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The purpose of this study was to develop a better understanding of the physical activity behavior of Black female adolescents age 14-18 in the Charlotte, NC public school community by examining the relationship between physical activity and self-efficacy, social support, outcome expectations, and physical environment. The study sample consisted of 96 girls ages 14-19 from a public high school in Charlotte, North Carolina. Participants volunteered to complete a survey with demographic, physical activity (PA), and psychosocial questions.

The predictor variables were self-efficacy and physical activity self-efficacy, social support, outcome expectations, and physical environment. The dependent variable was physical activity participation. Correlational analysis was employed to examine the relationship of the four predictor variables to physical activity. Self-efficacy was shown to be correlated with PA. The strongest correlation was between physical activity self-efficacy and PA. Correlations between outcome expectations and PA for the total sample were low and not significant. Total social support, family and friend social support were correlated with PA as well. Physical environment was not significantly related with PA for the Black adolescents in this study.

Multiple regression was used to determine the relative strength of the four main predictor variables on the dependent variable of physical activity level. For the total sample, the four predictor variables explained 24% of the variance in physical activity

participation. Of these variables, physical activity self-efficacy makes the largest unique contribution (beta=.36) with a significance level of .002.

In order to understand PA habits and perceptions among Black adolescent females, the last section of the survey included 14 open-ended questions. Most Black participants understand the health benefits of physical activity, but cited tiring and sweating factors as reasons why they do not participate in physical activity.

Findings suggest increasing physical activity self-efficacy and providing social support, as well as allowing girls to have a choice in their physical activity and offering activities they consider fun, may lead to increased physical activity among Black adolescent girls.

PSYCHOSOCIAL FACTORS AND PHYSICAL ACTIVITY AMONG BLACK  
ADOLESCENT FEMALES

By

Rennae A. Williams

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Approved by

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Committee Chair

To my family- thanks for all the support.

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of  
The Graduate School at the University of North Carolina at Greensboro.

Committee Chair \_\_\_\_\_

Committee Members \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Date of Acceptance by Committee

\_\_\_\_\_  
Date of Final Oral Examination

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## **CHAPTER I**

### **INTRODUCTION**

Because of the decreasing level of physical activity (PA) in Black female adolescents (Bungum et al., 1999; Felton, 2002; Kimm et al, 2002; Ransdell & Taylor, 2003), the serious health problems that can occur from inactivity and the known benefits from being physically active, methods to increase physical activity in this population need to be examined. One way to approach this examination is by studying psychosocial and environmental factors that influence physical activity behavior in this population, specifically: self-efficacy, outcome expectations, social support, and physical environment.

Although there have been numerous studies conducted on PA with the Black female population in the past decade, many issues and questions remain relative to the promotion of physical activity behavior in this population and various subgroups. Specifically, there has been very limited research targeting the Black female adolescent population in North Carolina.

Social Cognitive Theory (SCT) is explained by Bandura (1986) in terms of the model of triadic reciprocity “in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other” (p. 18). SCT is the most widely used theory for understanding PA behavior, and the most successful theory commonly used to guide the development of PA programs in youth

(Ward et al., 2007). This theory and model is useful when considering physical activity because to impact or change someone's physical activity behavior, you must factor in personal experience, the person's surroundings, and behavioral skills.

Social Cognitive Theory can serve as a guide for future interventions or programs in community or school locations. There are three broad factors or constructs within SCT (Ward, Saunders, & Pate, 2007). The primary cognitive constructs within the individual are self-efficacy or the belief that one can accomplish a given task or behavior, and outcome expectations, or the person's belief about what will happen. Self-efficacy has been shown to be one of the most influential determinants of physical activity behavior (Ward et al., 2007). According to Bandura (1977, 1997), sources of self-efficacy fall into four categories: Performance accomplishment, vicarious experiences, physiological/affective states, and verbal/social persuasion. Performance accomplishments refer to how well or poorly a person has done in an activity in the past or mastery experience. Vicarious experience or watching someone else successfully accomplish the skill, gives a person confidence in his or her own abilities.

Physiological/affective states and autonomic responses are associated with fear or readiness, emotions, and mood. Verbal/social persuasion includes encouraging words from others, social support, and positive self-talk. Several studies related to self-efficacy and PA in the Black population found Black girls have lower physical activity self-efficacy than White girls and Black boys (Dishman et al., 2008; Dowda et al., 2004; Felton et al., 2002; Trost et al., 1999).

According to Bandura (1986) outcome expectation is a belief of the likely consequence of an act. Outcome expectations can take three major forms: physical effects, social effects, and self-evaluative effects (Bandura, 1997). Examples of physical outcome effects are positive or negative sensory experiences; examples of social outcome effects are approval and disapproval and monetary rewards or removal of privileges; and examples of self-evaluative outcome effects are self-sanctions or self-satisfaction. Self-efficacy and outcome expectations are associated because the types of outcomes people expect depend on “their judgment of how well they will be able to perform in given situations” (p. 392). An individual can believe that a certain act will produce a particular outcome, but not act on that outcome belief because they question their ability to accomplish the act successfully (low self-efficacy). Bandura argued that outcome expectation is contingent on the capability of their performances. Therefore, individuals who believe themselves to be highly efficacious will expect positive outcomes; self-doubters will expect mediocre performances of themselves and consequently negative outcomes. Bandura (1986) also contended that expected outcomes are highly dependent on self-efficacy judgments. Expected outcomes may not predict behavior well on their own because they are highly dependent on self-efficacy.

In several studies, perceived self-efficacy predicted performance much better than expected outcomes. There is little research examining outcome expectations specifically with the Black population. In a study comparing the determinants of PA in active and low-active African-American sixth grade students, Trost et al. (1999) found that relative to low-active boys, active boys reported significantly higher levels of self-efficacy. They

also found that relative to low-active girls, active girls reported significantly higher levels of PA self-efficacy and greater positive PA outcome expectations.

Environmental factors refer to the physical environments outside of the individual and the social environment that influences the individual such as family and friends. The accessibility of facilities has been shown to correlate positively with physical activity participation among both adults (Sallis, Hovell, Hofstetter, Elder, et al., 1990) and children (Sallis, Nader, Broyles, et al., 1993). In a study examining the relationship of race and rural/urban setting to physical, psychosocial, and environmental factors associated with PA, Felton et al. (2002) found that White girls reported more sports equipment in their homes, reported more often that it was safe to walk or jog alone in their neighborhoods, than Black girls. They also reported less difficulty walking in their neighborhoods due to such things as traffic or lack of sidewalks.

Social support is most likely the most important type of social influence in physical activity settings (Lox, Ginis, & Petruzzello, 2006). In a study to develop and validate questionnaires used to measure psychosocial determinants of PA in pre-adolescent children, Saunders and colleagues (1997) administered questionnaires to a sample that was 69% African-American fifth-grade students. They found that all six scales (social influences, self-efficacy for support seeking, self-efficacy barriers, self-efficacy for positive alternatives, physical activity outcome beliefs, and social outcome beliefs) were all significantly correlated with intention to be physically active. Social influence and self-efficacy barriers were correlated significantly with after-school PA. The social influences scale correlated significantly with self-reported previous day PA.

As a prerequisite to designing effective intervention programs for this population, it is imperative to know the psychosocial and environmental factors that influence physical activity behavior (Troost et al., 1999, Annesi et al., 2005; Ransdell & Taylor, 2003). According to Ward et al. (2007), three of the most commonly identified influences on physical activity behavior in children and adolescents are perceived self-efficacy, social support, and enjoyment. Because self-efficacy, outcome expectations, the environment, and particularly social influence seem to be prominent factors associated with physical activity behavior in adolescents, they were the main focus of this study.

The target population for this study is Black female adolescents in North Carolina, and the sample comes from a predominantly Black public high school in the Charlotte Mecklenburg School District. The researcher is a physical education teacher and Athletic Trainer in this school. Thus, the study and findings must be considered within this particular context and in light of the researcher's connections with the issues and participants.

### **Problem Statement and Research Questions**

The purpose of this study was to develop a better understanding of the PA behavior of Black female adolescents age 14-18 in the Charlotte, NC public school community. The following questions guide this research:

1. How is self-efficacy related to PA participation? Self-efficacy was assessed with a measure that provides a total and three subscale scores- barriers, support seeking, and positive alternative, as well as a separate specific physical activity self-efficacy score.

Sub-questions are:

- 1a. How is support seeking self-efficacy related to PA participation?
- 1b. How is barriers self-efficacy related to PA participation?
- 1c. How is positive alternative self-efficacy related to PA participation?
- 1d. How is total self-efficacy related to PA participation?
- 1e. How is physical activity self-efficacy related to PA participation?
2. How are outcome expectations related to PA participation? Outcome expectation was assessed with a measure that provides a total and two subscale scores- social outcomes and physical outcomes scores. Sub-questions are:
  - 2a. How are social outcome expectations related to PA participation?
  - 2b. How are physical outcome expectations related to PA participation?
  - 2c. How are total outcome expectations related to PA participation?
3. How is social support related to PA participation? Social support was assessed with a measure that provides a total and two subscale scores- family and friend social support scores. Sub-questions are:
  - 3a. How is family social support related to PA participation?
  - 3b. How is friend social support related to PA participation?
  - 3c. How is total social support related to PA participation?
4. How is physical environment related to PA participation? Physical environment was assessed with a measure that provides a total and subscale scores- access to equipment and/or facilities and safety in the neighborhood and community. Sub-questions are:
  - 4a. How is perceived equipment and facility accessibility related to PA

participation?

4b. How is neighborhood safety related to PA participation?

4c. How is total environment related to PA participation?

Survey data provide descriptive information and address the research questions. Descriptive analyses, including frequencies, means and variability, provide a descriptive profile of the sample on the main variables. Correlations and regressions are used to address the specific research questions. Correlations among all the main variables (self-efficacy, outcome expectations, social support, physical environment, and physical activity) are examined. Also multiple regression analyses are used to determine the relative influence of self-efficacy, physical environment, outcome expectations and social support in predicting physical activity. Based on previous research, it is expected that high PA self-efficacy along with positive outcome expectations will be the strongest predictors of PA. In addition to the main measures and research questions, exploratory open-ended questions were included with the questionnaire to allow participants to add further information on other factors that may influence PA or inactivity in this population. Open-ended questions include: List reasons why you do or do not exercise; How does PA affect your overall health and wellness; How does PA affect your thoughts and feelings about yourself; What do you like about PA; and What do you dislike?

### **Conceptual and Operational Definitions**

The following are the definitions and operational measures for the main variables in this research.

**Physical Activity Self-Efficacy:** “One’s belief in their capabilities to organize and execute courses of action required to attain designated types of performances” (Bandura, 1986, p. 391). PA self-efficacy is a physical activity-specific form of self-confidence. In this study PA self-efficacy was assessed by an 18-item questionnaire. That includes 15 items with three subscales from Saunders et al., (1997), and three items (physical activity habits 1, 3, and 5, times days week) was developed specifically for this study in line with typical self-efficacy measures (McAuley & Mihalko, 1998).

**Outcome expectations:** A person’s estimate that a given behavior will lead to certain outcomes (Bandura, 1977). In this study outcome expectations of PA was assessed by a questionnaire developed by Saunders et al. (1997) to validate questionnaires used to measure psychosocial determinants of PA in fifth-grade students. Specific outcome expectation items include: hair, weight, in shape, mood, time with friends, etc. The measure had two subscales, physical and social, and a total score.

**Social support:** “An exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient” (Shumaker & Brownell, 1984, p. 13). This study focuses on family members and friends who have some influence on physical activity behavior. Social support was measured using an 8-item questionnaire. Saunders and colleagues (1997) developed this scale based on the Theory of Reasoned Action and Social Cognitive Theory. This will be scored by family and friends separately plus a total score.

**Physical environment:** Opportunity and safe access to a facility or program in which PA takes place. (i.e. home, neighborhood). In this study perceived physical environment was measured using a 4-item scale (Motl et al., 2005).

**Physical activity participation:** Physical activity is bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure. The recommended 30-60 minutes of PA on at least 3 days a week is the standard for PA participation. (US Department of Health and Human Services, 1999). Physical activity was measured using the Godin Leisure-Time Exercise Questionnaire (Godin & Shephard, 1985).

### **Limitations**

There are some limitations to the way most previous physical activity studies are conducted (Dishman, 1994). First, usually the research designs are cross-sectional or retrospective and are limited to a few weeks or months, how determinants may be different with increasing age is unknown. Longitudinal prospective studies are needed that follow children into adulthood and examine factors related to lifelong physical activity. Another limitation is that usually self-efficacy and physical activity studies use self-report measures, which may not be the most accurate.

Prior to the late 1980s physical activity studies used one-dimensional techniques on small homogenous samples in restricted settings, which produced results that were not generalizable (Dishman, 1994). Currently there are more heterogeneous studies with larger samples, however some of the same issues exist. Dishman asserts that to assess and understand the effectiveness of community and population interventions, the proper

measurement tools need to be used. However, instruments are typically designed for clinical purposes or for homogenous samples so the results may not be valid.

Some of the same limitations apply in this study. Because a convenience sample from a high school population will be used, generalizability of results is limited. Also, some participants in the study may have been students in the course with the researcher, and that may bias some data. Another limitation is that self-report measures may be influenced by recall accuracy or bias.

However, this study also has strengths. The researcher's connections to the school and participants may encourage greater participation and more valid responses. Most related previous research studies examined the children and pre-adolescent population and not this particular age group (14-18). Many of the studies compare Black and White girls, but few, if any, studies look at these particular predictors and PA with Black females in this particular age group.

## **CHAPTER II**

### **REVIEW OF LITERATURE**

This research focuses on cognitive expectations, social support, and environmental factors that influence Black female adolescents PA behavior. This chapter begins with a review of literature on PA in Black female adolescents, then reviews relevant theories and models, and research on cognitive and environmental factors related to PA behavior.

#### **Physical Activity and Health in Black Female Adolescents**

It is now widely known that obesity and overweight are widespread among children and adolescents across America. Obesity is particularly prevalent among Black females. Based on national data trends in the US, among youth 12 to 19 years old, 13% of white females have a BMI above the 95th percentile, whereas for black females the rate is almost 24% (Wang & Beydoun, 2007). Black girls ages 6-11 also have the fastest annual increase in the prevalence of overweight, which is expected to reach 31.1% by 2015, similar patterns were observed for adolescents aged 12-19. In addition, by 2015 the prevalence of obesity for Black women could reach as high as 62.5%.

Previous research has shown that younger children, in general, are physically active, but this activity declines drastically as children transition into adolescent years (Sallis & Owen, 1999). Physical inactivity is clearly associated with obesity and overweight, and obesity is the leading risk factor for cardiovascular disease (CVD).

Cardiovascular disease is 67.2% higher in Black women when compared to White women. The prevalence of hypertension, type II diabetes mellitus, and stroke is two times greater for Blacks than Whites. Physical activity has been shown to be a primary prevention factor for CVD as well as several other diseases (Trost, Pate, Ward, Saunders, & Riner, 1999). Physical activity has several health benefits in young people, including decreased overweight and obesity, increased psychological well-being, improved health into adulthood, and continuing physical activity behavior into adulthood. Specifically, in youth and adolescents, regular physical activity is inversely related to some cardiovascular disease risk factors, including high blood lipids, hypertension, and cigarette smoking. Physical activity is positively associated with physical fitness, HDL cholesterol, and bone mass (Loucaides, Plotnikoff, & Bercovitz 2007; Trost et al., 1999).

The current recommendations for youth and adolescents is to exercise daily or nearly daily as part of their lifestyle, engage in three or more 60-minute moderate to vigorous intensity physical activity sessions per week (Center for Disease Control and Prevention (CDC), 2008). Previous studies have identified several predictors for physical activity behavior in Black adolescents such as, physical activity self-efficacy, access to community-based physical activity organizations, access to exercise/fitness equipment, television watching, and parental influences (parents may be overweight, sedentary, and less supportive of physical activity than other groups) (Annesi, Wayne, Avery, & Unruh, 2005; Ward, Saunders & Pate, 2007).

Black youth are at a greater risk for physical inactivity than other populations, and this is even more so in Black females. According to the US Department of Health and

Human Services (USDHHS) (2004), a larger proportion of Caucasian children and adolescents engage in moderate physical activity (27%) than Black children (17%). Also Caucasians engage in more vigorous physical activity that promotes cardiovascular fitness (68 %) than Blacks (56 %). In the 2007 Youth Risk Behavior Survey (YRBS) girls reporting meeting the recommended levels of physical activity on the previous seven days prior to the survey decline from 31.5% in 9<sup>th</sup> grade to 20.6% in 12<sup>th</sup> grade. The 2007 YRBS also revealed that 42.1% of Black females, 28.2% of Caucasian females, and 35.2% of Hispanic females did not participate in any 60-minute physical activity the previous seven days. A study by Felton et al. (2002) examined the relationship between race and rural/urban setting to physical, behavioral, psychosocial, and environmental factors associated with PA of Black and White girls. Results mirrored what many other studies found, in that White girls reported statistically higher levels of moderate and vigorous activity than Black girls. They also found that White girls reported higher self-efficacy, Black girls had more family involvement and encouragement in regards to PA, and White girls reported having more access to sports equipment and safer neighborhoods than Black girls.

Another factor found to contribute to physical inactivity in adolescents is the significant decrease in physical education enrollment of high school students in the last several decades. Data show that only 48% of all high school girls are enrolled in PE, and girls' enrollment in PE declines from 9<sup>th</sup> grade (70%) to 12<sup>th</sup> grade (32%). In addition, girls' daily attendance in PE and intensity during PE both decline between 9<sup>th</sup> and 12<sup>th</sup> grade (CDC, 2005). Decline in PA is more prevalent in Black girls than in White girls

(Kimm et al., 2002). Several studies reported female student's negative perception of their PE experience (Ennis, 1999; Garrett, 2004; Taylor et al., 1999; Vertinsky, 1995). These negative perceptions were seen predominantly in Black and Latino girls. Corbett and Calloway (2006) also suggested several barriers to regular physical activity for both Black girls and women. Some of the barriers they offered are: poor perception of health, lack of support from employers; lack of time due to family responsibilities; lack of social support by parents, family and friends; lack of knowledge of the importance of exercise; differing social norms and value attributed to physical activity; tiredness due to physically demanding jobs; lack of both community resources for equipment and gender-sensitive programs; and the desire to reject the dominant culture's "white identity" which they associate with nutritional foods and exercise.

Compared to Caucasian adolescent girls, Black girls report heavier ideal/desired body size (Akan & Grilo, 1995; Altabe, 1998). In general, Black girls are less likely to view themselves as overweight, have less body dissatisfaction issues, and are less likely to engage in diet or weight reduction behaviors. This can be attributed to acceptance of a larger body size for Black women by family and friends, boyfriends and husbands, and what is portrayed in the media (Kumanyika, Wilson, & Guilford-Davenport, 1993; Allan, Mayo, & Michel, 1993). As a result, Black females may not be very motivated to participate or adhere to an intervention program focusing on physical activity and diet to reduce weight. A more successful intervention program would need to focus on intrinsic motivation beyond weight and health benefits (Robinson et al., 2003). Because adolescent Black girls are at a higher risk for inactivity and overweight when compared

to other groups and may face significant health problems later in life, it is imperative to find ways to promote physical activity in this population.

### **Relevant Theories and Models**

Numerous psychological theories and models have been developed to explain individual and group PA behavior. Many of these theories and models fall within a social cognitive framework; the individual's perception/cognition and social environment are major determinants of behavior. Many of these theories and models have influenced research and have also been used to develop successful physical activity programs and interventions. Examples of theories that fall within the social cognitive framework are the Theory of Reasoned Action and the Theory of Planned Behavior, both of which consider people's intention to engage in physical activity based on their attitude, subjective norms, and perception of control of the behavior (Ajzen, 1985). In addition, there is the Self-Determination Theory (SDT) with its component theory, cognitive evaluation theory, which states that intrinsic motivation is maintained and enhanced by feelings of autonomy, competence (experience mastery), and relatedness (connectedness with the activity and social interactions) (Deci & Ryan, 1985).

The most relevant theory for this study on determinants of physical activity is Bandura's Social Cognitive Theory (SCT), which states that cognition, the environment, and behavior all influence each other. The self-efficacy theory was developed within the framework of SCT. Self-efficacy is the extent to which an individual feels they will be successful in a certain behavior based on their abilities (Bandura, 1977). In addition to

SCT, more recent studies have been examining ecological models that consider local and larger environmental context as factors (Sallis & Owen, 1999).

### ***Social Cognitive Theory and Self-Efficacy Theory***

Social Cognitive Theory was developed by Albert Bandura (1986) and is considered one of the most successful theories used to design physical activity programs (Ward, Saunders, & Pate, 2007). Within this theory Bandura refers to the triadic reciprocity, which has an individual's behavioral skills, cognitive or personal factors, and environmental factors influencing each other.

There are three broad factors or constructs within SCT (Ward, Saunders, & Pate, 2007). The primary cognitive construct within the individual is self-efficacy or the belief that one can accomplish a given task or behavior. Behavioral factors or skills include self-control, goal setting, problem solving, self-monitoring, and self-reward.

Environmental factors refer to the physical environment outside of the individual and the social environment that influences the individual such as family and friends. Previous studies suggested that perceived support from family (Dowda et al., 2007; Kuo, Voorhees, Haythornthwaite, & Young, 2007; Neumark-Sztainer et al., 2003) and friends (Duncan et al., 2005) each are related to PA among adolescent girls.

One of the most central and widely researched constructs of SCT is self-efficacy. Bandura (1977) describes it as a situation-specific form of self-confidence. Perceived self-efficacy is one's beliefs in his or her "capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997). A person who is more confident in their abilities is more likely to undertake a task and persist when barriers

arise. In contrast, a low efficacious person may not try as hard and give up in the face of obstacles. Bandura suggests self-efficacy is key to behavior change and a strong determinant of choice of activity, the level of effort put forth toward the activity, and the degree of persistence (Bandura, 1997; Gill, 2000).

There are four sources of information that influence self-efficacy: past performance accomplishments, vicarious experiences, social/verbal persuasion, and physiological/affective states. Each one with increasingly greater influence on physical activity behavior and can work individually or in conjunction with one another (Feltz, Short & Sullivan, 2008; Lox, Ginis, & Petruzzello, 2006). Past accomplishments has been shown to be the most influential source of efficacy information because they are based on one's own mastery experiences through the self-appraisal of one's performances (Bandura, 1997). This is especially the case with performance accomplishments on difficult tasks. Efficacy information can also be derived through observing and comparing oneself with others or vicarious experience. Bandura (1997) suggests that the most informative models are people who are similar or slightly higher in ability. Social/verbal persuasion includes evaluative feedback, expectation on the part of others, self-talk, and other cognitive strategies (Feltz, Short, & Sullivan, 2008). Social/verbal persuasion can help motivate people to persist in their efforts if the persuader's appraisal is realistic and their level of prestige, credibility, expertise, and trustworthiness (Bandura, 1997). People can also appraise their physiological/affective states to form efficacious decisions regarding whether they can successfully meet specific demands. Physiological states being one's level of strength, fitness, fatigue, and pain; whereas affective states

refer to one's subjective feelings and moods (Feltz, Short, & Sullivan, 2008; Maddux, 1995). Physiological and affective responses can be appraised as positive or negative, consequently affecting one's performances (Bandura, 1997). These four sources of self-efficacy have different levels of influence on an individual. In addition, the influence on self-efficacy also depends on the level of difficulty, the situation, the task, the individual's skill level, among other things. The most influential sources of perceived self-efficacy are personal experiences and perceptions of success or failure.

These categories of sources that influence self-efficacy can be utilized to develop methods to increase self-efficacy. Methods used to increase perceived self-efficacy and behavioral skills are modeling (vicarious experiences) and skills training using guided practice with feedback (mastery experience) (Ward et al., 2007). Other methods that have been shown from previous studies to be successful with increasing physical activity self-efficacy include verbal encouragement, sharing of successful physical activity experiences by others, providing clear instructions, and making the activity enjoyable (Bungum et al., 1999; Trost et al, 1999).

A significant body of research has demonstrated that self-efficacy is both a strong determinant and consequence of physical activity behavior, especially when the activity is new or challenging (McAuley & Blissmer, 2000; Trost et al., 2002). There are numerous studies in the literature examining self-efficacy as it relates to physical activity in a wide range of settings and across diverse participant samples (Bozoian, Rejeski, & McAuley, 1994; Felton et al., 2002; Hu et al., 2007; McAuley & Blissmer, 2000; McAuley, Pena, & Jerome, 2001; Trost et al., 2003; Winters, Petosa, & Charlton, 2003).

Hu and colleagues (2007) conducted a study examining the effects of exercise self-efficacy on enjoyment of physical activity in a sample of low to moderately active college-aged women. The results indicated that self-efficacy may be an important influence on physical activity enjoyment, especially at higher intensities. In a similar study, McAuley et al. (2005) reported that high self-efficacy was associated with greater positive well-being over the course of a six-month randomized exercise intervention for older adults. Winters and colleagues (2003) conducted research on male and female high school students in the Midwestern United States to determine whether self-efficacy to overcome exercise barriers was associated with moderate and vigorous physical activity outside of school. They found that self-efficacy to overcome barriers to exercise was significantly associated with moderate and vigorous physical activity involvement in non-school related activities. They also found that self-efficacy was more strongly related to vigorous physical activity than moderate physical activity.

Another intervention study targeted a population of 14-17 year-old daughters and their mothers. The home-based group attended classroom sessions and was taught about different components of physical activity and health related fitness, how to complete various exercises and stretches, as well as goal setting and positive self-talk. The community-based participants were monitored to promote self-efficacy and decrease burnout or excessive fatigue while exercising. The results showed that mothers and daughters in both groups responded positively to the physical activity programs and improved in different physical fitness components. In addition, adherence rates were higher than previous similar studies (Ransdell et al., 2003). These studies are good

examples of applying the SCT and self-efficacy theory in community interventions, by considering social and cognitive factors.

*Self-efficacy measurements.* There are numerous self-efficacy measurements in the literature, some of which have been shown to have more validity and reliability than others. The most well-known and accepted way to assess self-efficacy is to evaluate its level and strength (Bandura 1977). “The level of self-efficacy refers to an individual’s belief that she can successfully perform various elements of a task. The strength of self-efficacy indicates the individual’s degree of conviction for successfully accomplishing each level of the task” (Lox, Ginis, & Petruzzello, 2006, p. 49).

A specific example of a well-known self-efficacy measurement includes the Physical Self-Efficacy Scale (PSES), developed by Rychman, Robbins, Thornton, & Cantrell (1982) to measure the two constructs of perceived physical ability and physical self-presentational confidence. The scale’s validity was examined by McAuley and Gill (1983) who concluded that the PSES showed factorial validity with a small sample of female college gymnasts. However, Motl and Conroy (2000), who tested male and female college students, did not draw the same conclusion. They found that the scale did not demonstrate adequate factorial validity for their sample. The PSES has also been critiqued by several others who found that it demonstrated acceptable validity and reliability (Baldwin & Courneya, 1997; McAuley, Mihalko, & Bane, 1997; Motl & Conroy, 2000). Hu et al. (2005) examined the two subscales, the Perceived Physical Ability (PPA) and Physical Self-Presentational Confidence (PSPC) and concluded that the PPA is a better measure of physical self-esteem than self-efficacy.

### ***Outcome Expectancy Construct***

Although a lot of attention has been given to the role of self-efficacy within social cognition models, less attention has been paid to outcome expectancy (Culos-Reed, Gyurcsik, Brawley, 2001; Dawson et al., 2001). Expectancy theorists contended that, based on past experience, individuals expected certain outcomes to occur as a result of a particular behavior (Bolles, 1972). In addition, according to the expectancy-value theory, behavior could be predicted by the combination of outcome expectancies and outcome values, which is defined as the subjective value, or perceived importance of an expected outcome” (Williams, Anderson, & Winett, 2005, p. 71). This expectancy-value construct served as the foundation for the development of several theoretical models used to explain health behavior, including social learning theory, the theory of reasoned action, and protection motivation theory. Within self-efficacy theory, outcome expectancy directly impacts behavior, with positive outcome expectancy increasing behavior and negative outcome expectancy decreasing behavior. In self-efficacy theory outcome value moderates the effect of outcome expectancy on behavior so that a valued positive outcome will increase behavior more than an outcome that is not valued.

### ***Social Support Construct***

Social support is one of the most important types of social influence in PA participation, especially for youth and adolescents (Lox, Ginis, & Petruzzello, 2006; Ward, Saunders, & Pate, 2007). It is defined as “the perceived comfort, caring, assistance, and information that a person receives from others” (Lox, Ginis, & Petruzzello, 2006, p. 106). There are five main types of social support: Instrumental

support, emotional support, informational support, companionship support, and validation support. Instrumental support entails providing practical, tangible aid that will help someone achieve their exercise goals. Emotional support is offered when one shows expressions of encouragement, caring, empathy, and concern towards a person. Informational support involves giving, directions, advice, feedback, or suggestions regarding exercise. Companionship support refers to the availability of those close to the person such as family and friends. Validation involves comparing one's thoughts, feelings, problems, and experiences with others in order to gauge one's normalcy. Few studies have examined the different types of social support and their influence on PA. However studies on adults and college students show that those who have high social support (e.g., family, friends, spouses, or neighbors) reported greater levels of PA (Eyler et al., 1999; Giles-Corti & Donovan, 2003; Hibbard, 1988; Leslie et al., 1999).

Among children and youth, social support from parents and other family members has been identified as one of the most important determinants of participation in all forms of PA (USDHHS, 1996). Parent support is important to a child's activity level because parents can provide support from all five different types of social support. In a study examining the amount of instrumental and validation support given by mothers and fathers to their daughters, Davison and colleagues (2003) found that the higher levels of both types of parental support were associated with higher PA levels among the daughters. Similarly, Sallis et al. (1999) surveyed a national sample of 1,500 parents and children in the fourth through 12 grade. They found that family support for PA was one of the strongest predictors of both boys' and girls' level of PA in all grades. A study by

Rhodes and colleagues (2002), compared the relative utility of subjective norm and social support in understanding exercise behavior among adults. They found that social support significantly predicted exercise intention, social support significantly predicted strenuous exercise behavior, and social support exhibited discriminant validity from subjective norms. They also found that friend support was one of the strongest indicators of social support whereas family support was the weakest indicator of social support. Saunders et al. (2004) examined social support and theory of planned behavior constructs in explaining PA in Black and White adolescent girls. Their study revealed that social provisions were significant predictors of intention, and social provisions and intention were significant predictors of moderate to vigorous PA. Family support more strongly predicted team sport involvement than moderate to vigorous PA. The findings were comparable when comparing the relationships between Black and White girls.

### ***Self-Determination Theory***

Self-Determination theory (SDT) and its component Cognitive Evaluation Theory states that individuals are more intrinsically motivated when the task is challenging, interesting, and if they have a choice in participating. Individuals are more likely to be self-determined to initiate and maintain involvement in physical activity when these factors are in place (Deci & Ryan 1985, 2000). According to Hagger and Chatzisarantis (2007), SDT is the only theory that provides a multidimensional approach to the determinants of intrinsic motivation. They believe the self-efficacy theory does not include the important role autonomy plays in intrinsic motivation.

The self-determination continuum goes from intrinsic motivation on one end, which reflects high self-determination, to amotivation on the opposite end, which reflects low self-determination. Another aspect of SDT explains the specific versus general kinds of motivation. The first level is global motivation, defined as the degree of motivation across different behaviors; contextual motivation refers to more stable motivation in a specific context; and situational motivation, is motivation at a specific point in time and specific activity (Lox, Ginis, & Petruzzello, 2006). Vallerand, Deci, and Ryan (1987) found that if one perceives locus of causality to be internal it would promote self-determination and intrinsic motivation and if locus of causality is perceived to be more external this decreases self-determination and intrinsic motivation. Feeling in control or competent increases intrinsic motivation.

The social environment also plays a key role with intrinsic motivation. For example, motivating people with external rewards or punishment will decrease intrinsic motivation because it diminishes the feeling of autonomy (Hagger & Chatzisarantis, 2007). Conversely, to increase intrinsic motivation one must support autonomy, relatedness, and competence. Subsequently, an individual who is motivated to participate in physical activity by intrinsic aspiration such as personal growth or social affiliation will enhance well-being because they are satisfying the three psychological needs. Frederick and Ryan (1993) found that enjoyment/interest and competence were positively associated with time spent exercising per week and feelings of satisfaction with the activity. In contrast, external goal orientation such as good looks or fame may be

considered controlling and not meet the basic psychological needs and make long-term commitment to exercise less likely.

### ***Ecological Model***

The ecological model was developed from a fairly new field of research examining environmental factors that influence physical activity (Sallis, Kraft, & Linton, 2002). Until recently, most of the focus was on the individual, psychosocial and educational approaches to physical activity promotion, currently ecological factors are becoming more critical to physical activity involvement. “The general thesis of ecological models of behavior is that environments restrict the range of behaviors by promoting and sometimes demanding certain actions and by discouraging or prohibiting other behaviors” (Kaczynski & Henderson, 2007, p. 317). This model examines the influence and relationships among different environmental, personal, and social variables. Studies that have used the ecological model usually focus on how these variables constrain or facilitate accessibility to local trails, exercise equipment and facilities, parks, sidewalks, traffic, safety, lighting, etc., and how this impacts physical activity and obesity (Gobster, 2005; Salmon et al., 2003; Trost et al., 2002). Bronfenbrenner (1977, 1989) developed a hierarchical framework for the ecological model. He posited that microsystem dimensions such as type and quality of facilities and verbal support from friends and family influence participation in physical activity. The microsystem is set within the context of larger mesosystem and macrosystem dimensions such as weather, neighborhood safety, societal norms and values, and urbanization.

Because of the newly emerging ecological model, there is little research investigating the effects of policy and environmental interventions on physical activity (Lox, Ginis, & Petruzzello, 2006). A group of researchers came up with a preliminary social ecological model for physical activity that could be very useful for future research (Sallis, Bauman, & Pratt, 1998). According to this model community members can influence policies that will provide supportive physical activity environments. Individuals in a community will be more likely to engage in physical activity in a more supportive environment; this can be achieved by: improving availability and access to facilities and programs and providing supportive environments for active transportation such as biking and walking.

Perceived neighborhood safety and equipment accessibility and perceived lack of accessible equipment in the home and community are physical environmental variables that might influence PA behaviors of adolescent girls (Motl et al., 2005). Several studies has supported neighborhood safety and equipment accessibility as correlates of PA among a population-based sample of adolescents (Gordon-Larsen et al., 2000; Molnar et al., 2004), and among a small sample of adolescent girls (Dunton, Janner, & Cooper, 2003).

### ***Transtheoretical Model***

The transtheoretical and social ecological models both integrate the theories and models discussed previously very well when applied to physical activity behavior (Lox, Ginis, & Petruzzello, 2006). The transtheoretical model (TTM) explains that behavior change does not happen quickly. Instead, behavior change happens gradually over time

through a series of stages that range from people having no intention of starting to exercise in the near future to when people have been exercising for more than six months. These stages are: precontemplation, contemplation, preparation, action, and maintenance. In order for an individual to transition through the stages, cognitive and behavioral strategies are implemented in interventions. The TTM is quite useful for guiding exercise intervention programs.

### **Relevant Research Studies**

#### ***Self-efficacy and Black Females Research***

There have been multiple studies specifically related to self-efficacy and PA in the Black population. Several studies have found that Black girls have lower physical activity self-efficacy than White girls and Black boys (Dishman et al., 2008; Dowda et al., 2004; Felton et al., 2002; Trost, et al. 1999). A study by Trost et al. (1999) revealed that Black students who were active reported significantly higher ratings of self-efficacy than low-active students. Previous studies involving adolescents have revealed the positive relationship between physical activity self-efficacy and exercise behavior. In the intervention done by Annesi et al. (2005), Black boys and girls from ages 5-12 underwent a 12-week physical activity protocol to increase physical fitness at a local YMCA. There was also a behavioral skills education component that included a self-efficacy assessment and interactive lessons focused on such things as goal-setting, self-talk, and recruiting social support. This intervention incorporated behavioral skills training in conjunction with physical activity instruction. The results showed that there was improvement in

overall physical fitness and there was also a statistically significant increase in exercise self-efficacy scores for 9-12 year old girls.

### ***Outcome Expectancy Research***

There is little research examining outcome expectations especially with Black adolescent females. However, Gohner et al. (2009) developed an intervention that combines motivational and volitional strategies that aim to prepare orthopedic rehabilitation patients to perform PA regularly after discharge. The measure consisted of nine positive and seven negative outcome expectations regarding PA. There were significant results in regards to an increase in self-efficacy and more positive balance of outcome expectations at six months. Dishman et al. (2005) found that certain social-cognitive variables such as outcome expectancy value, perceived barriers and enjoyment did not exhibit direct associations with PA among 6<sup>th</sup> and 8<sup>th</sup> graders. In contrast, other studies of children and adolescents have revealed that PA has been positively related to outcome expectancy value (Bungum et al., 2000; O'Loughlin et al., 1999; Strauss et al., 2001; Trost et al., 1999). However those studies did not directly compare the independent associations of self-efficacy, outcome expectancy value, etc. with PA among girls of different ages (Dishman et al., 2005).

Studies reporting bivariate correlations between positive outcome expectancy and PA of young to middle-aged adults have shown small, but significant, associations (Dzewaltowski, 1989; Dzewaltowski et al., 1990; Rovnaik et al., 2002). However, a study on rural youth failed to find an association between the two variables (Pate et al., 1997). Few studies have measured negative outcome expectancy and PA (Williams et al., 2005).

More research has been conducted on perceived barriers to PA and found mixed results. Although perceived benefits of physical activity are the same as positive outcome expectancies, perceived barriers are not the same as negative outcome expectancies. Barriers are perceived to prevent behavior, whereas negative outcomes are expected to result from behavior. However, the two constructs are related in that perceived barriers are often partly based on expected negative outcomes.

The self-efficacy theory posits that self-efficacy and outcome expectancy are correlated (Williams et al., 2005). Self-efficacy influences behavior directly and indirectly through outcome expectancy. According to Williams and colleagues (2005), there is limited research examining how self-efficacy and outcome expectancy operate together to determine PA. There is, however, a small amount of research on this topic. Some studies that focus on older adults show that outcome expectancy is related to self-efficacy and that outcome expectancy accounts for at least some variation in PA beyond that accounted for by self-efficacy (Conn, 1997; Resnick et al., 2000; Resnick et al., 2002). Other studies on young to middle-aged adults found that outcome expectancy predicts variance in PA, or PA intentions, beyond that accounted for by self-efficacy (Rodgers & Brawley, 1996; Desharnais, Bouillon & Godin, 1986). Social cognitive theory suggests that outcome expectancy is more influential on initiation of novel behavior than behavioral maintenance (Bandura 1986; Schwarzer, 1992). In one study higher positive outcome expectancy led to increased attendance at an initial exercise test but was not related to subsequent class participation (Damush et al., 2001). According to Rothman (2000), one explanation may be that expectations are important

when predicting initiation of behavior, but perceived satisfaction with actual outcomes are better predictors for PA maintenance.

### ***Ecological Model Research***

A few studies have combined the self-efficacy construct and the ecological model, as well as other combination of theories and models in their research to develop interventions and community programs. Dzewaltowski and colleagues (2007) examined self-efficacy and proxy agency of children and adolescents. “Proxy agency is a socially mediated form of agency exerted by children and adolescents when they try to get other people who have expertise and influence to act on their behalf to secure their desired outcome” (p. 311). They contend that self-efficacy has been shown to predict physical activity, however sometimes children and adolescents have no direct control over social and physical context provided for their physical activity choices. These children and adolescents use proxy efficacy when they need others to help them achieve their objectives. Ryan and Dzewaltowski (2002) also combined self-efficacy and ecological model in their study examining different types of self-efficacy and after school physical activity among sixth grade youth. The sample reported their confidence to be physically active (physical activity self-efficacy), confidence to overcome barriers (barrier self-efficacy), confidence to ask parents, friends, and teachers to be physically active with them (asking efficacy), and environmental change self-efficacy.

Motl and colleagues (2005) conducted a study examining the direct and mediated effects of perceived equipment and neighborhood safety on PA across a one-year period among adolescent girls (41% Black, 39% White). The initial analysis found that

neighborhood safety did not exhibit cross-sectional or longitudinal direct effects on PA, however equipment accessibility exhibited a statistically significant cross-sectional, but not longitudinal, direct effect on PA. The secondary analysis revealed that self-efficacy for overcoming barriers mediated the cross-sectional effect of equipment accessibility on PA. In a replication of this study, Motl et al. (2007) included the same variables but added an extension involving examining perceived self-efficacy as a factor accounting for the effect of perceived social support on self-reported PA among 12<sup>th</sup>-grade girls. Along with similar results from the previous study, they also found that perceived social support exhibited direct and indirect effects on self-reported PA; the indirect effect was accounted for by barriers self-efficacy.

### ***Self Determination Theory Research***

Landry and Solmon (2004) conducted a study using the Behavioral Regulation in Exercise Questionnaire (BREQ), which has questions based on the SDT continuum and the Stages of Exercise Scale, which is based on the Transtheoretical Model of behavior change. The purpose of the study was to determine whether these instruments could assess the level of exercise behavior change among Black adult females, as well as how regulation and self-determination vary across groups who are at different stages in their readiness to exercise. Consistent with Mullan and Markland (1997), they found that participants who had been active over a period of time were more self-determined in their behavior regulation. The application of SDT has produced more insight regarding how individual's initial motivational orientation to a physical activity program predicted

adherence. However, very little research has examined SDT and the Black female adolescent population.

### **Conclusion**

Previous research has revealed that Black female adolescents report a lower level of PA and have a higher prevalence of overweight and obesity levels, which may lead to an increase in CVD risk factors in adulthood. There is clearly a need to improve PA participation among Black female adolescents to potentially lower certain known health risk factors and promote better quality of life. Because of the lack of physical activity in this population and the serious health problems that can occur from inactivity, methods for increasing physical activity need to be examined (Ransdell & Taylor, 2003). This can be achieved by combining behavioral skills training and physical activity, which has been recommended by the United States Department of Health and Human Services (1997). Because intrinsic motivation is shown to be one of the most important factors to exercise over time, more research is needed to see what can enhance intrinsic motivation in Black females to exercise from their youth into adulthood (Hagger & Chatzisarantis, 2007).

Psychosocial factors such as perceived self-efficacy, beliefs about PA, social influences, and environmental factors are strongly correlated with youth and adolescent's engagement in PA (Ward, Saunders, & Pate, 2007). Therefore, physical activity research, interventions, and programs should incorporate some combination of psychosocial and environmental factors in order to increase Black female adolescents' involvement in PA.

It is important to consider the relevant models and theories to be able to recognize the multiple levels that influence physical activity behavior. This is imperative

for future research as well as community programs and interventions. Researchers can make a bigger impact when considering the whole picture. They can improve physical activity participation by not only focusing on the individual's attitude and perceptions, but also on such things as removing environmental barriers and changing public policy (Lox, Ginis, & Petruzzello, 2006). Information gained in this study on how psychosocial and environmental factors influence PA behavior in this sample of Black female adolescents may be used in future school Physical Education and community programs and interventions promoting PA.

### **CHAPTER III**

### **METHODOLOGY**

To address the research questions and gain insight into psychosocial and environmental factors that influence Black female adolescents physical activity (PA) behavior, survey method was used to determine the relationship of self-efficacy, outcome expectations, social support and the environment with PA. After an overview of the school setting and the researcher's position, the chapter describes participants, measures and procedures in separate sections.

This study took place in an equity-plus urban public high school in the Charlotte Mecklenburg School system, the second largest school system in the state of North Carolina. Equity Plus schools are determined by the percentage of students who receive free and reduced priced lunches. The total enrollment in the 2009-2010 school year is 2,243 students, 49% female, 68% Black, 66% free or reduced lunch. This school is one of four schools in the district designated as a priority school, which means 50 to 60% of students are performing at grade level or less than 50% of students are performing at grade level. However, in the 2008-2009 school year this school was able to exceed the specific goals set for the Adequate Yearly Progress or AYP, which it was not able to meet the previous year.

I (the researcher) have been an athletic trainer and physical educator at this high school for over five years. Teaching in this predominantly Black high school is where my

passion for promoting physical activity among Black female adolescents developed, due to witnessing the lack of physical activity more so in this population than others. I started to wonder why at a school with approximately 68% Blacks, was a majority of girls' sports teams made up of White girls, with the exception of basketball and track & field. I see the same general lack of participation of Black girls compared to other ethnic/racial groups in the physical activity classes.

As a Black female, I can speak from the experience of the Black female body, although that experience may be vastly different from other Black female bodies. I see and experience the benefits that physical activity has on my health and overall well-being. As I read more and more journal articles about Black girls and women's health and lack of physical activity in general, I feel a sense of obligation to do something about it as a researcher, scholar, and just as a Black woman who sees this in my own students, friends, and family members. Being a physical educator it is my passion and belief to see all students, regardless of race/ethnicity and gender, participate in physical activity and leave school with general knowledge, appreciation and enjoyment of lifetime physical activity. Being that I am a Black female, I see myself as someone who can potentially be a role model to these young women, someone they can relate to. I do not fit this inactive Black female profile that the literature perpetuates and neither does every Black female. The fact that I'm a Black female may affect the way the participants respond and interact with me as opposed to a White researcher, and I may obtain more valid responses from participants.

## **Participants**

The target population was Black females between the ages of 14-18 years. The population is defined as Black to be inclusive of all female groups (African-American, African, Jamaican, Trinidadian, etc.) who currently live in Charlotte, NC. The survey was completed by all high school females who returned signed parental consent forms and assent forms (Total n = 96; Black n = 62, Non-Black n = 34 including: White n = 11, Asian n = 7, Hispanic n = 8, Other n = 8). Further information on the sample demographics is included in the Results chapter.

## **Instruments**

The survey packet (see Appendix A & B) included several measures that assess the main variables of the study: self-efficacy, outcome expectations, social support and environmental factors, as well as physical activity. Before completing the main measures, participants completed brief demographic items on age, year in school, and race/ethnicity.

### ***Godin's Leisure-Time Exercise Questionnaire***

Physical activity levels were measured through self-report using Godin's Leisure-Time Exercise Questionnaire (GLTEQ) (Godin & Shephard, 1985). The GLTEQ has been shown reliable for measuring physical activity among adolescents with a significant test-retest correlation coefficient of  $r = .81$  (Sallis et al., 1993). Sallis and colleagues administered the GLTEQ to children in 5<sup>th</sup>, 8<sup>th</sup>, and 11<sup>th</sup> grades and re-administered the GLTEQ to the same groups two weeks later with 16-hour heart rate comparisons. All three groups had high GLTEQ reliabilities, with the reliability for 11<sup>th</sup> graders at  $r = 0.96$ . When compared to the 7-day Physical Activity Recall (PAR), the GLTEQ is more

appealing because it is self-administered and assesses the usual activity pattern (Sallis et al., 1993). The 7-Day PAR has acceptable reliability and validity characteristics for both adult and children, but can be costly due to the need for an interviewer and it only assesses a one-week sample of PA that may not represent overall PA pattern.

The GLTEQ assesses the average physical activity participation over an average one week period in which the participant spends more than 15 minutes in activities that are classified as mild (3 METS), moderate (5 METS), or strenuous (9 METS). Examples of activities are presented under each category and the participants are required to write only three numbers. A total score is derived by multiplying the frequency of each category by the MET value, and those products are summed. The sum of these scores provides the participant's total PA score during an average week.

### ***Self-efficacy for PA Measure***

The self-efficacy measure included 15 items taken from a questionnaire that examined confidence in overcoming barriers to physical activity in fifth grade students (Saunders et al., 1997), as well as three added PA self-efficacy questions. All items had a 5-point response scale (1 = Disagree a lot, 5 = Agree a lot). Sample questions are: I can ask my best friend to be physically active with me; I have the skills I need to be physically active; I can be physically active no matter how tired I may feel; I can be physically active even if I have a lot of homework, etc. Saunders and colleagues used a cross-validation design to randomly split their sample (n = 421) into two sub-samples. Data for the 80% sample were used in psychometric development of the scales and factor analysis was utilized. The authors used Cronbach's  $\alpha$  to assess internal consistency. The

20% sample was used to reassess reliability and validity. Test-retest reliability was determined using Pearson correlations. Three factors emerged from this analysis: support seeking, barriers, and positive alternatives, each with 5 items. The internal consistency reliabilities for each scale were: support seeking 0.71 (n=319), barriers 0.71 (n=323), and positive alternatives 0.54 (n=321). In the validation sample, the  $\alpha$ 's were 0.52, 0.55, and 0.62, respectively. The test-retest reliability for the scales were 0.76, 0.82, 0.61 respectively. In the current study the Cronbach's  $\alpha$  coefficients were: support seeking 0.59, barriers 0.76, positive alternatives 0.72, total self-efficacy 0.83, and PA self-efficacy 0.81. The 15-item self-efficacy measure yields three sub-scores and a total score. Sub-scale scores were calculated by adding the item scores for each sub-scale. The three added items were developed based on guidelines for developing efficacy measures, and directly asked participants: I can be physically active for at least 30 minutes at least one (three, five) day per week. All items have a 5-point response scale (1 = Disagree a lot, 5 = Agree a lot).

### ***Outcome Expectancy Values Measure***

Outcome expectancy was assessed by a questionnaire developed by Saunders et al. (1997) to validate measures of psychosocial determinants of PA in fifth-grade students. The outcome expectations scale was developed from the beliefs and attitudes component of the Theory of Reasoned Action and the outcome expectations component of the Social Cognitive Theory. Their outcome expectations or "belief" scale produced a 10-item sub-scale for social outcome and 12-item sub-scale for physical outcome. All items have a 5-point response scale (1 = Disagree a lot, 5 = Agree a lot). This scale

contained seven items that were negatively worded and were reverse coded (e.g., It would make me tired, It would be boring, and It would lead to my getting an injury).

The results showed the internal consistency reliabilities for the physical outcomes and social outcomes scales were 0.75 and 0.58 respectively (Saunders et al., 1997) . For the validation sample, the  $\alpha$ 's were 0.46 and 0.51 respectively. The test-retest correlation coefficients were 0.51 and 0.69 respectively. This study used the Saunders scale with the two sub-scales (physical and social) and a total measure. In the current study the Cronbach's  $\alpha$  was .28 for physical outcomes, .22 for social outcomes, and .46 for total expected outcomes. Given the low reliabilities caution is in order in interpreting these scores.

### ***Social Support Questionnaire***

Social support was measured using an 8-item questionnaire, 5 items for family support and 3 for friend support. All items had a 5-point response scale (0 = None, 4 = Daily). Saunders and colleagues (1997) developed this scale based on the Theory of Reasoned Action and Social Cognitive Theory. Results showed that the internal consistency reliability for the total 8-item scale was 0.75 in the development sample and 0.72 in the validation sample. The test-retest correlation coefficient was 0.78. A similar measure was used in a student survey of the Amherst Health and Activity Study (Sallis et al., 2002) with sub-scales to measure support for PA from friends and family. The Cronbach's  $\alpha$  for family support was .78 and test-retest reliability was .81. Friend support was .74 and .70. In the current study Cronbach's  $\alpha$  for family support was .75, friend

support was .75, and total support was .79. The social support measure yields two scores (family and friends) with each calculated by adding the item scores for that sub-scale.

### ***Perceived Physical Environment***

Perceived environment was measured using a 4-item scale (Motl et al., 2005). All items had a 5-point response scale (1 = Disagree a lot, 5 = Agree a lot). Perceived equipment accessibility and perception of access to facilities and physical activities in the neighborhood and communities were assessed. Motl and colleagues found this scale included two sub-scales, equipment accessibility and neighborhood safety with two items each. The two sub-scales exhibited evidence of invariant factor structure and factor loadings across one year ( $\chi^2_{diff} = .43$ ,  $df = 2$ ,  $p = .81$ ) and between Black and White girls ( $\chi^2_{diff} = 1.51$ ,  $df = 2$ ,  $p = .47$ ). Motl and colleagues (2007) used a similar scale for a study examining psychosocial variables and PA among adolescent girls. In their study the internal consistency for the entire scale was .62, and for the equipment accessibility and neighborhood safety subscales was .46 and .69, respectively. The two scores (accessibility and safety) were calculated by adding the item scores. In the current study, one neighborhood safety item was reversed scored due to negative wording. Cronbach's  $\alpha$  for accessibility in the current study was .36, safety .68, and total .57.

In addition to the established measures of the main variables, several open-ended questions were included that provided added information to complement the survey results. These exploratory questions asked participants about factors that influence their physical activity, why they do or do not participate, and what would make them more likely to participate.

## **Procedures**

Following approval by the UNC-Greensboro IRB, district and school administrators were contacted to obtain permission to recruit prospective participants. Following their approval, participants were recruited through a CMS public high school. To get approval from the Charlotte-Mecklenburg School system Accountability Department, it was necessary to complete their application and submit the proposal along with a draft of consent forms and all other instruments or surveys and a copy of the UNC-Greensboro IRB approval.

The researcher addressed students while in their health classes. During this time, the researcher provided a brief description about the study and why it was being conducted while handing out parental consent forms in each class. The information given was a summary of the assent forms. The students were asked to take the parental consent form home and get it signed and return it to their physical education teacher or the researcher. They were given approximately one week to return the forms. The teachers were given envelopes to collect the consent forms. The investigator collected the signed consent forms from the physical education teachers. Physical education teachers announced in their classes about the specific time and classroom that was designated for all participants to meet with the researcher to conduct the survey. In the meeting of all participants who returned consent forms, the researcher handed out assent forms then read over the form out loud and had participants follow along. The participants were given time to read, ask questions and sign the assents forms. The researcher collected the

forms and administered questionnaires, which were collected immediately after being completed.

### **Data Analyses**

First, descriptive analyses, including frequencies, means and variability were conducted for all the main variables (physical activity, self-efficacy, outcome expectations, social support, and environment) to develop a profile of the sample. Following descriptive analyses, correlations and regression analyses were used to address the main research questions.

The first research question was: How is self-efficacy related to PA participation? To test for the relationship between self-efficacy and PA, correlations were used to determine the relative strength of self-efficacy in determining PA participation in Black adolescent females. This yielded total scores of support seeking, self-efficacy, self-efficacy barriers, positive alternatives self-efficacy, and an added 3-item total score for PA self-efficacy. Bivariate correlations of each efficacy total score with PA were examined.

The second research question was: How is outcome expectations related to PA participation? To test for the relationship, correlations were used to determine the relative strength of outcome expectations in determining PA participation in Black adolescent females. This scale yielded total scores for two sub-scales, physical outcomes and social outcomes, and a total score. Correlations of sub-scales and total scores with PA were examined.

The third research question was: How is social support related to PA participation? To test for the relationship between social support and PA participation, correlations were used to determine the relative strength of social support in determining PA participation in Black adolescent females. This scale yields scores for both family and friend support. Correlations of these two scores and the total support score with PA were examined.

The final research question was: How is physical environment related to PA participation? To test for the relationship between physical environment and PA participation, correlations were used to determine the relative strength of physical environment in determining PA participation in Black adolescent females. Correlations of equipment accessibility and safety and the total with PA were examined.

As well as examining the bivariate correlations of each of the main variables with PA, multiple regression analyses were used to determine the relative strength of the main variables in predicting PA. The total scores for each of the main variables (self-efficacy, outcome expectations, social support and environment) were entered as predictors in a multiple regression analysis with PA as the criterion variable.

This chapter described the methodology used in this study to determine if there is a relationship between physical activity and self-efficacy, outcome expectations, social support and environment among Black adolescent females. Chapter IV presents the results acquired using those methods.

## CHAPTER IV

### RESULTS

The purpose of this study was to develop a better understanding of the PA behavior of Black female adolescents age 14-18 in the Charlotte, NC public school community. This chapter presents descriptive analyses of demographic and variable data and the results of the analyses described in the data analyses section. In this chapter, findings are reported according to research questions. Research questions and sub-questions guiding this study were as follows:

1. How is self-efficacy related to PA participation? Self-efficacy was assessed with a measure that provides a total and three subscale scores- barriers, support seeking, and positive alternative, as well as a separate specific physical activity self-efficacy score.

Sub-questions are:

1a. How is support seeking self-efficacy related to PA participation?

1b. How is barriers self-efficacy related to PA participation?

1c. How is positive alternative self-efficacy related to PA participation?

1d. How is total self-efficacy related to PA participation?

1e. How is physical activity self-efficacy related to PA participation?

2. How are outcome expectations related to PA participation? Outcome expectation was assessed with a measure that provides a total and two subscale scores- social outcomes and physical outcomes scores. Sub-questions are:

2a. How are social outcome expectations related to PA participation?

2b. How are physical outcome expectations related to PA participation?

2c. How are total outcome expectations related to PA participation?

3. How is social support related to PA participation? Social support was assessed with a measure that provides a total and two subscale scores- family and friend social support scores. Sub-questions are:

3a. How is family social support related to PA participation?

3b. How is friend social support related to PA participation?

3c. How is total social support related to PA participation?

4. How is physical environment related to PA participation? Physical environment was assessed with a measure that provides a total and subscale scores- access to equipment and/or facilities and safety in the neighborhood and community. Sub-questions are:

4a. How is perceived equipment and facility accessibility related to PA participation?

4b. How is neighborhood safety related to PA participation?

4c. How is total environment related to PA participation?

In this study self-efficacy, outcome expectation, social support, and physical environment, measured by a questionnaire adapted from one used in a previous study (Saunders et al., 1997), are variables on the dependent variable of physical activity. Physical activity scores were measured using Godin's Leisure-Time Exercise Questionnaire (GLTEQ) (Godin & Shephard, 1985).

The Predictive Analytics SoftWare 18.0 (2009) was used to conduct all data analyses. Multiple regression was used to determine which predictor variables were the best predictors of PA. Alpha levels of .05 were set for all analyses.

### **Sample Profile**

All physical education/health classes were recruited for this study, with a majority of them in 9<sup>th</sup> grade. The total possible sample was 210 girls. A total of 96 high school adolescent females ages 13-19 completed the surveys; Black (n = 62), White (n = 11), Asian (n = 8), Hispanic (n = 7), Other (n = 8). There were 45 freshman, 16 sophomores, 12 juniors, and 23 seniors. The purpose of the study was to develop a better understanding of Black female adolescents PA behavior, and the sample was drawn from a predominantly Black high school. As noted, the sample included 34 non-Black participants. Thus, analyses were conducted separately for the Black and non-Black sub-samples as well as for the total sample. In most cases the results that address the research questions are the same for the total sample and the Black sub-sample; relevant differences are noted. Two questions on the open-ended section of the survey asked: During the past 12 months, did you play on any sports team or participate in any physical activity programs run by the school (not including PE class) and by organizations outside of school. Ninety-four participants responded, 46% reported yes they did play a school sport/physical activity, and 33% reported yes they play a non-school sport/physical activity. Of the Black sample, 40% responded yes to playing a school sport/physical activity and 35% responded yes to playing a non-school sport/physical activity. Of the

Non-Black sample, 59% responded yes to playing a school sport/physical activity and 32% responded yes to playing a non-school sport/physical activity.

### **Descriptive Results**

Descriptive results for each of the main variables, including sub-scales and total scores, are presented in this section. The sample included 62 Black and 34 non-Black participants; however the focus was on the Black sample. Comparison between samples is reported in Appendix G. However, there were very few differences. Thus, results are reported for the total sample. In a few cases where results differ for the Black sample, those differences are noted. Results for physical activity levels are presented first, followed by descriptive results for the main predictor variables – self-efficacy, outcome expectations, social support and environment.

#### ***Physical Activity Participation***

Physical activity scores reported on the GLETQ ranged from a minimum of 0 to a maximum of 131 for the total METS for the whole sample. Mild PA ranged from 0 to 30, moderate PA ranged from 0 to 50, and strenuous PA ranged from 0 to 72. Four participants reported 0 PA on all three levels and 42 reported 0 on one or more of the levels. Thus, PA scores are variable with a high standard deviation. The mean and standard deviation for MET values and daily PA values are presented in Table 1.

**Table 1: Physical Activity Levels**

<b>Sample</b>	<b>N</b>	<b>Mild</b>	<b>Moderate</b>	<b>Strenuous</b>	<b>Total</b>
PA (METS)	96	9.78(8.71)	15.99(12.39)	23.44(20.42)	49.21(30.54)
PA (Days)	96	3.26(2.91)	3.20(2.48)	2.60(2.26)	9.06(5.47)

### ***Descriptive Results for Main Predictor Variables***

In this study, self-efficacy was measured with the total and three self-efficacy subscales: positive alternatives, barriers, and support seeking; as well as physical activity self-efficacy. The mean values are shown in Table 2. The total sample exhibited generally moderate scores for each sub-scale of self-efficacy, with scores a little above moderate for support seeking and PA self-efficacy. This suggested a moderate self-efficacy level for the total sample.

**Table 2: Descriptive Results for Self-Efficacy**

<b>Sample</b>	<b>N</b>	<b>Alt</b>	<b>Barriers</b>	<b>SS</b>	<b>Total</b>	<b>PASE</b>
Total	96	17.01(4.26)	13.98(4.68)	18.13(4.02)	49.11(10.41)	11.80(3.08)

Note. Alt-Alternative; SS-Support-seeking; PASE-Physical activity self-efficacy

Social support was also examined with the subscales, family and friends, as well as the total. Physical environment included the subscales equipment accessibility and neighborhood safety as well as a total. The means for both social support and environment are shown in Table 3. The total sample showed slightly low scores on social support for both family and friends, suggesting that the participants do not perceive having very much support for PA from their social environment. They also showed moderate scores for physical environment, both safety and access, suggesting that participants perceive having access to equipment and neighborhood safety.

**Table 3: Descriptive Results for Social Support and Environment**

<b>Sample</b>	<b>N</b>	<b>Family</b>	<b>Friends</b>	<b>TSS</b>
Total	94	8.69(4.91)	5.29(3.41)	13.97(7.15)

  

<b>Sample</b>	<b>N</b>	<b>Access</b>	<b>Safety</b>	<b>TEN</b>
Total	95	7.09(2.35)	7.24(2.44)	14.35(3.84)

Note. TSS-Total social support; TEN- Total environment

The total score was examined for outcome expectations as well as physical and social subscales. As noted earlier, these scales were not very reliable. Also, outcomes expectations had missing data, with only 80 participants having complete scores. Both social and physical outcome expectation scores were relatively high for the total sample, suggesting that they had generally high outcome expectations for PA.

**Table 4. Outcome Expectations**

<b>Sample</b>	<b>N</b>	<b>Phys</b>	<b>Soc</b>	<b>Total</b>
Total	80	43.22(4.67)	35.19(4.27)	78.39(7.46)

Note. Phys-physical; Soc-social

### **Relationships Between Predictors and Physical Activity**

The four research questions involve the relationships of the main predictor variables (self-efficacy, outcome expectations, social support, environment) with physical

activity. The relationships between the four variables and physical activity were investigated using Pearson correlation coefficients (See Table 5). First, question 1 involved the relationship between self-efficacy and PA. As shown in Table 5, self-efficacy was shown to be correlated with PA, with significant correlations for all subscales except for support seeking. There was also a correlation between physical activity self-efficacy and PA, similar to existing research. Generally, correlations for the Black sample were similar to those with the total sample.

Question 2 involved the relationship between outcome expectations and PA. As shown in Table 5, correlations between outcome expectations and PA for the total sample were low and not significant for the total score and subscales. These results might have been affected by the missing data as well.

Question 3 involved the relationship between social support and PA. As shown in Table 5, total social support, family and friend social support were correlated with PA METS. However, only total social support was correlated with PA days.

Lastly, question 4 involved the relationship between physical environment and PA. As shown in Table 5, physical environment /access was significantly correlated with total PA (Days) and total PA (METS). However, these correlations were not significant for the Black sample, and PA was not correlated with environment safety or environment total.

**Table 5**  
**Correlations of Predictors and PA (Total METS, Total Days)**

	<b>Total PA (METS)</b>	<b>Total PA (Days)</b>
<b>Self-efficacy</b>		
<b>Alt</b>	.264*	.222*
<b>Bar</b>	.346*	.248*
<b>SS</b>	.148	.157
<b>Total</b>	.320*	.263*
<b>PASE</b>	.417*	.374*
<b>Outcome Expectations</b>		
<b>Physical</b>	.147	.155
<b>Social</b>	.205	.201
<b>Total</b>	.188	.198
<b>Social Support</b>		
<b>Family</b>	.238*	.167
<b>Friends</b>	.261*	.189
<b>Total</b>	.288*	.205*
<b>Environment</b>		
<b>Access</b>	.241*	.243*
<b>Safety</b>	-.071	-.073
<b>Total</b>	.106	.104

\*p < .05

Note. Alt-Alternative; Bar-Barriers; SS-Support-seeking; PASE-Physical activity self-efficacy

### **Multiple Regression Results**

Multiple regression was used to determine the relative strength of the four main predictor variables (total self-efficacy, physical activity self-efficacy, total environment, total social support) on predicting the dependent variable physical activity levels (Total METS and Days). Outcome expectations were not included as a predictor due to low reliability and missing data. For the total sample, the predictor variables explained 24%

of the variance in physical activity participation. Of these variables, physical activity self-efficacy makes the largest unique contribution (beta=.37 PA METS and .367 PA Days) with a significance level of .001 (see Table 6 for all beta weights). Stepwise regression revealed that PA self-efficacy was the strongest and only significant predictor.

**Table 6a. Multiple Regression Results for Total Sample and PA (METS)  
(Enter method)**

Predictors		t	Sig.
	Beta		
EnvTotal	-.025	-.260	.796
SSTotal	.144	1.355	.179
TotalSE	.086	.709	.480
PASE	.370	3.335	.001

Note. Env-Environment, PASE- Physical Activity Self-efficacy, SE- Self-efficacy, SS- Social support

R = .484, R Square = .235, F (4, 88) = 6.744, p < .001

**Table 6b. Multiple Regression Results for Total Sample and PA (Days)  
(Enter method)**

Predictors		t	Sig.
	Beta		
EnvTotal	-.005	-.045	.964
SSTotal	.064	.589	.558
TotalSE	.077	.615	.540
PASE	.367	3.217	.002

Note. Env-Environment, PASE- Physical Activity Self-efficacy, SE- Self-efficacy, SS- Social support

R = .438, R Square = .192, F (4, 88) = 5.213, p < .001

**Table 7. Stepwise Regression Results for Black Sample**

Model	Variable	R	F	Final Beta	t	Sig.
1	SEPATotal	.452	14.67*	.438	3.91	.001
2	SSTotal	.548	11.99*	.309	2.76	.008

Note. SEPA- Physical Activity Self-efficacy, SE- Self-efficacy, SS- Social support

1. R = .452, R Square = .205, F (1, 57) = 14.671, p < .001

2. R = .548, R Square = .300, F (2, 56) = 11.996, p < .001

The results were slightly different for the Black sample. Stepwise regression showed that PA self-efficacy explained 21% of the variance in physical activity participation. In step 2 PA self-efficacy remained as the strongest predictor, but social support also added significantly in the stepwise regression (see Table 7).

### **Open-Ended Responses**

In order to understand PA habits and perceptions among Black adolescent females, the last section of the survey included 14 open-ended questions. Examples of questions asked are: List the top three reasons why you participate in PA; List the top three reasons why you do not participate in PA; How does PA affect your overall health and wellness; How does PA affect your thoughts and feelings about yourself; Do you agree or disagree with reports that Black girls participate in sports less than White girls, why. All 96 of the high school females responded to most of the open-ended questions. In order to analyze the open-ended responses the researcher read the responses, listed them, and grouped similar ones together. The researcher then listed the most common responses

for the total sample and for the Black sample. The most common responses are presented in this section, and all responses can be found in Appendix F.

### Top Reasons

The top responses to the question to list the top three reasons why you participate in PA were “to get in shape/fit” (n = 44) and “keeps me healthy” (n = 41). The third common response was “because its fun” (n = 36). Looking only at the Black sample, the top three most common responses were the same; 30 responded “to get in shape/fit, 26 responded “keeps me healthy”, and 18 “its fun”. Other top responses for the Black sample were “to lose weight” and “to meet friends/new people”.

Common responses to top three reasons why you do not participate in PA were “its tiring” (n = 27), “don’t have time/busy” (n = 21), and “I get sweaty/hot/stinky/messy” (n = 26). The top responses for the Black sample were similar with 17 reporting “tiring”, 16 reporting “being sweaty, hot, stinky” with several mentioning messing up their hair, and 12 reported “don’t want to/don’t like to/not interested”. Other common responses for the Black sample were “don’t have time/busy”, and “don’t have transportation”.

### Effects

The most common responses to the question “how does PA affect your overall health and wellness?” was “makes me healthier/less likely to get sick” (n = 30), followed up closely with “gets me in shape/fit” (n = 25) and “lose/control my weight” (n = 13). The top responses for the Black sample were “makes me healthier/less likely to get sick” (n = 19), “get in shape/fit” (n = 16), “helps me feel better/good/more positive” (n = 9).

When asked how PA affects your thoughts and feelings about yourself, the most common response was “makes me feel more confident/better about myself (my image, my appearance)” (n = 27), followed by “I feel good/great/better” (n = 21). Those were the top responses for the Black sample as well. The next most common response was “none/no change/ it doesn’t” with only 9 responses.

#### Likes/Dislikes of Physical Education

Most answers to the questions what do you like and dislike about PA replicated the top responses to the questions about listing the top reasons why you do and do not participate in PA.

The top response to the question, “what do you like about PE class?” was “nothing/I don’t”(n = 17). The second most common answer was “the different sports/activities/games we play” (n = 16), “working out/exercising” (n = 14), and “having friends in class” (n = 12). The top three responses for the Black sample were “working out/exercising” (n = 14), “nothing/I don’t” (n = 11), and “its fun/enjoy myself” (n = 7). When asked, “why do you dislike PE class?”, the most common response was “nothing” (n = 19). The second most common response was “dressing out” (n = 10). The Black sample reported “nothing” (n = 13), “exercising” (n = 7), followed up closely with “running” (n = 6). When asked, “what would make PE class better for you?”, the most common response was “if we had more interesting/fun activities to do/not playing the same sport” (n = 17), this was also the top response for the Black sample (n = 15), some mentioning being able to choose the exercises.

#### Black Female PA Behavior

When asked do you agree or disagree with reports that Black girls participate in sports/PA less than White girls, almost the same amount of girls agreed versus those who disagreed (Disagree; n = 40, Don't know n = 10, Agree; n = 37). The most common reason for those who disagreed was because "there are a lot of Black girls who are very active/play sports" and "we all like/participate in sports". And for those who agreed the most common reason was because "Black girls are not interested/don't care/have other things to worry about" followed by "most sports teams at my school have mostly other races besides Black". The Black sample differed in their response to this question with 22 disagreeing, 7 reported not knowing, and 25 agreeing.

For the question do you agree or disagree with reports that Black girls participate in sports/PA less than Black boys, over twice as many agreed versus disagreed. Those who disagreed (n = 26) most commonly stated reason was "we all play/participate in sports/PA". For agree (n = 56) the most commonly stated reason was "boys are way more active/athletic than girls". Nine reported "I don't know". Similarly for the Black sample more agreed than disagreed but the difference was not as big (Disagree n = 21, Don't know n = 5, Agree n = 32).

When asked the question about what could change to get more Black girls involved in more PA/sports both the total sample and Black sample's top responses were statements including: "introduce sports they want to participate in/let them choose what they want to do/something they enjoy", "make more programs for girls (certain suggestions were dance classes, double dutch, or step classes)". Other common answers

were “give some kind of incentive/reward (music, money, drinks, snacks)” and “provide more encouragement/support”.

## **CHAPTER V**

### **DISCUSSION**

Because of the decreasing level of physical activity in Black female adolescents (Bungum et al., 1999; Felton, 2002; Kimm et al, 2002; Ransdell & Taylor, 2003), the serious health problems that can occur from inactivity and the known benefits from being physically active, methods to increase physical activity in this population need to be examined. Much helpful information can be gained by examining psychosocial and environmental factors that influence physical activity behavior in this population. In addition, there has been very limited research targeting the Black female adolescent population in North Carolina. Therefore the purpose of this study was to develop a better understanding of the PA behavior of Black female adolescents age 14-18 in the Charlotte, NC public school community by examining the relationship between physical activity and self-efficacy, social support, outcome expectations, and physical environment.

This chapter provides a summary of the research problem and findings with discussion. Study limitations are also discussed. Recommendations for practitioners are given and implications for future research on PA participation among Black adolescent females are provided.

Self-efficacy and physical activity self-efficacy has been shown to be positively correlated and have a direct relationship with PA behavior (Dowda et al., 2009; Motl et al., 2007; Saunders et al., 1997). There were similar results in this study; self-efficacy

was shown to be correlated with PA, with significant correlations for all subscales except for support seeking. In addition, there were correlations between physical activity self-efficacy and PA, with it also being the strongest predictor of PA among the Black participants. This sample showed moderate scores for their self-efficacy and PA self-efficacy levels. Black participants were slightly higher on all self-efficacy measures than non-Blacks. This is different than other research that found Black girls have lower physical activity self-efficacy and than White girls (Dishman et al., 2008; Dowda et al., 2004; Felton et al., 2002; Trost et al., 1999). Although not one of the most common responses, there were several answers to the open-ended questions that are associated with self-efficacy. For example, some reasons why participants reported participating or not participating in PA were “I can do it”, “I don’t know how to play”, “not good at sports”, or “getting things wrong”. Therefore, results from this study reinforce the findings of previous studies and confirm the importance of PA self-efficacy as a mediator of activity behavior in Black adolescents. These findings affirm the need for health and physical educators to enhance self-efficacy perceptions in low-active Black female youth and adolescents.

Previous studies examining similar populations have shown mixed results regarding outcome expectations and PA (Saunders et al., 1997, 2004; Trost et al., 1999). In this study there was a significant relationship between the Black sample’s social outcome expectations and PA. The participants also had fairly high scores on outcome measures. In addition, most of the reasons given in the open-ended questions about why they participate in PA were associated with outcome expectations, including comments

such as “make me healthy, keeps me in shape/fit”. Thus Black adolescent girls should be encouraged to develop positive expectations from PA behavior.

Social support has been shown to significantly influence and have direct relationships with PA in this population (Dowda et al., 2009; Felton et al., 2002; Motl et al., 2007; Saunders et al., 1997, 2004). There were similar findings in this study with total social support, family and friend social support all correlated with PA. Social support also added significantly to the stepwise regression analysis, showing it can be a strong predictor along with PA self-efficacy. Family and friend support showed generally low scores for the sample. In the open-ended questions, several girls reported participating in sports/PA to “meet new people/make friends”, but also reported not participating in PA due to “not having transportation”. Therefore, increasing social support might be important for encouraging participation in PA among Black adolescent girls because PA participation often requires the support of others, especially family and friends. Motl et al. (2007) suggest possible antecedents for increasing perceived social support including the social network of people who provide helpfulness and protection, the connection people have with their social network, and the quality of the relationship. Consequently those around the adolescents should be encouraged to get involved in the PA behavior of the adolescent, whether by providing encouragement, equipment, transportation, as well as participating with them.

There have been mixed results regarding the relationship of physical environment and PA among this population (Dowda et al., 2009; Motl et al., 2007; Trost et al., 1999). In this study perceived accessibility in the environment showed a relationship with total

PA days and with total PA METS for the total sample but not with the Black sample. Perceived environment safety was not correlated with PA. Perceived environment safety was not correlated with PA. Although not significant with the Black population in this study, access to equipment and facilities as well as perceiving a safe environment, has been shown to be linked to PA behavior. To help facilitate this process, schools should establish links with community-based organizations to provide more options for PA in schools and near homes (Troost et al., 1999).

As for the open-ended responses, findings from this study are different from Corbett and Calloway's (2006) because the overwhelming top responses to the question to list the top three reasons why you participate in PA were "to get in shape/fit" and "keeps me healthy". The participants seem to have the knowledge of the importance of PA for physical health. They also showed their knowledge of the benefits of PA with their answers to the question, "how does PA affect your overall health and wellness?"; the most common response was "makes me healthier/less likely to get sick", followed up closely with "gets me in shape/fit" and "lose/control my weight". The top response to the question, "what do you like about PE class?" was "nothing/I don't", which confirms the previous findings that girls, especially minority girls, may not enjoy PE and therefore are not really benefiting from it. When asked, "what would make PE class better for you?", the most common response for the total and Black samples was "if we had more interesting/fun activities to do/not playing the same sport", some mentioning being able to choose the exercises. This refers back to the idea of offering things enjoyable to girls or letting them have a say in what is offered. When asked the question about what could

change to get more Black girls involved in more PA/sports both the total sample and Black sample's top responses were statements including: "introduce sports they want to participate in/let them choose what they want to do/something they enjoy", "make more programs for girls". This is in concurrence with some literature that contends physical education teachers should offer more of what female students are interested in and not focus so much on team sports (Darst & Pangrazi, 2006; The 2007 Tucker Center Research Report, 2007). According to the cognitive evaluation theory (Deci & Ryan, 1985) people are more intrinsically motivated when the task is challenging, fun, interesting, and if they have a choice in participating (giving the girls a choice of activity, something they consider fun and interesting).

### **Recommendations for Practitioners**

When considering Social Cognitive Theory, researchers and practitioners can make a bigger impact when considering the whole picture of personal, environmental and behavioral factors. For example, physical activity participation might be enhanced by not only focusing on the individual's attitude and perceptions, but also by removing environmental barriers and changing public policy. Interventions to improve PA might combine behavioral skills training and physical activity, as recommended by the United States Department of Health and Human Services (1997).

Because Black girls generally report heavier ideal/desired body size, are less likely to view themselves as overweight, have less body dissatisfaction issues, and are less likely to engage in diet or weight reduction behaviors (Akan & Grilo, 1995; Altabe, 1998); they may not be motivated to participate or adhere to programs focusing on

physical activity and diet to reduce weight. More successful programs would need to focus on intrinsic motivation beyond weight and health benefits (Robinson et al., 2003). It is important to consider important cultural differences when designing and implementing programs to promote PA in this population. Cultural specificity as it relates to weight loss practices and body shape perception should be considered (Troost et al., 1999)

There have been several successful girl-focused programs and interventions that incorporate Social Cognitive Theory. The first is the Lifestyle Education for Activity Program (LEAP), which is a longitudinal intervention targeting secondary school girls to reduce the rate of decline in PA in girls. Framed by the SCT, LEAP focuses on changing personal, environmental, and social factors thought to influence PA. Specifically, modifications are made in PE, health, school health services, and school environment. The modifications are designed to provide girls with positive PA experiences through participation in PA that are culturally relevant and to provide enhanced social and environmental support for PA. Research revealed that LEAP was effective and that girls in LEAP schools were significantly more physically active than girls in the control condition (Felton et al., 2005).

Another girls-only program based on the SCT called New Moves, developed within the Division of Epidemiology in the School of Public Health at the University of Minnesota, is an alternative high school PA program aimed at obesity prevention and positive changes in PA and eating behaviors. This program helps girls feel good about themselves by addressing socio-environmental, personal, and behavioral factors. Results

showed that girls in the New Moves program differed significantly on their PA than girls in the control group and it provided a safe and comfortable environment for those girls who might be unmotivated to participate in PA (Neumark-Stzainer, Story, Hannan, & Rex, 2003).

The GEMS pilot study (Robinson et al., 2003) was an intervention program targeting Black girls, consisting of after-school dance classes at community centers and lessons designed to reduce television watching. This intervention incorporated dance, which is an activity that Black girls typically enjoy and have a high self-efficacy toward. Also, television viewing has been linked to obesity and is the most modifiable cause of obesity in children. The intervention had a high participation rate and resulted in the treatment group having a decrease in body mass index, increase in after-school physical activity, and decrease in television viewing (Robinson et al., 2003).

These recommendations link back to the SCT, which again suggests that to impact or change someone's physical activity behavior, you must factor in the person's individual characteristics (self-perceptions, self-efficacy), surroundings (physical and social environment), and behavior. It is imperative to look at the whole picture when striving to affect behavior change. The LEAP and New Moves programs support findings from this study because they incorporate personal, environmental and social factors to enhance PA participation, as well as incorporating culturally relevant strategies as recommended by numerous reports. The GEMS program provides Black girls with an activity that they enjoy-dancing. Dance was mentioned by numerous girls in the open-ended responses of this study as an activity that they enjoy.

The 2007 Tucker Center Research Report made several recommendations for best practices, programs and policies for promoting PA among girls, most of which support the findings in this study:

- Girls should guide the selection of movement activities or at least have a choice of a variety of activities that they enjoy. A team/competitive-sport based curriculum is typically “boy-friendly”.
- Introduce them and prepare them with skills for lifetime PA.
- Teach girls to value what their bodies can “do” rather than “how they look”.
- Create a safe, accepting environment for girls to explore their movement abilities whatever they may be.
- Create a climate respectful of diversity in gender, race, ethnicity, culture, ability, and sexual orientation.

### **Limitations of the Study**

There are some limitations to the way most previous physical activity studies have been conducted (Dishman, 1994). First, usually the research designs are cross-sectional or retrospective and are limited to a few weeks or months, and how determinants may be different with increasing age is unknown. Longitudinal prospective studies are needed that follow children into adulthood and examine factors related to lifelong physical activity. Another limitation is that usually self-efficacy and physical activity studies use self-report measures, which may not be the most accurate.

Prior physical activity studies used one-dimensional techniques on small homogenous samples in restricted settings, which produced results that were not

generalizable (Dishman, 1994). Dishman asserts that to assess and understand the effectiveness of community and population interventions, the proper measurement tools need to be used. However, instruments are typically designed for clinical purposes or for homogenous samples so the results may not be valid.

Some of the same limitations apply in this study. Because only high school girls from one Charlotte area school were examined, generalizability is limited. Future studies should include females from multiple schools. Also, some participants in the study may have been students in the course with the researcher, and that may bias some data. Another limitation is that self-report measures may be influenced by recall accuracy or bias. Also, the social support scale only measured perceived social support and self-reported PA. Motl and colleagues (2007) suggest future research should examine both perceived and actual social support in conjunction with self-reported and actual PA.

Despite its limitations, this study provided informative and relevant information for understanding the PA behavior of Black adolescent girls in the Charlotte urban high school population. The open-ended questions added more useful information on the participants' unique perceptions of PA, which the survey alone could not capture. A sample of 96 participants is sufficient for this study and this sample represented the population of the high school well.

### **Recommendations for Future Research**

We know little about the combination of personal, environmental and behavioral factors that influence Black female adolescents physical activity motivation and behavior. Because intrinsic motivation is shown to be one of the most important factors related to

exercise over time, more research is needed to see what can enhance intrinsic motivation in Black females to exercise from their youth into adulthood (Hagger & Chatzisarantis, 2007).

The perceived physical environment measure did not look at specific features of the environment. Future research might examine the perceived presence or absence of traffic, sidewalks, and gangs. Also for social support, future research might assess the influence of family versus friends support separately.

The cultural environment (shared values, customs, and social practices) is another possible influence on PA based on SCT (Bandura, 1997). “The cultural environment might have a stronger relationship with PA than the physical and social environment, particularly among Black adolescent girls. Future research might examine and compare the influence of the cultural environment versus the physical and social environment on PA in a racially... diverse sample of adolescent girls” (Motl et al., 2007, p. 11).

Other suggestions for future research made by the 2007 Tucker Center Research Report include:

- Ways to generate girls’ interest in and believed importance of PA and health improvement.
- Creation of PA opportunities and climates that are enjoyable to girls.
- Intersections among race, class, and gender as a means to understand the barriers preventing girls from participating in PA (e.g., girls of color seem to have more obstacles to participation in sports and PA than white girls).

- Alternatives to the competitive model of sport that is typically employed in PE classes in secondary schools.
- Interviewing of adolescent girls to discover what they need and want for PA classes-in addition to their concerns –so that classes have greater relevance and girls experience themselves as active participants in change.

Some of these recommendations, such as creation of PA activities that are enjoyable to girls and asking adolescent girls what they need and want from PA classes link directly to suggestions made from this study.

### **Conclusion**

There is no question that adolescent girls' PA levels have been declining over the past few decades, and this decline is often seen more in Black adolescent females. Programs, both in the schools and communities, need to target this population especially in schools and communities that have a high population of Blacks. Examining psychosocial factors related to PA is one place to start to understand ways to motivate this population's PA behavior. Findings from this study showed that self-efficacy, physical activity self-efficacy, and also social support are important factors to consider in this particular high school population. Many Black females who do not participate in regular PA know the benefits of PA but still do not do it. As research has found, this study supports the importance of letting girls have a say in what activities to offer and giving them a choice of activities they consider fun and enjoyable. Physical educators should try to teach behavioral skills to change their perceptions about PA and increase their PA self-efficacy. Race and gender cannot be ignored when developing and

implementing PA programs because it all plays a part in interests and behavior. Much research targets this population as it relates to PA; however, much research is still needed.

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**Appendix A**  
**Demographic/Godin Leisure-Time Exercise Questionnaire**

**Demographic Questionnaire**

**Please answer these questions as accurate as possible. There is no right or wrong answer. Your personal identification will not be linked to any answer on this questionnaire.**

1. What is your age? \_\_\_\_\_
  2. What grade are you in? \_\_\_\_\_
  3. Do you consider yourself Black/African American? Y \_\_\_\_\_ N \_\_\_\_\_
- If no, what do consider yourself? \_\_\_\_\_

**Godin Leisure-Time Exercise Questionnaire**

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

	<b>Times Per Week</b>
<p><b>a) STRENOUS EXERCISE</b> <b>(HEART BEATS RAPIDLY)</b> (e.g., running, jogging, hockey, football, soccer, basketball, roller skating, aerobic dance, kickboxing, vigorous swimming, vigorous long distance bicycling, etc.)</p>	_____
<p><b>b) MODERATE EXERCISE</b> <b>(NOT EXHAUSTING)</b> (e.g., fast walking, softball, tennis, easy bicycling, volleyball, badminton, easy swimming, weight training, popular dancing)</p>	_____
<p><b>c) MILD EXERCISE</b> <b>(MINIMAL EFFORT)</b> (e.g., yoga, pilates, bowling, golf, easy walking)</p>	_____

## Appendix B Psychosocial Questionnaire

### Perceived Self-Efficacy

Please circle the number which most closely describes how much you agree or disagree with each statement. Remember that physical activity can be any play, game, sport, or exercise that gets you moving and breathing harder. There are no wrong answers. **(CIRCLE ONE NUMBER FOR EACH ITEM)**

	Disagree a lot	Disagree a little	Neither disagree nor agree	Agree a little	Agree a lot
1. I can be physically active during my free time on most days.	1	2	3	4	5
2. I can ask my parent or other adult to do physically active things with me.	1	2	3	4	5
3. I can be physically active during my free time on most days even if I could watch TV or play video games instead.	1	2	3	4	5
4. I can be physically active during my free time on most days even if my friends want me to do something else.	1	2	3	4	5
5. I can ask my parent or other adult to sign me up for a sport, dance, or other physical activity program.	1	2	3	4	5
6. I can be physically active during my free time on most days even if it is very hot or cold outside.	1	2	3	4	5
7. I can ask my best friend to be physically active with me during my free time on most days.	1	2	3	4	5
8. I can ask my parent or other adult to get me the equipment and clothes I need to be physically active.	1	2	3	4	5
9. I can ask my parent or other adult to take me to a physical activity or sport practice.	1	2	3	4	5
10. I can be physically active during my free time on most days even if I have a lot of	1	2	3	4	5

homework.					
11. I can be physically active during my free time on most days even if I have to stay at home.	1	2	3	4	5
12. I have the coordination I need to be physically active during my free time on most days.	1	2	3	4	5
13. I can be physically active during my free time on most days no matter how busy my day is.	1	2	3	4	5
14. I can be physically active during my free time on most days no matter how tired I may feel.	1	2	3	4	5
15. I can be physically active during my free time on most days even when I'd rather be doing something else.	1	2	3	4	5
16. I can be physically active for at least 30 minutes at least one day per week.	1	2	3	4	5
17. I can be physically active for at least 30 minutes at least 3 days per week.	1	2	3	4	5
18. I can be physically active for at least 30 minutes at least 5 days per week.	1	2	3	4	5

### Environment

	Disagree a lot	Disagree a little	Neither disagree nor agree	Agree a little	Agree a lot
1. At home there are enough <b>supplies and pieces of sports equipment</b> (like balls, bicycles, skates) to use for physical activity	1	2	3	4	5
2. There are <b>playgrounds, parks, or gyms</b> close to my home or that I can get to easily	1	2	3	4	5

3. It is <b>safe to walk or jog alone</b> in my neighborhood during the day	1	2	3	4	5
4. It is <b>difficult to walk or jog in my neighborhood</b> because of things like traffic, no sidewalks, dogs, or gangs.	1	2	3	4	5

### Perceived outcomes

On the scales below circle the number that shows how much you disagree or agree with each statement. Remember that physical activity can be any play, game, or sport, or exercise that gets you moving and breathing harder.

<b>If I were to be physically active during my free time on most days....</b>	Disagree a lot	Disagree a little	Neither disagree nor agree	Agree a little	Agree a lot
1. It would help me spend more time with my friends.	1	2	3	4	5
2. It would lead to my getting an injury.	1	2	3	4	5
3. It would help me control my weight.	1	2	3	4	5
4. It would cause me pain and muscle soreness.	1	2	3	4	5
5. It would help me cope with stress	1	2	3	4	5
6. It would interfere with my hanging out with friends.	1	2	3	4	5
7. It would make me tired.	1	2	3	4	5

8. It would be fun.	1	2	3	4	5
9. It would make me too muscular	1	2	3	4	5
10. It would make me less popular	1	2	3	4	5

11. It would help me make new friends.	1	2	3	4	5
12. It would make me embarrassed in front of others.	1	2	3	4	5
13. It would get or keep me in shape.	1	2	3	4	5
14. It would prevent me from doing my homework	1	2	3	4	5
15. It would interfere with my television watching/playing video games	1	2	3	4	5

<b>If I were to be physically active during my free time on most days....</b>	Disagree a lot	Disagree a little	Neither disagree nor agree	Agree a little	Agree a lot
16. It would interfere with my talking on the telephone.	1	2	3	4	5
17. It would make me more attractive	1	2	3	4	5
18. It would be boring.	1	2	3	4	5
19. It would give me energy.	1	2	3	4	5
20. It would mess up my hair or make-up	1	2	3	4	5
21. It would make me hot and sweaty	1	2	3	4	5
22. It would make me better in sports, dance, or other activities	1	2	3	4	5

## Social Support

The following questions are about your family (1-5) and your friends (6-8). **(CIRCLE ONE NUMBER FOR EACH)**

1. <u>During a typical week</u> , how often has a member of your family encouraged you to do physical activity or sports?	None 0	Once 1	Sometimes 2	Almost Daily 3	Daily 4
2. <u>During a typical week</u> , how often has a member of your family done a physical activity or played sports with you?	None 0	Once 1	Sometimes 2	Almost Daily 3	Daily 4
3. <u>During a typical week</u> , how often has a member of your family provided transportation to a place where you can do physical activities or play sports?	None 0	Once 1	Sometimes 2	Almost Daily 3	Daily 4
4. <u>During a typical week</u> , how often has a member of your family watched you participate in physical activities or sports?	None 0	Once 1	Sometimes 2	Almost Daily 3	Daily 4
5. <u>During a typical week</u> , how often has a member of your family told you that physical activity is good for your health?	None 0	Once 1	Sometimes 2	Almost Daily 3	Daily 4
6. <u>During a typical week</u> , how often do your friends encourage you to do physical activities or play sports?	None 0	Once 1	Sometimes 2	Almost Daily 3	Daily 4
7. <u>During a typical week</u> , how often do your friends do physical activities or	None 0	Once 1	Sometimes 2	Almost Daily 3	Daily 4

physical activities or play sports with you?					
8. During a typical week, how often do your friends tell you that you are doing well at physical activities or sports?	None 0	Once 1	Sometimes 2	Almost Daily 3	Daily 4

## Appendix C

### Open-Ended Questions

*Please answer these open-ended questions as accurate as possible. There is no right or wrong answer. Your personal identification will not be linked to any answer on this questionnaire.*

1. During the past 12 months, did you play on any sport teams or participate in any physical activity programs run by the school? (Do not include PE classes) Yes\_\_\_\_  
No\_\_\_\_

If Yes, please list all the teams or programs that you were in:

2. During the past 12 months, did you play on any sports teams or participate in any physical activity programs run by organizations outside of your school? Yes\_\_\_\_  
No\_\_\_\_

If Yes, please list all teams or programs that you were in:

3. List the top 3 reasons why you participate in physical activity.

4. List the top 3 reasons why you do NOT participate in physical activity.

5. How does physical activity affect your overall health and wellness?

6. How does physical activity affect your thoughts and feelings about yourself?
7. What do you like about physical activity?
8. What do you dislike about physical activity?
9. What do you like about PE class?
10. What do you dislike about PE class?
11. What would make PE better for you?
12. Reports suggest that Black/African-American girls participate in sports and physical activity less than White girls. Do you agree or disagree? Why?
13. Reports suggest that Black/African-American girls participate in sports and physical activity less than Black/African-American boys. Do you agree or disagree? Why?
14. What could change to get more Black/African-American girls involved in more physical activity/sports?

## **Appendix D Parental Consent Form**

Project Title: Psychosocial Factors and Physical Activity Among Black Adolescent Females

Project Director: Rennae Williams

Participant's Name:

### **What is the study about?**

This research study examines how certain factors such as self-confidence, social support, outcome expectations, and physical environment influence physical activity among adolescent females between the ages of 14 and 18. The study focuses on Black female adolescents, but data will be collected from all female adolescents in the school. Your daughter is being asked to participate in this study by filling out a survey form that is confidential and anonymous. Participation is completely voluntary.

### **Why are you asking my child?**

Because of the decreasing level of physical activity in female adolescents, the serious health problems that can occur from inactivity and the known benefits from being physically active, methods to increase physical activity in this population need to be examined. Your daughter is being asked to participate in this study because she can provide valuable information that can be used to develop programs to promote physical activity.

### **What will you ask my child to do if I agree to let her be in the study?**

Your daughter will be filling out a survey that will take approximately 20-40 minutes.

### **Is there any audio/video recording of my child?**

No

### **What are the dangers to my child?**

The Institutional Review Board at the University of North Carolina at Greensboro has determined that participation in this study poses no risk to participants.

If you have any concerns about your child's rights, how they are being treated or if you have questions, want more information or have suggestions, please contact Eric Allen in the Office of Research Compliance at UNCG at (336) 256-1482. Questions about this project or benefits or risks associated with being in this study can be answered by Rennae Williams who may be contacted at (704) 965-3051 or [rennae.williams@cms.k12.nc.us](mailto:rennae.williams@cms.k12.nc.us).

### **Are there any benefits to my child as a result of participation in this research study?**

Participants may learn of their own physical activity habits and psychosocial factors that might contribute to their physical activity habits. Survey questions may help to bring enlightenment and ideas to the forefront about how important physical activity is and

reasons these girls may not participate regularly in physical activity as well as what could be done to increase their regular participation.

**Are there any benefits to society as a result of my child taking part in this research?**

Results can serve as a guide for future physical activity interventions or programs in community or school locations.

**Will my child get paid for being in the study? Will it cost me anything for my kid to be in this study?**

Your child will not get paid for being in the study. There are no costs to you or your daughter as a result of participation in this study.

**How will my child's information be kept confidential?**

All information obtained in this study is strictly confidential unless disclosure is required by law. Participants will not be identified by name when data is collected and disseminated. The collected data will be kept in a locked file on the campus of the University of North Carolina at Greensboro.

**What if my child wants to leave the study or I want him/her to leave the study?**

You have the right to refuse to allow your child to participate or to withdraw him or her at any time, without penalty. If your child does withdraw, it will not affect you or your child in any way. If you or your child chooses to withdraw, you may request that any data that has been collected be destroyed unless it is in a de-identifiable state. If your child chooses not to participate in this study, their decision will not affect their care as an athlete or their grade if they have the investigator as a teacher.

**What about new information/changes in the study?**

If significant new information relating to the study becomes available which may relate to your willingness allow your child to continue to participate, this information will be provided to you.

**Voluntary Consent by Participant:**

By signing this consent form, you are agreeing that you have read it or it has been read to you. You fully understand the contents of this document and consent to your child taking part in this study. All of your questions concerning this study have been answered. By signing this form, you are agreeing that you are the legal parent or guardian of the child who wishes to participate in this study described to you by Rennae Williams.

\_\_\_\_\_  
Participant's Parent/Legal Guardian's Signature

Date: \_\_\_\_\_

\_\_\_\_\_  
Participant's Parent/Legal Guardian's Signature

Date: \_\_\_\_\_

## **Appendix E**

### **Assent Form**

Study Title: Psychosocial Factors and Physical Activity Among Black Adolescent Females

My name is Rennae Williams

#### **What is this about?**

I am doing a study on how factors such as self-confidence, social support, outcome expectations, and physical environment influence physical activity among adolescent females between the ages of 14 and 18.

#### **Did my parents/guardians say it was ok?**

Your parent(s)/guardians said it was ok for you to be in this study and have signed a form like this one.

#### **Why me?**

Because of the decreasing level of physical activity in female adolescents, especially Black adolescent female adolescents, the serious health problems that can occur from inactivity and the known benefits from being physically active, I am examining methods to increase physical activity among your age group. You are being asked to participate in this study because you can provide valuable information that can be used to develop programs to promote physical activity in this population.

#### **What if I want to stop?**

You have the right to stop at any time without penalty. If you choose not to participate in this study, your decision will not affect your care as an athlete or your grade if you have the investigator as a teacher.

#### **What will I have to do?**

You will be filling out a survey that will take approximately 20-40 minutes.

#### **Will anything bad happen to me?**

There is no risk of harm or danger in this study.

#### **Will anything good happen to me?**

By participating in this study, you may gain more insight into your physical activity habits. Results can serve as a guide for future physical activity interventions or programs in community or school locations that could possibly benefit you and your friends.

#### **Do I get anything for being in this study?**

No

**What if I have questions?**

You are free to ask questions at any time.

If you understand this study and want to be in it, please write your name below.

\_\_\_\_\_  
Signature of student

\_\_\_\_\_  
Date

## Appendix F

### Open-Ended Top Responses

#### Top 3 reasons why you participate in PA

Control/lose weight-13  
 Its fun-36  
 Nothing/ I don't participate-6  
 Keeps me healthy-41  
 Its exercise/ Be active-10  
 I meet new people/making new friends/social-13  
 Get in shape/fit-44  
 I like/love it-7  
 Helps me stay energized-9  
 Strong/gain muscles/stronger both physically and mentally-6

#### Top 3 reasons why you do not participate in PA

Tiring-27  
 Don't have transportation-8  
 Lazy-14  
 Don't like to/not interested/Don't want to/not in the mood/don't feel like it-20  
 Don't have time/busy-21  
 Hot/Sweaty/stinky/messy-26  
 Sweat out my hair/messes up my hair-5  
 None/I do participate-8  
 Boring-13  
 I have (more important/other/something better) things to do-7  
 School work/homework/keep grades up-5  
 Injured/scared of injuries/getting hurt-6

#### How does PA affect your overall health and wellness

Makes me healthier/less likely to get sick-30  
 None/it doesn't-3  
 Get in shape/fit-25  
 Lose/control weight/decrease fat/overweight-13  
 I'm stronger-7  
 Its good/good for you-4  
 Feel better/good-7  
 Live longer/Healthy later in life-4

Energy-4

Helps me control what I eat/eat the right foods/more fruit-4

**How does PA affect your thoughts and feelings about yourself?**

Makes me feel healthy-4

Like I'm losing weight/doing something about my weight-3

I feel good/great/better-14

Better for my body/myself-3

I don't know-4

None/no change/it doesn't-9

More confident/feel better about myself/my image/appearance-28

Stress free/release stress-6

Increases self-esteem/self-image-6

Affect them positively-3

**What do you like about PA**

I don't like it/ Nothing-4

Its fun/enjoy myself-24

Exercise/good workout/active-4

Being in shape/fit/tones the body -18

Control/lose weight-6

Healthy-8

Being around friends/meeting new friends/meeting new people/company-11

Benefits afterwards/end results-5

Energy/rejuvenated-4

It gives me something productive to do/keeps you busy/keeping yourself occupied-6

**What do you dislike about PA**

Sweaty/hot/sticky/Messing up my hair/sweating out my perm-33

Soreness-9

Hard-4

Injury/pain-6

Nothing-15

Boring-5

Tired/The breathing part/out of breath-22

Doing all the work/extra work-4

**What do you like about PE class**

Working out/staying active/exercise-14  
 Free time-6  
 My friends/having friends to work out with-12  
 Its fun/enjoy yourself-10  
 Playing volleyball/improve volleyball skills-4  
 Nothing/I don't-17  
 Because we can play a sport in there/variety (new) of sports/different activities/games-16  
 To be healthy-3  
 Learning new things-3  
 Time out of regular class/nice break from book work/ Its not an instructional class -7

### **What do you dislike about PE class**

Stretching-4  
 Physical training/exercise-8  
 Too many people-5  
 Nothing/ I like everything-20  
 Running-8  
 Playing the same sport (basketball)-3  
 We always do more of the things boys like/boys dominate the gym-3  
 Dressing out-11  
 Being sweaty and smelling during school-7  
 Boring-5  
 People do not participate/do what they want-5

### **What would make PE better for you?**

If it was a little later in the day/ Having it last block -3  
 Not dressing out (everyday)-8  
 Friends/more people I know-4  
 More exercising/ If we had more stuff to do/more interesting (new) activities  
 (sports)/more fun stuff/not playing the same sport/more games for girls/could choose our  
 exercise-18  
 Doing things girls like instead of what boys like-3  
 Nothing/its fine the way it is-10  
 More time/longer-4  
 I don't' know-11  
 One day a week to hang out and chill/more breaks/working out less-4

**Do you agree or disagree w reports that Black girls participate in sports and PA less than white girls.**

Disagree-40

Reports could be wrong/its not true-2

Not based on race, race and how much you exercise has not connection/has more to do with character than race-3

There are a lot of Black girls who are very active/play sports-7

I see more black girls on the track team

More black girls are cheerleaders or play basketball

We all like/participate in sports (white girls just make the teams more often)-7

Black girls get a lot of reports but it's the same amount of white girls not participating in sports

Black girls and white girls just play different sports

I don't know-10

Agree-37

Black girls are known for being overweight

They don't care, have other things to worry about/not interested-5

White girls don't have as much drama, handle it differently

Like myself, I never have a ride

They have different obstacles

White girls maybe can afford the lessons

White girls have more options of sports to play

I see it everyday

Black girls normally just sit down/ Black girls don't want to do anything -3

Most sports teams at my school have mostly other races (more white girls) besides Black-5

You see more white girls trying out for sports teams

Black girls are picky and stuck-up-2

Some just don't participate-2

Black girls are more concerned about their looks and don't want to sweat/too worried about their hair and stuff-2

**Do you agree or disagree w reports that Black girls participate in sports and PA less than Black boys**

Disagree-26

I've seen lots of girls playing sports-3

We all enjoy/participate in sports-9

Not all people like doing exercise

People choose to do what they want

Boys and girls just play different sports-2

I don't know-9

Agree-56  
 Black girls don't like to sweat  
 Boys are way more active/athletic/want to be in good shape-25  
 Because there are girly girls/prissy-4  
 Most Black girls don't like to play sports-2  
 Boys are more competitive-2  
 There are more sports for boys-2  
 Staying fit is not that important to some girls-2  
 Boys are stronger than any girl-1  
 Girls sit around and try to look cute/worried about their hair, nails, etc-3  
 Lack of options  
 Black girls are just not into working out/sports-2  
 Society puts more pressure on boys to be more athletic than girls  
 I see more boys play sports than the girls-2  
 Boys have more opportunities than girls

**What could change to get more Black girls involved in more PA/sports?**

Nothing-5  
 I don't know-23  
 It's their own decision/opinion-6  
 Snacks/let us eat/Give some kind of reward/incentive-4  
 Force them to/be harder on them-2  
 More sports/activities for girls (dance (of different cultures), cheer classes, double dutch, step team)-7  
 Introduce sports they want to participate in/let them choose what they want to do/something they enjoy(like)/make more fun/more programs for girls-14  
 Let them play all sports that boys play/offer more than boys sports-2  
 Less work/easier-5  
 Encouragement (from parents)/support-6  
 Society's (other races) perspective of black girls-3  
 More sports where girls won't get hurt, mess up their hair, nails, and stuff/less sweaty-2  
 Change their views about messing up their hair, nails, and stuff

## Appendix G

### Descriptive Results

A MANOVA comparing the Black and non-Black sub-samples on the mild, moderate and strenuous scores revealed no significant differences,  $F(3, 92) = 1.34$ , N.S.

**Table 1: Physical Activity Levels (METS)**

<b>Sample</b>	<b>N</b>	<b>Mild</b>	<b>Moderate</b>	<b>Strenuous</b>	<b>Total</b>
Black	62	8.56(8.32)	16.05(12.99)	23.66(22.12)	48.27(30.65)
Non-Black	34	12.0(9.11)	15.88(11.38)	23.03(17.18)	50.91(30.71)
Total	96	9.78(8.71)	15.99(12.39)	23.44(20.42)	49.21(30.54)

The MANOVA comparing the two sub-samples on the three self-efficacy subscores and the added PA self-efficacy measures revealed a significant difference,  $F(4, 91) = 3.57$ ,  $p < .01$ , with significant univariate differences for all except barriers self-efficacy. As table 2 shows, Black participants were slightly higher on all self-efficacy measures.

**Table 2: Descriptive Results for Self-Efficacy**

<b>Sample</b>	<b>N</b>	<b>Alt</b>	<b>Barriers</b>	<b>SS</b>	<b>Total</b>	<b>PASE</b>
Black	62	17.69(3.87)	14.31(4.35)	19.01(3.35)	51.01(9.08)	12.24(2.83)
Non-Black	34	15.76(4.70)	13.38(5.24)	16.50(4.63)	45.65(11.86)	11.0(3.38)
Total	96	17.01(4.26)	13.98(4.68)	18.13(4.02)	49.11(10.41)	11.80(3.08)

\*Alt-Alternative; SS-Support-seeking; PASE-Physical activity self-efficacy

MANOVA with the two social support and two environment scores revealed no differences between sub-samples,  $F(4, 88) = 2.00$ , N.S.

**Table 3: Descriptive Results for Social Support and Environment**

<b>Sample</b>	<b>N</b>	<b>Family</b>	<b>Friends</b>	<b>TSS</b>
Black	60	9.10(4.63)	5.22(3.66)	14.32(7.08)
Non-Black	34	7.97(5.37)	5.41(2.98)	13.38(7.33)
Total	94	8.69(4.91)	5.29(3.41)	13.97(7.15)

  

<b>Sample</b>	<b>N</b>	<b>Access</b>	<b>Safety</b>	<b>TEN</b>
Black	61	7.26(2.29)	7.75(2.41)	15.06(3.91)
Non-Black	34	6.79(2.46)	6.35(2.31)	13.15(3.57)
Total	95	7.09(2.35)	7.24(2.44)	14.35(3.84)

\*TSS-Total social support; TEN- Total environment

MANOVA revealed no differences for outcome expectations,  $F(2, 77) = .13$ , N.S.

**Table 4. Outcome Expectations**

<b>Sample</b>	<b>N</b>	<b>Phys</b>	<b>Soc</b>	<b>Total</b>
Black	54	43.52(4.47)	35.32(4.65)	78.73(7.68)
Non-Black	34	42.74(4.99)	34.97(3.94)	77.88(7.20)
Total	80	43.22(4.67)	35.19(4.27)	78.39(7.46)

\* Phys-physical; Soc-social

*Relationships Between Predictors and Physical Activity*

**Table 5  
Correlations of Predictors and PA (Total METS)**

	<b>Total PA (METS)</b>	<b>Black</b>	<b>Non-Black</b>
<b>Self-efficacy</b>			
<b>Alt</b>	.264*	.218	.376*
<b>Bar</b>	.346*	.405*	.274
<b>SS</b>	.148	.112	.248
<b>Total</b>	.320*	.329*	.367*

<b>PASE</b>	.417*	.392*	.502*
<b>Outcome Expectations</b>			
<b>Physical</b>	.147	.093	.235
<b>Social</b>	.205	.288*	.041
<b>Total</b>	.188	.215	.145
<b>Social Support</b>			
<b>Family</b>	.238*	.266*	.210
<b>Friends</b>	.261*	.319*	.135
<b>Total</b>	.288*	.339*	.209
<b>Environment</b>			
<b>Access</b>	.241*	.150	.413*
<b>Safety</b>	-.071	-.026	-.126
<b>Total</b>	.211*	.078	.204

\*p < .05

Note. Alt-Alternative; Bar-Barriers; SS-Support-seeking; PASE-Physical activity self-efficacy