valuable guide in examining the relationships between parents’ specific personal and environmental factors and parents’ physical activity behavior. SCT proposes that personal factors and environmental factors influence behavior in a reciprocal nature (Bandura, 1997; Bandura 2004). In this study, the personal factors of perceived self-efficacy and environmental factor of physical environment were associated with the physical activity behavior of African American parents of young children. Overall, these findings are consistent with the SCT emphasizing multiple influences on physical activity behavior.

The SCT guided the study of the interrelationships of specific personal factors (knowledge of physical activity, self-efficacy and outcome expectations), environment (SES, physical environment and culture) and behavior (physical activity, TV viewing frequency). This study found the following significant relationships:
• the personal factor of knowledge of physical activity was inversely associated with parents/caregivers’ physical activity behavior;

• the environmental factor of physical environment and physical activity;

• the environmental factor of culture and the personal factor of knowledge (inverse), self-efficacy, and outcome expectations (social);

• the environmental factor of SSS community and the personal factor of outcome expectations (social and self-evaluative)

• the environmental factor of SSS US and the personal factor of outcome expectations (social)

• the behavior of TV viewing and the personal factor of knowledge and outcome expectations (self-evaluative); and

• the behavior of TV viewing and personal factor of outcome expectations: physical (inverse)

The regression model showed that the personal factors (knowledge of physical activity guidelines and perceived self-efficacy) and environmental factors of physical environment were associated with parents’ physical activity accounting for 33% of variance, suggesting that there are additional factors influencing physical activity among African American parents that were not captured in the study measures. For example, cultural factors such as familial patterns of physical activity, social environment or social support, and residence location may play a role in the environmental determinants of physical activity. The environmental factor of physical environment accounted for the high levels of physical activity among African Americans in this study; however, research needs to explore the perceived physical environment and actual
environment (Li et al., 2012) to develop interventions improving the built environment to increase physical activity. The built environment refers to the neighborhood environment’s features such as neighborhood traffic; neighborhood crime; presence of sidewalks; places within walking distance; enjoyable scenery; and accessibility to places to exercise (parks, walking trails, bike paths, recreation centers, playgrounds, public swimming pools etc.) (Sallis, Johnson, Calfas, Caparosa, & Nichols, 1997; Sallis et al., 2010).

The significant, negative correlation found between knowledge and physical activity was not expected. The inversely significant relationship found between parents’ knowledge and physical activity could be associated with the study measure used. The Knowledge of Physical Activity Guidelines questionnaire had low internal consistency (Kuder-Richardson reliability (K20) score of 0.52 for the 22 items), which suggests that this measure was possibly measuring more than one construct in relation to knowledge about physical activity (Cook & Beckman, 2006). Morrow et al. (2004) used Kuder-Richardson test to assess internal consistency of this measure and also found poor reliability (0.59) for the 20 items included in their scale.

Knowledge, competence, and various forms of self-knowledge and perceived self-efficacy perform together to provide adequate explanations of behavior (Bandura, 1986). Bandura (2004) proposed that knowledge is the precondition for behavior change and that it plays a major role in personal change, which differs from the findings in this study. The negative association between knowledge and physical activity suggests that parents/caregivers with increased physical activity were not influenced by knowledge or parents with decreased physical activity levels were influenced by knowledge.
Self-efficacy is one of the most important predictors of behavior and the research findings of this study continue to support the use of SCT in guiding health behavior change (Bandura, 2004). The study findings are consistent with Bandura (2004) stating that individuals with higher perceived self-efficacy are more vigorous and persistent in engaging in a particular behavior. In the regression analysis conducted, there was a significant positive relationship between perceived self-efficacy and physical activity.

The findings in this study are consistent with environmental factors (e.g., SES and familial structures) influencing human behavior (Bandura, 1986). The positive association between physical environment and parents’ physical activity is consistent with a systematic review of the built environment and its association with physical activity among African Americans (Casagrande et al. (2009)). These investigators concluded that the presence of light traffic, sidewalks, and safety from crime are often associated with physical activity. The physical environment was positively associated with and predicted parents/caregivers’ physical activity. The findings in this study differ from SCT, positing that SES indirectly influences behavior because there was no relationship between SES and physical activity. The validity of the MacArthur’s SSS subscales was not fully supported because the weak to lack of correlations between the SSS-US ladder (subjective SES) and objective SES (income, education, and employment), which is inconsistent with the validity being supported by the strong correlations found among subjective status (SSS-US or SES-ladder) with employment, education, and income by Singh-Manoux et al. (2003). The validity finding is this study could possibly impact the lack of association between parents/caregivers’ SES and physical activity.
Outcome expectations make a small contribution to understanding certain behaviors after taking into consideration self-efficacy (Bandura, 1997; Li et al. 2012). The findings in this study differ from SCT in that parents’ outcome expectations did not predict parents/caregivers’ physical activity when accompanied with self-efficacy. Outcome expectations are significantly associated with physical activity; however, not as consistently as perceived self-efficacy (Rogers et al., 2005). The finding that parents’ outcome expectations were not associated with parents/caregivers’ physical activity levels is inconsistent with outcome expectations being associated with physical activity. All of the theoretical variables of SCT (personal and environmental factors) were not significantly correlated with the parents’ self-reported physical activity scores.

**Strengths and Limitations**

**Strengths**

Although personal and environmental factors are clearly determinants of parents’ physical activity in this study, there are few other studies of the SCT’s constructs and concepts such personal and environmental factors (perceived self-efficacy and physical environment) that promote physical activity behaviors. The examination of the effect of outcome expectations on physical activity in correlational and regression analyses in this study offers a unique contribution to the research literature because there is minimal literature examining outcome expectations in context of SCT and physical activity among African Americans. The findings of this study using a cross-sectional approach to identify the personal and environmental factors affecting physical activity participation among African American parents/caregivers of young children ages 6-12 years of age can be used as a foundation for future intervention studies. The
findings also can be helpful in beginning to identify the facilitators and challenges to engaging physical activity for this target population. This study helped begin to identify the relationship of specific personal and environmental factors and parents/caregivers’ physical activity in a targeted and under-studied population.

The use of a cross-sectional design to explore parents’ personal and environmental factors was invaluable. Cross-sectional designs offer the ability to examine multiple variables and the influences of variables on each other. Research using cross-sectional designs can be used to guide experimental research to better understand causal relationships (Kadzin, 2003). To the investigator’s knowledge, the personal factors (knowledge, perceived self-efficacy, and outcome expectations) and environmental factors of SES, culture, and physical environment in relation to physical activity behavior have not been studied simultaneously in African American parents/caregivers of young children (ages 6-12 years).

Use of SCT as the theoretical framework to guide this study was appropriate because SCT considers factors at both individual and environmental levels to support behavioral change related to physical activity. A survey consisting of questionnaires to measure the main variables provided the means to quantify the SCT’s personal and environmental factors of physical activity. SCT’s outcome expectations are infrequently measured in studies that evaluate the theoretical framework in relation to physical activity. This study can contribute to research literature measuring this construct. Future research can explore the effect of outcome expectations on physical activity participation.

Inconsistent with existing studies that characterized the importance of culture in African Americans, this population’s preference for African American things was not important to
engaging in physical activity. Self-report questionnaires serve as the most popular method of quantifying culture (Taras, Rowney, & Steel, 2009). The possible use of the following subscales of the AAAS-R: religious beliefs and practices; family practices; family values; and health beliefs and practices to identify the importance of cultural values in African American parents and their physical activity is warranted to assess culture in more depth.

There is limited quantitative information about physical activity of parents/caregivers of young children (ages 6-12 years) exclusive to African Americans. The findings highlighted the importance of physical environment in increasing physical activity levels of African Americans. Exploring the physical activity of these parents/caregivers in this study identified the strengths and limitations of their physical environment, which is important in developing interventions to improve physical activity participation. Data uncovered through the use of a descriptive approach supported existing literature regarding the role of physical environmental factors in physical activity participation that may lead researchers to accurately implement interventions that have impact in increasing physical activity levels of African American parents.

Limitations

The sample size, although sufficiently powered, may have limited the ability to detect significant interaction between parents’ personal and environmental factors and their physical activity in the regression model. There were positive associations between two variables of personal factors and environmental factors (perceived self-efficacy and physical environment) and physical activity. Other limitations of this study include study instrument, bias (confounding, social-desirability, gender, and selection bias), self-reported data, sample characteristics, research design, and recruitment. Another limitation of this study was that the sample was predominately
comprised of self-acclaimed physically active participants. Increasing the sample size could have possibly tapped into a population of sedentary African Americans.

**Study instrument.** The inverse relationship between parents/caregivers’ knowledge scores and physical activity levels could be the result of using a questionnaire not specifically designed for the study population suggesting that the instrument may not have accurately measured the intended construct. The relationships between the knowledge items and the IPAQ-S in this study may not accurately reflect parents/caregivers’ knowledge about traditional and lifestyle physical activities that have an effect on their physical activity behavior, thus causing a misinterpretation of study findings. Kimberlin & Winterstein (2008) discussed how the greater the number of items in a summated scale, the higher Cronbach’s alpha tends to be, with the major gains being in additional items up to approximately 10 when the increase in reliability for each additional item levels off. As a result of the length of the survey measuring multiple variables in this study, additional items would have resulted in significant participant burden. Future researchers could use this scale by adding more items to measure the construct of knowledge of physical activity guidelines to see whether or not the reliability or precision of the measurement improves (Kimberlin & Winterstein, 2008).

**Bias.** Pannucci & Wilkins (2010) states that bias can cause estimates of association to be either smaller or larger than the true association between variables of interest creating confounding bias. Confounding variables are variables that possibly influence the outcome (Kadzin, 2003). In addition to the moderate to weak associations found between personal and environmental factors and physical activity, the low variance of the regression predictor model suggests the possible presence of confounding variables influencing physical activity. The use of
the SCT aided in specifying the relationships of the main study variables or constructs of interest to each other and the relationship between the outcome (physical activity behavior) (Kadzin, 2003).

Selection bias can occur when the inclusion and exclusion criteria used to recruit and enroll participants into separate study cohorts are inherently different (Pannucci & Wilkins, 2010). The sample in this study was not representative of the low-income population residing in South Side, Chicago. The subsequent discussion will focus on social desirability bias and gender bias.

**Self-reported data.** Parents/caregivers in this study reported exceptionally high levels of physical activity by claiming physical activity of more than seven days per week and average daily physical activity exceeding 960 minutes. Kimberlin & Winterstein (2008) stated that self-reports of behavior such as exercise frequency and intensity are subject to problems of social desirability biases. Social desirability bias occurs when research participants provide responses that are socially acceptable or consistent with the impression they want to create (Kimberlin & Winterstein, 2008). Kadzin (2003) discussed how participants respond differently when they are being assessed with self-reported data. Nederhof (1985) discussed methods to coping with social desirability bias using the following: forced-choice items, self-administered questionnaires, and closed-ended neutral questions. Items can be added to tap social desirability is a possible solution.

An additional problem with the use of self-reported data is the potential for underreporting or over-reporting. This was the case in this study in which parents/caregivers
over-reported their physical activity using the IPAQ-S. The possibility of over-reporting of physical activity is of concern with respect to interpreting the findings.

**Sample characteristics.** The sampling method (convenience) was practical for this study; however, it has its weaknesses. The parents in this study were highly educated with high family incomes. These characteristics can provide the reason for high levels of physical activity. Individuals earning over 25,000 dollars a year are faced with lower barriers to accessing physical activity opportunities. Physical activity behavior may vary between low and middle-to-high income scales (Clark, 2005). Levels of physical activity could possibly differ among an African American population with low-incomes and decreased educational attainment. The parents that chose to participate in this study may not be representative of African American parents of young children residing in South Side, Chicago. Sample size may not have been large enough to identify the effects of SCT’s personal and environmental variables on predicting behavior. The sample in this study was mostly female suggesting gender bias. Gender bias in survey response rate occurs when more women than men participate in a study (Li et al., 2012).

**Research design.** Cross-sectional designs cannot ensure that the cause precedes effect (Shadish et al., 2002), limiting any cause-effect conclusions to be drawn from the study findings. Conclusive evidence and causal inferences cannot be made based on the descriptive design used (Kadzin, 2003; Shadish et al., 2002). The use of a cross-sectional design limits the ability to determine causal relationships between the variables (Kadzin, 2003), in which strong causal conclusions cannot be made about the variables in this study. Experimental research is required to address causality (Shadish et al., 2002). Study findings can lead to experimental research to
test the causal roles of personal and environmental factors in physical activity participation (Kadzin, 2003).

**Recruitment.** The use of the network (snowball) sampling method worked very well in gaining access to African American parents of children ages 6-12 years residing in South Side, Chicago because it resulted in the recruitment of a fair amount of African American parents. Sampling was purposeful, which limits the generalizability of study findings to impoverished African Americans residing in South Side, Chicago (Trochim & Donnelly, 2008).

**Nursing Implications and Future Research**

Knowledge, self-efficacy, and physical environment explained 33% of variance in predicting parents/caregivers’ physical activity levels; however, there are other factors that nurse clinicians must consider in interfacing with African American families. Parents/caregivers with high physical activity levels reported greater perceived self-efficacy and physical environment that promoted increased walkability. Findings in this study indicate parents’ confidence (perceived self-efficacy) and physical environment may not be enough for parents to engage in physical activity. Parents with confidence to participate in physical activity by adopting, maintaining, and overcoming barriers to physical activity is important along with a physical environment promoting walkability; however, they are not the only key to influencing physical activity behavior. Physical environment and increasing self-efficacy is vital to physical activity engagement in African American parents of young children. Nurses must take into account the many personal and environmental factors to increase physical activity among African American parents of young children.
Physical activity levels were high among parents and caregivers in this study. The majority of participants were employed full-time with job titles of managers and staff workers suggesting the need to further explore the physical activity participation during work hours or occupational physical activity.

Prevention is the center of primary health care delivery. Nurses working in primary care settings can counsel young parents about physical activity to increase their confidence and about the importance of physical activity engagement. Nurses can also counsel parents during pediatric visits about the importance of engaging in physical activity to serve as an exemplar to their children. Casagrande et al. (2009) found that physical activity preferences vary suggesting that safe neighborhood streets to run or walk or accessibility to recreation centers may not be conducive to African American parents that do not prefer those types of physical activities. Nurses can assess the physical activity preferences of parents and counsel parents on how to incorporate those particular types of physical activity into their lifestyle. Community health nurses leading interventions, policies, and initiatives can create safer neighborhoods that encourage physical activity participation.

Nurses working in primary care settings have the opportunity to implement research findings. Nurses should continue research and disseminate tested interventions that promote increased physical activity among African American patients from similar environments. Nurses should take the initiative in developing and facilitating policies aimed at the promotion of physical activity and increasing the physical activity resources within the built environment of African American parents and their families. Research should aim at looking at the other factors that play a role in the behavior change process. The findings of this study suggest the need to
explore the physical environment further using an experimental design to examine its effects on physical activity.

The use of SCT that guided the research aims of this study can be employed to develop interventions to change physical activity behavior. In controlling the variables in the regression model, perceived self-efficacy predicted physical activity, which supports the use of SCT in predicting the process of behavior change (Bandura, 1997). The results of this study suggest that perceived self-efficacy does not serve as the single factor in predicting behavior change (Bandura, 1997). The results of this study do not concur with the role of outcome expectations based on the lack of association of the different types of outcome expectations (social, physical, self-evaluative, and relevance to children) influencing and predicting physical activity among parents/caregivers in this study. The environmental factor of physical environment also predicted physical activity. These findings support that the personal factors of knowledge and outcome expectations and environmental factors of SES and culture affect parents’ physical activity behavior indirectly, which is consistent with SCT (Bandura, 1986).

The Knowledge of Physical Activity Guidelines scale used in this study followed the scale implementation instructions provided by the developers (Morrow et al., 2004). However, the inverse association between knowledge and physical activity levels in this study suggests the need for further research of measuring knowledge about physical activity. The low reliability of the items in this study may be the reason for the strong inverse association found between knowledge and physical activity in both analyses. Results of this survey in this population suggest discontinued usage of this questionnaire. Clearly, Knowledge of Physical Activity Guidelines was different for the African American parents in this study. Qualitative research may
provide more information on knowledge about physical activity guidelines in relation to physical activity levels that will possibly develop an instrument that accurately measures knowledge.

TV viewing was assessed in this study using one item. There were no significant findings found in both analyses of the relationship between parents’ TV viewing and their physical activity. Research can be conducted using a measure with more items assessing TV viewing among African American parents. A single item is not optimal in measuring a construct (Kimberlin & Winterstein, 2008). It is documented that understanding family TV viewing behaviors should be targeted to help increase physical activity (Steffen et al., 2009). The sedentary behavior questionnaire (SBQ) is a self-report measure of time spent in sedentary behavior (TV viewing, playing computer games, sitting during commuting, etc.) during a typical week among overweight adults (Rosenberg et al., 2010). Wijndaele et al. (2014) developed the SIT-Q-7-d, a self-administered questionnaire that quantifies time spent sedentary in the last seven days across five different domains: meals, transportation, occupation, leisure screen time (e.g., TV viewing; computer use; playing sedentary computer games; etc.), and time spent sedentary in other activities. Rosenberger, Haskell, Buman, LaStofka, & Carstensen (2014) discussed a Lumoback device, similar to the ActivPal device, that objectively measures both body posture and activity for sedentary behavior during daily activities.

Personal and environmental factors play a role in influencing physical activity behavior among African American parents. Researchers should be aware of the personal and environmental factors associated with physical activity, which could prove useful in identifying interventions that will increase physical activity behavior among African American parents. The decreased rates of knowledge and increased physical activity levels or vice versa suggest that
knowledge about physical activity for health benefits or increasing awareness about physical activity benefits is not sufficient to influence physical activity behavior. This conclusion reinforces the critical importance of additional research to find effective interventions to meet the needs of African American parents of young children. Future research can test other theoretical frameworks (e.g., social ecological models, Health Promotion models, or expectancy value theories such as the Theory of Planned Behavior and Theory of Reasoned Action).

**Conclusion**

The strength of this study is its contribution to new and supporting information that can guide research focusing on physical activity behavior among African Americans parents of young children. This study has attempted to give an overview of quantitative research related to physical activity of African American parents/caregivers of young children ages 6-12 years. The goal of this study was to describe the relationship between personal and environmental factors with regard to physical activity participation.

This study illustrates the usefulness of delineating the factors that may influence the physical activity of African American parents that are needed for promoting physical activity. This study highlights the need for continued efforts focusing on improving the physical (built) environment to help overcome challenges of increased traffic and crime that impact physical activity engagement. Influencing parents’ physical activity behavior in this population will require improving the features of the built environment associated with physical activity participation using a multifaceted, multidisciplinary approach.
APPENDIX A

RECRUITMENT LETTER
RECRUITMENT LETTER

Are you an African American Parent?

Would you be willing to discuss your physical activity? If so, consider enrolling in this research study. Participation in this study will also involve you discussing your concerns about your child’s physical activities.

You may be eligible for this study if:
- You are an African American parent, legal guardian, or primary caregiver
- Have at least one child who is aged 6-12 years.
- Reside in Chicago’s south side area

According to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research, The Institutional Review Board responsible for human subjects research at The University of Arizona has reviewed this research project and found it to be acceptable. Contact Kashica Webber, Doctoral Candidate in Nursing, at kwebber@email.arizona.edu for more information and to enroll in the study.
APPENDIX B

LETTER OF SUPPORT
LETTER OF SUPPORT

December 2, 2013

University of Arizona Institutional Review Board
c/o Office of Human Subjects
1618 E. Helen St
Tucson, AZ 85721

Please note that Ms. Kashica Webber, UA Graduate Student, has permission of The Black Star Project to conduct research at our organization located at 3509 S. King Drive, Suite 2B for her study. The Black Star Project will offer several hundred parents of students in various programs an opportunity to participate in this study. Our office will provide de-identified information regarding participants for use in her research. A survey link will be provided to the organization so that the survey can be accessed on our website www.blackstarproject.org for completion. Her plan is to have all surveys distributed by the end of March 2014. Ms. Webber’s on-site research activities will be completed by April 14, 2014.

Ms. Webber has agreed to provide to my office a copy of the University of Arizona IRB-approved, stamped consent document before she recruits participants on campus and through our organization, and will also provide a copy of any aggregate results.

If there are any questions, please contact my office.

Sincerely,

Philippa Jackson
Executive Director
The Black Star Project
APPENDIX C

IRB APPROVAL LETTER AND DISCLOSURE FORM
IRB APPROVAL LETTER

Date: April 17, 2014
Principal Investigator: Kashica Jataun Webber
Protocol Number: 1404295626
Protocol Title: Personal and Environmental Factors Affecting Physical Activity among Parents of Young African American Children
Level of Review: Exempt
Determination: Approved

This submission meets the criteria for exemption under 45 CFR 46.101(b).

- The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).
- All research procedures should be conducted in full accordance with all applicable sections of the Investigator Manual.
- Exempt projects do not have a continuing review requirement.
- Amendments to exempt projects that change the nature of the project should be submitted to the Human Subjects Protection Program (HSPP) for a new determination. See the Investigator Manual, ‘Appendix C Exemptions,’ for more information on changes that affect the determination of exemption. Please contact the HSPP to consult on whether the proposed changes need further review.
- All documents referenced in this submission have been reviewed and approved. Documents are filed with the HSPP Office. If subjects will be consented the approved consent(s) are attached to the approval notification from the HSPP Office.

Your proposal is in compliance with Federalwide Assurance 00004218. This project should be conducted in full accordance with all applicable sections of the IRB Investigators Manual and you should notify the IRB immediately of any proposed changes that affect the protocol. You should report any unanticipated problems involving risks to the participants or others to the IRB.

This project has been reviewed and approved by an IRB Chair or designee.
This is a research project being conducted by Kashica, a PhD candidate at the University of Arizona in Tucson, Arizona. The purpose of this research project is to describe self-reported physical activity in parents of young (ages 6-12 years) African American children, factors related to these parents' physical activity, and parents' perceptions of the outcomes of their own physical activity behaviors on their children. You are invited to participate in this research project because you meet the inclusion criteria of the study. Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized.

The procedure involves filling an online survey that will take approximately 15-20 minutes. It is recommended that you seek a quiet, private setting to complete the survey. Your responses will be confidential and we do not collect identifying information such as your name, email address or IP address. The survey questions will be about personal and environmental factors related to physical activity.

We will do our best to keep your information confidential. All data is stored in a password protected electronic format. To help protect your confidentiality, the surveys will not contain information that will personally identify you. The results of this study will be used for scholarly purposes only and may be shared with University of Arizona representatives. At the close of this study, you will be awarded with a $5 Target Gift card for your participation.

If you have any questions about the research study, please contact kwebber@email.arizona.edu. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Human Subjects Protection Program at 520-626-6721 or online at http://orcr.arizona.edu/hbpp. This research has been reviewed according to SurveyMonkey University IRB procedures for research involving human subjects.

1. ELECTRONIC CONSENT: Please select your choice below.

Clicking on the “agree” button below indicates that:

• you have read the above information
28  • you voluntarily agree to participate
29  • you are at least 18 years of age
30  Agree  Disagree
APPENDIX D

SAMPLE ANALYSIS RESULTS
SAMPLE SIZE ANALYSIS RESULTS USING G*POWER 3.1


Exact-Correlation: Bivariate normal model

Options: exact distribution

Analysis: A priori: Compute required sample size
Input: Tail(s) = Two
Correlation \( \rho \) H1 = 0.3
\( \alpha \) err prob = 0.05
Power (1-\( \beta \) err prob) = 0.8
Correlation \( \rho \) H0 = 0

Output: Lower critical \( r \) = -0.2145669
Upper critical \( r \) = 0.2145669
Total sample size = 84
Actual power = 0.8003390

Figure 4. Sample Analysis Results Using G*Power 3.1
APPENDIX E

PERMISSION LETTERS FOR USE OF STUDY INSTRUMENTS
PERMISSION LETTERS FOR USE OF STUDY INSTRUMENTS

Appendix E

E.1 International Physical Activity Questionnaire (IPAQ)

Dear colleague,

Welcome to the website for the International Physical Activity Questionnaire. Here you will find information about the use of the questionnaire and links to the questionnaire itself, in multiple languages.

This physical activity questionnaire is publicly available, it is open access, and no permissions are required to use it. So we encourage any researchers to use it where it will be an appropriate measure of physical activity, particularly in large population studies or in the context of physical activity surveillance for which this measure was designed.

Regarding Scoring of the IPAQ: Over the past 10 years, we have had many requests that have asked for support with the IPAQ algorithm or scoring protocol, and other methodological issues. For many years a group of four or five of us that initially developed and tested the IPAQ measure have responded to all these enquiries, but the volume of them has continued to increase in recent years. Most of the requests come from students or graduates doing pieces of research using the IPAQ, and where students are able to ask a local senior researcher for help, particularly one with physical activity experience or a local biostatistician, they usually find that the scoring problems can be resolved.

After many hundreds of such enquiries we have decided that we have served the IPAQ measure and its development well, but that we no longer can provide the individual support to answer all these queries, and we would prefer to refer students to their local statisticians and physical activity experts. We are happy to collaborate in IPAQ projects that answer innovative and population-focused research questions, but it is difficult
for us to continue to provide an un-funded advisory service.

It's not that we don't want to help, it's just that we don't have the time to answer each of these requests individually in the detail that they require. We think that the IPAQ measure protocols are reasonably straightforward and most researchers manage to use them, but if you have continuing problems, please consult your local research experts.

We hope that IPAQ is a useful measure for you, and one that meets your needs,

Yours sincerely,

The IPAQ group
E.2 Knowledge of Physical Activity Guidelines Questionnaire

James R. Morrow, Jr., PhD, FACSM, FNAK
Regents Professor
Department of KHPR
1155 Union Circle #310769 University of North Texas
Denton, TX 76205-5017
jim.morrow@unt.edu

Dear Dr. Morrow,

I am a doctoral student from University of Arizona, College of Nursing writing my dissertation tentatively titled Personal and Environmental Factors Affecting Physical Activity among Parents of Young African American Children under the direction of my dissertation committee chaired by Dr. Lois Loescher.

I would like your permission to use the American Adults’ Knowledge of Exercise Recommendations measure in my research study. I would like to use your survey to put into SurveyMonkey under the following conditions:

• I will use this survey only for my research study and will not sell or use it with any compensated activities.

• I will send my research study and one copy of reports, articles, and the like that make use of these survey data promptly to your attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to me either through e-mail with your signature:
kwebber@email.arizona.edu.

Sincerely,

Kashica J. Webber
Doctoral Candidate

_________________________________________________________

James R. Morrow, Jr.
Signature

_________________________________________________________

Expected date of completion 8/31/2014
E.3 Multidimensional Self-Efficacy for Exercise Scale (MSES)

January 22, 2014

Dr. Wendy Rodgers,
Professor
Faculty of Physical Education and Recreation
University of Alberta
Edmonton, Alberta, Canada T6G 2H9

Dear Dr. Rodgers,

I am a doctoral student from University of Arizona, College of Nursing writing my dissertation tentatively titled Personal and Environmental Factors Affecting Physical Activity among Parents of Young African American Children under the direction of my dissertation committee chaired by Dr. Lois Luescher.

I would like your permission to use the Multidimensional Self-Efficacy for Exercise Scale in my research study. I would like to use your survey to put into SurveyMonkey under the following conditions:

- I will use this survey only for my research study and will not sell or use it with any compensated activities.
- I will cite the relevant papers supporting the MSES development in any reports, articles, etc. that emanate from the project.
- I will send my research study and one copy of reports, articles, and the like that make use of these survey data promptly to your attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to me either through e-mail with your signature:

kwebber@email.arizona.edu

Sincerely,

Kashica J. Webber
Doctoral Candidate

[Signature]

Expected date of completion 8/31/2014
January 22, 2014

Dr. Thomas Wójcicki,
338 Louise Freer Hall
906 S Goodwin Ave
Urbana, IL 61801

Dear Dr. Wójcicki,

I am a doctoral student from University of Arizona, College of Nursing writing my dissertation tentatively titled Personal and Environmental Factors Affecting Physical Activity among Parents of Young African American Children under the direction of my dissertation committee chaired by Dr. Lois Loescher.

I would like your permission to use the Multidimensional Outcome Expectations for Exercise Scale (MOESS) in my research study. I would like to use your survey to put into SurveyMonkey under the following conditions:

- I will use this survey only for my research study and will not sell or use it with any compensated activities.
- I will send my research study and one copy of reports, articles, and the like that make use of these survey data promptly to your attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to me either through e-mail with your signature: kwebber@email.arizona.edu.

Sincerely,

Kashica J. Webber
Doctoral Candidate

Signature

[Signature]

Expected date of completion 5/31/2014
January 22, 2014

Michael A. Da Luz
Program Coordinator
UCSF Center for Health & Community

Dear Michael A. Da Luz,

I am a doctoral student from University of Arizona, College of Nursing writing my dissertation tentatively titled Personal and Environmental Factors Affecting Physical Activity among Parents of Young African American Children under the direction of my dissertation committee chaired by Dr. Lois Loezcher.

I would like your permission to use the MacArthur Scale of Subjective Social Status in my research study. I would like to use your survey to put into SurveyMonkey under the following conditions:

- I will use this survey only for my research study and will not sell or use it with any compensated activities.
- I will send my research study and one copy of reports, articles, and the like that make use of these survey data promptly to your attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to me either through e-mail with your signature:
kwieder@email.arizona.edu.

Sincerely,
Kashica J. Webber
Doctoral Candidate

Signature

Nancy E. Adler, PhD
Director, Center for Health and Community
Chair, MacArthur Network on SES and Health
E.6 African American Acculturation Scale Revised (AAAS-R)

January 17, 2014

Elizabeth A. Klonoff,  
Behavioral Health Institute, California State University—San Bernardino  
5500 University Parkway, San Bernardino, CA 92407  
eklonoff@csusb.edu

Dear Dr. Klonoff,

I am a doctoral student from University of Arizona, College of Nursing writing my dissertation tentatively titled Personal and Environmental Factors Affecting Physical Activity among Parents of Young African American Children under the direction of my dissertation committee chaired by Dr. Lois Loescher.

I would like your permission to use the African American Acculturation Scale in my research study. I would like to use and print your survey under the following conditions:

- I will use this survey only for my research study and will not sell or use it with any compensated activities.
- I will include the copyright statement on all copies of the instrument.
- I will send my research study and one copy of reports, articles, and the like that make use of these survey data promptly to your attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to me either through e-mail with your signature: kwebber@email.arizona.edu.

Sincerely,

Kashica J. Webber  
Doctoral Candidate

Signature

Expected date of completion: 6/6/2014
E.7 Physical Activity Neighborhood Environment Scale (PANES)

January 22, 2014

James F. Sallis, Ph.D.
Distinguished Professor of Family and Preventive Medicine
Chief, Division of Behavioral Medicine. http://behavioralmedicine.ucsd.edu/
University of California, San Diego, mail code 0824
Director, Active Living Research
3900 Fifth Avenue, Suite 310
San Diego, CA 92103
jsallis@ucsd.edu

Dear James F. Sallis,

I am a doctoral student from University of Arizona, College of Nursing writing my dissertation tentatively titled Personal and Environmental Factors Affecting Physical Activity among Parents of Young African American Children under the direction of my dissertation committee chaired by Dr. Lois Loescher.

I would like your permission to use the Physical Activity Neighborhood Environment Scale in my research study. I would like to use your survey to put into SurveyMonkey under the following conditions:

- I will use this survey only for my research study and will not sell or use it with any compensated activities.
- I will send my research study and one copy of reports, articles, and the like that make use of these survey data promptly to your attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to me either through e-mail with your signature:
kwebber@email.arizona.edu.

Sincerely,
Kashica J. Webber
Doctoral Candidate

_____________________________________________________________

Signature

_____________________________________________________________

Expected date of completion 8/31/2014
APPENDIX F

EXEMPAR OF ITEMS IN SURVEYMONKEY*

* Includes Disclaimer pages, IPAQ-S, and last page of survey. Other surveys are proprietary and publishers must be contacted for use.
Physical Activity, You, and Your Environment

This is a research project being conducted by Kashica, a PhD candidate at the University of Arizona in Tucson, Arizona. The purpose of this research project is to describe self-reported physical activity in parents of young (ages 6-12 years) African American children, factors related to these parents’ physical activity, and parents’ perceptions of the outcomes of their own physical activity behaviors on their children.

You are invited to participate in this research project because you meet the inclusion criteria of the study. Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized.

The procedure involves filling an online survey that will take approximately 15-20 minutes. It is recommended that you seek a quiet, private setting to complete the survey. Your responses will be confidential and we do not collect identifying information such as your name, email address or IP address. The survey questions will be about personal and environmental factors related to physical activity.

We will do our best to keep your information confidential. All data is stored in a password protected electronic format. To help protect your confidentiality, the surveys will not contain information that will personally identify you. The results of this study will be used for scholarly purposes only and may be shared with University of Arizona representatives. At the close of this study, you will be awarded with a $5 Target Gift card for your participation.

If you have any questions about the research study, please contact kwebber@email.arizona.edu. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Human Subjects Protection Program at 520-626-6721 or online at http://orcr.arizona.edu/hssp. This research has been reviewed according to SurveyMonkey University IRB procedures for research involving human subjects.

1. ELECTRONIC CONSENT: Please select your choice below.

Clicking on the "agree" button below indicates that:

- you have read the above information
- you voluntarily agree to participate
- you are at least 18 years of age

☐ Agree  ☐ Disagree
**Physical Activity, You, and Your Environment**

You will be asked to answer questions related to your physical activity or exercise behavior. Some questions require an answer in order to progress through the survey. In order to progress through this survey, please use the following navigation buttons:

- Click the Next button to continue to the next page.
- Click the Previous button to return to the previous page.
- Click the Exit the Survey Early button if you need to exit the survey.
- Click the Submit button to submit your survey.

If any issues occur with progressing through the survey then click the link again. For further questions or concerns, please contact kwebber@email.arizona.edu.
**Physical Activity, You, and Your Environment**

Think about all the vigorous activities that you did in the last 7 days. Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time. Complete or mark one response for each item as instructed.

2. **During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>days per week</td>
<td></td>
</tr>
<tr>
<td>No vigorous physical activities</td>
<td>Skip to question 4</td>
</tr>
</tbody>
</table>

3. **How much time did you usually spend doing vigorous physical activities on one of those days?**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>hours per day</td>
<td></td>
</tr>
<tr>
<td>minutes per day</td>
<td></td>
</tr>
<tr>
<td>Don't know/Not sure</td>
<td></td>
</tr>
</tbody>
</table>
### Physical Activity, You, and Your Environment

Think about all the moderate activities that you did in the last 7 days. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time. Complete or mark one response for each item as instructed.

4. **During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.**

<table>
<thead>
<tr>
<th>days per week</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No moderate physical activities—Skip to question 6</td>
<td></td>
</tr>
</tbody>
</table>

5. **How much time did you usually spend doing moderate physical activities on one of those days?**

<table>
<thead>
<tr>
<th>hours per day</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>minutes per day</td>
<td></td>
</tr>
<tr>
<td>Don't know/Not sure</td>
<td></td>
</tr>
</tbody>
</table>
Physical Activity, You, and Your Environment

Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you might do solely for recreation, sport, exercise, or leisure. Complete or mark one response for each item as instructed.

6. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

- days per week
- No walking—Skip to question 8

7. How much time did you usually spend walking on one of those days?

- hours per day
- minutes per day
- Don't know/Not sure
### Physical Activity, You, and Your Environment

The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television. Complete or mark one response for each item as instructed.

**8. During the last 7 days, how much time did you spend sitting on a week day?**

- **hours per day**
- **minutes per day**
- **Don't know/Not sure**
Physical Activity, You, and Your Environment

Press the submit button to complete your survey. Thank you for participating!
APPENDIX G

SURVEY MONKEY PERMISSION LETTER
February 21, 2014

SurveyMonkey Inc.
www.surveymonkey.com

For questions, email:
support@surveymonkey.com

Re: Permission to Conduct Research Using SurveyMonkey

To whom it may concern:

This letter is being produced in response to a request by a student at your institution who wishes to conduct a survey using SurveyMonkey in order to support their research. The student has indicated that they require a letter from SurveyMonkey granting them permission to do this. Please accept this letter as evidence of such permission. Students are permitted to conduct research via the SurveyMonkey platform provided that they abide by our Terms of Use, a copy of which is available on our website.

SurveyMonkey is a self-serve survey platform on which our users can, by themselves, create, deploy and analyze surveys through an online interface. We have users in many different industries who use surveys for many different purposes. One of our most common use cases is students and other types of researchers using our online tools to conduct academic research.

If you have any questions about this letter, please contact us at the email address above.

Sincerely,

SurveyMonkey Inc.
APPENDIX H

INTERNAL PHYSICAL ACTIVITY QUESTIONNAIRE-SHORT FORM AND SCORING

PROTOCOL
International Physical Activity Questionnaire—Short Form (IPAQ-S)

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE
(August 2002)

SHORT LAST 7 DAYS SELF-ADMINISTERED FORMAT

FOR USE WITH YOUNG AND MIDDLE-AGED ADULTS (15-69 years)

The International Physical Activity Questionnaires (IPAQ) comprises a set of 4 questionnaires. Long (5 activity domains asked independently) and short (4 generic items) versions for use by either telephone or self-administered methods are available. The purpose of the questionnaires is to provide common instruments that can be used to obtain internationally comparable data on health-related physical activity.

Background on IPAQ
The development of an international measure for physical activity commenced in Geneva in 1998 and was followed by extensive reliability and validity testing undertaken across 12 countries (14 sites) during 2000. The final results suggest that these measures have acceptable measurement properties for use in many settings and in different languages, and are suitable for national population-based prevalence studies of participation in physical activity.

Using IPAQ
Use of the IPAQ instruments for monitoring and research purposes is encouraged. It is recommended that no changes be made to the order or wording of the questions as this will affect the psychometric properties of the instruments.

Translation from English and Cultural Adaptation
Translation from English is supported to facilitate worldwide use of IPAQ. Information on the availability of IPAQ in different languages can be obtained at www.ipaq.ki.se. If a new translation is undertaken we highly recommend using the prescribed back translation methods available on the IPAQ website. If possible please consider making your translated version of IPAQ available to others by contributing it to the IPAQ website. Further details on translation and cultural adaptation can be downloaded from the website.

Further Developments of IPAQ
International collaboration on IPAQ is ongoing and an International Physical Activity Prevalence Study is in progress. For further information see the IPAQ website.

More Information
INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the last 7 days. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the vigorous activities that you did in the last 7 days. Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

1. During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?
   
   ____ days per week
   
   □ No vigorous physical activities ➔ Skip to question 3

2. How much time did you usually spend doing vigorous physical activities on one of those days?
   
   ____ hours per day
   ____ minutes per day
   
   □ Don’t know/Not sure

Think about all the moderate activities that you did in the last 7 days. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

3. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.
   
   ____ days per week
   
   □ No moderate physical activities ➔ Skip to question 5

SHORT LAST 7 DAYS SELF-ADMINISTERED version of the IPAQ. Revised August 2002.
4. How much time did you usually spend doing moderate physical activities on one of those days?

_____ hours per day
_____ minutes per day

☐ Don’t know/Not sure

Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you might do solely for recreation, sport, exercise, or leisure.

5. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

_____ days per week
☐ No walking  ➔ Skip to question 7

6. How much time did you usually spend walking on one of those days?

_____ hours per day
_____ minutes per day

☐ Don’t know/Not sure

The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the last 7 days, how much time did you spend sitting on a week day?

_____ hours per day
_____ minutes per day

☐ Don’t know/Not sure

This is the end of the questionnaire, thank you for participating.
IPAQ-S SCORING PROTOCOL

APPENDIX 1

At A Glance
IPAQ Scoring Protocol (Short Forms)

Continuous Score

Expressed as MET-min per week: MET level x minutes of activity/day x days per week

Sample Calculation

<table>
<thead>
<tr>
<th>MET levels</th>
<th>MET-minutes/week for 30 min/day, 5 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking = 3.3 METs</td>
<td>3.3<em>30</em>5 = 495 MET-minutes/week</td>
</tr>
<tr>
<td>Moderate Intensity = 4.0 METs</td>
<td>4.0<em>30</em>5 = 600 MET-minutes/week</td>
</tr>
<tr>
<td>Vigorous Intensity = 8.0 METs</td>
<td>8.0<em>30</em>5 = 1,200 MET-minutes/week</td>
</tr>
</tbody>
</table>

\[ \text{TOTAL} \; = \; 2,295 \; \text{MET-minutes/week} \]

Total MET-minutes/week = \text{Walk (METs*min*days)} + \text{Mod (METs*min*days)} + \text{Vig (METs*min*days)}

Categorical Score- three levels of physical activity are proposed

1. **Low**
   - No activity is reported OR
   - Some activity is reported but not enough to meet Categories 2 or 3.

2. **Moderate**
   - Either of the following 3 criteria
     - 3 or more days of vigorous activity of at least 20 minutes per day OR
     - 5 or more days of moderate-intensity activity and/or walking of at least 30 minutes per day OR
     - 5 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum of at least 600 MET-minutes/week.

3. **High**
   - Any one of the following 2 criteria
     - Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET-minutes/week OR
     - 7 or more days of any combination of walking, moderate- or vigorous-intensity activities accumulating at least 3000 MET-minutes/week

Please review the full document "Guidelines for the data processing and analysis of the International Physical Activity Questionnaire" for more detailed description of IPAQ analysis and recommendations for data cleaning and processing [www.ipaq.ki.se].

Revised November 2005
References


http://www.cdc.gov/nchs


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