

1-1-2011

# Perceived familial socialization and ethnic identity: factors associated with physical activity, eating behavior patterns, and social physique anxiety in african american middle adolescents

Nutrena H. Tate  
*Wayne State University,*

Follow this and additional works at: [http://digitalcommons.wayne.edu/oa\\_dissertations](http://digitalcommons.wayne.edu/oa_dissertations)

 Part of the [Nursing Commons](#)

---

## Recommended Citation

Tate, Nutrena H., "Perceived familial socialization and ethnic identity: factors associated with physical activity, eating behavior patterns, and social physique anxiety in african american middle adolescents" (2011). *Wayne State University Dissertations*. Paper 334.

This Open Access Dissertation is brought to you for free and open access by DigitalCommons@WayneState. It has been accepted for inclusion in Wayne State University Dissertations by an authorized administrator of DigitalCommons@WayneState.

**PERCEIVED FAMILIAL SOCIALIZATION AND ETHNIC IDENTITY:  
FACTORS ASSOCIATED WITH PHYSICAL ACTIVITY, EATING  
BEHAVIORS, AND SOCIAL PHYSIQUE ANXIETY  
IN AFRICAN AMERICAN ADOLESCENTS**

by

**NUTRENA H. TATE**

**DISSERTATION**

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

**DOCTOR OF PHILOSOPHY**

2011

MAJOR: NURSING

Approved by:

\_\_\_\_\_  
Advisor

\_\_\_\_\_  
Date

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

© COPYRIGHT BY

NUTRENA H. TATE

2011

All Rights Reserved

## DEDICATION

For all things, I give God the glory. Because if it were not for Him, I would not be where I am today. I dedicate my life's work to His purpose and will for my life. I dedicate this to the love of my life, my husband, James E. Tate, Jr. You have been my rock from the time that we met, through life's successes and challenges. I could not imagine going through this journey with anyone but you. Thank you for all of the sacrifices that you have made, and always remember that I love you for being you. I also dedicate this to my parents, Cleveland and Rosie Watts. Words cannot even capture my gratitude for all that you have done for me. I am the person that I am today because of your encouragement and unconditional love. From a very young age, you exposed me to my favorite scripture: "I can do all things through Christ who strengthens me" (Philippians 4:13). Thank you for instilling a sense of dedication, perseverance, humility, and service in my inner being at a very early age. I love you both very much.

## ACKNOWLEDGEMENTS

Dr. Jean Davis was one of the best advisors that I could have asked for during my dissertation journey. Her ‘about business’ attitude was refreshing and truly fueled my dissertation progress. I now know how to mentor graduate students because of the mutual respect that we shared during this process. Thank you for all of your hard work and dedication to me and other doctoral students.

Dr. Feleta Wilson was my lifeline. She provided the community perspective to my dissertation, and I thank you for your down to earth support.

Dr. Nancy George challenged me to new heights in my thinking process. Thank you for ‘second chances’.

Dr. Hossein Yarandi was my statistics expert, and I thank you for making statistics understandable.

Dr. Jeffrey Martin introduced me to a new way of looking at body image in African Americans that made sense. I thank you for the a-ha moments of the dissertation.

Thank you to my research team that made it happen!

Lastly, thank you to all of the organizations, parents, and adolescents who were integral during this process: Neighborhood Service Organization, The Youth Connection, Fellowship Chapel, Detroit Christian Academy, Teen H.Y.P.E., Osborn Evergreen Academy, Lambda Chi Chapter of Chi Eta Phi Sorority, Inc., and Family Victory Fellowship Church. We have great children and families in the city of Detroit!

## TABLE OF CONTENTS

|  |     |
|--|-----|
| Dedication.....  | ii  |
| Acknowledgements.....  | iii |
| List of Tables.....  | vi  |
| List of Figures.....   | vii |
| Chapter 1 Introduction.....                                  | 1   |
| Chapter 2 Theoretical Framework.....                         | 10  |
| Chapter 3 Literature Review.....                             | 20  |
| Chapter 4 Methods.....                                       | 37  |
| Chapter 5 Results.....                                       | 56  |
| Chapter 6 Discussion.....                                    | 70  |
| Appendix A Human Investigation Committee Approval.....       | 87  |
| Appendix B Parental Consent.....                             | 88  |
| Appendix C Adolescent Assent.....                            | 92  |
| Appendix D Major Study Variables and Definitions.....        | 95  |
| Appendix E Demographic Questionnaire.....                    | 96  |
| Appendix F Sociocultural Influences Questionnaire.....       | 98  |
| Appendix G Multi Ethnic Identity Measure.....                | 100 |
| Appendix H Physical Activity Questionnaire - Adolescent..... | 103 |
| Appendix I Eating Behavior Pattern Questionnaire.....        | 106 |
| Appendix J Social Physique Anxiety Scale.....                | 109 |
| References.....  | 110 |

|                                 |     |
|---------------------------------|-----|
| Abstract.....                   | 124 |
| Autobiographical Statement..... | 126 |

## LIST OF TABLES

|   |    |
|---|----|
| Table 1: Subject characteristics.....   | 57 |
| Table 2: Other subject characteristics.....                                     | 58 |
| Table 3: Means and standard deviations for the major study variable scores..... | 59 |
| Table 4: Intercorrelations for the major study variables.....                   | 61 |
| Table 5: Gender differences in weight measurement.....                          | 62 |
| Table 6: Gender differences in the major study variables.....                   | 63 |
| Table 7: Socioeconomic status differences in weight measurement.....            | 64 |
| Table 8: Socioeconomic status differences in major study variables.....         | 66 |
| Table 9: Residential status differences in weight measurement.....              | 67 |
| Table 10: Residential status differences in major study variables.....          | 68 |



## LIST OF FIGURES

|  |    |
|--|----|
| Figure 1: First level of concepts derived from Allen and Allen's (1986)<br>Sociocultural Factors and Weight Behaviors and Cognitions<br>Framework.....   | 12 |
| Figure 2: An illustration of the second level substruction from theoretical conceptual to<br>theoretical variable level of the Sociocultural Factors and Weight Related<br>Behaviors and Cognitions Framework..... | 15 |
| Figure 3: Current dissertation project: Sociocultural factors and adolescent<br>norm related weight behaviors and cognitions in African American<br>Adolescents.....   | 19 |
| Figure 4: Proposed conceptual map for study.....   | 82 |
| Figure 5: Conceptual map based on study findings.....  | 83 |

## CHAPTER 1

### Introduction

African American adolescents consume foods high in fat and calories (Affenito, et al., 2005). Additionally, African American adolescents are less physically active than their White counterparts (Perlman & Seidman, 1996; Vertinsky, 1998). The culmination of low physical activity and unhealthy eating behaviors are two factors contributing to the obesity disparity experienced by this population. Obesity's health threat is both particularly problematic and complex for African American adolescents.

As a result of decreased physical activity and unhealthy eating behaviors, obesity rates are significantly higher among African American adolescents compared to White adolescents (Haas, et al., 2003; Singh, Kogan, Van Dyck, & Siahpush, 2008; Zhang & Wang, 2003). In addition to intergroup disparities, there are intragroup gender, socioeconomic (SES), and residential differences in obesity among African American adolescents. Female African American adolescents have a higher incidence of obesity than male African American adolescents. Economically, low SES African American adolescents are more obese than middle and higher SES African American adolescents (Martin, 2008; Miech, et al., 2006; Neumark-Sztainer, Story, Hannan, & Croll, 2002; Wang & Zhang, 2006; Zhang & Wang, 2003). Residentially, urban African American adolescents are more likely to be obese than suburban African American adolescents (Alm, et al., 2008; Nelson, et al., 2006). Thus, not only are there obvious disparities in obesity rates between White and African American adolescents, there are obvious differences within the heterogeneous African American community. These intragroup disparities are alarming, especially in light of the increase in

the incidence of obesity-related adult onset diseases such as hypertension, type 2 diabetes, and hypercholesterolemia within this population (Skinner, Mayer, Flower, Perrin, & Weinberger, 2009). These diseases increase both the morbidity and mortality rates at younger ages in African American adolescents. To alter the eating and physical activity behaviors and decrease the intergroup ethnic disparities, and the intragroup SES, residential, and gender differences associated with obesity in African American adolescents, research related to these concepts must incorporate developmental and sociocultural trajectories of this heterogeneous group. Additionally, researchers must also account for the possibility that the obesity disparities among African Americans may be related to differing views of physical activity and eating behaviors within the heterogeneous African American community.

Developmental and sociocultural changes that occur with African American adolescents have been well documented (Erikson, 1968; Garcia-Coll, et al., 1996; Quintana, 2007). Adolescence, the years between the ages of 12 and 21, is believed to be a period of marked change. Specifically, middle adolescents, ages 15 to 17 years experience changes such as identity formation, that involve body image development and ethnic identity formation (Austrian, 2008; Blos, 1972; Erikson, 1968; Kroger, 2005; Phinney, 1992; Rew, 2005). The manner in which African American middle adolescents identify with their ethnicity is an integral part of their self-definition. Ethnic norms, behaviors, attitudes, and beliefs are incorporated into the African American adolescents' worldviews of who they are becoming as individuals and as members of a group. These norms, behaviors, and attitudes are ultimately a result of familial socialization. Familial socialization is the process whereby familial figures transmit their attitudes, behaviors, perceptions, and norms regarding physical

activity, eating behaviors, and body image to their children, which develops into their unique identity (Ricardelli & McCabe, 2001; Rotheram & Phinney, 1987; Stevenson, 1994). For the current study, perceived familial socialization is considered the adolescent's perception of how their familial figure has influenced their physical activity, eating behavior, and body image via teasing and role modeling.

As part of familial socialization, group members experience many core values, beliefs, and behaviors that serve as ethnic identity symbols associated with body image, eating, and physical activity. Physical activity, body image, and eating behaviors are not only a result of familial socialization, but are also associated with how adolescents identify with their ethnicity.

As a result of the internalization of familial socialization and their identity as an African American, social physique anxiety could manifest in the African American adolescent, and may be another factor associated with eating behaviors and physical activity in this population. Social physique anxiety is the amount of anxiety a person experiences as a result of the evaluation of his or her body in social settings (Hart, 1989). Social physique anxiety may be an important part of adolescent identity formation and is intertwined with the health behaviors of eating and physical activity in the African American adolescent. Although the concept of social physique anxiety is applicable throughout the lifespan, this concept becomes particularly salient during adolescence as a subcomponent of body image. Social physique anxiety may be a manifestation of the pressure of maintaining a certain body type within the African American culture, and may be explained meaningfully by the intensity with which individuals identify with their ethnicity and their familial influences on body image as a multifactoral concept (Bediako, Kwate, & Rucker, 2004; Phinney, 1989).

Current evidence indicates that obesity among African Americans has unique cultural features that originated from norms about body image and its related components, such as social physique anxiety (Fujioka, et al., 2009; Granberg, et al., 2009).

Cultural tolerance, grounded in ethnic norms associated with eating and physical activity, is problematic for public health interventions that promote healthy eating and physical activity engagement. Adolescents, in general, may consider themselves immune from adult health problems such as hypertension, and may not appreciate the importance of weight control through healthy eating behaviors and physical activity as a means of primary prevention. Even more, certain characteristics of the African American cultural experience shape adolescents' perceptions of their health that subsequently affect their eating behaviors and physical activity engagement (Bediako, et al., 2004; IOM, 2005; WHO, 2005). Furthermore, the familial pressures of being a certain weight create anxiety about how adolescents' bodies are viewed in socio-cultural settings. The norms affiliated with their physiques, in addition to the anxiety experienced in social environments by adolescents, are part of the affective component of body image that is salient within their developmental trajectories.

Physical activity is defined as bodily movement produced by skeletal muscles resulting in energy expenditure (Bailey, 2006). Regular physical activity can help to control obesity and diabetes and can help to control and lower blood pressure and blood cholesterol (CDC, 2010; Sallis & Patrick, 1994; USDHHS, 2000; Trost, et al., 2002). Although physical inactivity is more prevalent in women than in men in the general population, this pattern is even more pronounced in African Americans (Cowie, Harris, Silverman, Johnson, & Rust, 1993; Katz, et al., 2004). Lack of regular physical activity is the empirically documented

norm for African American adolescents (Perlman & Seidman, 1996; Vertinsky, 1998). They have the lowest level of physical activity of all ethnic groups. Because African Americans are also at high risk for chronic diseases associated with physical inactivity (e.g. hypertension, hypercholesterolemia, and Type 2 diabetes), it is vital to understand the personal, behavioral, psychosocial, and environmental factors that influence physical activity behavior in African American adolescents (Felton, Boyd, Bartoces, & Tavakoli, 2002). Physical activity patterns among African American adolescents may be a part of their ethnic identity and be transmitted as norms about ideal weight (Airhihenbuwa, et al., 1995).

In addition to physical activity, eating behaviors in African American adolescents may be linked to how they identify with their ethnicity. Eating behaviors refer to the ways in which humans use food: how food is obtained and stored, how it is prepared, how it is served and to whom, and how it is consumed (Bailey, 2006). Research findings about African American eating behaviors revealed that not only did the issues of belonging and status play a part in their eating behaviors, but their cultural attitudes regarding where and with whom food is eaten were equivalent in importance to their attitudes about specific foods (Airhihenbuwa, et al., 1996). A majority of researchers have noted that the food habits of African Americans today usually reflect their current socioeconomic status, geographical location, and work schedule more than their African or Southern heritage (Bailey, 2006). Although limited research studies have been conducted on diet in the African American community, the preliminary findings suggest that food is emblematic of ethnic background in the African American community and serves a psychological function. Many African Americans perceive the foods they eat as a means of maintaining ethnic identity, creative self-expression, and power, especially if their diet reinforces historically-based communal

experiences (Bailey, 2006). Consequently, the typical diet for African Americans is high in fat and low in fruits and vegetables (Bediako, et al., 2004; WHO 2006). Regardless of the documented and sociocultural reasons, African Americans, in general, are at risk for chronic diseases as a result of their eating behaviors (Healthy People, 2010, 2000; Oster & Thompson, 2000; USDHHS, 2000).

### **Statement of the Problem**

Many African American adolescents may be overweight or obese as a physical extension of not only their eating patterns and physical activity levels, but also as a result of how they perceive their bodies in social settings, based on the depth of their identification with ethnic membership and internalization of familial socialization. The obesity status among the African American adolescent population has surpassed their White adolescent counterparts and reached epidemic proportions in comparison to other adolescents of color. Obesity prevalence and incidence continue to rise despite culturally sensitive interventions. Current obesity interventions purport to be culturally sensitive, yet do not address how ethnic identity and familial socialization may affect the efficacy of the interventions. Furthermore, most researchers who have examined the relationships among familial socialization and obesity have focused on early adolescents, leaving middle adolescents understudied during a critical time of scaffolding identity development and eating/physical activity behavioral formation (Granberg, et al. 2009). Additionally, to date, no published researchers have explored the influences of familial socialization and ethnic identity on physical activity or eating behaviors among African American adolescents. The closing of this gap in our knowledge base will inform culturally-sensitive, targeted interventions to help decrease obesity by focusing on promoting the health behaviors of eating and physical activity, and

ultimately, decrease the empirically documented intragroup and intergroup obesity disparities. Lastly, African American males have rarely been included in studies regarding physical activity and eating behaviors, and even more importantly, social physique anxiety. In addition, most studies have focused on urban, low-income African Americans, limiting the generalizability of findings. Examining the intragroup differences based on the subcultures of SES, gender, and residential status will address the heterogeneity within this population and address selected limitations of previous studies.

### **Statement of the Purpose**

The purpose of the current study was to examine the sociocultural influences of perceived familial socialization and ethnic identity on the weight related behaviors and cognitions of physical activity, eating behaviors, and social physique anxiety in African American middle adolescents ages 15 to 17 years. Differences were examined among the current relationships based on the covariables of SES, gender, residential status, and weight status.

### **Specific Aims and Working Hypotheses**

The purpose of this study was accomplished by the following specific aims and associated working hypotheses:

Primary study aim: To examine the relationships among perceived familial socialization, ethnic identity, social physique anxiety, physical activity, and eating behaviors in African American adolescents.

Working Hypothesis #1a: Perceived familial socialization will be related to social physique anxiety, physical activity, and eating behaviors in African American adolescents.



Working Hypothesis #1b: Ethnic identity will be related to social physique anxiety, physical activity, and eating behaviors in African American adolescents.

Secondary study aim: To examine gender, SES, and residential status differences among weight status, physical activity levels, eating behaviors, and social physique anxiety in African American adolescents.

Working Hypothesis #2a: African American females will exhibit a higher amount of body fat, increased body mass index, and larger waist circumference than African American males.

Working Hypothesis #2b: African American females will be less physically active, consume diets higher in fat and calories, and experience more social physique anxiety than African American males.

Working Hypothesis #2c: African American adolescents with a lower socioeconomic status will exhibit a higher amount of body fat, increased body mass index, and greater waist circumference than African American adolescents with a higher socioeconomic status.

Working Hypothesis #2d: African American adolescents with a lower socioeconomic status will be less physically active, eat diets higher in fat, and experience less social physique anxiety than African American adolescents with a higher socioeconomic status.

Working Hypothesis #2e: Inner-city African American adolescents will exhibit a higher amount of body fat, increased body mass index and waist circumference than Metropolitan African American adolescents

Working Hypothesis #2f: Inner-city African American adolescents will be less physically active, eat diets higher in fat, and experience less social physique anxiety than metropolitan African American adolescents.

## CHAPTER 2

### Theoretical Framework

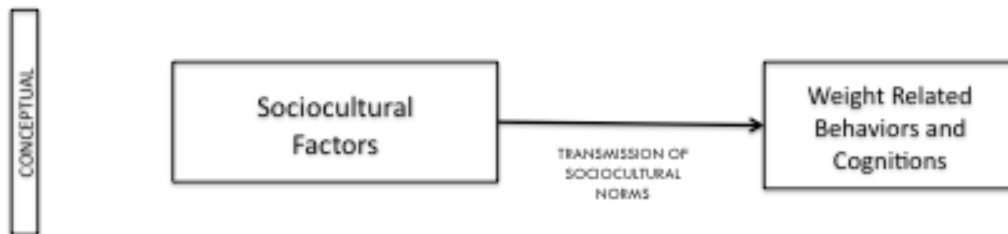
Social ecology is viewed as an overarching framework for understanding the interrelations among diverse personal and environmental factors in human health and illness (Allen & Allen, 1986; Davison & Birch, 2001; McElroy, Bibeau, Steckler, & Glanz, 1988; Stokols, 1996). The social ecological approach integrates person-focused efforts to modify health behaviors, with an emphasis on environment-focused changes to enhance physical and social surroundings. In addition to forming the basis for behavioral and environmental change strategies, this approach offers a theoretical framework for understanding the dynamic interplay among persons, groups, and their sociophysical milieus (Stokols, 1996). Additionally, changes in individual characteristics cannot be effectively explained without consideration of the individual's context. These changes occur as a result of interactions within and among environmental contexts, that is, characteristics of the adolescent interactions with family and peers, while in turn, community and societal factors influence family and peers. Ultimately, this approach outlines bi-directional instead of uni-directional relationships among the different levels of influence and considers how factors at one level moderate the influence of factors from another (Davison & Birch, 2001). There are different modes of inquiry within social ecological approach. Specifically, Allen and Allen (1986) developed a sociocultural application of the social ecological approach that will be utilized as the conceptual basis for the current study.

Allen and Allen 's (1986) sociocultural approach to social ecology includes a change in the focus on the individual exclusively to the individual within their sociocultural

environment. The social culture of the individual has strong norms for health behaviors. Cultural norms are behaviors that are expected, accepted, or supported by a group. Norms regulate the health behaviors of the individual. The creation of healthier lifestyles is often in violation of the blatant and subtle cultural norms. It is therefore essential to understand the power of the cultural norms of an individual in order to fully understand the manner in which they behave as it relates to their health behaviors and ultimately to their health. Cultural norms are often transmitted between generations through socialization, which then shapes the individual's ethnic identity. As an expression of the individual's ethnic identity, norms regarding physical activity, eating behaviors, and body image are internalized. In the current study, Allen and Allen's (1986) concepts of sociocultural factors, transmission of sociocultural norms, weight related behaviors and cognitions, and their relationship formed the foundational basis.

Although a surge of interest in the issue has increased an understanding of the predictors of adolescent overweight status, research that did not incorporate the social ecological framework has been limited primarily to the analyses of a series of simple or bivariate relationships. Research grounded in a social ecological framework moves beyond bivariate relationships and develops a comprehensive model of factors implicated in the development of adolescent weight status. Familial socialization that shapes the adolescent's body image in addition to their eating and physical activity practices and the contexts in which transmissions of sociocultural norms surrounding these behaviors and cognitions occur are important to include. These contextual models incorporate adolescent characteristics, such as gender and development that influence parenting practices and moderate the impact of risk factors on the development of weight related behaviors and cognitions. Social

ecological models serve as tools to promote the investigation of the complex multifactorial development of adolescent weight status and facilitate the development of effective intervention and prevention programs (Davison & Birch, 2001). Figure 1 represents Allen and Allen's conceptual framework used in the present study.



**Figure 1. First level of concepts derived from Allen and Allen's (1986) Sociocultural Factors and Weight Behaviors and Cognitions Framework**

### **Conceptual Level I Concepts**

*Sociocultural Factors.* Sociocultural factors are behaviorally relevant dimensions of an individual or group's social and cultural environment (Allen & Allen, 1986; McElroy, et

al., 1988 ). These concepts collectively encompass social and cultural factors in community settings, including socioeconomic status (SES), gender, ethnicity, cultural norms about health and illness, supportive social relationships, and organizational climate that influence personal and collective well-being (Davison & Birch, 2001). Additionally these groups can include family, organizations, social clubs, neighborhoods, and communities (Allen & Allen). In the current study, sociocultural factors include parenting styles and family characteristics.

*Transmission of Sociocultural Norms.* The transmission of sociocultural norms is the act of conveying the written and unwritten rules of a culture or society (Allen & Allen, 1986). These rules can be communicated verbally or nonverbally between the sociocultural group and the adolescent. Norms establish the guidelines for the adolescent behavior. They provide a needed social context for day-to-day behavior and are interwoven in a complex cultural system. Norms are introduced through a group's modeling, communication, and orientation mechanisms. Group norms are further strengthened through rewards, sanctions, and relationship development (Allen & Allen, p. 44)

*Weight related Behaviors and Cognitions.* Weight related behaviors and cognitions refer to the understanding and manner in which individuals conduct themselves according to cultural rules related to physical activity, eating behaviors, body image, and social physique anxiety. These behaviors and cognitions emerge whenever people come together with a shared purpose; hence, the sociocultural influences on weight related behaviors, and ultimately, health in the form of weight status.

Certain characteristics of the African American cultural experience may shape perceptions about weight status that subsequently affect their physical activity and dietary behavior (Bediako, et al., 2004; IOM, 2005; WHO, 2005). Ethnic norms notably underscore

a wide range of behaviors that reflect ways in which individuals express themselves, experience the world, and act in the world. In the current study, weight related behaviors include physical activity and eating behaviors, while weight related cognitions include body image, specifically social physique anxiety.

### ***Substruction of the Theoretical Framework***

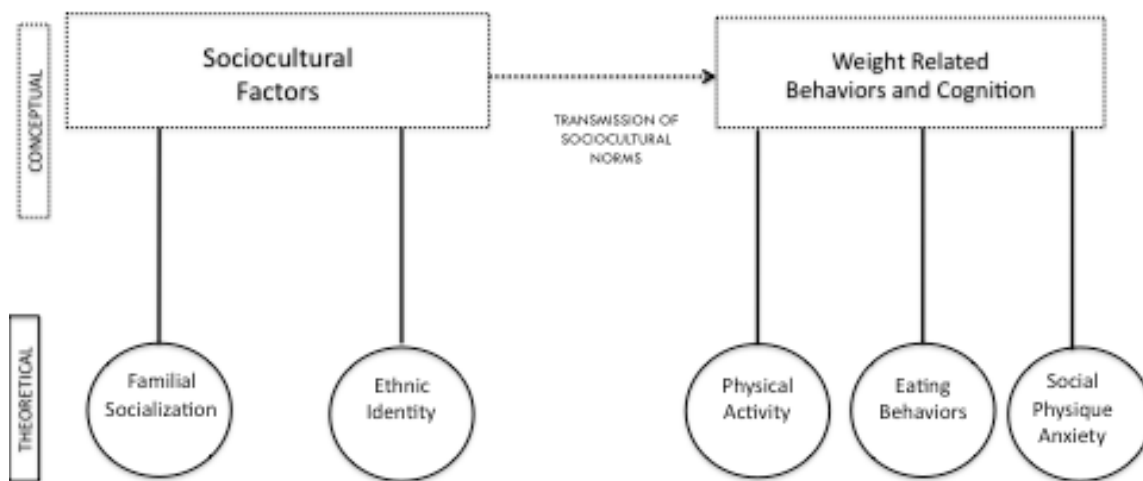
The Sociocultural Factors and Weight Related Behaviors and Cognitions Framework represents a substruction of the conceptual influence of Allen and Allen's (1986) sociocultural ecological approach. The Sociocultural Factors and Weight Related Behaviors and Cognitions Model was the theoretical framework guiding the current study. The components of the Sociocultural Factors and Weight Related Behaviors and Cognitions Framework include theoretical concepts, theoretical variables, and relational propositions.

### **Theoretical Level Concepts**

The possible relationship between sociocultural factors and weight related behaviors and cognitions is the result of the transmission of sociocultural norms. Very little information is available on this current relationship; therefore, cause and effect cannot be established. The findings of the current study will establish descriptive – correlational data, which will help establish relationships among the study variables. Within the theoretical level, there is a further descent from theoretical concepts to measureable theoretical variables. The theoretical variables are even less abstract than the theoretical concepts, and from these variables, analyses can be performed according to the current research questions.

The arrows between sociocultural factors and adolescent norm related weight behaviors and cognitions at the conceptual level in Allen and Allen's framework have been changed to a dotted line in the theoretical model to denote a possible relationship among

perceived familial socialization, ethnic identity, physical activity, eating behaviors, and social physique anxiety (see Figure 2). The variables chosen to represent the theoretical concepts for the present study were based on their presence in the literature, specifically the relationship among sociocultural factors and weight related behaviors and cognitions in African American adolescents. Figure 2 depicts the second level of substruction from the theoretical conceptual level to the theoretical variable level.



**Figure 2.** An illustration of the second level substruction from theoretical conceptual to theoretical variable level to the Sociocultural Factors and Weight Related Behaviors and Cognitions Framework

*Familial Socialization.* Familial socialization is the process whereby familial figures transmit their attitudes, behaviors, perceptions, and norms regarding physical activity, eating



behaviors, and body image to their children, which develops into aspects of their unique identity (Rotheram & Phinney, 1987; McCabe & Ricardelli, 2001; Stevenson, 1994). For the current study, perceived familial socialization refers to the adolescent's perception of how their family figure, whether male or female, influenced their physical activity, eating behavior, and body image.

*Ethnic Identity.* Ethnic identity is one's sense of importance and belonging to an ethnic group and the part of one's thinking, perception, feelings, and behavior that is due to ethnic group membership on an individual, intragroup, and intergroup level (Phinney & Rosenthal, 1992; Scottham & Sellers, 2008).

*Body Image.* Body image is a multidimensional concept that describes the personal and social perceptions, attitudes, and beliefs about one's physique. For the purpose of the current study, body image was defined by the amount of anxiety the participant experiences as a result of the evaluation of his/her body in social settings, also known as social physique anxiety (Hart, et al., 1989).

*Physical Activity.* For the purposes of the current study, physical activity means bodily movement produced by skeletal muscles resulting in energy expenditure (Bailey, 2006). Physical activity patterns in African American adolescents may be a part of their ethnic identity and may be transmitted, such as norms about ideal weight (Airhihenbuwa, et al., 1995). Barriers to participating in physical exercise may also be culturally based. Generally, African American girls, specifically, view physical education classes as an unpleasant experience (Taylor, 1999). Profuse perspiration, hair and make-up concerns interfere with their participation in physical activity.

*Eating Behaviors.* For the purpose of this study, dietary intake was expressed as eating behaviors. Eating behaviors are the ways in which humans use food in addition to the sociocultural affiliation with food: how food is obtained and stored, how it is prepared, how it is served and to whom, and how it is consumed (Bailey, 2006). Research findings about African American eating behaviors revealed that not only did the issues of belonging and status play a part in their eating patterns, but their cultural attitudes regarding where and with whom food is eaten were equivalent in importance to their attitudes about specific foods (Airhihenbuwa, 1996).

*Control Variables.* Gender, SES, residential status, athletic status, weight status, and presence of diagnosed eating disorder were the contextual variables controlled for in the current study. Consistent with the study aims, controlling the aforementioned variables would provide insight into the various subcultures within the African American middle adolescent sample used in the study.

Weight status is influenced not only by social and physical environmental circumstances, but also by a variety of individual characteristics of African American middle adolescents, including social physique anxiety, eating behaviors, and physical activity. Although current research has emphasized the links between parent and adolescent eating behaviors and physical activity, they have provided minimal information about the mechanisms by which these behaviors are contextually linked. However, one potential mechanism might be familial socialization.

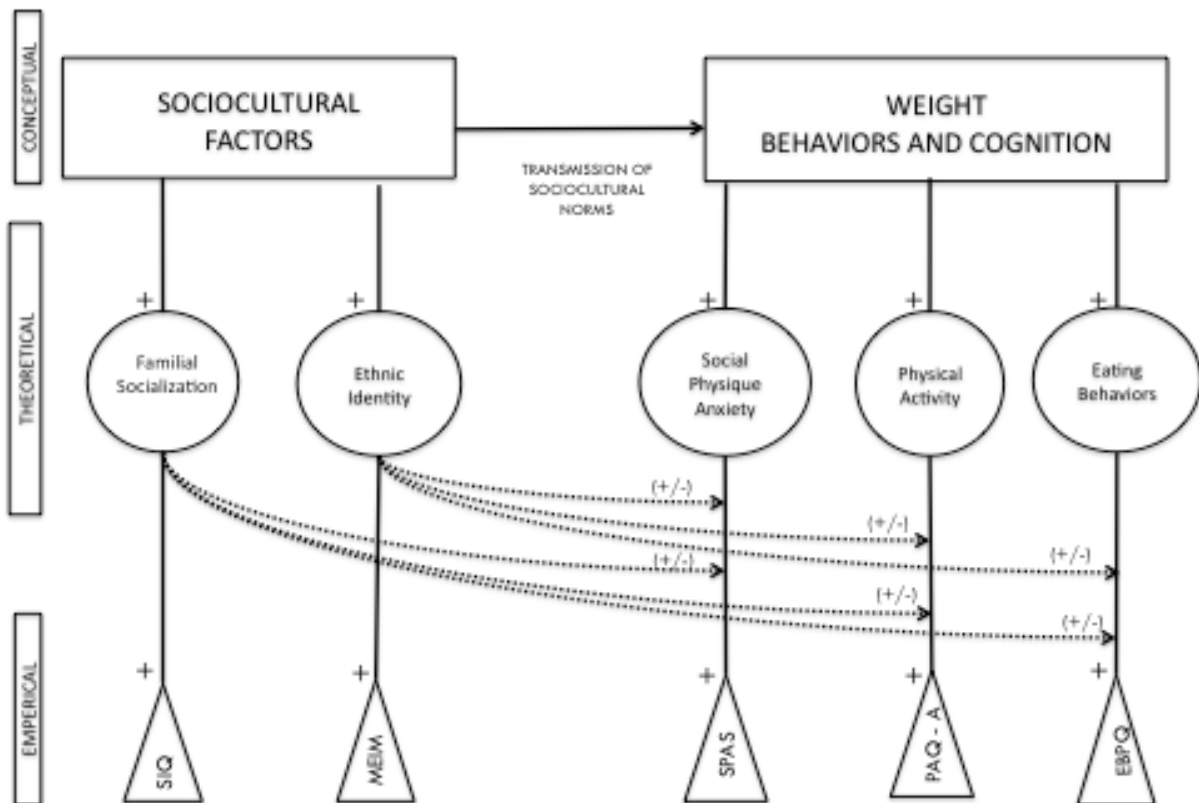
The sociocultural factors of familial socialization and ethnic identity interact with adolescents' weight related behaviors of physical activity, eating behaviors, and social physique anxiety to inform their developmental processes (Umana-Taylor & Guimond,

2010). Additionally, characteristics particular to the adolescent, such as gender and age, interact with familial and societal characteristics of SES to influence development (McElroy, Bibeau, Steckler, & Glanz, 1988). Change in the adolescents' characteristics of physical activity, eating behaviors, and social physique anxiety cannot be effectively explained without consideration of the context, or ecological niche, in which the African American middle adolescents are embedded – the family and culture (Davison & Birch, 2001). This health norm context of the familial culture to which the African American middle adolescents belong has strong norms for health risk behavior, such as certain physical activity and eating behaviors (Allen & Allen, 1986). For example, the solution lies in a change of focus from an exclusive concern with the African American middle adolescent to a concern about both the adolescents and their familial socialization and ethnic identity, that is, a broader contextual focus. This shift will be difficult because Western culture carries a norm for individual-focused solutions (Allen & Allen, 1986).

African American familial socialization is considered essential for ensuring their adolescents' optimal adaptation (Umaña-Taylor & Guimond, 2010). Socialized behaviors that are typically characteristic of African Americans as a result of historical events are disseminated transgenerationally. These behaviors can affect the ethnic identity and, in turn, the social physique anxiety, eating behaviors, and physical activity level of the African American middle adolescent.

### ***Operational Level of the Substruction***

On the theoretical level, there is one final vertical substruction to the operational level variables, that is, the instruments used in the measurement of the theoretical variables. The operational variables of this study will be discussed in the “Major Study Variables and Measurements” section of Chapter 4. An illustration of the current dissertation project, including the operational level of the substruction, is included in Figure 3.



**Figure 3. Current dissertation project: Sociocultural factors and adolescent norm related weight behaviors and cognitions in African American adolescents.**

## CHAPTER 3

### Literature Review

The goal of the current study was to extend the understanding of weight related behaviors and cognitions (physical activity, eating behaviors, and social physique anxiety) among African American middle adolescents as they related to their ethnic identity and their perceptions of familial socialization. In accordance with the theoretical framework, in the current study, the principal investigator also measured the potential extraneous influences of gender, SES, residential status, athletic status, weight status, and presence of eating disorders. The following literature review provides a systematic overview of the relevant empirical research related to the study variables.

#### Major Study Variables

This section provides a description of the major variables of this study.

##### *Body Image*

*Familial Socialization.* Parents socialize their children to share similar values, attitudes, and behaviors related to eating, physical activity, and weight concerns. From an early age, parents model their weight related preferences and orientations as well as their level of self-restraint. Familial socialization also produces a shared lifestyle that shapes weight related behavior (Martin, 2008).

Harris (1995) was one of the first researchers to examine sociocultural influences on body image in African American college women. Harris' data indicated that self and sociocultural variables were associated with evaluations of physical appearance and fitness. The father's higher level of education, higher internalization of ethnic attitudes, and

increased social self-esteem best predicted the women's body areas satisfaction and a better appearance and fitness evaluation. Findings from a larger study of over 6,500 adolescents from Cycle III of the National Health Examination Survey further emphasized that strong familial influences are a powerful predictor of body image (Levinson, Powell, & Steelman, 1986).

Consequently, researchers started to examine familial influences via mother-daughter dyads. Flynn and Fitzgibbon (1996) examined the body image and ideals of 27 low-income African American mothers and their 29 pre-adolescent daughters from Chicago. Results suggested a relationship between the mothers' perceptions of their daughters' bodies and their daughters' own body images. Importantly, pre-adolescent, low-income, African American girls have normal weight ideals rather than the ultra thin ideals typically found among Caucasian females.

In another mother-daughter dyad study, Brown, Schreiber, McMahon, Crawford, and Ghee (1995) used cross sectional data from the National, Heart, Lung, and Blood Institute Growth and Health Study. Brown and colleagues (1995) studied maternal reactions to the daughters' body build and eating habits and the daughters' body satisfaction among 1,652 African American and Caucasian female parent/guardians and their daughters ages 9 and 10 years at baseline. Results demonstrated that African American mothers were less tolerant than Caucasian mothers of body build and habits among moderately heavy daughters. Despite maternal disapproval of their build and habits, African American females still demonstrated higher body satisfaction scores than Caucasian females. The largest proportion of variation in the daughters' body satisfaction was explained by race, body mass index, and household income.

In examining families as a unit, familial attitudes that encouraged healthy eating and exercising to be fit versus dieting socialized females with a higher level of body satisfaction and fewer reports of personal weight related concerns and behaviors (Kelly, Wall, Eisenberg, Story, & Neumark-Sztainer, 2005). Additionally, within the same sample of 2,357 female middle and high school students, 26.7% of the females reported high body satisfaction, which was most common among African American females at 40%.

From a qualitative perspective, Barroso, Peters, Johnson, Kelder, and Jefferson (2010) examined the beliefs and perceived norms regarding body image in a sample of urban African American and Latino teenagers (n=83; 18 to 19 years old) from Texas. Thinness was equated with HIV infection in African Americans, which was transmitted intergenerationally. Furthermore, the parents of the children who were found overweight thought that their child was a normal weight, and 80% thought their child's overweight status was healthy (Skelton, Busey, & Havens, 2006).

In juxtaposition to Brown and colleagues' study (1995), it is often thought that African American women are not preoccupied with their weight status, and thus are more tolerant of a larger physique compared to their White counterparts. According to Kumanyika, Wilson, and Guilford-Davenport (1993), the social environment of African American women is less negative about obesity than might commonly be assumed, based on the data for White women, and that being overweight is not necessarily synonymous with being unattractive to African American women.

In contrast to the aforementioned studies, Granberg, Simons, Gibbons, and Melby (2008) found that there was no significant relationship between ethnic identity and weight status in a study of 343 African American girls ages 12 to 14. However, these authors stated

that the age range for assessing identity might have been too young to truly capture an identity and weight status link.

In summary, most current research describes a significant relationship between familial socialization and body image. This relationship is significant among paternal-daughter dyads, maternal dyads, and the family as a whole. A father's education, mother's perceptions, and familial attitudes toward healthy eating and physical activity influence the development of body image in African American females, ranging from middle childhood to early adulthood. Higher levels of body satisfaction and esteem have, in part, been a result of positive familial socialization. Although this research is promising in describing the relation between familial socialization and body image, very little is still known. Most research has focused on the African American female and excluded the African American male. Second, familial socialization has more intricate elements that have not been included in the analysis, specifically how the adolescent is socialized. Familial socialization encompasses the transmission of cultural norms that undergird the body image of the African American adolescent. Third, most researchers examined African American preadolescents or adults, excluding the middle adolescent who has unique features surrounding identity formation, which informs body image. Last, body image has been measured using constructs such as body weight perception, satisfaction and esteem, but not social body image values, and so how familial influences have explained these values have been ignored.

*Ethnic Identity and Body Image.* There is an abundance of literature on ethnic differences in body image, specifically among females. According to the literature, African American women are more satisfied with their weight and appearance than are White women and less likely to engage in unhealthy weight control practices, but have higher rates of



obesity. This phenomenon may occur for one of three reasons: a) African American women may develop a strong positive self-valuation and an alternative beauty aesthetic to resist societal stigmatization; b) African American women may be less likely to acquire eating disorders due to differences in the cultural construction of femininity in African American communities, and c) positive body image among African American women may sometimes reflect a defensive need to deny health problems such as compulsive overeating and obesity (Lovejoy, 2001).

Additionally, African American females experience less discrepancy between current and preferred weights than White females and were more satisfied with their weight. Rucker and Cash (1992), in their classic study comparing body image within African American and White college women, discovered that African American females held more favorable body image attitudes than Whites.

It is unclear if African American females' differentiation from the mainstream standards of beauty is a rejection of the aesthetics of a too-thin body or a realization that the ultra thin body is unrealistic for most women. African American women hold body size ideals that are more congruent with their current perceived size and less strict criteria for "being fat". These results are consistent with a study of 335 college students, 150 male and 185 female, with a mean age of 21, in which African Americans had the most positive general appearance body image (Altabe, 1999). In a sample of 816 African American and Caucasian females, ethnic differences in obesity are related to an increased internalization of the thin ideal in Caucasian women rather than in Black women (Vaughan, Sacco, & Beckstead, 2008). Results further demonstrate that potential ethnic differences in

sociocultural standards of appearance influence ethnic disparities in physical health via effects on weight control behaviors.

In a study of 190 college students consisting of 38 African American women, 33 African American men, 59 Caucasian women, and 60 Caucasian men, Caucasian women chose a significantly thinner ideal body size and expressed more concern with weight than did African American women. Caucasian men indicated less desire than African American men to date women with a heavier than ideal body size, and Caucasian men felt they would more than likely be ridiculed if they dated women who were larger than the “ideal” (Powell & Kahn, 1994).

In a qualitative study of 55 African American women, their frame of reference for normal body weight was much larger than the standard indicator for weight (Gore, 1999). Their definitions of weight were based on a cultural, social, and individual context instead of a medical standard. The sample were an average of 36.4 years and consisted primarily of low to middle class women, based on income and education. Gore estimated that 50% of the study participants were overweight, but the subject’s weight was not formally calculated.

Very little literature exists regarding the relationship between ethnic identity and body image. Fujioka, Ryan, Agle, Legaspi, and Toohey (2009), in a study of 286 White and Black college females, examined the racial differences in personal importance of thinness, fear, and fat. Ethnic identity predicted participants’ personal endorsement of thinness, with the highest ratings among high White identifiers and the lowest ratings among high African American identifiers.

Some African American females experience social pressures from family members to maintain current weight even if overweight (Flynn & Fitzgibbon, 1996). A relationship

between ethnic identity and weight status was determined in a study by Boyington, et al. (2008). Their qualitative study of 12 African American overweight girls ages 12 to 18 determined that body size preferences were primarily determined by the individual and her immediate social circle, and were less influenced by opinions of those outside of the social circle. Although these researchers used an adolescent sample and discussed social influences on weight status, the normal weights for girls and boys, in general, were excluded from the sample. Additionally, SES and residential status were not mentioned in the study. Developmentally, all adolescents ranging from early to late were included in the study and age was not a consideration.

Webb, Looby, and McMurtery (2004) interestingly discovered that there were no statistically significant differences between African American men's perceptions of body figure attractiveness and their acculturation levels. African American men perceived women with smaller body figures as more attractive; however, the body ideal was moderate or medium body figure. These men were between the ages of 18 and 35, attending a traditionally White university in the Southeastern region of the U.S. In the study, acculturation was not clearly defined nor the identification of the acculturation frame of reference. Additionally, development was not taken into account as evidenced by exclusion of an age range across the sample.

Befort, Thomas, Daley, Rhode, and Ahluwalia (2008), in a qualitative study, explored perceptions and beliefs about body size and weight among obese African American women. They found that these women believed that one could be attractive and healthy at larger sizes. The sample was predominantly middle aged with a mean BMI of 40.3. The study employed a small sample size of adult women but did not measure SES or residential status.

Conversely, Cachelin, Rebeck, Chung, and Pelayo (2002) examined 801 women and 428 men, and found that in 17% of the African American participants, ethnicity did not influence preference for female and male shapes or tolerance for obesity. Average age of the participants was 24.3 with a mean BMI of 24.7 and a mean education of some college. Additionally, African American females were more likely than White females to report that they considered themselves attractive. The greater acceptance of one's body by African American females may prevent the low self-esteem, helplessness, and hopelessness that has been associated with restrictive and problematic eating behavior among White females.

*Gender and Body Image.* In their study of 384 rural adolescents, mean age 13 years and 57% African American, females wanted to be smaller and reported more body dissatisfaction than did males (Jones, Fries, & Danish, 2006). Additionally, Caucasian females reported the most body dissatisfaction while African Americans reported larger current and ideal figure ratings than did Caucasians. African Americans preferred larger opposite sex figures than did Caucasians. Both African American and Caucasian males selected a larger female figure as ideal than was elected by females.

Researchers examining over 6,500 adolescents from the Cycle III of the National Health Examination Survey found that adolescents tend to denigrate rather than enhance their body image. This derogation is more pronounced for females than males. Males usually viewed themselves as too thin, whereas females saw themselves as overweight, conversely African Americans females viewed themselves as too thin (Levinson, Powell, & Steelman, 1986).

Conversely, as part of the classic Bogalusa Heart Study, gender, income, and physical activity were not found to be significant predictors of body image perception. The study was

conducted with 3, 698 participants, ages 18 to 35 from Louisiana. Mean body mass index was highest among African American females (Bhuiyan, Gustat, Srinivasan, & Berenson, 2003).

In summary, African American adolescent females have greater body satisfaction, larger body ideals and standards, and less internalization of media body images than White adolescent females. Furthermore, there is evidence that African American adolescent females experience social pressure to maintain a certain weight status. What remains unclear, however, are the social ramifications and consequences of familial pressure to be a certain size, regardless of being thin or overweight. Even more, what is the transmission mechanism of body image norms as manifested in African American adolescent males? Lastly, more needs to be explained regarding how the relationship between body image and ethnic identity varies within the African American community based on SES, gender, residential status, and weight status.

*SES and Body Image.* Adolescents reporting annual household incomes less than \$20,000 demonstrated higher overall body esteem, sexual attractiveness, and physical condition compared to annual household incomes over \$20,000 in a study of 271 low-income females. Thirty five percent were African American ages 16 to 21, while 48% reported an annual household income of less than \$20,000. Mean body mass index was 26.1. African American participants demonstrated greater body esteem on all scales relative to Caucasian participants (Kornblau, Pearson, & Breitkopf, 2007).

In a qualitative study of 36 White women and 31 African American women ages 18 - 65, African American women of a lower SES were significantly different than African American women of a higher SES and Caucasian women regardless of SES, in that they

viewed themselves as heavier, and their perceived attractive body size as heavier. Also, African American women of a lower SES had to become a great deal heavier than the other groups before they defined themselves as overweight (Allan, Mayo, & Michel, 1993).

In summary, there is a wealth of literature on body image norms, body image satisfaction, body attractiveness, body esteem, and non-internalization of the thin ideal in the African American population, specifically African American adolescents. But what we do not know is how the effects of social pressure from family to have a certain physique is internalized and manifested into an anxiety state in the African American adolescent. In the following section, a literature review on social physique anxiety will describe this phenomenon within the adolescent population.

*Social Physique Anxiety and Body Image.* Social physique anxiety encompasses the amount of distress the African American adolescent experiences as a result of their perception of how their body is visualized in a social environment. Very little research has been conducted in this area especially as social physique anxiety relates to the African American adolescent; therefore, this section of the literature review will focus on adolescents in general.

Females tend to report higher levels of social physique anxiety than males according to a study in a UK sample of 2,334 high school and university students ages 11 to 24. Although the sample consisted of high school and university students, only 4.5% were Black (Hagger & Stevenson, 2009). Again, developmental issues were not addressed based on the sizeable age range of participants.

Males also experience social physique anxiety. In a sample of 98 male college students, participants experienced moderate social physique anxiety. In the same study,

appearance evaluation and positive attributes of muscularity were the predictors of social physique anxiety (Martin, Kilber, Kulinna, & Fahlman, 2006).

Martin, Engels, Wirth, and Smith (1999) found in a sample of 68 elite female youth athletes, ages 9 to 17, that self-esteem contributed most to the variance in social physique anxiety; however, body fat percentage did not significantly contribute to their social physique anxiety.

Niven, Fawkner, Knowles, Henretty, and Stephenson (2009) in a sample of 162 adolescent females ages 11 to 12, examined girls who were motivated to be active primarily by body related reasons, and found that social physique anxiety likely leads to lower levels of physical activity.

Physical self-perceptions were strong predictors of change in physical activity, dietary restraint, and social physique anxiety as found in a longitudinal study of 631 Canadian female adolescents 15 to 16 years (Crocker, et al., 2003). The authors did not discuss ethnicity but stated that the sample came from varied SES groups.

In summary, although both females and males experience social physique anxiety, females apparently experience it at higher levels. Once the adolescent experiences social physique anxiety, it is usually linked to physical activity levels, but there is not much evidence to discuss its relationship to eating behaviors, other than dietary restraint. Furthermore, most research on social physique anxiety was conducted in White, not African American, adolescents. Although SES was mentioned in some of the studies, residential status was not addressed nor weight status of the study participants.

### ***Physical Activity***

*Familial Socialization and Physical Activity.* The current research demonstrates a positive relationship between familial influences and physical activity; however, published research examining the relationship between familial socialization and physical activity is very scarce. Therefore, the few studies that illustrate the relationship between familial socialization and physical activity are discussed in this section.

Social norms play a role in adolescent decision making about participating in physical activity. Adolescents who perceive that their physical activity behaviors are unimportant to parents are less likely to have positive attitudes or intentions about healthy eating and activity (Wood, Little, & Brownwell, 2003)

In addition to social norms, the levels of physical activity relate to familial influences (Sallis, Prochaska, & Taylor, 2000). Ammouri, Kaur, Neuberger, Gajewski, and Choi (2007) in their secondary analysis of 300 urban adolescents ages 10 to 19 discovered that adolescent females who reported a strong relationship with their parents reported higher exercise participation scores. Additionally, Ries, Voorhies, Gittelsohn, Roche, and Astone (2008), in their qualitative study of 377 ninth to 12th grade African American adolescents from Baltimore, examined their perceptions of influences on physical activity. A positive relationship was determined among physical activity, social support, negative social influences, and familial control. Last, Lown and Braunschweig (2008) in their study of 72 African American low-income overweight females from Chicago, ages 8 to 13, explained how social support from parents was a significant predictor of a greater intention to engage in physical activity. Developmentally, the age range from late childhood to late adolescence did not add to the developmental context of the research question or aim of the study.



In summary, the studies that demonstrated a relationship between familial influences and physical activity in African American adolescents were very few. Current research utilized small to moderate sample sizes and included adolescents of different ages. A thorough literature review revealed very little published research about the relationship between ethnic identity and familial socialization as defined by the current study.

*Ethnic Identity and Physical Activity.* Flynn and Fitzgibbon (1999) stated that many Black females would not be motivated to participate in physical activity and dietary restrictions in order to achieve a slender figure. However, African American women do seem willing to lose weight to reduce health risks.

Taylor's research group (1999) found that adolescent females participate in physical activity for fun, social support, and if they have a concern about their body image. They often do not participate if they have endured negative experiences in physical education class, concerns about appearance after their activity, and if a lack of opportunity impeded their participation in physical activity. Although the total sample included African American and Latino girls from California and Texas from 11 to 15 years of age, the sample was small ( $n = 34$ ), and furthermore, the authors did not mention differences between the two ethnicities.

Conversely, in a study by Blanchard and colleagues (2008) of 553 college students (280 African American and 273 White), ethnicity did not influence the degree to which the participants engaged in physical activity. The author maintained that it is essential to assess variables such as the whole person (i.e., family relationships, SES, and environmental factors). The potential importance of determining whether a particular ethnic group is

individualistic vs collectivist may also help in explaining ethnic differences in exercise (Blanchard, et al., 2008).

*Gender and Physical Activity.* Boys have stronger current and future physical activity definitions than girls. Possessing a physical activity definition increases the chance of physical activity engagement according to Robbins, Pis, Pender, & Kazanis (2004) in their study of 168 adolescents ages 9 to 17 years.

In a study of 4,746 adolescents from an urban public school in Minnesota, African American females tended to report fewer weight related concerns/behaviors such as physical activity than White females, while Hispanic, Asian American and Native American females tended to report similar or more concerns/behaviors. Among boys, weight related concerns/behaviors were more prevalent among all non-Whites than among Whites. In particular, African American males were at greater risk for potentially harmful weight related concerns/behaviors than White males (Neumark-Sztainer, Croll, et al., 2002).

In summary, there seems to be a relationship between ethnicity and physical activity; however, not much has been published regarding the relationship between ethnic identity and physical activity levels, especially from a quantitative mode of analysis. The current literature also demonstrates that there are gender differences regarding physical activity levels and norms associated with the behavior, but little is known about the sociocultural influences on physical activity, specifically ethnic identity and familial socialization.

### ***Eating Behaviors***

*Familial Socialization and Eating Behaviors.* Researchers have demonstrated a positive relationship between familial influences and eating behaviors. In one of the first articles examining the relationship between familial socialization and eating behaviors, Akan

and Grilo (1995) demonstrated that a history of being teased by their sociocultural group was associated with problematic eating behaviors and attitudes in an African American subsample of 34 women.

Tibbs, et al. (2001), in a cross sectional design, determined that in a group of 456 African American parents, familial modeling of healthful dietary behavior was associated with low fat eating patterns and a higher consumption of fruit and vegetables by their children.

In summary, the studies that demonstrated a relationship between familial socialization and eating behaviors in African American adolescents did not discuss sample characteristics in terms of SES or residential status. Additionally, representation of African American adolescents was minimal in the studies.

*Ethnic Identity and Eating Behaviors.* Resnicow, et al. (2009) examined this relationship in a sample that included 468 African Americans between the ages of 21 and 70, who were from the Metro Detroit and Metro Atlanta areas. SES and residential status were not included in the sample description. A burgeoning literature has examined the relationship of ethnic identity and dietary behaviors in African Americans. Researchers have determined a positive relationship between the two variables. The more an African American identified with their African roots, the more prevalent were their healthy behaviors, such as an increase in fruit and vegetable intake.

Bediako, Kwate, and Rucker (2004) demonstrated a significantly positive relationship between ethnic identity and dietary behavior in a sample of 197 African American adults residing in a Southeastern community. Again, SES, residential status, and gender differences were not addressed in their study.

Abrams, Allen, and Gray (1993) examined ethnic identity, disordered eating attitudes and behaviors in African American and White college students. They determined that White females exhibited more disordered eating attitudes and behaviors than African American females; however, ethnic identity was not formally measured although included in the study title. The sample included a total of 200 female college students, 100 African American and 100 White.

Conversely, in a sample of 98 Asian American, African American, and Caucasian college women, ethnic identity, as measured by acculturation, did not demonstrate a positive relationship to eating behaviors within the African American subsample (Akan & Grilo, 1995). A non-significant relationship could be attributed to the small sample size.

Eating patterns associated with obesity may in fact vary by ethnicity and gender. Nicklas, Yang, Baranowski, Zakeri, and Berenson (2003) conducted their seminal Bogalusa study of 1,562 ten-year-old boys and girls between 1973 and 1994, which included seven cross sectional surveys. The samples were combined, with 65% White and 35% African American, while 51% were female and 49% were male. This multiethnic study demonstrated the aforementioned finding, but stated that this initial finding needs to be confirmed in other national surveys with a larger geographic representation and larger sample size.

*Gender and Eating Behaviors.* Downs, DiNallo, Savage, and Davison (2007) in their study of 646 adolescents, mean age 14.28 years, 3.8% African American, boys scored higher on measures of physical activity and body satisfaction and lower on negative eating attitudes compared with girls. Findings also demonstrated that compared with normal weight adolescents, overweight adolescents exhibited lower body satisfaction

In summary, a relationship has been determined between eating behaviors and ethnic identity; however, ethnicity and ethnic identity have been used synonymously in many studies. Ethnicity and ethnic identity are different concepts that should be measured distinctly and differently. Ethnic identity and acculturation are also different and distinct concepts that have been utilized inappropriately in exchange for the other. The current study has focused on ethnic identity, as it is most pertinent to U.S. born African American adolescents. Gender, SES, residential status, and weight status subculture descriptions are lacking in the literature in terms of the relationship between ethnic identity and eating behaviors.

## **CHAPTER 4**

### **Methodology**

This chapter addresses the methodological procedures that were implemented in the current study. Research design, sample, study variables, instrumentation, data collection and statistical analysis procedures are discussed.

#### **Design**

The current study utilized a descriptive, correlational design to examine the relationships among the variables of perceived familial socialization, ethnic identity, physical activity, eating behaviors, and social physique anxiety in the study participants. This descriptive correlational design was appropriate for the current study as it allowed the investigator to describe a phenomenon while examining relationships among variables (Campbell & Stanley, 1963).

#### **Human Subjects Protection**

In studies examining factors affecting weight related behaviors and cognition in African American adolescents, there were no reports of adverse effects. The study participants had the right to exit at any time during the study. Both parents and adolescents were assured that information obtained for the study purposes remained confidential and anonymous. All aspects of the study were completed in accordance with the HIPPA protocol guidelines at the current facilities and the Wayne State University Institutional Review Board (IRB guidelines). The Human Investigation Committee approval form can be found in Appendix A.

## Sample

The participants in this study included a non-random, convenience sample of African American adolescents ages 15 through 17 from the Metropolitan Detroit Area. A power analysis was conducted and a sample size of 144 was determined to be adequate, with a power of .80, an alpha of 0.05, and a critical effect size of .50 (Faul, Erdfelder, Lang, & Buchner, 2007).

### *Inclusion and Exclusion Criteria*

Inclusion criteria for the sample were: a) self-identified Non-Hispanic, African American, b) U.S. born citizenship, c) 15 through 17 years of age, d) resident of Detroit or its surrounding suburbs, e) enrolled in a local high school, and f) male or female. Inclusion criteria was developed based on the rationale: a) confounding role that ethnicity may have played within the current study; therefore ethnicity and citizenship was limited as listed above b) the physical activity measure (PAQ – A) requires that the participant is enrolled high school; and c) sample representation from differing residential status and both genders was essential based on the identified gap in the literature. Exclusion criteria included a) lack of ability to speak or understand English, b) physically disabled, and c) known pregnant state. Exclusion criteria was developed based on the rationale: a) reading and comprehension of the English language was essential in order to complete the measures adequately; b) being physically disabled may have impacted the participant's response to the physical activity questionnaire; c) being pregnant may have compromised the waist circumference measurement.

***Recruitment***

African American adolescents were recruited from a population of adolescents who attended community outreach clinics, community organizations, and churches, and through social networks throughout inner city Detroit and its surrounding suburbs.

Within the community outreach clinics, the primary investigator approached individual patients and their parents about participation in the current study while they waited to be seen by a health care provider. Flyers were also posted around the clinic describing the current study along with the principal investigator's contact information.

Community organizations assisted with recruitment by allowing the principal investigator to present the current study to prospective participants and their parents. After the presentation, the principal investigator was available to discuss the study in detail and obtain contact information from potential participants. In addition to the presentation, flyers were posted around the community organization's headquarters. The principal investigator contacted the prospective participants who expressed interest, within one week to begin the study.

Church recruitment was implemented by attending youth group meetings. Upon visiting these meetings, the principal investigator discussed the current study and returned within one week and administered survey instruments as well as obtained weight biomarkers (height, weight, waist circumference, and body fat analysis) of consenting participants.

Social networking was utilized by advertising the current study and need for participants during the principal investigator's professional meetings as well.



### **Major Study Variables and Measurement**

The major variables of interest in this study were perceived familial socialization, ethnic identity, physical activity, eating behaviors, and social physique anxiety. Measurement properties as well as psychometric properties are described in the following section. The psychometric properties of each measure were assessed with this study sample. Internal consistency was determined by Cronbach's alpha value for each measure. Utilizing 15% of the sample through random assignment, test retest reliability was assessed. In order to perform the test-retest reliability, the participants were asked to return within two weeks to repeat the study procedures, survey measurements, and biomarkers.

#### ***Perceived Familial Socialization***

Perceived familial socialization is defined as the process whereby African American adolescents develop a sense of their body, eating behaviors, and physical activity as evidenced by their behaviors, perceptions, values, and attitudes from their familial figures (Rotheram & Phinney, 1987; Stevenson, 1994). Familial socialization was measured using the Sociocultural Influences Questionnaire (SIQ) (McCabe & Ricciardelli, 2001). The 82-item survey instrument consists of 6 subscales; however, for the purposes of the current study, only 2 subscales were utilized which consisted of 26 questions in total, 13 questions for each subscale. The selected subscales originally were developed to assess the perceived nature of the feedback from mother figures and father figures to gain weight, lose weight, and increase muscular tone (Appendix F). The total possible scores on each scale could range from 13 to 65. The first three items were rated on a 5-point Likert-type scale ranging from 1 (extremely positive) to 5 (extremely negative) and asked the perceived type of feedback received about the size or shape of the participant's body, eating pattern to change

their body size and shape, and level of exercise to change their body size and shape (e.g., “What type of feedback do you receive from your mother about your eating patterns to change your body size and shape?”) Items 4 to 13 required the study participants to respond to a 5-point Likert-type scale ranging from 1 (always) to 5 (never). Items 4 to 8 evaluated the perceived level of encouragement to lose weight, gain weight, eat less, eat more, or become more muscular (e. g., “Does your father encourage you to become more muscular?”). Items 9 to 13 evaluate the perceived level of teasing because the participant was too fat, too thin, should eat more, should eat less, or was not muscular enough (e. g., “Does your father tease you about gaining weight?”).

In published literature, psychometric properties were determined in a sample of 444 adolescents from grades 7 to 10 who enrolled in two coeducational high schools in Melbourne, Australia (204 females with a mean age of 13.70, and 240 males with a mean age of 13.83). Seventy-seven percent of the population was Anglo Saxon, with the other percentage being primarily of Asian descent. Reliability estimates or Cronbach’s alpha on all subscales were greater than .77.

Psychometric properties were determined in the current sample for both the sociocultural influences questionnaire – father, Cronbach’s alpha = .739 and sociocultural influences questionnaire – mother, Cronbach’s alpha = .644. The test-retest reliability was also determined for the sociocultural influences questionnaire – father ( $r = .679, p = 0.0001$ ) and sociocultural influences questionnaire – mother ( $r = .598, p = 0.0001$ ). Acceptable levels are  $r = .70$  or higher (Cronbach, 1954).

### ***Ethnic Identity***

Ethnic identity is defined as one's sense of belonging to an ethnic group and the part of one's thinking, perception, feelings, and behavior that is due to ethnic group membership (Phinney & Rosenthal, 1992). The ethnic identity of the participants was assessed with Phinney's Multigroup Ethnic Identity Measure (MEIM) (Phinney, 1996). The 20-item survey instrument was developed to measure the adolescents' degree of identification with their ethnic group, regardless of the unique characteristics of the group (Appendix G). The 4-point Likert-type scale can be utilized to study correlates of ethnic identity across diverse samples, as group identity is common to all humans (Phinney, 1996). Items 1 – 20 are scored 1 – 4, yielding a composite score of 20 – 80, with higher scores indicating an elevated level of ethnic identification. Four subscales are included in the measure: affirmation and belonging, ethnic identity achievement, ethnic behavior practices, and other group orientation. The affirmation and belonging subscale assesses the degree of ethnic pride, positive feelings about one's background, and happiness with one's group membership, as well as feelings of belonging and attachment (alpha reliability coefficient = .75). This 5-item subscale is scored 1 – 4, yielding a score of 5 through 20, with higher scores indicating an elevated sense of affirmation and belonging to one's ethnic group. An example from the subscale includes: 'I have a strong sense of belonging to my own ethnic group'. The ethnic identity achievement subscale is formulated as a continuous variable, ranging from the lack of exploration and commitment (little clarity, low interest and awareness concerning one's ethnicity) to evidence of both exploration and commitment, reflected in efforts to learn more about one's background and a clear understanding of the role of ethnicity for oneself (alpha reliability coefficient = .69). This 7-item subscale is scored 1 to 4, yielding a score of 7

through 28, with higher scores indicating an elevated level of ethnic identity achievement. An example from the subscale includes 'I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs'. The ethnic behavior practices subscale measures the involvement in social activities with members of one's group and participation in cultural traditions. This subscale consists of only two items; therefore, the alpha reliability coefficient was unavailable. The two item subscale is scored 1 to 4, yielding a score of 2 to 8, with higher scores indicating an elevated level of engagement in ethnic behaviors. An example from the subscale includes: 'I am active in organizations or social groups that include mostly members of my own ethnic group'. The other group orientation subscale assesses attitudes toward and interactions with ethnic groups other than one's own (alpha reliability coefficient = .71). An example from the subscale includes 'I enjoy being around people from ethnic groups other than my own'.

The psychometric properties of the MEIM were determined in a sample of 417 high school students (182 males and 235 females) who attended an urban, ethnically diverse institution (Phinney, 1992). The participants ranged in ages 14 through 19, with a mean of 16.5 years. SES was measured by occupation proxy. The sample represented approximately 38% professional workers, 41% white collar or skilled laborers, 15% unskilled laborers, with the remaining 6% represented as missing data. The ethnicity of the participants included approximately 32% Asian American, 31% African American, 21% Hispanic, 10% mixed backgrounds, 3% White, and 3% other. The overall scale demonstrated an alpha coefficient reliability of .81. The participants were asked to indicate the extent to which they agree or disagree with items using a 4-point Likert-type scale: strongly disagree, somewhat disagree, somewhat agree, and strongly agree.

The psychometric properties were determined in the current sample for the MEIM: Cronbach's alpha = .780 and test-retest reliability ( $r = .782, p = 0.0001$ ), which was acceptable.

### ***Physical Activity***

Physical activity is defined as bodily movement produced by skeletal muscles resulting in energy expenditure (Bailey, 2006). The Physical Activity Questionnaire determined physical activity engagement for Adolescents (PAQ – A) (Kowalski, Crocker, & Donen, 2004). This 9-item measure was developed for high school students in grades 9 to 12 who are currently in the school system (Appendix H). The self-administered, 7-day recall questionnaire measures general physical activity levels during the school year. Specific activity participation (i. e., dance, football, etc.) as well as weekend, after school, evening, physical education, and lunch activity levels are determined by a 5-point Likert-type scale. Items 1 to 8 are scored 1 to 5, yielding a composite score of 8 to 40, with higher scores indicating greater physical activity. An item example includes ‘In the last 7 days, on how many days right after school did you do sports, dance, or play games in which you were very active?’ Item 9 determines if the participant was sick or if any event prevented participation in normal physical activity during the 7-day recall and is not used as a part of the summary activity scores.

The psychometric properties for the PAQ-A were determined in a sample of 85 Canadian high school students (41 males and 44 females) grades 8 to 12, ages 13 to 20 (Kowalski, Crocker, & Kowalski, 1997). Convergent validity was determined among other measures: activity rating ( $r = 0.73$ ), Leisure Time Exercise Questionnaire - LTEQ ( $r = 0.57$ ), and Physical Activity Readiness - PAR ( $r = 0.59$ ). Additionally, internal consistency was

determined at 0.68 in a sample of 63 midwestern community adolescents (Paxton, Estabrooks, & Dzewaltowski, 2004). Psychometric properties were determined in the current sample for the PAQ-A: Cronbach's alpha = .889 and test-retest reliability ( $r = .736, p = 0.0001$ ), which was acceptable.

### ***Eating Behaviors***

Eating behaviors are defined as the ways in which humans use food in addition to their sociocultural affiliation with food: how food is obtained and stored, how it is prepared, how it is served and to whom, and how it is consumed (Bailey, 2006). Eating behaviors were assessed with the Eating Behavior Patterns Questionnaire (EBPQ) (Schlundt, Hargreaves, & Buchowski, 2003). This 51-item survey instrument determines eating behaviors that are predictive of fat intake in African Americans (Appendix I). Utilizing a 5-point Likert-type scale, items are scored 1 to 5, yielding a composite score of 51 to 225, with higher scores indicating higher fat intake. The EBPQ consists of six subscales: low fat eating, emotional eating, snacking on sweets, cultural/ethnic, haphazard planning, and meal skipping. The low fat eating subscale contains 14 items, yielding a score of 14 to 70, with higher scores indicating low fat eating behaviors. The emotional eating subscale contains 10 items, yielding a score of 10 to 50, with higher scores indicating a greater level of emotional eating. The snacking on sweets subscale contains 6 items, yielding a score of 6 to 30, with higher scores indicating a greater level of sweet food consumption. The cultural/lifestyle behaviors subscale contains 7 items, yielding a score of 7 to 35, with higher scores indicating a higher engagement of eating behaviors associated with cultural events. The haphazard planning subscale contains 9 items, yielding a score of 9 to 45, with higher scores indicating a lower

level of meal planning. The meal skipping subscale contains 5 items, yielding a score of 5 to 25, with higher scores indicating a greater level of meal planning.

Psychometric properties were determined in a sample of 310 African American women from diverse socioeconomic backgrounds. Internal validity and reliability were determined, and item examples for the subscales include: low fat eating (alpha = .88) ‘I buy snacks from vending machines’; snacking and convenience (alpha = .86) ‘I eat cookies, candy bars, or ice cream in place of dinner’; emotional eating (alpha = .80) ‘I eat when I am upset’; planning ahead (alpha = .71), ‘I eat a fast food restaurant at least three times a week’; meal skipping (alpha = .70), ‘I rarely eat breakfast’; and cultural/lifestyle behaviors (alpha = .78), ‘On Sunday, I eat a large meal with my family’. Psychometric properties were determined in the current sample for the EBPQ: Cronbach’s alpha = .777 and test-retest reliability ( $r = .802, p = 0.0001$ ), which was acceptable.

### ***Social Physique Anxiety***

For the purposes of the current study, social physique anxiety (SPA) is defined by the amount of anxiety the participant experiences as a result of the evaluation of his/her body in social settings. SPA was determined by The Social Physique Anxiety Scale (SPAS), which consists of 11 survey items rated on a 5-point Likert-type scale. The items are scored 1 to 5, yielding a composite score of 12 to 60, with higher scores indicating greater social physique anxiety (Appendix J). An item example includes ‘There are times when I am bothered by thoughts that other people are evaluating my weight or muscular development negatively’. Participants would be classified as low and high social physique anxiety groups according to the median of social physique anxiety values.

The psychometric properties of the SPAS were determined in a sample of 89 college subjects, 46 females and 43 males (Hart, Leary, & Rajeski, 1989). Cronbach's alpha coefficient was .90 while an 8-week test-retest reliability was .82. Internal validity has been demonstrated in current research at 0.65 while reliability was determined at a range of 0.76 - .87 (Gargari, et al., 2010; Martin, Engels, Wirth, & Smith, 1997; Niven, Fawkner, Knowles, Henretty, & Stephenson, 2009). Psychometric properties were determined in the current sample for the SPAS: Cronbach's alpha = .636 and test-retest reliability ( $r = .896, p = 0.0001$ ). The Cronbach alpha increased from .437 to .636 after item 11 was excluded in the reliability analysis, "When in a bathing suit or swimming trunks, I often feel nervous about the shape of my body." The Cronbach alpha score and test-retest reliability of the SPAS is acceptable.

In summary, instruments chosen for the current study were deemed appropriate as evidenced by their psychometric properties and plentiful empirical research utilizing each measure. Familial socialization as measured by the SIQ (McCabe & Ricciardelli, 2001), social physique anxiety as measured by SPAS, and PAQ-A have been utilized and tested extensively in the adolescent population; however, there has been limited use in adolescents of color. Scales for the current study, perceived familial ethnic socialization as measured by the SIQ (McCabe & Ricciardelli, 2001), ethnic identity as measured by the MEIM (Phinney, 1992), body image as measured by the SPAS (Hart, et al., 1990), eating behaviors as measured by the EBPQ (Schlundt et al., 2003), and physical activity as measured by the PAQ-A (Kowalski, et al., 2004) demonstrated moderate to high reliabilities, ranging from .70 to .90.



## Contextual Variables

### *Weight Status*

Weight status is defined as a measurement of risk status for life-threatening diseases based on their weight in relation to their height, central adiposity, and total overall body fat. Weight status was determined by body mass index, waist circumference, and body fat percentage.

### *Body Mass Index (BMI)*

Body mass index was assessed by height and weight. Height was measured using a Seca 217 stadiometer (Hanover, MD; [www.seca.com](http://www.seca.com)). Weight was assessed using a Tanita HD351 standing digital scale, (Arlington Heights, IL; [www.tanita.com](http://www.tanita.com)). The participants' weight and height were entered into a CDC computerized program to determine the adolescent's BMI based on their birth date and gender (accessed from <http://apps.nccd.cdc.gov/dnpabmi/>). Once their BMI was obtained, the value was graphed on a chart that determined if the adolescent was overweight or obese based on age and gender. Overweight status was determined if the adolescent's BMI was between the 85 through < 95<sup>th</sup> percentile, while obese status was defined as the adolescent's BMI  $\geq 95^{\text{th}}$  percentile (Barlow, et al., 2007; CDC 2010).

### *Waist Circumference*

Waist circumference was measured using a MyoTape Vinyl Body Tape measure manufactured by AccuFitness (Greenwood Village, CO; [www.accufitness.com](http://www.accufitness.com)). The most frequently recommended site for waist circumference measurement is the narrowest part of the waist at the umbilicus. Waist circumference is an indicator of central adiposity, which is a good predictor of abdominal fat (Katmarzyk et al., 2004). Abdominal fat is related to

development of type 2 diabetes, cardiovascular diseases, and premature death. Black males ages 15 – 17 years old with waist circumferences larger than 29.1 inches and Black females ages 15 – 17 years old with waist circumferences larger than 28.1 inches are considered at risk for obesity related diseases (Katmarzyk et al., 2004).

### ***Body Fat Composition/Analysis***

Body fat composition was measured using the Slim Guide Skinfold Caliper (Mundelin, IL; www.uniquefit1.com). All body fat measurements were taken on the right side of the participant's body at three sites.

### ***Gender, SES, Residential Status, Athletic Status, and Eating Disorder Presence***

The contextual variables of gender, SES, residential status, athletic status, and eating disorders were assessed utilizing a demographic form (Appendix E).

### **Data Collection Procedures**

The principal investigator met to discuss the study with the administrative leader of each primary health clinic, community organization, and church involving the adolescents. The meeting was instituted to discuss the study and to address any questions or concerns that the administrative leader had. Each leader received a folder containing copies of all data collection tools, informed consent forms, informational booklets, and an HIC approval letter.

The principal investigator explained the purpose of the study using a written script to adolescents who met the inclusion criteria. Adolescents wishing to participate were instructed to return the informed consent form completed by their legal (Appendix B) along with the adolescent assent form (Appendix C) prior to the start of the data collection. Demographic data that were obtained from the participants and parents included gender, age, highest level of education, zip code, crossroads of neighborhood, race/ethnicity, parental

marital status, highest level of familial education, and yearly household income (Appendix E).

The principal investigator returned to the location of participant solicitation and arranged a date and time to return for the data collection. On the date of the data collection, the principal investigator arrived 15 minutes prior to the appointed time in order to prepare the assigned area for the data collection. A study folder containing the data collection tools was placed in front of each participant along with a pencil or pen. Each folder and its contents had a study identification number, which was only known to the principal investigator. The participant sat at a table while the principal investigator explained the study. Once the study was explained and participant assent as well as parental consent was collected, the survey instrumentation was completed, then the weight status measurements of height, weight, body fat analysis, and waist circumference were obtained.

Data collection was conducted in a setting familiar to each of the participants, depending upon the location of solicitation. For the adolescents who were recruited from the primary care clinic, data collection was completed in an area designated by the office manager. In the church setting, data collection was conducted in the fellowship hall of their church or other designated area; for the adolescents who were recruited from a community organization, data collection was conducted in a classroom of the organization's central building or other designated area. For the participants obtained through social networks, data were collected at a mutually agreed upon location where the participant and principal investigator were comfortable.

The participants were asked to sit and the principal investigator read the instructions and all the items on all questionnaires aloud. After questionnaires were completed, weight measurements were obtained.

In obtaining the participants' waist circumference with a measuring tape, they were asked to point to their umbilicus. The measurement tape was then placed snugly around the area surrounding the waist at the level of umbilicus and the inches recorded.

For body fat composition, measurement was made at three sites: chest, abdomen, and thigh for the male participants and tricep, abdomen, and thigh for the female participants. All three measurements were added, then compared to a table published by Unique Fitness Concepts ([www.Uniquefit1.com](http://www.Uniquefit1.com)).

The skinfold was lifted by placing the thumb and index finger about three inches apart on a line that is perpendicular to the long axis of the skin. The skinfold was grasped firmly between the thumb and index finger of the investigator's left hand. The fold was lifted 1 cm above the site to be measured. The jaws of the caliper were placed perpendicular to the fold approximately 1 cm below the thumb and index finger.

As stated previously, the measuring sites for the males included the chest, abdomen, and thigh. For the male chest site, the direction of the fold is diagonal and was taken half the distance between the anterior axillary line and the nipple. The male abdominal site is a vertical fold taken 2 cm to the side of the umbilicus. Both male and female thigh measuring sites are the same, where the vertical fold is taken on the anterior aspect of the thigh midway between the inguinal crease and proximal border of the patella. The participant was instructed to shift their body weight onto their left foot. In addition to the thigh, the measuring sites for the females included the triceps and waist. For the female triceps

measuring site, the direction of the fold is vertical and is taken midway between the shoulder and elbow joint, on the center of the back of the arm. The female waist side is diagonal above the iliac crest along the anterior axillary line.

Data collection sessions lasted 30 to 60 minutes. Upon completion, the participants received a \$10.00 gift card. As stated previously, 15% of the sample were randomly assigned to return in two weeks to retake the surveys and measurement as a part of the test-retest reliability establishment. These selected participants received another \$10.00 gift card upon repeating completion of the survey.

### **Data Management and Analysis**

A tracking system was established to ensure that duplicate participants were not ascertained for the study. The tracking system was comprised of a database that included the first initial, last initial, birth date, and initial for recruitment site. The key for the recruitment site included the church (FC), community organization (NSO), community clinic (DCHC), and social network (SN). For example, if a hypothetical participant Joe Thomas has a birthday of June 7<sup>th</sup> and was recruited from the social network, his identifier would be JT67SN. In the instance of duplication, a method of addressing the issue was developed as follows: when the primary investigator observed a duplicate identifier based on their initials, she further investigated and compared the files to determine duplication. If duplication occurred, the duplicate information was discarded. Although the method was established, duplication did not occur in the current study. If data were missing, the item was left blank during data entry. One copy of the consent, assent, and completed surveys were saved by the primary investigator and stored in a designated secure location. This location is a locked

cabinet in the office of the principal investigator's dissertation chair's research office at Wayne State University College of Nursing.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 18.0. Items were manually reviewed and corrected if errors were discovered. In order to understand and summarize the data, descriptive statistics were performed on all variables. Sample characteristics of gender, SES, residential status, weight status, athletic status, and eating disorder diagnosis were described using descriptive statistics, which included frequencies along with measures of central tendency (mean, median, mode). Kurtosis, symmetry, skewness, and identification of outliers were also included. In order to test each of the hypotheses, the following statistical tests were utilized as identified by italics: Primary study aim: To examine the relationships among perceived familial socialization, ethnic identity, social physique anxiety, physical activity, and eating behaviors in African American adolescents.

Working Hypothesis #1a: Perceived familial socialization is related to social physique anxiety, physical activity, and eating behavior patterns in African American adolescents.

*The Pearson Product Moment Correlation statistical test was utilized to determine the relationships among the variables of perceived familial socialization, social physique anxiety, physical activity, and eating behavior patterns.*

Working Hypothesis #1b: Ethnic identity is related to social physique anxiety, physical activity, and eating behaviors in African American adolescents.

*The Pearson Product Moment Correlation statistical test was utilized to determine the relationships among the variables of ethnic identity, social physique anxiety, physical activity, and eating behavior patterns.*

**Secondary study aim:** To examine gender, SES, and residential status differences among weight status, physical activity levels, eating behaviors, and social physique anxiety in African American adolescents.

Working Hypothesis #2a: African American females will exhibit a higher amount of body fat, increased body mass index, and greater waist circumference than African American males.

*An Independent Sample t test was utilized to compare the mean scores of body fat, body mass index, and waist circumference between females and males .*

Working Hypothesis #2b: African American females will be less physically active, consume diets higher in fat and calories, and experience more social physique anxiety than African American males.

*An Independent Sample t test was utilized to compare the mean scores of physical activity, eating behavior patterns, and social physique anxiety between females and males.*

Working Hypothesis #2c: African American adolescents with a lower socioeconomic status will exhibit a higher amount of body fat, increased body mass index, and greater waist circumference than African American adolescents with a higher socioeconomic status.

*An Independent Sample t test was utilized to compare the mean scores of body fat, body mass index, and waist circumference between African American adolescents of lower and higher socioeconomic status.*

Working Hypothesis #2d: African American adolescents with a lower socioeconomic status will be less physically active, eat diets higher in fat, and experience less social physique anxiety than African American adolescents with a higher socioeconomic status.

*An Independent Sample t test was utilized to compare the mean scores of physical activity, eating behavior patterns, and social physique anxiety between African Americans of lower and higher socioeconomic status.*

Working Hypothesis #2e: Inner-city African American adolescents will exhibit a higher amount of body fat, increased body mass index, and greater waist circumference than metropolitan African American adolescents.

*An Independent Sample t test was utilized to compare the mean scores of body fat, body mass index, and waist circumference between inner city and metropolitan African American adolescents .*

Working Hypothesis #2f: Inner-city African American adolescents will be less physically active, eat diets higher in fat, and experience less social physique anxiety than metropolitan African American adolescents.

*An Independent Sample t test was utilized to compare the mean scores of physical activity, eating behavior patterns, and social physique anxiety between inner city and metropolitan African American adolescents .*



## CHAPTER 5

### Results

This chapter reports the results of the statistical analysis of the study. The initial section includes descriptive statistics of the sample and of the variables studied. Descriptive statistics are provided for the covariates identified in the study: weight status, gender, socioeconomic status, and residential status. In the next section, the results from the correlations and *t* tests conducted on the hypotheses are reported and explained. Lastly, a summary of study findings is provided.

#### Characteristics of the Sample

Table 1 presents the characteristics of the sample. Of the 145 respondents who completed the study, 140 or 96.6% identified as African American, four or 2.8% identified as Mixed, and one or 0.7% identified as Hispanic/Latino. Eighty-eight or 60.7% were female and fifty-seven or 39.3% were male. The respondent's ages ranged from 15 to 17 years; 48 or 33.1% were 15 years old, 53 or 36.3% were 16 years old, and 44 or 30.3% were 17 years old. One hundred and sixteen or 79.5% of the respondents were from inner city Detroit and 28 or 19.2% of the respondents were from metropolitan Detroit. Ninety two or 63.4% respondents qualified for free lunch but 53 or 36.6% did not qualify. Sixty-eight or 47.2% of the respondents were members of sports teams while 76 or 52.8% of the respondents were non-members of sports teams.

**Table 1. Subject Characteristics (n = 145)**

| Characteristics                | Number | %    |
|--------------------------------|--------|------|
| <b>Race/Ethnicity</b>          |        |      |
| African American               | 140    | 96.6 |
| Hispanic/Latino                | 1      | 0.7  |
| Mixed                          | 4      | 2.8  |
| <b>Gender</b>                  |        |      |
| Male                           | 57     | 39.3 |
| Female                         | 88     | 60.7 |
| <b>Age</b>                     |        |      |
| 15 years                       | 48     | 33.1 |
| 16 years                       | 53     | 36.3 |
| 17 years                       | 44     | 30.3 |
| <b>Residential Status</b>      |        |      |
| Inner City Detroit             | 116    | 79.5 |
| Metropolitan Detroit           | 28     | 19.2 |
| <b>Free Lunch</b>              |        |      |
| Qualified for Free Lunch       | 92     | 63.4 |
| Did Not Qualify for Free Lunch | 53     | 36.6 |
| <b>Sports Status</b>           |        |      |
| Member of Sports Team          | 68     | 47.2 |
| Non-Member of Sports Team      | 76     | 52.8 |

Table 2 presents other characteristics of the sample: 145 respondents completed weight measurements; 142 respondents completed body fat measurements. The mean body fat of the respondents was 23.65mm (SD = 10.56), while the mean body mass index (BMI) was 25.79 kg/m<sup>2</sup> (SD = 6.46). The mean waist circumference of the respondents was 34.77cm (SD = 10.97), while the mean weight was 160.52 (SD = 44.08).

**Table 2. Other Subject Characteristics (n = 145)**

| Characteristics                      | Mean (SD)      |
|--------------------------------------|----------------|
| Body Fat Composition (mm) (n= 142)   | 23.65 (10.56)  |
| Body Mass Index (kg/m <sup>2</sup> ) | 25.79 (6.46)   |
| Waist Circumference (in)             | 34.77 (10.97)  |
| Weight (lbs)                         | 160.52 (44.08) |

### Major Study Variables

The major study variables included perceived familial socialization, ethnic identity, eating behaviors patterns, physical activity, and social physique anxiety. The primary study aim was to examine the relations among these variables in the sample of African American adolescents.

Table 3 presents the means and standard deviations of the major study variables' scores. The mean eating behavior pattern score was 147.51 (SD = 21.22), with an inclusive range of 51 to 225. The mean ethnic identity score was 44.09 (SD = 6.10), with an inclusive

range of 20 to 80. The mean physical activity score was 33.49 (SD = 17.73), with an inclusive range of 0 to 145. The mean sociocultural influences score: father was 6.05 (SD=5.36), with an inclusive range of 0 to 45. The mean sociocultural influences score: mother was 4.78 (SD = 3.92), with an inclusive range of 0 to 45. The mean social physique anxiety score was 30.64 (SD = 5.51), with an inclusive range of 11 to 55.

**Table 3. Means and Standard Deviations for the Major Study Variable Scores (n = 145)**

| Score                                  | <u>M</u> | <u>SD</u> | <u>Inclusive Range</u> |
|--|----------|-----------|------------------------|
| Eating Behavior Pattern Score          | 147.51   | 21.22     | 51 - 255               |
| Multi-Ethnic Identity Score            | 44.09    | 6.10      | 20 - 80                |
| Physical Activity Score                | 33.49    | 17.73     | 0 - 145                |
| Sociocultural Influences Score: Father | 6.05     | 5.36      | 0 - 45                 |
| Sociocultural Influences Score: Mother | 4.78     | 3.92      | 0 - 45                 |
| Social Physique Anxiety Score          | 30.64    | 5.51      | 11 - 55                |

Hypothesis 1a proposed that perceived familial socialization was related to social physique anxiety, physical activity, and eating behaviors in African American adolescents. This hypothesis was tested through the computation of correlations among the scores of a)

sociocultural influences – father, b) sociocultural influences – mother, c) physical activity, d) eating behavior patterns, and e) social physique anxiety.

Hypothesis 1b proposed that ethnic identity was related to social physique anxiety, physical activity, and eating behaviors in African American adolescents. The hypothesis was tested through the computation of the correlations among the scores of a) ethnic identity, b) eating behavior patterns, c) physical activity, and d) social physique anxiety.

Table 4 presents the correlations of the major study variables. The father's sociocultural influences were significantly related to physical activity:  $r = 0.21, p = 0.018$ ; and social physique anxiety:  $r = 0.20, p = 0.009$ , but not to eating behavior patterns:  $r = 0.14, p = 0.109$ . The mother's sociocultural influences were significantly related to eating behavior patterns:  $r = 0.21, p = 0.002$ ; physical activity levels:  $r = 0.18, p = 0.033$ ; and social physique anxiety:  $r = 0.29, p < .0001$ . All significant relationships demonstrated weak correlations. Ethnic identity was not significantly related to eating behavior patterns:  $r = 0.04, p = 0.770$ ; physical activity:  $r = 0.06, p = 0.742$ ; sociocultural influences – father:  $r = -0.04, p = 0.548$ ; or to social physique anxiety:  $r = 0.11, p = 0.380$ . Other non-significant relationships included physical activity and eating behavior patterns:  $r = -0.01, p = 0.476$ ; social physique anxiety:  $r = -0.04, p = 0.521$ .

Significant relationships not related to the hypotheses were: eating behavior patterns and social physique anxiety:  $r = 0.41, p < .0001$ , demonstrating a moderate correlation; ethnic identity and sociocultural influences – mother:  $r = 0.21, p = 0.045$ , demonstrating a weak correlation; and sociocultural influences – mother and sociocultural influences – father:  $r = 0.67, p < .0001$ , demonstrating a strong correlation.

**Table 4. Intercorrelations for the Major Study Variables**

| Variable                             | 1     | 2     | 3     | 4     | 5      | 6      |
|--------------------------------------|-------|-------|-------|-------|--------|--------|
| 1. Eating Behavior Patterns          | ----- | 0.04  | -0.01 | 0.19  | 0.21*  | 0.41** |
| 2. Ethnic Identity                   |       | ----- | 0.06  | -0.04 | 0.18*  | 0.11   |
| 3. Physical Activity                 |       |       | ----- | 0.21* | 0.18*  | -0.04  |
| 4. Sociocultural Influences - Father |       |       |       | ----- | 0.67** | 0.20*  |
| 5. Sociocultural Influences - Mother |       |       |       |       | -----  | 0.29** |
| 6. Social Physique Anxiety           |       |       |       |       |        | -----  |

\* $p < .05$ . \*\* $p < .001$ .

The secondary study aim was to examine gender, SES, and residential status differences among weight status, physical activity levels, eating behaviors, and social physique anxiety in the African American adolescents.

Hypothesis 2a proposed that the African American females would exhibit a higher amount of body fat, increased body mass index, and greater waist circumference than the African American males. The hypothesis was tested through a  $t$  test computation to determine gender differences in weight measurement.

Table 5 presents the gender differences in weight measurements. A significant difference was present between the males and females in regard to weight,  $t = 2.00$ ,  $p = 0.047$ , and amount of body fat,  $t = -9.37$ ,  $p < .0001$ , but there was no significant difference in body mass index,  $t = 0.96$ ,  $p = 0.339$ , or waist circumference,  $t = -0.54$ ,  $p = 0.585$ .

**Table 5. Gender Differences in Weight Measurement**

| Weight Measurement                   | Male              | Female            | Mean Difference | $t$ (p value) |
|--------------------------------------|-------------------|-------------------|-----------------|---------------|
|                                      | <u>M</u><br>(SD)  | <u>M</u><br>(SD)  |                 |               |
| Weight (lbs)                         | 169.23<br>(47.97) | 154.33<br>(40.45) | 14.90           | 2.00 (0.047)  |
| Body Mass Index (kg/m <sup>2</sup> ) | 25.07<br>(6.27)   | 26.13<br>(6.53)   | -1.06           | -0.96 (0.339) |
| Body Fat Composition (mm)            | 15.20<br>(8.22)   | 28.62<br>(8.44)   | -13.42          | -9.37 (0.000) |
| Waist Circumference (in)             | 35.37<br>(12.08)  | 34.34<br>(10.31)  | 1.03            | 0.55 (0.585)  |

Hypothesis 2b proposed that the African American females would be less physically active, consume diets higher in fat and calories, and experience more social physique anxiety than the African American males. This hypothesis was tested through a  $t$  test computation to determine gender differences in the major study variables.

Table 6 presents the gender differences in the major study variables. There was a significant difference between the African American females and the African American

males in regard to the major study variables of eating behaviors,  $t = -2.36$ ,  $p = 0.019$ , and social physique anxiety,  $t = -3.97$ ,  $p < .0001$ , but there was no significant difference in ethnic identity,  $t = 0.66$ ,  $p = 0.509$ ; father influence,  $t = 1.72$ ,  $p = 0.088$ ; mother influence,  $t = 0.37$ ,  $p = 0.709$ ; or physical activity,  $t = 1.36$ ,  $p = 0.175$ .

**Table 6. Gender Differences in the Major Study Variables**

| Major Variable          | Male              | Female           | Mean Difference | $t$ (p value) |
|-------------------------|-------------------|------------------|-----------------|---------------|
|                         | <u>M</u><br>(SD)  | <u>M</u><br>(SD) |                 |               |
| Ethnic Identity         | 43.68<br>(6.36)   | 44.38<br>(5.98)  | 0.70            | -.66 (0.509)  |
| Father Influence        | 7.00<br>(6.26)    | 5.36<br>(4.59)   | 1.64            | 1.72 (0.088)  |
| Mother Influence        | 4.91<br>(4.19)    | 4.66<br>(3.77)   | 0.25            | 0.37 (0.709)  |
| Eating Behaviors        | 142.30<br>(21.80) | 150.70<br>(0.34) | 8.40            | -2.36 (0.019) |
| Physical Activity       | 35.98<br>(17.82)  | 31.86<br>(17.76) | 4.12            | 1.36 (0.175)  |
| Social Physique Anxiety | 28.44<br>(3.91)   | 31.97<br>(5.92)  | 3.53            | -3.97 (0.000) |

Hypothesis 2c proposed that the African American adolescents with a lower socioeconomic status would exhibit a higher amount of body fat, increased body mass index, and greater waist circumference than the African American adolescents with a higher



socioeconomic status. This hypothesis was tested through a  $t$  test computation to determine the socioeconomic differences in weight measurements.

Table 7 presents the socioeconomic differences in weight measurements. There was a significant difference between the participants with a lower socioeconomic status and those with a higher socioeconomic status in regard to body mass index,  $t = -2.57$ ,  $p = 0.011$ ; but there was no significant difference in weight,  $t = -1.49$ ,  $p = 0.139$ ; amount of body fat,  $t = -1.65$ ,  $p = 0.102$ ; or waist circumference,  $t = -0.81$ ,  $p = 0.422$ .

**Table 7. Socioeconomic Status Differences in Weight Measurement**

| Socioeconomic Status                 | <u>No Free Lunch</u> | <u>Free Lunch</u> | <u>Mean Difference</u> | <u><math>t</math> (p value)</u> |
|--------------------------------------|----------------------|-------------------|------------------------|---------------------------------|
|                                      | <u>M</u>             | <u>M</u>          |                        |                                 |
| Weight (lbs)                         | 152.90<br>(37.93)    | 164.21<br>(46.75) | 11.31                  | -1.49 (0.139)                   |
| Body Mass Index (kg/m <sup>2</sup> ) | 23.92<br>(4.82)      | 26.74<br>(6.98)   | 2.82                   | -2.57 (0.011)                   |
| Body Fat Composition (mm)            | 21.42<br>(10.20)     | 24.45<br>(10.73)  | 3.03                   | -1.65 (0.102)                   |
| Waist Circumference (in)             | 33.76<br>(10.69)     | 35.30<br>(11.20)  | 1.54                   | -0.81 (0.422)                   |

Hypothesis 2d proposed that the African American adolescents with a lower socioeconomic status would be less physically active, eat diets higher in fat, and experience

less social physique anxiety than the African American adolescents with a higher socioeconomic status. This hypothesis was tested through a *t* test computation to determine the socioeconomic differences in the major study variables.

Table 8 presents the socioeconomic differences in the major study variables. There was a significant difference between participants with a lower socioeconomic status and participants with a higher socioeconomic status in regard to the major study variables of eating behaviors,  $t = -2.23$ ,  $p = 0.447$ , but there was no significant difference in ethnic identity,  $t = 0.52$ ,  $p = 0.604$ ; father influence,  $t = -0.46$ ,  $p = 0.650$ ; mother influence,  $t = 1.13$ ,  $p = 0.259$ ; physical activity,  $t = -1.56$ ,  $p = 0.121$ ; or social physique anxiety,  $t = -0.76$ ,  $p = 0.447$ .

**Table 8. Socioeconomic Status Differences in the Major Study Variables**

| Major Variable             | <u>No Free</u>    | <u>Free</u>       | <u>Mean</u>       | <u>t (p value)</u> |
|----------------------------|-------------------|-------------------|-------------------|--------------------|
|                            | <u>Lunch</u>      | <u>Lunch</u>      |                   |                    |
|                            | <u>M</u>          | <u>M</u>          | <u>Difference</u> |                    |
|                            | <u>(SD)</u>       | <u>(SD)</u>       |                   |                    |
| Ethnic Identity            | 44.45<br>(5.96)   | 43.90<br>(6.23)   | 0.55              | 0.52 (0.604)       |
| Father<br>Influence        | 5.76<br>(5.29)    | 6.20<br>(5.46)    | 0.44              | -0.46 (0.650)      |
| Mother<br>Influence        | 5.25<br>(4.55)    | 4.47<br>(3.52)    | 0.78              | 1.13 (0.259)       |
| Eating<br>Behaviors        | 142.28<br>(20.14) | 150.35<br>(21.42) | 8.07              | -2.23 (0.027)      |
| Physical<br>Activity       | 30.45<br>(17.64)  | 35.22<br>(17.81)  | 4.77              | -1.56 (0.121)      |
| Social Physique<br>Anxiety | 31.04<br>(5.35)   | 30.32<br>(5.58)   | 0.72              | -0.76 (0.447)      |

Hypothesis 2e proposed that the inner-city African American adolescents would exhibit a higher amount of body fat, increased body mass index, and greater waist circumference than the metropolitan African American adolescents. This hypothesis was tested through a *t* test computation to determine the residential status differences in weight measurement.

Table 9 presents the residential differences in weight measurements. There was a significant difference between the inner city African American participants and the

metropolitan African American participants in regard to weight,  $t = 2.07$ ,  $p = 0.040$ , and body mass index,  $t = 2.24$ ,  $p = 0.027$ , but there was no significant difference in body fat amount,  $t = -0.13$ ,  $p = 0.900$ , or waist circumference,  $t = 0.22$ ,  $p = 0.830$ .

**Table 9. Residential Status Differences in Weight Measurement**

| Weight Measurement                   | <u>Inner City</u> | <u>Metropolitan</u> | <u>Mean Difference</u> | <u>t (p value)</u> |
|--------------------------------------|-------------------|---------------------|------------------------|--------------------|
|                                      | <u>M</u><br>(SD)  | <u>M</u><br>(SD)    |                        |                    |
| Weight (lbs)                         | 163.74<br>(46.80) | 144.68<br>(26.07)   | 19.06                  | 2.07 (0.040)       |
| Body Mass Index (kg/m <sup>2</sup> ) | 26.31<br>(6.87)   | 23.31<br>(3.54)     | 3.00                   | 2.24 (0.027)       |
| Body Fat Composition (mm)            | 23.39<br>(10.98)  | 23.68<br>(9.01)     | 0.29                   | -0.13 (0.900)      |
| Waist Circumference (in)             | 34.86<br>(9.70)   | 34.36<br>(15.61)    | 0.50                   | 0.22 (0.830)       |

Hypothesis 2f proposed that the inner-city African American adolescents would be less physically active, eat diets higher in fat, and experience less social physique anxiety than the metropolitan African American adolescents. The hypotheses were tested through a computation of a series of  $t$  tests to determine the residential status differences in the major study variables.

Table 10 presents the residential status differences in the major study variables. There was a significant difference between the inner city participants and the metropolitan

participants in regard to the major study variables of physical activity:  $t = -2.39, p = 0.018$ , but there were no significant differences in ethnic identity,  $t = -0.29, p = 0.767$ ; father influence,  $t = -0.79, p = 0.426$ ; mother influence,  $t = -1.29, p = 0.199$ ; eating behaviors,  $t = 0.44, p = 0.658$ ; or social physique anxiety,  $t = -1.72, p = .088$ .

**Table 10. Residential Status Differences in the Major Variables**

| Major Variable          | <u>Inner City</u> | <u>Metropolitan</u> | <u>Mean Difference</u> | <u>t (p value)</u> |
|-------------------------|-------------------|---------------------|------------------------|--------------------|
|                         | <u>M (SD)</u>     | <u>M (SD)</u>       |                        |                    |
| Ethnic Identity         | 43.97<br>(6.11)   | 44.35<br>(6.21)     | -0.38                  | -0.29 (0.767)      |
| Father Influence        | 5.84<br>(5.43)    | 6.78<br>(5.32)      | -0.94                  | -0.79 (0.426)      |
| Mother Influence        | 4.54<br>(3.73)    | 5.61<br>(4.68)      | -1.07                  | -1.29 (0.199)      |
| Eating Behaviors        | 147.82<br>(21.49) | 145.82<br>(20.93)   | 2.00                   | 0.44 (0.658)       |
| Physical Activity       | 31.50<br>(16.92)  | 40.21<br>(18.68)    | - 8.71                 | -2.39 (0.018)      |
| Social Physique Anxiety | 30.20<br>(5.23)   | 32.18<br>(6.37)     | -1.98                  | -1.72 (0.088)      |

### **Additional Findings**

Additional findings exclusive from of the specific aims and hypotheses were included in data analysis. As presented in Table 7, when the difference in body fat between adolescents who qualified for free or reduced lunch and adolescents who did not qualify for free or reduced lunch were compared using ANCOVA were compared and controlling for gender, the mean difference was statistically significant ( $F = 4.4, p = 0.038$ ).

Also, utilizing a multiple regression model, the three independent variables of maternal influence, paternal influence, and ethnic identity were regressed onto the dependent variables of eating behaviors, social physique anxiety, and physical activity. The only model that was statistically significant was maternal influence, paternal influence, and ethnic identity on social physique anxiety with maternal influence accounting for the most variance ( $b = .244, t = 2.078, p = .040$ ).

### **Summary of the Findings**

The study hypotheses were designed to examine the association among perceived parental socialization, ethnic identity, eating behaviors, physical activity, and social physique anxiety in a sample of African American middle adolescents ages 15 to 17 years. Differences based on the factors of SES, gender, and residential status provided the context for the analysis. Several significant results were discovered in the study. Perceived parental socialization is associated with eating behaviors, physical activity, and social physique anxiety; specifically maternal influences on eating behaviors, physical activity, and body image were related to social physique anxiety, while paternal influences on eating behaviors, physical activity, and body image were related to eating behavior patterns and social

physique anxiety. Gender differences exist in regard to eating behaviors, social physique anxiety, weight, and body fat. Socioeconomic status differences exist in regard to eating behavior patterns and body mass index. Residential status differences exist in regard to physical activity levels, weight, and body mass index. These findings will be further explicated in the discussion chapter of the study.

## CHAPTER 6

### Discussion

In this chapter, the sample characteristics and key findings of the study are discussed according to each specific aim. A comparison of the key findings with the existing literature about the relationships among familial influences, ethnic identity, physical activity, social physique anxiety, and eating behavior patterns is also presented. Additionally, the appropriateness of the social ecological approach as a theoretical framework for the current study is illustrated. The study's strengths and limitations are identified as well as implications for clinical practice and directions for future research.

### Sample Characteristics

The final study included 145 African American middle adolescents ages 15 to 17 years. In the current study, approximately 40% of the sample were male. This differed from the majority of reviewed studies in that they used female participants as the sole focus of the research phenomenon of norm related weight control behaviors. Participants from both the metropolitan area and inner city were also included in the current study. The metropolitan area was defined as the surrounding cities and townships of the inner city limits. This was more encompassing than the reviewed studies in which the focus was only on inner city African American adolescents. Additionally, this study differentiated the socioeconomic status of the participants as indicated by their qualification for free or reduced-cost lunch services in the school setting. In the reviewed studies, a description of the sample's socioeconomic status was not illustrated in this manner. Also, approximately 50% of the current sample were members of organized sports teams. Most of the reviewed research studies did not assess sports status as an attribute of the sample, which is an important



confounding variable in the examination of norm related weight control behaviors. Lastly, from a developmental perspective, the current sample displayed an adequate representation of middle adolescence with approximately one third being 15 years old, one third 16 years old, and one third 17 years old. Most of the published research studies had focused on early or late adolescence, but had not included a representative distribution of ages throughout the developmental age span. The current study represented the heterogeneity that spans the African American culture related to the variables of gender, socioeconomic status, residential status, and age. This approach to enhance the generalizability of the study allows for a comprehensive application of the current study findings to tailor an intervention that will be developmentally appropriate and culturally sensitive in order to decrease the obesity disparities occurring in the African American adolescent population.

### **Major Study Variables**

In this section, the key study findings are discussed according to the specific aims. Additionally, these findings are compared to the existing published literature related to the major study variables. The primary study aim was to examine the relationships among the variables of perceived familial socialization, ethnic identity, social physique anxiety, physical activity, and eating behaviors in African American adolescents. In this study, familial socialization comprises both paternal and maternal influences on the adolescents' physical activity, eating behaviors, and body image; hence, these influences are discussed simultaneously as they relate to the aforementioned norm weight related behaviors and cognitions. The secondary study aim was to examine gender, socioeconomic status, and residential status differences among weight status, physical activity levels, eating behaviors, and social physique anxiety in African American adolescents.

### ***Primary Study Aim***

In order to discuss the relationships among the major study variables, a discussion of how the participants scored in the measurements of these variables is given first. Despite the fact that approximately half of the sample identified themselves as members of an organized sports team, the average physical activity levels were relatively low as measured by the Physical Activity Questionnaire – Adolescent Version (Kowalski, et al., 2004). Social physique anxiety was moderately high within this sample, as measured by the Social Physique Anxiety Scale (Hart, 1989). Eating behavior were high in fat and calories in the final sample, as measured by the Eating Behavior Pattern Questionnaire (Schlundt, et al., 2003). Overall, the sample identified moderately with being African American as assessed by Phinney's Multi Ethnic Identity Measure (1992).

Although significant relationships were illustrated in the current study among perceived familial influences and norm related weight control behaviors, the final sample scored fairly low on both the Sociocultural Influences Questionnaire – Mother (SIQ – M) and Sociocultural Influences Questionnaire – Father (SIQ – F) (McCabe, et al., 1992). However, the sample scored higher on the father's sociocultural influences questionnaire than the mother's sociocultural influences questionnaire, suggesting that father figures have more of an association with eating behaviors, physical activity, and body image in these adolescents than their mothers.

The current study demonstrated that father figures and mother figures are associated with physical activity levels in African American adolescents. Specifically, the more that the father figure or mother figure attempted to change the adolescents' personal weight status and tease them about it, the more engaged the adolescents were in physical activity.

Researchers have demonstrated similar findings. Wood and colleagues (2003) found that adolescents who perceived that their physical activity behaviors were unimportant to their parents were less likely to have positive attitudes or intentions toward physical activity. Harris (1995) demonstrated a similar finding in which fathers influenced physical fitness via their educational level and high levels of social self-esteem. Lastly, in the published literature, social support as a parental influence was related to physical activity levels. Ammouri and colleagues (2007) found that adolescent females who reported a strong relationship with their parents also reported higher exercise participation scores. Ries and colleagues (2008) and Lown and colleagues (2008) reported similar findings.

Additionally, the current study found that father figures and mother figures are associated with social physique anxiety. Particularly, the more the father figure or mother figure attempted to change their adolescents' personal weight status and teased them regarding their muscularity, the more social physique anxiety the African American adolescent experienced. A similar finding was illustrated in a study by Levinson and colleagues (1986) in which strong parental influences were a powerful factor in the development of body image, a construct similar to social physique anxiety. Additionally, Flynn and colleague (1996) and Brown and colleagues (1995) demonstrated that a mother's perception of her daughter's body was related to the development of the African American adolescent female's body image. Although researchers have demonstrated parental influences on body image, none have been published that demonstrate the relationship between parental influences and social physique anxiety in African American adolescents. Thus, the current study is one of the first to describe this phenomenon in this population.

Interestingly, in this study, only mother figures were associated with eating behavior patterns in the African American adolescents. Precisely, the more that the mother attempted to change her own personal weight status and teased her adolescent regarding their muscularity and the amount of food consumed on a daily basis, the more high fat, high caloric food the adolescent consumed. These findings are consistent with published studies by Tibbs and colleagues (2001) and Kelly and colleagues (2005), which determined that African American parental role modeling and encouragement of healthful eating behavior patterns are related to the adolescents' eating behavior patterns.

In the current study, ethnic identity was not significantly related to eating behavior patterns, physical activity, or social physique anxiety. The findings from the current study are the first of their kind to be reported based on the review of literature, so there is no basis for comparison.

### ***Secondary Study Aim***

As stated previously, the secondary study aim was to examine gender, socioeconomic status, and residential status differences for weight status, physical activity levels, eating behaviors, and social physique anxiety in African American adolescents.

#### **Weight status.**

In the current study, weight status was obtained through the following measurements: a) waist circumference, b) body mass index, and c) body fat composition. In general, the final sample was classified as overweight per body mass index with a high body fat percentage. Waist circumference was surprisingly normal since adult standards were used, as waist circumference standards have not been developed for adolescents. The findings related to body mass index were similar to the published studies of African American adolescents

(Bhuiyan, et al., 2003). The current study is one of the first to describe waist circumference and body fat composition in African American adolescents as a weight status measurement. Because there is a lack of published research on body fat composition in African American adolescents ages 15 to 17, there is no basis of comparison.

The current study found that female participants were more overweight than their male counterparts in terms of body mass index and body fat composition. This finding is consistent with the literature, specifically body mass index. The findings from the current study are consistent with the landmark Bogalusa Heart Study, which found that African American female adolescents possessed the highest body mass index compared to other groups (Bhuiyan, et al. 2003). Published research describing body fat composition in African American adolescents has not been found in the literature. In regard to waist circumference, males in the current study had a larger waist circumference than the females. Research describing waist circumference as a weight measurement in African American male adolescents was also not found in the literature; however, the average waist circumference of the African American female adolescents of the current study was larger than African American female adolescents from other published studies measuring waist circumference as a weight measurement (Camhi et al., 2008).

Lower socioeconomic status African American adolescents were more overweight than African American adolescents of a higher socioeconomic status as measured by body mass index, body fat composition, weight, and waist circumference. This finding is consistent with the published literature that found that African Americans with a lower SES are more overweight than their higher SES counterparts (Miech, et al., 2006; Neumark-Sztainer, et al., 2002; Wang, et al., 2006, and Zhang, et al., 2003). Again, overweight status

in these studies was based solely on body mass index, non inclusive of body fat composition and waist circumference.

Inner city participants were classified as overweight compared to their metropolitan counterparts as measured by weight, body mass index, and waist circumference. The findings in the current study are consistent with published studies. Based on body mass index values, Alm and colleagues (2008) found that African American adolescents of a lower socioeconomic status were more obese than metropolitan African American adolescents in their assessment of barriers and facilitators to achieving behavior goals in inner city adolescents.

#### **Physical activity.**

The females were less physically active than the males in the current study. This finding is similar to studies conducted by Robbins and colleagues (2004) and Downs and colleagues (2007) who found that males are more physically active than females. Lower socioeconomic status African American adolescents were more physically active than higher socioeconomic status in the current study, while inner city participants were less physically active than their metropolitan counterparts. This study is the first to examine physical activity among African American adolescents in the context of residential status and socioeconomic status, so there is no basis for comparison.

#### **Social physique anxiety.**

The females demonstrated more social physique anxiety than the males. In comparing the current study with the existing literature, the findings are indeed similar. Haggard and colleagues (2009) found that females experienced a higher level of social physique anxiety than males. Lower socioeconomic status participants demonstrated less

social physique anxiety than higher socioeconomic status participants. Additionally, inner city participants experienced less social physique anxiety than metropolitan participants. Both of these findings are the first of their kind to be reported; therefore, there is no basis for comparison.

### **Eating behavior patterns.**

The females in this study consumed diets higher in fat and calories than their male counterparts. This finding is consistent with a study conducted by Downs and colleagues. (2007) that demonstrated that males scored lower on negative eating attitudes compared with females. Lower socioeconomic status participants in the current study consumed diets higher in fat and calories than higher socioeconomic status participants, while inner city participants consumed diets higher in fat and calories than metropolitan participants. Regarding socioeconomic status and residential status, the current study is the first to describe the phenomenon, so there is no basis for comparison.

### **Study Strengths and Limitations**

There were three sources of limitations to this study, as well as certain strengths.

#### **Sample**

Although the sample size for this study was based on an adequate amount of power and effect to determine significant relationships among the variables, the size of the convenience sample was modest. However, utilizing male and female African Americans from different socioeconomic and residential statuses as well as different community sites increased the generalizability of the results to other African American adolescents. In juxtaposition, limiting the sample to African American middle adolescents may have limited the generalizability of the findings to other ethnicities and age groups.

### **Source of Bias**

Measurement was self report and on some occasions, the adolescents needed their parental figure to help them with physical activity recall, especially as it related to sports practice dates and various other physical activities throughout the week. Despite the fact that weight control behavior and cognition research commonly use self report, the method can introduce a source of bias, especially if parents were needed to assist the adolescents' recall of their behaviors.

Additionally, racial concordance was a method utilized during the data collection to decrease bias, specifically when assessing behaviors and attitudes focused on ethnicity or race. For the current study, the principal investigator was the same race and ethnicity as the final sample.

### **Instrumentation and Measurement**

The degree of reliability and validity of the study instrumentation in some cases strengthened it and in other cases, limited it. The internal consistency of each instrument, using Cronbach's alpha, was determined as well as test-retest reliability statistics. However, the design of the study utilized questionnaires that had not been previously tested with African American adolescents. The only instrument that had been tested in the African American adolescent population was the Multi Ethnic Identity Measure (Phinney, 1992), which in this sample yielded an adequate Cronbach's alpha above .70 and test-retest reliability statistic above .70. Interestingly, the Physical Activity Questionnaire – Adolescent Version (PAQ-A) yielded the highest internal consistency with a Cronbach's alpha above .70 and test-retest reliability above .70 (Kowalski, et al., 2002); whereas the Social Physique Anxiety Scale yielded the lowest Cronbach's alpha above .30, but the highest test-retest



reliability statistic equaling close to .90. Schlundt's (2004) Eating Behavior Patterns Questionnaire (EBPQ) demonstrated a Cronbach's alpha score above .70 with a test-retest reliability score above .80. The Sociocultural Influences Questionnaire – Father (SIQ – F) demonstrated internal consistency scores above .70 and test-retest reliability above .60, while the Sociocultural Influences Questionnaire – Mother (SIQ-M) demonstrated internal consistency scores above .60 and test-retest reliability above .50 (McCabe, 2001). Based on these psychometric test results for the study sample, the results from the Social Physique Anxiety (SPA) Scale and Sociocultural Influences Questionnaire-Mother and Father should be interpreted with care because of the lack of reliability with this sample. Additionally, concerns with the SIQ-M and SIQ-F include the assessment of the maternal and paternal points of reference when completing the questionnaire. Identification of an uncle, father, brother, or stepfather, for instance, as the point of reference would be helpful in the analysis and translation of the findings into future programs and interventions to decrease the obesity epidemic in this population.

In addition to the limitations just described, during the data collection, many of the participants could not comprehend some of the words included on the SPA scale or did not fully understand the reverse coded questions of the same scale. Based on the psychometric properties of the scales used with this sample and the participant difficulties with completing some of the scales, it is apparent that further instrument development, modification, and testing is essential in order to fully describe and explain weight control behaviors and cognition phenomena within this population in a culturally relevant manner.

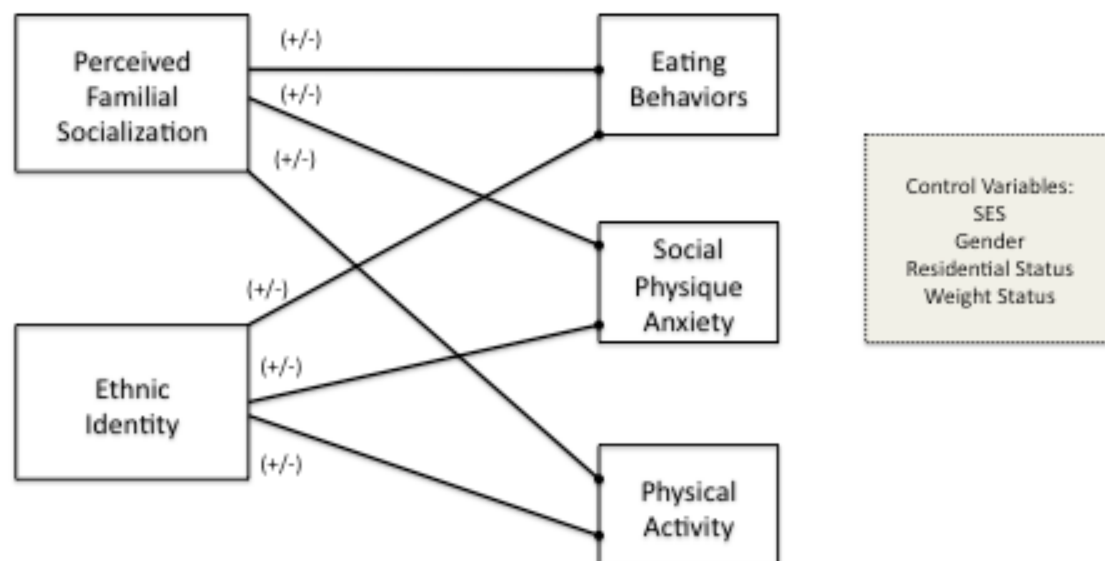
Another measurement concern was usage of the skinfold calipers for measuring body fat composition of the participants. Although it was inexpensive, portable, and fairly non-

invasive, the values are subject to the precision of the calipers, skills of the technician, and weight status of the research participants. In the current study, the principal investigator assessed the majority of the participants' body fat composition, while other members of the research team assessed a small number. This may have introduced measurement error, not only because there were multiple technicians but also because the techniques of measuring the actual body fat composition differed among the research team members. In future research of this nature, other body fat measurement methods need to be considered.

The descriptive correlational design of the study was appropriate for the level of analysis demonstrated by the genesis of new information as a result of the current study. The study described a beginning demonstration of the established relationships among sociocultural influences and norm related weight control behaviors and cognitions in African American adolescents.

### **Appropriateness of the Theoretical Framework**

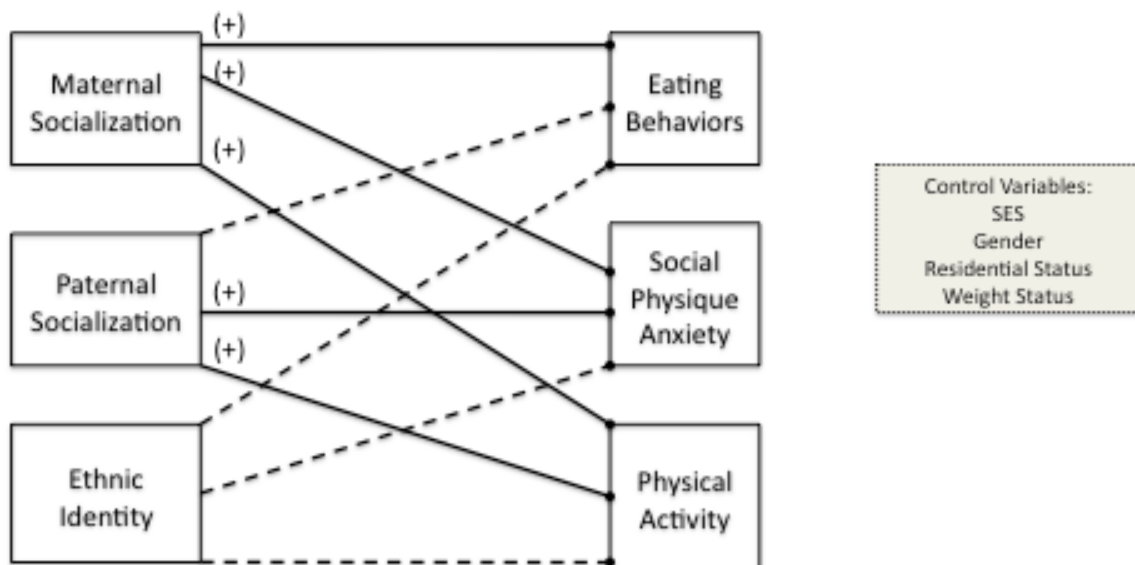
The social ecological approach (Allen, et al., 1986) was utilized to guide the current study's design. It aided in conceptualizing the relationships among the sociocultural factors of perceived familial socialization and ethnic identity, and the norm related weight behaviors and cognitions of physical activity, social physique anxiety, and eating behavior patterns. Figure 4 illustrates the conceptual map prior to the current study's findings.



**Figure 4. Proposed conceptual map for the study**

Even though ethnic identity was not significantly related to physical activity, social physique anxiety or eating behavior patterns, the research findings of this study did support the relationship between perceived familial socialization and all of the other aforementioned variables. The study's research results also supported gender, socioeconomic status, and residential status differences in physical activity, eating behavior patterns, and social physique anxiety as well as weight status. The current study findings were consistent with the literature regarding these sociocultural differences.

Figure 5 is a conceptual map based on the current study findings. The solid black lines represent significant hypothesized relationships while the dashed lines represent non-significant hypothesized relationships. Additionally, the perceived familial socialization concept is separated into two different subconcepts, maternal influence and paternal influence.



**Figure 5. Conceptual map based on the study's findings**

The social ecological approach may also be utilized to examine weight status as an outcome variable, norm related weight control behaviors, and cognitions as the mediating variables, and ethnic identity and parental socialization as moderating variables. Lastly,

inclusion of another tool that specifically addresses the status of parental ethnic socialization may be warranted as an additional mode of inquiry to expand the findings of the study. Ultimately, the current study design will need to be repeated within the African American population to further refine the initial findings.

### **Significance of the Study to Nursing and Society**

The initial findings from the current study contribute to nursing practice, nursing science, health care, and society by beginning to address the gaps in the literature, research, and clinical guidelines that focus on the African American middle adolescent, particularly in regard to obesity and weight control.

Nursing practice can benefit from this study as the findings can inform clinical guidelines that address the education and anticipatory guidance that nurses and advanced practice nurses provide to families of African American adolescents during hospital stays and well child visits. Specifically, results from the current study can inform health care providers in their communication with parents and the adolescent about the weight related behaviors of physical activity, eating behaviors, and, ultimately, weight status. Additionally, the study will serve as a starting point to discuss methods of weight measurement other than body mass index in the advanced practice nurse office setting.

Nursing science will be enhanced by the current study's analysis of the dynamic interaction between the person and the environment and how it ultimately affects the health of African American adolescents. Person, environment, health, and nursing are the four components of the nursing metaparadigm that encompasses the status of the discipline of nursing. The current study examined the reciprocal interaction of two components of the metaparadigm with a third component as its context: person (African American adolescents'

ethnic identity, social physique anxiety, eating behaviors, and physical activity), environment (perceived familial socialization), and health as the context for the sample's characteristics (weight status).

In relation to society, the significance of the findings of the current study is that they provide a worldview that encompasses a culturally sensitive and developmentally appropriate research approach with African American adolescents that incorporates heterogeneity within this population. The current study provides further insight into and description of the African American adolescent's weight related behaviors and cognitions of physical activity, eating behaviors, and social physique anxiety within the context of gender, socioeconomic status, and residential status. An examination of these within group differences in this population is a major step in providing the basis for future weight related, targeted interventions for the African American adolescent.

### **Future Research**

The current study was only the first step in exploring and describing the phenomenon of parental socialization and ethnic identity as the variables related to physical activity, social physique anxiety, and eating behavior patterns. In order to explore the transmission of norms that surround the weight control behaviors and cognitions of eating behaviors, physical activity, and social physique anxiety, a dyad approach may be essential, using qualitative inquiry. Qualitative inquiry could also further the exploration and description of the phenomenon of social physique anxiety. Because the instrumentation for social physique anxiety had some reliability issues, more research is needed to determine the construct's relationship to the other theoretical constructs within the African American population.

Although there were some significant findings regarding familial socialization, eating behavior patterns, body image, and physical activity, these relationships were exceptionally weak. We need to explore other sociocultural socialization factors such as female and male best friends as well as the media in relation to how African American adolescents are developing their attitudes and behaviors regarding eating, physical activity, and social physique anxiety.

### **Conclusion**

This study was the first of its kind to examine the relationships among perceived familial socialization, ethnic identity, physical activity, social physique anxiety, and eating behavior patterns in African American adolescents. Initial findings from the study will assist in helping healthcare practitioners and researchers to better understand the factors related to the behaviors and cognitions related to the obesity epidemic that affects the African American adolescent in disparate proportions. Participants from this community-based sample experienced moderately high social physique anxiety, consumed diets high in fat and calories, and exhibited low levels of physical activity. Already during their teenage years, the sample was classified as overweight, which could lead to obesity and a lifetime of health related issues as well as an increase in health care costs. Furthermore, gender, socioeconomic status, and residential differences were found as related to weight status, physical activity, eating behavior patterns, and social physique anxiety. These variables are essential components to include in developmentally appropriate and culturally relevant, targeted interventions with this population. Nurses and health care providers who work with youth can utilize the initial findings from this study to be the advocates of healthy lifestyles while reducing the obesity disparity within the African American adolescent population.

## APPENDIX A

### Human Investigation Committee Approval

|   |   |   |
|---|---|---|
|  | <p><b>HUMAN INVESTIGATION COMMITTEE</b><br/>         87 East Canfield, Second Floor<br/>         Detroit, Michigan 48201<br/>         Phone: (313) 577-1628<br/>         FAX: (313) 993-7122<br/> <a href="http://hic.wayne.edu">http://hic.wayne.edu</a></p> |  |
|---|---|---|

### NOTICE OF FULL BOARD APPROVAL

**To:** Nutrena Tate  
 College of Nursing  
 242 Cohn

**From:** Dr. Scott Millis  
 Chairperson, Behavioral Institutional Review Board (B3)

**Date:** January 06, 2011

**RE:** HIC #: 122710B3F  
 Protocol Title: Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety in African American Adolescents

Sponsor:  
 Protocol #: 1012009134

**Expiration Date:** January 05, 2012

**Risk Level / Category:** 45 CFR 46.404 - Research not involving greater than minimal risk

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Full Board Review* by the Wayne State University Institutional Review Board (B3) for the period of 01/06/2011 through 01/05/2012. This approval does not replace any departmental or other approvals that may be required.

- Revised Protocol Summary Form, received 1-4-11.
- Behavioral Documentation of Adolescent Assent Form, dated 1-4-11.
- Parental Permission/Research Informed Consent, dated 1-4-11.
- Receipt of a Letter of Support from Teen H.Y.P.E., dated 12-1-10.
- Receipt of a Letter of Support from Neighborhood Services Organization/Youth Initiatives Project, dated 12-1-10.
- Receipt of a Letter of Support from Lambda Chi Chapter of Chi Eta Phi Sorority, Inc, dated 12-1-10.
- Receipt of a flyer "Volunteers for a Research Study".
- Receipt of a research protocol

- ° Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval **before** the expiration date. Data collected during a period of lapsed approval is unapproved research and can never be reported or published as research data.
- ° All changes or amendments to the above-referenced protocol require review and approval by the HIC **BEFORE** implementation.
- ° Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the HIC Policy (<http://www.hic.wayne.edu/hicpol.html>).

**NOTE:**

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the HIC office must be contacted immediately.
2. Forms should be downloaded from the HIC website at **each** use.



## APPENDIX B Parental Consent

Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety

### Parental Permission/Research Informed Consent

Title of Study: *Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety*

Principal Investigator (PI): Nutrena Tate MS, RN, CPNP-PC  
5557 Cass Ave Detroit, MI 48202  
313 530 6442

### Purpose

- You are being asked to allow your child or ward to be in a research study of parental and ethnic influences on weight related behaviors because he/she is an African American high school student between the ages of 15 – 17 years. This study is being conducted at Neighborhood Service Organization, Detroit Community Health Connection, and other community organizations around the metropolitan Detroit area. The estimated number of study participants to be enrolled at these sites is about 150. **Please read this form and ask any questions you may have before agreeing to be in the study.**

In this research study, the relationship among parental influences, ethnic identity, eating behaviors, physical activity, and social physique anxiety in African American middle adolescents ages 15 – 17 years will be examined. Differences based on socioeconomic status, gender, and residential status will be discussed.

### Study Procedures

- If you/ your child agree to take part in this research study, he/she will be asked to complete a series of survey questionnaires and have their weight, height, waist circumference, and skinfold measured.
- Example of survey questions and items include:
  - 1) I participate in cultural practices of my own group, such as special food, music, or customs.
  - 2) I am comfortable with how fit my body appears to others.
  - 3) On the last weekend, how many times did you do sports, dance, and play games in which you were very active?
  - 4) On Sunday, I eat a large meal with my family.
  - 5) What type of feedback do you get from your mother figure about your size or shape of your body?
- Each visit will take approximately one to one and a half hour.
- If randomly selected, your child may be asked to return in two weeks to complete the survey questionnaires and weight measurements again in order to establish consistency and reliability among the test measures.
- Your child will be assigned a code identifier that will include the first and last initial of their name, their birth month and year, and recruitment site.

Submission/Revision Date: 1/4/11  
Protocol Version #: 1012009134

Page 1 of 4

\_\_\_\_\_  
Parent/Guardian Initials

Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety

**Benefits**

There maybe no direct benefit for your child; however, information from this study may benefit other people now or in the future.

**Risks**

By taking part in this study, your child may experience the following risks:

Physical risks : Bruising and discomfort from the skinfold measurements  
Emotional risks: Feelings of discomfort from discussing ethnicity and weight related issues

The following information must be released/reported to the appropriate authorities if at any time during the study there is concern that:

- Child abuse or neglect has possibly occurred

There may also be risks involved from taking part in this study that are not known to researchers at this time.

**Study Costs**

- Participation in this study will be of no cost to you.

**Compensation**

For taking part in this research study, your child will receive a \$10.00 Target gift card for his/her time and inconvenience. You will also receive a second \$10.00 Target gift card if you are selected to repeat the study questionnaires and weight related measures.

**Research Related Injuries**

In the event that this research related activity results in an injury, treatment will be made available including first aid, emergency treatment, and follow-up care as needed. Care for such will be billed in the ordinary manner to you or your insurance company. No reimbursement, compensation, or free medical care is offered by Wayne State University, *the Detroit Medical Center, University Pediatricians, University Physician Group, sponsor, and any other facility involved with this study.* If you think that your child has suffered a research related injury, contact the PI right away at (313) 530 6442.

Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety

**Confidentiality**

All information collected about your child during the course of this study will be kept confidential to the extent permitted by law. Your child will be identified in the research records by a code name or number. Code identifiers will be stored in a locked and secured research room at Wayne State University College of Nursing. Code identifiers will be destroyed immediately after data is analyzed. Information that identifies your child personally will not be released without your written permission. However, the study sponsor, the Human Investigation Committee (HIC) at Wayne State University, or federal agencies with appropriate regulatory oversight [e.g., Food and Drug Administration (FDA), Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.] may review your records.

When the results of this research are published or discussed in conferences, no information will be included that would reveal your child's identity.

**Voluntary Participation/Withdrawal**

Taking part in this study is voluntary. You have the right to choose not to allow your child to take part in this study. If you decide to allow your child to take part in the study you can later change your mind and withdraw from the study. You and/or your child are free to only answer questions that you want to answer. You are free to withdraw your child from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you or your child are entitled to receive.

**Questions**

If you have any questions about this study now or in the future, you may contact Nutrena Tate at the following phone number (313) 530 6442. If you have questions or concerns about you or your child's rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety

**Consent to Participate in a Research Study:**

To voluntarily agree to have your child take part in this study, you must sign on the line below. If you choose to have your child take part in this study, you may withdraw them at any time. You are not giving up any of your or your child's legal rights by signing this form. Your signature below indicates that you have read, or had read to you, this entire consent form, including the risks and benefits, and have had all of your questions answered. You will be given a copy of this consent form.

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Signature of Parent/ Legally Authorized Guardian

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Parent Authorized Guardian

\_\_\_\_\_  
Time

\_\_\_\_\_  
\*Signature of Parent/ Legally Authorized Guardian

\_\_\_\_\_  
Date

\_\_\_\_\_  
\*Printed Name of Parent Authorized Guardian

\_\_\_\_\_  
Time

\_\_\_\_\_  
\*\*Signature of Witness (When applicable)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Witness

\_\_\_\_\_  
Time

\* Both parent's signatures should be obtained however both are **required** for level 3 studies

\*\* Use when parent/guardian has had consent form read to them (i.e., illiterate, legally blind, translated into foreign language).

Submission/Revision Date: 1/4/11  
Protocol Version #: 1012009134

Page 4 of 4

\_\_\_\_\_  
Parent/Guardian Initials

## APPENDIX C Adolescent Assent

Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety

### Behavioral Documentation of Adolescent Assent Form (ages 13-17)

**Title: Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety**

**Study Investigator: Nutrena Tate MS, RN, CPNP-PC**

#### **Why am I here?**

This is a research study. Only people who choose to take part are included in research studies. You are being asked to take part in this study because you are 1) African American 2) between the ages of 15 years and 17 years 3) an US born citizen 4) resident of Detroit or its surrounding suburbs and 5) enrolled in a local high school. Please take time to make your decision. Talk to your family about it and be sure to ask questions about anything you don't understand.

#### **Why are they doing this study?**

This study is being done to find out how you feel about being African American and how your parent or person who is responsible for you (e.g. parent, grandparent, guardian, etc.) has shaped how you feel about your body, how you eat, and how much you exercise.

#### **What will happen to me?**

- You will be asked to answer questions related to your body, exercise, and eating behaviors as it relates to the influence of the person who is responsible for you (e. g. parent, grandparent, guardian, etc.) and how you feel about being African American.
- Your weight, height, waist, and amount of body fat (skinfold measurements) will be measured.
- If randomly selected, you may be asked to return in two weeks to complete the survey questionnaires and weight measurements again in order to establish consistency and reliability among the test measures.

#### **How long will I be in the study?**

You will be in the study for one hour to one and half hour at the most.

#### **Will the study help me?**

We cannot promise you that being in this research study will help you in any manner.

#### **Will the study hurt?**

The most common side effects seen with skinfold measurements include slight discomfort while the calipers are being used. Bruising may occur days after the procedure, but will resolve within 7 – 10 days.

Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety

**Will I get paid to be in the study?**

For taking part in this research study, you will be receive a \$10.00 Target gift card upon completion of the study. You will also receive a second \$10.00 Target gift card if you are selected to repeat the study questionnaires and weight related measures.

**Do my parents or guardians know about this?**

This study was explained to your parents/guardian and they said that you could be in it. You can talk this over with them before you decide.

**What about confidentiality?**

Every reasonable effort will be made to keep your records confidential. We will keep your records private unless we are required by law to share any information. The law says we have to tell someone if you might hurt yourself or someone else. The following information must be released/reported to the appropriate authorities if at any time during the study there is concern that:

- Child abuse or neglect has possibly occurred

**What if I have any questions?**

For questions about the study please call Nutrena Tate at (313) 530 6442. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628.

**Do I have to be in the study?**

You don't have to be in this study if you don't want to or you can stop being in the study at any time. Please discuss your decision with your parents and doctor. No one will be angry if you decide to stop being in the study.

Perceived Parental Socialization and Ethnic Identity: Factors Associated with Physical Activity, Eating Behaviors, and Social Physique Anxiety

AGREEMENT TO BE IN THE STUDY

Your signature below means that you have read the above information about the study and have had a chance to ask questions to help you understand what you will do in this study. Your signature also means that you have been told that you can change your mind later and withdraw if you want to. By signing this assent form you are not giving up any of your legal rights. You will be given a copy of this form.

\_\_\_\_\_  
Signature of Participant (13 yrs & older)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name of Participant (13 yrs & older)

\_\_\_\_\_  
\*\*Signature of Witness (When applicable)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Witness

\_\_\_\_\_  
Signature of Person who explained this form

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Person who explained form



\*\* Use when participant has had consent form read to them (i.e., illiterate, legally blind, translated into foreign language).

Submission/Revision Date: 1/4/11  
Protocol Version #: 1012009134

Page 3 of 3

Participants Initials \_\_\_\_\_

HIC Date: 05/08

## APPENDIX D

### Major Study Variables and Definitions

#### Major Study Variables

Sociocultural factors

(Allen & Allen, 1986)

Transmission of sociocultural norms

(Allen & Allen, 1986)

Weight related behaviors and cognitions

(Allen & Allen, 1986)

Familial socialization

(Rotheram & Phinney, 1987;

Stevenson, 1994)

Ethnic identity

(Phinney & Rosenthal, 1992;

Scottham & Sellers, 2008)

Body image

(Paquette & Raine, 2004)

Eating behaviors

(Bailey, 2006)

Physical activity

(Bailey, 2006)

Perceived parental influences on body

image and body change

(McCabe & Ricciardelli, 2001)

Social physique anxiety

(Hart, Leary, & Rajeski, 1989)

#### Definitions

Behaviorally relevant dimensions of an individual's or groups social and cultural environment

The act of conveying the written and unwritten rules of a culture or society

Understanding and manner in which individuals conduct themselves according to cultural rules related to physical activity, eating behaviors, and social physique anxiety

The process whereby African American adolescents develop a sense of their body, eating behaviors, and physical activity as evidenced by their behaviors, perceptions, values, and attitudes from their familial figures (Rotheram & Phinney, 1987; Stevenson, 1994).

One's sense of importance and belonging to an ethnic group and the part of the one's thinking, perception, feelings, and behavior that is due to ethnic group membership on an individual, intragroup level

A multidimensional concept that describes the personal and social perceptions, attitudes, and beliefs about one's physique

Eating behaviors are defined as the ways in which humans use food in addition to the sociocultural affiliation with food: how food is obtained and stored, how it is prepared, how it is served and to whom, and how it is consumed (Bailey, 2006).

Bodily movement produced by skeletal muscle resulting in energy expenditure

Perceived nature of feedback received from maternal and paternal figure to gain weight, lose weight, or increase muscularity

The amount of anxiety the participant experiences as a result of the evaluation of his or her body in social settings



**APPENDIX E****Demographic Form**

Are you Male or Female?

- Male
- Female

What is your age?

- 14 years
- 15 years
- 16 years
- 17 years

What is the highest level of education you have completed?

- 7<sup>th</sup> grade
- 8<sup>th</sup> grade
- 9<sup>th</sup> grade
- 10<sup>th</sup> grade
- 11<sup>th</sup> grade
- 12<sup>th</sup> grade

What is your zip code? \_\_\_\_\_

What are the crossroads of your neighborhood?

What is your race/ethnicity?

- Black/African American
- White/Caucasian/European/not Hispanic
- Hispanic/Latino
- Asian/Asian American
- American Indian
- Mixed: parents are from two different groups
- Other (write in): \_\_\_\_\_

What is your parent's marital status?

- Married
- Living together, not married
- Never been together
- Unknown

Do you qualify for free or reduced lunch?

- Yes
- No

Do you have an eating disorder called anorexia?

Yes

No

Do you have an eating disorder called bulimia?

Yes

No

Are you a member of a sports team?

Yes

No

Are you taking any prescribed medications?

If so, what is the name? \_\_\_\_\_

## APPENDIX F

## Sociocultural Influences Questionnaire

## The Sociocultural Influences Questionnaire

**Type of Feedback (Comments) from Father (or important adult male in your life e.g. uncle or step-father). If you do not have such a person in your life, leave this page blank. Extremely positive means good comments, extremely negative means bad comments.**

1. What type of feedback do you get from your father about the size or shape of your body?  

|                    |          |            |          |                    |             |
|--------------------|----------|------------|----------|--------------------|-------------|
|                    |          |            |          |                    |             |
| extremely positive | positive | in between | negative | extremely negative | no feedback |
2. What type of feedback do you get from your father about your eating patterns to change your body size or shape?  

|                    |          |            |          |                    |             |
|--------------------|----------|------------|----------|--------------------|-------------|
|                    |          |            |          |                    |             |
| extremely positive | positive | in between | negative | extremely negative | no feedback |
3. What type of feedback do you get from your father about your level of exercise to change your body size or shape?  

|                    |          |            |          |                    |             |
|--------------------|----------|------------|----------|--------------------|-------------|
|                    |          |            |          |                    |             |
| extremely positive | positive | in between | negative | extremely negative | no feedback |
4. Does your father encourage you to lose weight?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
5. Does your father encourage you to gain weight?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
6. Does your father encourage you to become more muscular?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
7. Does your father diet to lose weight?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
8. Does your father try to put on weight?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
9. Does your father try to become more muscular?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
10. Does your father tease you because your are too thin?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
11. Does your father tease you because you should eat less?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
12. Does your father tease you because he thinks you are not muscular enough?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
13. How important to you is what your father thinks about the shape of your body?  

|                     |                  |            |                    |                       |
|---------------------|------------------|------------|--------------------|-----------------------|
|                     |                  |            |                    |                       |
| extremely important | fairly important | in between | fairly unimportant | extremely unimportant |

**Type of Feedback (Comments) from Mother (or important adult female in your life (e.g. aunt or step-mother). If you do not have such a person in your life leave this page blank. Extremely positive means good comments, extremely negative means bad comments.**

1. What type of feedback do you get from your mother about the size or shape of your body?  

|                    |          |            |          |                    |             |
|--------------------|----------|------------|----------|--------------------|-------------|
|                    |          |            |          |                    |             |
| extremely positive | positive | in between | negative | extremely negative | no feedback |
2. What type of feedback do you get from your mother about your eating patterns to change your body size or shape?  

|                    |          |            |          |                    |             |
|--------------------|----------|------------|----------|--------------------|-------------|
|                    |          |            |          |                    |             |
| extremely positive | positive | in between | negative | extremely negative | no feedback |
3. What type of feedback do you get from your mother about your level of exercise to change your body size or shape?  

|                    |          |            |          |                    |             |
|--------------------|----------|------------|----------|--------------------|-------------|
|                    |          |            |          |                    |             |
| extremely positive | positive | in between | negative | extremely negative | no feedback |
4. Does your mother encourage you to lose weight?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
5. Does your mother encourage you to gain weight?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
6. Does your mother encourage you to become more muscular?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
7. Does your mother diet to lose weight?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
8. Does your mother try to put on weight?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
9. Does your mother try to become more muscular?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
10. Does your mother tease you because you are too thin?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
11. Does your mother tease you because you should eat less?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
12. Does your mother tease you because she thinks you are not muscular enough?  

|        |               |            |           |       |
|--------|---------------|------------|-----------|-------|
|        |               |            |           |       |
| always | almost always | frequently | sometimes | never |
13. How important to you is what your mother thinks about the shape of your body?  

|                     |                  |            |                    |                       |
|---------------------|------------------|------------|--------------------|-----------------------|
|                     |                  |            |                    |                       |
| extremely important | fairly important | in between | fairly unimportant | extremely unimportant |

## APPENDIX G

### Multi Ethnic Identity Measure

Use the numbers given below to indicate how much you agree or disagree with each statement.

4: Strongly Agree    3: Somewhat Agree    2: Somewhat Disagree    1: Strongly Disagree

- 1) I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs. \_\_\_\_\_
- 2) I am active in organizations or social groups that include mostly members of my own ethnic group. \_\_\_\_\_
- 3) I have a clear sense of my ethnic background and what it means for me. \_\_\_\_\_
- 4) I like meeting and getting to know people from ethnic groups other than my own. \_\_\_\_\_
- 5) I think a lot about how my life will be affected by my ethnic group membership. \_\_\_\_\_
- 6) I am happy that I am a member of the group I belong to. \_\_\_\_\_
- 7) I sometimes feel it would be better if different ethnic groups didn't try to mix together. \_\_\_\_\_
- 8) I am not very clear about the role of my ethnicity in my life. \_\_\_\_\_
- 9) I often spend time with people from ethnic groups other than my own. \_\_\_\_\_
- 10) I really have not spent much time trying to learn more about the culture and history of my ethnic group. \_\_\_\_\_
- 11) I have a strong sense of belonging to my own ethnic group. \_\_\_\_\_

Use the numbers given below to indicate how much you agree or disagree with each statement.

4: Strongly Agree    3: Somewhat Agree    2: Somewhat Disagree    1: Strongly Disagree

12) I understand pretty well what my ethnic group membership means to me, in terms of how to relate to my own group and other groups. \_\_\_\_\_

13) In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.

14) I have a lot of pride in my ethnic group and its accomplishments. \_\_\_\_\_

15) I don't try to become friends with people from other ethnic groups.

16) I participate in cultural practices of my own group, such as special food, music, or customs.

17) I am involved in activities with people from other ethnic groups \_\_\_\_\_

18) I feel a strong attachment towards my own ethnic group. \_\_\_\_\_

19) I enjoy being around people from ethnic groups other than my own. \_\_\_\_\_

20) I feel good about my cultural or ethnic background. \_\_\_\_\_

21) My ethnicity is \_\_\_\_\_

1) Asian, Asian American, or Oriental

2) Black or African American

3) Hispanic or Latino

4) White, Caucasian, European, not Hispanic

5) American Indian

6) Mixed; parents are two different groups

7) Other (write in): \_\_\_\_\_

22) My father's ethnicity is (use numbers above) \_\_\_\_\_

23) My mother's ethnicity is (use numbers above) \_\_\_\_\_

Ethnic identity: The total score is derived by reversing negative items (indicated by "R"), summing across items, and obtaining the mean (Items 1, 2, 3, 5, 6, 8R, 10R, 11, 12, 13, 14, 16, 18, and 20). Subscales are as follows: Affirmation and Belonging (Items 6, 11, 14, 18,

and 20): Ethnic Identity Achievement (Items 1, 3, 5, 8R, 10R, 12, and 13): and Ethnic Behaviors (Items 2 and 16). Ethnic self identification (open ended response), ethnicity (Item 21), and parent's ethnicity (Items 22 and 23) are not scored but are used as background information. Other group orientation: Scored as above (Items 4, 7R, 9, 15R, 17, and 19).

## APPENDIX H

*Physical Activity Questionnaire (High School)*

Name: \_\_\_\_\_

Age: \_\_\_\_\_

Sex: M \_\_\_\_\_ F \_\_\_\_\_

Grade: \_\_\_\_\_

Teacher: \_\_\_\_\_

We are trying to find out about your level of physical activity from *the last 7 days* (in the last week). This includes sports or dance that make you sweat or make your legs feel tired, or games that make you breathe hard, like tag, skipping, running, climbing, and others.

**Remember:**

3. There are no right and wrong answers — this is not a test.
4. Please answer all the questions as honestly and accurately as you can — this is very important.

1. Physical activity in your spare time: Have you done any of the following activities in the past 7 days (last week)? If yes, how many times? (Mark only one circle per row.)

|                            | No                    | 1-2                   | 3-4                   | 5-6                   | 7 times<br>or more    |
|----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Skipping .....             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Rowing/canoeing .....      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| In-line skating .....      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tag .....                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Walking for exercise ..... | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Bicycling .....            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Jogging or running .....   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Aerobics .....             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Swimming .....             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Baseball, softball .....   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dance .....                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Football .....             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Badminton .....            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Skateboarding .....        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Soccer .....               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Street hockey .....        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Volleyball .....           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Floor hockey .....         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Basketball .....           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ice skating .....          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Cross-country skiing ..... | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ice hockey/ringette .....  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other:                     |                       |                       |                       |                       |                       |
| .....                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| .....                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |



2. In the last 7 days, during your physical education (PE) classes, how often were you very active (playing hard, running, jumping, throwing)? (Check one only.)

- I don't do PE .....
- Hardly ever .....
- Sometimes .....
- Quite often .....
- Always .....

3. In the last 7 days, what did you normally do *at lunch* (besides eating lunch)? (Check one only.)

- Sat down (talking, reading, doing schoolwork).....
- Stood around or walked around .....
- Ran or played a little bit .....
- Ran around and played quite a bit .....
- Ran and played hard most of the time .....

4. In the last 7 days, on how many days *right after school*, did you do sports, dance, or play games in which you were very active? (Check one only.)

- None .....
- 1 time last week .....
- 2 or 3 times last week .....
- 4 times last week .....
- 5 times last week .....

5. In the last 7 days, on how many *evenings* did you do sports, dance, or play games in which you were very active? (Check one only.)

- None .....
- 1 time last week .....
- 2 or 3 times last week .....
- 4 or 5 last week .....
- 6 or 7 times last week .....

6. *On the last weekend*, how many times did you do sports, dance, or play games in which you were very active? (Check one only.)

- None .....
- 1 time .....
- 2 — 3 times .....
- 4 — 5 times .....
- 6 or more times .....

7. Which *one* of the following describes you best for the last 7 days? Read *all five* statements before deciding on the *one* answer that describes you.

- F. All or most of my free time was spent doing things that involve little physical effort .....○
- G. I sometimes (1 — 2 times last week) did physical things in my free time (e.g. played sports, went running, swimming, bike riding, did aerobics) .....○
- H. I often (3 — 4 times last week) did physical things in my free time .....○
- I. I quite often (5 — 6 times last week) did physical things in my free time .....○
- J. I very often (7 or more times last week) did physical things in my free time .....○

8. Mark how often you did physical activity (like playing sports, games, doing dance, or any other physical activity) for each day last week.

|                 | None | Little bit | Medium | Often | Very often |
|-----------------|------|------------|--------|-------|------------|
| Monday .....    | ○    | ○          | ○      | ○     | ○          |
| Tuesday .....   | ○    | ○          | ○      | ○     | ○          |
| Wednesday ..... | ○    | ○          | ○      | ○     | ○          |
| Thursday .....  | ○    | ○          | ○      | ○     | ○          |
| Friday .....    | ○    | ○          | ○      | ○     | ○          |
| Saturday .....  | ○    | ○          | ○      | ○     | ○          |
| Sunday .....    | ○    | ○          | ○      | ○     | ○          |

9. Were you sick last week, or did anything prevent you from doing your normal physical activities? (Check one.)

- Yes .....○
- No .....○

If Yes, what prevented you? \_\_\_\_\_

## APPENDIX I

### Eating Behavior Patterns Questionnaire

#### (EBPQ)

Use the numbers given below to indicate how much you agree or disagree with each statement.

- | 5: Strongly<br>Agree   | 4: Agree | 3: Neutral or<br>Not Applicable | 2: Disagree | 1: Strongly<br>Disagree |
|--|----------|---------------------------------|-------------|-------------------------|
| 1) I reduce fat in recipes by substituting ingredients and cutting portions. |          |                                 |             | _____                   |
| 2) I eat when I am upset.  |          |                                 |             | _____                   |
| 3) Sometimes I eat dessert more than once a day.                             |          |                                 |             | _____                   |
| 4) On Sunday, I eat a large meal with my family.                             |          |                                 |             | _____                   |
| 5) I would rather buy take out food and bring it home than cook.             |          |                                 |             | _____                   |
| 6) If I do not feel hungry, I will skip a meal even if it is time to eat.    |          |                                 |             | _____                   |
| 7) I am very conscious of how much fat is in the food I eat.                 |          |                                 |             | _____                   |
| 8) When I am in a bad mood, I eat whatever I feel like eating.               |          |                                 |             | _____                   |
| 9) I usually keep cookies in the house.                                      |          |                                 |             | _____                   |
| 10) I buy meat every time that I go to the grocery store.                    |          |                                 |             | _____                   |
| 11) I eat out because it is more convenient than eating at home.             |          |                                 |             | _____                   |
| 12) If I eat a larger than usual lunch, I will skip supper.                  |          |                                 |             | _____                   |
| 13) I use low fat food products.   |          |                                 |             | _____                   |
| 14) I eat for comfort.   |          |                                 |             | _____                   |

Use the numbers given below to indicate how much you agree or disagree with each statement.

5: Strongly Agree      4: Agree      3: Neutral or Not Applicable      2: Disagree      1: Strongly Disagree

- 15) I have a sweet tooth. \_\_\_\_\_
- 16) I associate success with food. \_\_\_\_\_
- 17) I stop for a fast food breakfast on the way to work. \_\_\_\_\_
- 18) If I eat a larger than usual lunch, I will replace supper with a snack. \_\_\_\_\_
- 19) I choose healthy foods to prevent heart disease. \_\_\_\_\_
- 20) My emotions affect what and how much I eat. \_\_\_\_\_
- 21) I eat cookies, candy bars, or ice cream in place of dinner. \_\_\_\_\_
- 22) I have a serving of meat at every meal. \_\_\_\_\_
- 23) When I don't plan meals, I eat fast food. \_\_\_\_\_
- 24) I rarely eat breakfast. \_\_\_\_\_
- 25) I count fat grams. \_\_\_\_\_
- 26) If I am bored, I will snack more. \_\_\_\_\_
- 27) I snack two to three times every day. \_\_\_\_\_
- 28) I take time to plan meals for the coming week. \_\_\_\_\_
- 29) I have at least three to four servings of vegetables per day. \_\_\_\_\_
- 30) My eating habits are very routine. \_\_\_\_\_
- 31) If I am busy, I will eat a snack instead of lunch. \_\_\_\_\_
- 32) I carefully watch the portion sizes of my foods. \_\_\_\_\_
- 33) I sometimes snack even when I am not hungry. \_\_\_\_\_

Use the numbers given below to indicate how much you agree or disagree with each statement.

5: Strongly Agree      4: Agree      3: Neutral or Not Applicable      2: Disagree      1: Strongly Disagree

- 34) I am a snacker. \_\_\_\_\_
- 35) To me, cookies are an ideal snack food. \_\_\_\_\_
- 36) A complete meal includes a meat, a starch, a vegetable, and bread. \_\_\_\_\_
- 37) I eat at a fast food restaurant at least three times a week. \_\_\_\_\_
- 38) When choosing fast food, I pick a place that offers healthy foods \_\_\_\_\_
- 39) Fish and poultry are the only meats I eat. \_\_\_\_\_
- 40) I snack more at night. \_\_\_\_\_
- 41) I eat a church socials. \_\_\_\_\_
- 42) I hate to cook. \_\_\_\_\_
- 43) I like to eat vegetables seasoned with fatty meat. \_\_\_\_\_
- 44) When I buy snack foods, I eat until I have finished the whole package. \_\_\_\_\_
- 45) I never know what I am going to eat for supper when I get up in the morning. \_\_\_\_\_
- 46) I eat meatless meals from time to time because I think that is healthier for me. \_\_\_\_\_
- 47) When I am upset I tend to stop eating. \_\_\_\_\_
- 48) I try to limit my intake of red meat (beef and pork). \_\_\_\_\_
- 49) I buy snacks from vending machines. \_\_\_\_\_
- 50) I take a shopping list to the store. \_\_\_\_\_
- 51) Instead of planning meals, I choose what is available and what I feel like eating. \_\_\_\_\_

**APPENDIX J****Social Physique Anxiety Scale  
(SPAS)**

Indicate the degree to which the statements below are characteristic or true of you.

5: Extremely Characteristic    4: Very Characteristic    3: Moderately Characteristic    2: Slightly Characteristic    1: Not at all

1. I am comfortable with the appearance of my physique/figure. \_\_\_\_\_
2. I would never worry about wearing clothes that might make me look too thin or overweight. \_\_\_\_\_
3. I wish I wasn't so uptight about my physique/figure. \_\_\_\_\_
4. There are many times when I am bothered by thoughts that other people are evaluating my weight or muscular development negatively. \_\_\_\_\_
5. When I look in the mirror I feel good about my physique/figure. \_\_\_\_\_
6. Unattractive features of my physique/figure make me nervous in certain social settings. \_\_\_\_\_
7. In the presence of others, I feel apprehensive about my physique/figure. \_\_\_\_\_
8. I am comfortable with how fit my body appears to others. \_\_\_\_\_
9. When it comes to displaying my physique/figure to others, I am a shy person. \_\_\_\_\_
10. I usually feel relaxed when it is obvious that others are looking at my physique/figure. \_\_\_\_\_
11. When in a bathing suit or swimming trunks, I often feel nervous about the shape of my body. \_\_\_\_\_

## REFERENCES

- Abrams, K. K., Allen, L., & Gray, J. J. (1993). Disordered eating attitudes and behaviors, psychological adjustment to ethnic identity: A comparison of black and white female college students. *International Journal of Eating Disorders, 14*, 49 - 57. doi: 10.1002/1098-108X (199307) 14: 1<49:: AID-EAT2260140107>3.0CO; 2-Z
- Affenito, S. G., Thompson, D. R., Barton, B. A., Franko, D. L., Daniels, S. R., Obarzanek, E., et al. (2005). Breakfast consumption by African American and White adolescent girls correlates positively with calcium and fiber intake and negatively with body mass index. *Journal of American Dietetic Association, 105*, 938-945.
- Airhihenbuwa, C. O., Kumanyika, S. K., Agurs, T. D., Lowe, A., Saunders, D., & Morssink, C. B. (1996). Cultural aspects of African American eating patterns. *Ethnicity and Health, 1*, 245-260.
- Akan, G., & Grilo, C. M. (1995). Sociocultural influences on eating attitudes and behaviors, body image, and psychological functioning: A comparison of African-American, Asian-American, and Caucasian college women. *International Journal of Eating Disorders, 18*, 181-187.
- Allen, J., & Allen, R. F. (1986). Achieving health promotion objectives through cultural change systems. *American Journal of Health Promotion, 4*, 42-49.
- Allan, J. D., Mayo, K., & Michel, Y. (1993). Body sizes of White and Black women. *Research in Nursing and Health, 16*, 323 – 333. doi: 10.1002/nur.4770160503
- Alm, M., Soroudi, N., Wylie-Rosett, J., Isasi, C. R., Suchday, S., Rieder, J., et al. (2008).

- A qualitative assessment of barriers and facilitators to achieving behavior goals among obese inner-city adolescents in a weight management program. *The Diabetes Educator*, 34, 285 – 298. doi: 10.1177/0145721708314486
- American Psychological Association. (2009). *Publication manual of the American Psychological Association*. Washington DC: American Psychological Association.
- Ammouri, A. A., Kaur, H., Neuberger, G. B., Gajewski, B., & Choi, W. S. (2007). Correlates of exercise participation in adolescents. *Public Health Nursing*, 24, 111-120. doi: 10.1111/j.1525-1446.2007.00615.x
- Austrian, S. G. (2008). *Developmental theories through the life cycle*. West Sussex, UK: Columbia University Press.
- Bailey, E. J. (2006). *Food choice and obesity in Black America: Creating a new cultural diet*. Santa Barbara, CA: Praeger.
- Baker, C. W., Little, T. D., & Brownwell, K. D. (2003). Predicting adolescent eating and activity behaviors: The role of social norms and personal agency. *Health Psychology*, 22, 189-198.
- Barroso, C. S., Peters, R. J., Johnson, R. J., Kelder, S. H. , & Jefferson, T. (2010). Beliefs and perceived norms concerning body image among African American and Latino teenagers. *Journal of Health Psychology*, 15, 858-870. doi: 10.1177 /1359105309358197
- Bediako, S. M., Kwate, N. A., & Rucker, R. (2004). Dietary behavior among African Americans: Assessing cultural identity and health consciousness. *Ethnicity &*



- Disease, 14, 527-532.*
- Befort, C. A., Thomas, J. L., Dailey, C. M., Rhode, P. C., & Ahluwalia, J. S. (2008). Perceptions and beliefs about body size, weight, and weight loss among obese African American women: A qualitative inquiry. *Health Education and Behavior, 35*, 410-426. doi: 10.1177/1090198106290398
- Bhuiyan, A. R., Gustat, J., Srinivasan, S. R., & Berenson, G. S. (2003). Differences in body shape representations among young adults from a biracial (Black-White), Semirural community. *American Journal of Epidemiology, 158*, 792-797. doi: 10.1093/aje/kwg218
- Blanchard, C. M., Kupperman, J., Sparling, P., Nehl, E., Rhodes, R. E., Courneya, K. S., et al. (2008). Ethnicity and the theory of planned behavior in an exercise context: A mediation and moderation perspective. *Psychology of Sport and Exercise, 9*, 527-545. doi: 10.1016/j.psychsport.2007.06.004
- Blos, P. (1972). *On adolescence*. New York: Free Press.
- Boyington, J. E.A., Carter-Edwards, L., Piehl, M., Huston, J., Langdon, D., & McManus, S. (2008). Cultural attitudes toward weight, diet, and physical activity among overweight African American girls. *Preventing chronic disease: Public health research, practice, and policy*. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2396970/>
- Brown, K. M., Schreiber, G. B., McMahon, R. P., Crawford, P., & Ghee, K. L. (1995). Maternal influences on body satisfaction in Black and White girls aged 9 and 10: The NHLBI Growth and Health Study (NGHS). *Annals of Behavioral Medicine, 17*, 213-221. doi: 10.1007/BF02903915

- Cachelin, F. M., Rebeck, R. M., Chung, G. H., & Pelayo, E. (2002). Does ethnicity influence body size preference? A comparison of body image and body size. *Obesity, 10*, 158 – 166. doi: 10.1038/oby.2002.25
- Camhi, S. M., Kuo, J., & Young, D. R. (2008). Identifying adolescent metabolic syndrome using body mass index and waist circumference. *Preventing Chronic Diseases, 5*, 1 – 9. Available on line: [http://www.cdc.gov/pcd/issues/2008/oct/07\\_0170.htm](http://www.cdc.gov/pcd/issues/2008/oct/07_0170.htm). Retrieved on July 25, 2011.
- Center for Disease Control. Childhood obesity and overweight. Available on line: <http://www.cdc.gov/obesity/childhood/index.html>. Published March 31, 2010. Retrieved on June 26, 2010.
- Cowie, C. C., Harris, M. I., Silverman, R. E., Johnson, E. W., & Rust, K. F. (1993). Effect of multiple risk factors on differences between blacks and whites in the prevalence of non-insulin dependent diabetes in the United States. *American Journal of Epidemiology, 137*, 719-732.
- Crocker, P., Sabiston, C., Forrester, S., Kowalski, N., Kowalski, N., & McDonough, M. (2003). Predicting change in physical activity, dietary restraint, and physique anxiety in adolescent girls. *Canadian Journal of Public Health, 94*, 332-337.
- Davison, K. K., & Birch, L. L. (2001). Childhood overweight; A contextual model and recommendations for future research. *Obesity Reviews, 2*, 159-171.
- Downs, D. S., DiNallo, J. M., Savage, J. S., & Davison, K. K. (2007). Determinants of eating attitudes among overweight and nonoverweight adolescents. *Journal of Adolescent Health, 41*, 138-145. doi: 10.1016/j.jadohelath.2007.03.007

- Erikson, E. H. (1968). *Identity: Youth and crisis*. New York: W. W. Norton.
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191.
- Felton, G. M., Boyd, M. D., Bartoces, M. G., & Tavakoli, A. S. (2002). Physical activity in young African American women. *Health Care for Women International*, 23, 905-918.
- Flynn, K., & Fitzgibbon, M. (1996). Body image ideals of low-income African American mothers and their preadolescent daughters. *Journal of Youth and Adolescence*, 25, 615-630. doi:10.1007/BF01537357
- Fujioka, Y., Ryan, E., Agle, M., Legaspi, M., & Toohey, R. (2009). The role of racial identity in responses to thin media ideals: Differences between White and Black College women. *Communication Research*, 36, 451-474. doi: 10.1177/00936502-09333031
- Garcia-Coll, C., Crnic, K., Lamberty, G., Wasik, B. H., Jenkins, R., Garcia, H. V., & McAdoo, H. P. (1996). An integrative model for the study of developmental Competencies in minority children. *Child Development*, 67, 1891-1914.
- Gargari, B. P., Khadem-Haghighian, M., Taklifi, E., Hamed-Behzad, M., & Shahraki, M. (2010). Eating attitudes, self esteem, and social physique anxiety among Iranian females who participate in fitness programs. *Journal of Sports Medicine and Physical Fitness*, 50, 79-84.
- Gaston, M. H., & Porter, G. K. (2003). *Prime time: The African American woman's complete guide to midlife health and wellness*. New York: Ballantine.

- Goran, M.I., Ball, G. D., & Cruz, M. L. (2003). Obesity and risk of type 2 diabetes and cardiovascular disease in children and adolescents. *Journal of Clinical Endocrinology and Metabolism*, *88*, 1417-1427.
- Granberg, E. M., Simons, R. L., Gibbons, F. X., & Melby, J. N. (2008). The relationship Between body size and depressed mood: Findings from a sample of African American middle school girls. *Youth & Society*, *39*, 294-315. doi: 10.1177/00-44118X07301952
- Granberg, E. M., Simons, E. G., & Simons, R. L. (2009). Body size and social self image among adolescent African American girls: The moderating influence of family racial socialization. *Youth & Society*, *41*, 256-277. doi: 10.1177/0044118X093-38505
- Haas, J. S., Lee, L.B., Kaplan, C. P., Sonneborn, D., Phillips, K. A., & Liang, S. (2003). The association of race, socioeconomic status, and health insurance status with the prevalence of overweight among children and adolescents. *American Journal of Public Health*, *93*, 2105-2110.
- Hagger, M. S., & Stevenson, A. (2010). Social physique anxiety and physical self-esteem: Gender and age effects. *Psychology and Health*, *25*, 89-110. doi: 10.1080/0887-0440903160990
- Harris, S. M. (1995). Family, self, and sociocultural contributions to body image attitudes of African American women. *Psychology of Women Quarterly*, *19*, 129-145. doi: 10.1111/j.1471-6402.1995.tb00282.x
- Hart, E. A., Leary, M. R., & Rejeski, W. J. (1989). The measurement of social physique

- anxiety. *Journal of Sport & Exercise Psychology*, 11, 94-104.
- Healthy People 2020* (2010) Available on line <http://www.healthypeople.gov/>
- Institute of Medicine. (2005). *Preventing childhood obesity: Health in balance*. Washington, DC: The National Academies Press.
- Jones, L. R., Fries, E., & Danish, S. J. (2007). Gender and ethnic differences in body Image and opposite sex figure preferences of rural adolescents. *Body Image*, 4, 103-108. doi: 10.1016/j.bodyim.2006.11.005
- Katz, M. L., Gordon – Larsen, P., & Bentley, M. E., Kelsey, K., Shields, K., & Ammerman, A. (2004). Does skinny mean healthy?: Perceived ideal, current, and healthy body sizes among African American girls and their female caregivers. *Ethnicity & Disease*, 14, 533-541.
- Katzmarzyk, P. T., Srinivasan, S. R., Chen, W., Malina, R. M., Bouchard, C., & Berenson, G. S. (2004). Body Mass Index, Waist Circumference, and Clustering of Cardiovascular Disease risk factors in a biracial sample of children and Adolescents. *Pediatrics*, 114; e198 – e205.
- Kelly, A. M., Wall, M., Eisenberg, M. E., Sotry, M., & Neumark – Sztainer, D. (2005). Adolescent girls with high body satisfaction: Who are they and what can they teach us? *Journal of Adolescent Health*, 37, 391-396. doi: 10.1016/j.jadohealth.2004.08.008
- Kornblau, I. S., Pearson, H. C., & Radecki, C. (2007). Demographic, behavioral, and physical correlates of body esteem among low income female adolescents. *Journal of Adolescent Health*, 41, 566-570. doi: 10.1016/j.jadolhealth.2007-

.06.014

- Kowalski, K. C., Crocker, P. R. E., & Donen, R. M. (2004). The Physical Activity Questionnaire for Older Children (PAQ-C) and Adolescents (PAQ-A) Manual.
- Kroger, J. (2005). *Identity in adolescence: The balance between self and other*. Florence, KY: Routledge.
- Kumanyika, S., Wilson, J. F., & Guilford-Davenport, M. (2003). Weight related attitudes and behaviors of black women. *Journal of American Dietetic Association, 93*, 416-422.
- Levinson, R., Powell, B., & Steelman, L. C. (1986). Social location, significant others and body image among adolescents. *Social Psychology Quarterly, 49*, 330-337.
- Lovejoy, M. (2001). Disturbances in the social body: Differences in body image and eating problems among African American and White women. *Gender and Society, 15*, 239-261. doi: 10.1177/089124301015002005
- Lown, D. A., & Braunschweig, C. L. (2008). Determinants of physical activity in low-income, overweight African American girls. *American Journal of Health Behaviors, 32*, 253-259.
- McCabe, M. P., & Ricciardelli, L. A. (2001). The structure of the perceived sociocultural influences on body image and body change questionnaire. *International Journal of Behavioral Medicine, 8*, 19-41.
- McElroy, D., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education & Behavior, 15*, 351-377. doi: 10.1177/109019818801500401

- Martin, J. J., Engels, H. J., Wirth, J. C., & Smith, K. (1997). Predictors of social physique anxiety in elite female youth athletes. *Women in Sport and Physical Activity Journal*, 6, 29-48.
- Martin, J. J. , Kliber, A., Kulinna, P. H., & Fahlman, M. (2006). Social physique anxiety and muscularity and appearance cognitions in college men. *Sex Roles*, 55, 151-158. doi: 10.1007/s11199-006-9069-0
- Martin, M. A. (2008). The intergenerational correlation in weight: How genetic resemblance reveals the social role of families. *American Journal of Sociology*, 114, S67-S105.
- Miech, R. A., Kumanyika, S. K., Stettler, N., Link, B. G., Phelan, J. C., & Chang, V. W. (2006). Trends in the association of poverty with overweight among US adolescents, 1971-2004. *JAMA*, 295, 2385 – 2393. doi: 10.1001/jama.295.20.-2385
- Neumark-Sztainer, D., Croll, J., Story, M., Hannan, P. J., French, S. A., & Perry, C. (2002). Ethnic/racial differences in weight related concerns and behaviors among adolescent girls and boys: Findings from Project EAT. *Journal of Psychosomatic Research*, 53, 963-974. doi: 10.1016/S0022-3999(02)00486-5
- Neumark-Sztainer, D., Story, M., Falkner, N. H., Beuhring, T., & Resnick, M. D. (1999). Sociodemographic and personal characteristics of adolescents engaged in weight loss and weight/muscle gain behaviors: Who is doing what? *Preventive Medicine*, 28, 40-50. doi: 10.1006/pmed.1998.0373
- Neumark-Sztainer, D., Story, M., Hannan, P. J., & Croll, J. (2002). Overweight status and eating patterns among adolescents: Where do youths stand in comparison with the

- Healthy People 2010 Objectives? *American Journal of Public Health*, 92, 844-851.
- Nicklas, T. A., Yang, S. J., Baranowski, T., Zakeri, I., & Berenson, G. (2003). Eating patterns and obesity in children. The Bogalusa Heart Study. *American Journal of Preventive Medicine*, 25, 9-16.
- Niven, A., Fawkner, S., Knowles, A., Henretty, J., & Stephenson, C. (2009). Social physique anxiety and physical activity in early adolescent girls: The influence of maturation and physical activity motives. *Journal of Sports Sciences*, 27, 299-305. doi: 10.1080/02640410802578164
- Oster, G., & Thompson, D. (2000). Estimated effects of reducing dietary saturated fat intake on the incidence and costs of coronary heart disease in the United States. *Journal of the American Dietetic Association*, 96, 127-131.
- Pearlman, D. N., & Seidman, C. S. (1996). Rethinking women's health: Implications for Research, medical care, and public policy. *American Journal of Preventive Medicine*, 12, 395-400.
- Phinney, J. S. (1989). Stages of ethnic identity development in minority group adolescents. *Journal of Early Adolescence*, 9, 34-49.
- Phinney, J. S. (1990). Ethnic identity in adolescents and adults: Review of research. *Psychological Bulletin*, 108 (3), 499-514.
- Phinney, J. S. (1996). Understanding ethnic diversity: The role of ethnic identity. *American Behavioral Scientist*, 40, 143-152.
- Phinney, J. S., & Rosenthal, D. A. (1992). Ethnic identity in adolescence: Process,



- context, and outcome. In W. D. Hawley & A. W. Jackson (Eds.), *Toward a common destiny: Improving race and ethnic relations in America* (pp.145-172). Newbury Park, CA: Sage.
- Powell, A. D., & Kahn, A. S. (1995). Racial differences in women's desires to be thin. *International Journal of Eating Disorders, 17*, 191-195.
- Quintana, S. M. (2007). Racial and ethnic identity: Developmental perspectives and research. *Journal of Counseling Psychology, 54*(3), 259-270.
- Resnicow, K., Davis, R., Zhang, N., Strecher, V., Tolsma, D., Calvi, J., et al. (2009). Tailoring a fruit and vegetable intervention on ethnic identity: Results of randomized study. *Health Psychology, 28*(4), 394-403.
- Rew, D. L. (2005). *Adolescent Health: A multidisciplinary approach to theory, research and intervention*. Thousand Oaks, CA: Sage.
- Ries, A.V., Voorhies, C. C., Gittelsohn, J., Roche, K. M., & Astone, N. M. (2008). Adolescents' perceptions of environmental influences on physical activity. *American Journal of Health Behavior, 32*, 26-39.
- Robbins, L. B., Pis, M. B., Pender, N. J., & Kazanis, A. S. (2004). Physical activity self definition among adolescents. *Research and Theory for Nursing Practice: An International Journal, 18*, 317-330. doi: 10.1891/rtnp.18.4.317.64095
- Sallis, J. F. , & Patrick, K. (1994). Physical activity guidelines for adolescents: Consensus statement. *Pediatric Exercise Science, 6*, 302-314.
- Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (1999). A review of correlates of physical activity of children and adolescents. *Medicine & Science in Sports & Exercise,*

- 32, 963-975.
- Schlundt, D. G., Hargreaves, M. K., & Buchowski, M. S. (2003). The eating behavior patterns questionnaire predicts dietary fat intake in African American women. *Journal of American Dietetic Association, 103*, 338-345.
- Scottham, K. M., Sellers, R. M., & Nguyen, H. X. (2008). A measure of racial identity in African American adolescents: The development of the multidimensional Inventory of Black Identity-Teen. *Cultural Diversity and Ethnic Minority Psychology, 14*, 297-306.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.
- Singh, G. K., Kogan, M. D., Van Dyck, P. C., & Siahpush, M. (2008). Racial /ethnic, socioeconomic, and behavioral determinants of childhood and adolescent obesity in the United States: Analyzing independent and joint associations. *Annals of Epidemiology, 18*, 682 – 695. doi: 10.1016/j.annepidem.2008.05.001
- Skelton, J. A., Busey, S. L., & Havens, P. L. (2006). Weight and health status of inner city African American children: Perceptions of children and their parents. *Body Image, 3*, 289-293. doi: 10.1016/j.bodyim.2006.05.005
- Skinner, A. C., Mayer, M. L., Flower, K., Perrin, E. M., & Weinberger, M. (2009). Using BMI to determine cardiovascular risk in childhood: How do the BMI cutoffs fare? *Pediatrics, 124*, e905 – e912. doi: 10.1542/peds.2009-0179
- Stevenson, H. C. (1994). Validation of the scale of racial socialization for African American adolescents: Steps toward multidimensionality. *The Journal of Black*

- Psychology*, 20, 445 – 468. doi: 10.1177/00957984940204005
- Stokals, D. (1996). Translating social ecological theory into guidelines for community health promotion. *American Journal of Health Promotion*, 10, 282-298.
- Surgeon General's Call to Action to Prevent and Reduce Overweight and Obesity, 2001. Retrieved from <http://www.surgeongeneral.gov/topics/obesity/> on November 1, 2010.
- Taylor, W. C., Yancey, A. K., Leslie, J., Murray, N. G., Cummings, S. S., & Sharkey, S. A. (1999). Physical activity among African American and Latino middle school girls: Consistent beliefs, expectations, and experiences across two sites. *Women and Health*, 30, 67-82.
- Tibbs, T., Haire-Joshu, D., Schechtman, K. B., Brownson, R. C., Nanney, M. S., Houston, C., & Auslander, W. (2001). The relationship between familial modeling, eating patterns, and dietary intake among African American parents. *Journal of American Dietetic Association*, 101, 535-541. doi: 10.1016/S0002-8223(01)00134-1
- Trost, S. G., Pate, R. R., Dowda, M., Ward, D., Felton, G., & Saunders, R. (2002). Psychosocial correlates of physical activity in White and African American girls. *Journal of Adolescent Health*, 31, 226-233.
- Umana-Taylor, A. J., & Guimond, A. B. (2010). A longitudinal examination of parenting behaviors and perceived discrimination predicting Latino adolescents' ethnic identity. *Developmental Psychology*, 46, 636-650.
- United States Department of Health and Human Services. (2000). *Healthy People 2010: National health promotion and disease objective*. Washington, DC: United States

Government Printing Office.

- Vaughan, C. A., Sacco, W. P., & Beckstead, J. W. (2008). Racial/ethnic differences in Body mass index: The roles of beliefs about thinness and dietary restriction. *Body Image, 5*, 291-298. doi: 10.1016/j.bodyim.2008.02.004
- Vertinsky, P. (1998). Run, Jane, run: Central tensions in the current debate about enhancing women's health through exercise. *Women's Health Issues, 27*, 81-111.
- Wang, Y., & Zhang, Q. (2006). Are American children and adolescents of low socioeconomic status at increased risk of obesity? Changes in the association between overweight and family income between 1971 and 2002. *American Journal of Clinical Nutrition, 84*, 707-716.
- Webb, T. T., Looby, E. J., & Fults-McMurtery, R. (2004). African American men's perceptions of body figure attractiveness: An acculturation study. *Journal of Black Studies, 34*, 370-385. doi: 10.1177/0021934703254100
- World Health Organization. (2005). Global strategy on diet, physical activity, and health. Available on line: <http://www.who.int/dietphysicalactivity/publications/trs916/download/en/>
- Zhang, Q., & Wang, Y. (2003). Socioeconomic inequality of obesity in the United States: Do gender, age, and ethnicity matter? *Social Science and Medicine, 58*, 1171-1180. doi: 10.1016/S0277 – 9536(03)00288-0

**ABSTRACT****PERCEIVED FAMILIAL SOCIALIZATION AND ETHNIC IDENTITY:  
FACTORS ASSOCIATED WITH PHYSICAL ACTIVITY, EATING BEHAVIORS,  
AND SOCIAL PHYSIQUE ANXIETY IN AFRICAN AMERICAN ADOLESCENTS**

by

**NUTRENA H. TATE****August 2011****Advisor:** Dr Jean E. Davis**Major:** Nursing**Degree:** Doctor of Philosophy

Purpose: African American adolescents experience higher rates of obesity and have an increased risk of obesity related diseases than Caucasian American adolescents. Despite culturally sensitive obesity preventive interventions, obesity rates are increasing within the African American adolescent population. Current obesity interventions claim to be culturally sensitive, but do not address how ethnic identity and parental influences on body image and body change may affect the efficacy of the interventions. The purpose of this study was to examine the sociocultural factors related to weight behaviors and cognitions in African American adolescents. Differences based on socioeconomic status (SES), gender, and residential status provided the context for the analysis.

Theoretical Framework: The social ecological approach was used to guide the study in the exploration of parental influences on body image and body change as the variables related to the sociocultural norms in the weight behaviors and cognitions of social physique anxiety, eating behaviors, and physical activity in African American adolescents.

**Methodology:** A descriptive correlational design was utilized. The sample (n = 145) included African American adolescents, ages 15 to 17 from community clinics, youth organizations, churches, and social networks in metropolitan and inner city Detroit. Data were collected utilizing survey methods and analyzed using descriptive statistics, Pearson Product Moment Correlations, and Independent Sample *t* tests.

**Findings:** Adolescents in the study reported consuming diets high in fat and calories, low physical activity levels, and moderate amounts of social physique anxiety. Perceived familial socialization, specifically maternal socialization, was significantly related to the adolescents' eating behaviors, physical activity, and social physique anxiety, while paternal socialization was only significantly related to their physical activity and social physique anxiety. The adolescents' ethnic identity was not significantly related to their eating behaviors, physical activity, or social physique anxiety. There were significant group differences in the major study variables and weight measurement based on gender, socioeconomic status, and residential status.

**Conclusions:** The initial findings from the study will assist in better understanding the factors related to behaviors and cognitions that are related to the obesity epidemic that affects the African American adolescents in disparate proportions. Further examination of the variables is essential in order to serve as a basis for developmentally appropriate and culturally relevant targeted interventions with this population. Nurses and health care providers who work with youth can utilize the initial findings from this study to be the advocates of healthy lifestyles while reducing the obesity disparity within the African American adolescent population.

### **AUTOBIOGRAPHICAL STATEMENT**

My educational background includes a Bachelor of Science Degree in Nursing in 1996 and a Master of Science Degree in Parent Child Nursing in 2000, both from the University of Michigan – Ann Arbor. I am a Primary Care Pediatric Nurse Practitioner certified by the Pediatric Nursing Certification Board (PNCB). My areas of expertise include pediatric nursing and pediatric advanced practice nursing in school based, primary and acute care, sickle cell, and neurology. My undergraduate and graduate teaching experience includes a position as an assistant professor at the University of Detroit Mercy as well as lecturer at the University of Michigan – Flint and Wayne State University. Among my awards are membership in Sigma Theta Tau International Honor Society of Nursing; the Ellen H. Toporek Award for Excellence in Pediatric Nursing from the University of Michigan; Nurse Educator of the Year from the National Black Nurses Association, Mabel Keaton Staupers Scholarship Award; Children’s Hospital of Michigan Nurse of the Month, Wayne State University College of Nursing Community Service Award, Graduate Professional Award, and Fellow, King Chavez Parks Future Faculty Program. Professional memberships include the National Black Nurses Association, Chi Eta Phi Sorority, Inc., National Association for Pediatric Nurse Practitioners, and Midwest Nursing Research Society. I am an active community servant with Alternatives for Girls, Wayne State University Future Nurse Professionals, and the University of Michigan School of Nursing GENESIS Mentoring Group.