

EXAMINING THE RELATIONSHIP BETWEEN COMPETITIVENESS AND BODY
DISSATISFACTION IN AFRICAN AMERICAN AND CAUCASIAN WOMEN

By

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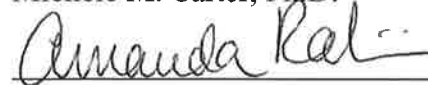
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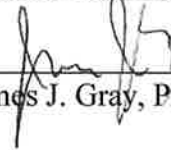
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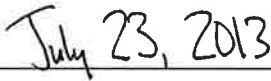
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DEDICATION

I would like to express the deepest appreciation for those who have helped make this project possible. First, thank you to my husband, parents, and other family members, for always encouraging me and supporting me every step along the way. Next, thank you to my advisor, Dr. Carol Weissbrod, for your unending support and for challenging me to think in new ways. Finally, to my committee members, Dr. Michele Carter, Dr. Amanda Rahimi, and Dr. James Gray, for their support and helpful feedback.

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ABSTRACT

To investigate the relationship between body dissatisfaction and dieting peer competitiveness, general competitiveness, and ethnic identity among African American and Caucasian women, online survey data from 165 African American and 178 Caucasian participants were analyzed. Two measures of body dissatisfaction were used, one focusing on the size and shape of specific body parts and one broadening the definition of body dissatisfaction to include variables that have been found to be important in body image of African American women, such as skin complexion, hair texture, and body proportion. Analysis of covariance tests were conducted to assess the effect of race/ethnicity on body dissatisfaction scores while controlling for age, body mass index, household income, number of children, self-esteem, and depression. Caucasian participants had significantly higher adjusted mean scores for body dissatisfaction than African American participants on both measures (Caucasian *adj M* = 1.431, African American *adj M* = 1.065; *adj M* = 1.431, African American *adj M* = 1.00). Dieting peer competitiveness was a significant predictor of both types of body dissatisfaction for all participants ($F(1, 282) = 35.846, p < .01$); ($F(1, 277) = 67.420, p < .01$)). General competitiveness scores were not a significant predictor of either type of body dissatisfaction for all participants ($F(1, 276) = .001, p > .05$); ($F(1, 272) = .485, p > .05$)). Ethnic identity was a significant predictor of body dissatisfaction as measured by the broader construct (($F(1, 267) = 6.631, p < .05$); ($F(1, 257) = .5140, p < .05$)) but not for body dissatisfaction as defined as shape and size of particular body parts (($F(1, 261) = .443, p > .05$); ($F(1, 256) = .002, p > .05$)). Racial/ethnic differences in body dissatisfaction were found among women ranging in age from 18 to 73 years old. Peer competitiveness focused on body image and eating behaviors was related

to body dissatisfaction for African American and Caucasian women while general competitiveness scores were not, adding support to Social Comparison Theory. Ethnic Identity was also found to be related to a broader definition of body dissatisfaction, which included skin complexion and hair texture.

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CHAPTER 1

INTRODUCTION

A growing body of literature focuses on eating disorder behavior, correlates of eating disorder behavior, and body dissatisfaction in ethnic minority women as data shows that the experiences of African American women may differ from that of Caucasian women. Eating disorders pose a serious health risk that disproportionately affects women while body dissatisfaction puts an individual at-risk for the development of an eating disorder or for experiencing symptoms of depression (Grabe & Hyde, 2006). In the current literature, whether or not differences exist in eating disorder symptoms between African American and Caucasian women is debated, but consistent differences are found between levels of body dissatisfaction in African American women and Caucasian women. Although a number of possible explanations for such differences have been proposed, much work remains to be done in exploring the experiences of both African American and Caucasian women in regards to eating behavior and body image. The current study explores the relationships between competitiveness, social comparison, and body dissatisfaction in African American and Caucasian women. The link between competitiveness and body image has been demonstrated among athletes but has not been widely studied among diverse populations of women over the age of 18 in the general population.

Eating Behavior in African American and Caucasian Women

Many studies focus on the presence of eating disorder symptoms or variables that have been found to be associated with the development of disordered eating behavior. However, a consensus has not been reached about whether or not African American women experience fewer disordered eating behaviors than Caucasian women. Some argue that African American

women are not as likely to develop symptoms of eating disorders or to endorse variables that are correlated with the presence of eating disorders (Fernandez, Malacrne, Wilfley, and McQuaid, 2006; Wildes, Emery, and Simons, 2001), while others argue that evidence supports that fewer differences exist in these variables between African American women and Caucasian women (Franko, Becker, Thomas, & Herzog, 2007; Shaw, Ramirez, Trost, Randall, & Stice, 2004).

Wildes, Emery, and Simons (2001), for example, conducted a literature review and found that in Western countries, African American women reported less disordered eating behavior and less body dissatisfaction than Caucasian women. These researchers found that the differences between African American and Caucasian women are often the largest when studies focused on college students and measured levels of disordered eating behavior below the threshold needed for clinical diagnosis such as dietary restraint, ideal body shape, and body dissatisfaction (Wildes, Emery & Simons, 2001). O'Neill (2003) also conducted a meta-analysis and found that African American women who demonstrated a drive for thinness had significantly lower rates of eating disturbances than Caucasian women with the same level of drive for thinness (as cited in Edwards George and Franko, 2010). In addition, when assessing both attitudes and behaviors associated with bulimia, Fernandez, Malacrne, Wilfley, and McQuaid (2006) found that female African American college students reported experiencing significantly lower occurrences of attitudes and behaviors associated with developing bulimia as compared to their Caucasian peers. Shuttlesworth and Zotter (2011) found that among university students, Caucasian women were at higher risk than African American women for maladaptive eating behavior, particularly symptoms related to a diagnosis of Anorexia Nervosa.

However, evidence has also been found that indicates that findings may depend on the level of disturbance in eating behavior being assessed. For example, Wildes, Emery, and Simons

(2001) found that differences between African American and Caucasian women were smaller when clinical diagnoses of eating disorders were studied. O'Neill (2003) also found that African American and Caucasian women did not differ in rates of Bulimia Nervosa or Binge Eating Disorder, further supporting the claim that differences are not as strong when clinical diagnosis are assessed (as cited in Edwards George and Franko, 2010).

Other investigators have argued that there is little evidence to support many of these proposed ethnic differences in eating behavior. For example, Shaw, Ramirez, Trost, Randall, and Stice (2004) conducted a study with female middle school, high school, and college students and found few significant differences in risk factors for developing eating disorders, including perceived pressure to be thin, body dissatisfaction, dieting behavior, and self-esteem. These authors argue that differences in the risk for eating disorder behavior between African American and Caucasian women may not be as large as many other researchers have claimed. However, these authors did find that African American and Hispanic women reported significantly less internalization of the thin ideal than Caucasian and Asian women (Shaw, Ramirez, Trost, Randall, & Stice, 2004). This suggests that ethnic differences in the meaning or value behind body image may be present. Additionally, Franko, Becker, Thomas, and Herzog (2007) found that ethnic differences did not exist in eating behavior in a sample of college students and instead found evidence that differences only exist in binge correlates. In their study, African American participants and Caucasian participants reported no significant differences in binge eating, restrictive eating, or amenorrhea, but Caucasian participants endorsed more binge correlates than African Americans (Franko, Becker, Thomas, & Herzog, 2007). This finding suggests that differences may exist in the variables associated with the presence of eating disorders, even when eating behavior is the same. In addition, some authors have suggested that African

American women may be at increased risk for developing binge eating behavior or obesity (Lovejoy, 2001).

Body Image in African American and Caucasian Women

Although many researchers do not agree on whether or not there are differences between eating disorder behaviors in African American and Caucasian women, consistent differences have been found in variables associated with eating disorder behaviors, including drive for thinness, ideal body shape, and body dissatisfaction (Shaw, Ramirez, Trost, Randall, & Stice, 2004; Wildes, Emery & Simons, 2001). Body image has been defined as the perception of one's body size and shape (Cash, 2001 as cited in Edwards George & Franko, 2010). Body image is often used as a way to assess body satisfaction or dissatisfaction, which is a rating of how positively or negatively an individual feels about his or her own body size and shape. When assessing body dissatisfaction, many studies have consistently found that African American women report lower levels of body dissatisfaction than Caucasian women. For example, in a meta-analysis, Grabe and Hyde (2006) found that overall, African American women reported lower levels of body dissatisfaction than their Caucasian peers. In another meta-analysis, Roberts, Cash, Feingold, and Johnson (2006) also discovered that differences in body dissatisfaction were consistently found between African American and Caucasian samples. Sabik, Cole & Ward (2010) found that as compared to European American and Asian American college-aged women, African American college-aged women reported the highest mean levels of appearance esteem, the lowest levels of drive for thinness, and the lowest levels of weight-based contingency of self-worth. When compared to their Caucasian and Hispanic peers, in addition to being larger in terms of body mass, female African American high school students reported a significantly lower drive for thinness, significantly lower dissatisfaction with their bodies, less

insecurity and worthlessness, and had higher expectations of superior performance (Rhea, 1999). It has been found that African American women have higher self-esteem, even when at a higher weight (Biro, Striegel-Moore, Franko, Padgett & Bean, 2006 as cited in Edwards George & Franko, 2010). Since many studies have found that on average, African American women weigh more than Caucasian women, Body Mass Index (BMI) is often taken into account in analyses in order to compare women with similar weight distributions. BMI is a measure of body fat based on an individual's height and weight. After controlling for BMI, Wilfley, Schreiber, Pike, Striegel-Moore, Wright, and Rodin (1996) found that African American mothers reported significantly lower rates of body dissatisfaction than Caucasian mothers. The largest differences tend to be found during adolescence and young adulthood or during college years (Grabe & Hyde, 2006; Wildes, Emery & Simons, 2001).

Although much data exists that supports the finding that African American women report less dissatisfaction with their bodies, some researchers argue that these differences may be small, may be dependent on the type of measure used, or may be reducing over time. Grabe and Hyde (2006) found that ethnic differences in body dissatisfaction were small and present when using body satisfaction questionnaires but not when using current- and ideal-body discrepancy measures. Roberts, Cash, Feingold, and Johnson (2006) found that African American women were significantly more satisfied with their bodies than Caucasian women for both weight-related measures and global body image measures in their meta-analysis using both published and unpublished articles. However, they also found that ethnic differences have diminished on weight-focused measures, but have actually increased on more global body image measures (Roberts, Cash, Feingold, & Johnson, 2006). Although researchers may debate the size of differences in body image and the patterns over time for body dissatisfaction in African

American women compared to Caucasian women, no studies have been found where African American women reported higher body dissatisfaction than their Caucasian peers.

Proposed Reasons for Differences in Body Image between African American and Caucasian Women

A number of different reasons have been proposed for why African American women may be more likely to experience less body dissatisfaction than Caucasian women as different factors may impact body image for women of different backgrounds. First, it has been proposed that African American women are less likely to endorse body dissatisfaction because African American women may feel that larger body sizes are acceptable (Fernandez, Malacrne, Wilfley & McQuaid, 2006; Root, 1990). It has been found that African American women tend to choose a larger figure as ideal than Caucasian women (Flynn & Fitzgibbon, 1998 as cited in Edwards George & Franko, 2010). In addition, African American women who express body dissatisfaction sometimes report that they view themselves as under-weight rather than over-weight (Perez & Joiner, 2003 as cited in Sabik, Cole, & Ward, 2010).

It has also been proposed that African American women may be less concerned with body size due to holding different standards of beauty than Caucasian women (Fernandez, Malacrne, Wilfley & McQuaid, 2006; Root, 1990). African American women are more likely to define physical attractiveness in terms of body shape and stylishness rather than size (Parker et al., 1995; Webb, Looby, & Fults-McMurtery, 2004 as cited in Sabik, Cole & Ward, 2010). Parker et al. (1995) used focus groups, interviews, and survey methods with female African American high school students to assess their beliefs about body image, weight, dieting, and other health and lifestyle factors. They found that participants' description of an ideal African American girl often began with a list of personality traits rather than physical attributes. This distinction is important since attitude, style, and personality traits can be changed without

changing eating behavior. In addition, African American women tend not to compare themselves to women of other ethnic groups so they may not feel like the media portrayals of other ethnicities of women apply to them (Frisby, 2004 as cited in Sabik, Cole & Ward, 2010; Poran, 2006 as cited in Sabik, Cole & Ward, 2010).

The question of why these different body ideals and different standards of beauty may exist for African American women has also been tackled in the current literature, but it is difficult to distinguish between possible causes when conducting such research as they are often related. Some researchers have proposed that aspects of the cultural heritage of African Americans have impacted their experiences with body image and eating behavior in Western countries as these individuals may view themselves as being bi-cultural (Sabik, Cole, & Ward, 2010). For example, one idea is that the acceptance of larger body sizes may come from the fact that larger body sizes are preferred and associated with health and prosperity in Africa and much of the world (Ofusu, Lafreniere & Senn, 1998 as cited in Sabik, Cole & Ward, 2010). It has been found that African American communities support acceptance of different body shapes and sizes (Craig, 2006 as cited in Sabik, Cole, & Ward, 2010). Additionally, it has been found that African American men prefer a larger body type for women and tend to associate more favorable characteristics with large women than Caucasian men (Greenberg & LaPorte, 1996 as cited in Grabe & Hyde, 2006; Jackson & McGill, 1996 as cited in Grabe & Hyde, 2006). This standard of beauty can impact African American women's views of attractiveness, particularly during the college years when more attention is often placed on dating and romantic relationships. Another theory holds that the distinction between individualistic and collectivistic cultures may shape individuals' views of their own bodies. Fernandez, Malacrne, Wilfley, and McQuaid (2006) suggest that Asian, African, and Latino cultures have been identified in the literature as being

collectivistic while English, American, Australian, and other western cultures have been identified as individualistic cultures. They argue that women in collectivist cultures of who have cultural heritage from collectivist cultures may focus less on their own body or be more likely to use the body size of their specific ethnic group as reference point for what an attractive body looks like (Fernandez, Malacrne, Wilfley, & McQuaid, 2006). If this is the case, it is possible that African American women have less dissatisfaction with their bodies and less disordered eating than their Caucasian peers because the Caucasian women may both live in individualized cultures and have cultural heritage from individualized cultures. Therefore, they may then focus more on their own bodies or internalize more of the media pressure to be thin as it is often Caucasian women who are portrayed as particularly thin in Western media (Fernandez, Malacrne, Wilfley, & McQuaid, 2006). Snapp (2009) found that when compared to African American and Hispanic women who endorsed low thin-ideal internalization, African American and Hispanic women who endorsed high thin-ideal internalization did not report feeling more pressure from society to be thin and did not have higher scores on a measure of how they think that others judge someone else's appearance. This suggests that African American women may not internalize the Western societal value placed on thinness and the concern about being judged for not being thin that Caucasian women often endorse. Instead, African American women may internalize the thin-ideal for different reasons. Others suggest that some African American women may view the rejection of the thin ideal as a rejection of European values and a way to adhere to values from within their own culture (Ofusu, Lafreniere, & Senn, 1998 as cited in Sabik, Cole, & Ward, 2010), which may be particularly important within the United States of America which has a long history of racism directed towards African Americans.

It has also been suggested that specific relationship patterns that may exist in African American culture in the United States could be contributing to the differences in ideal body size and body dissatisfaction between African American and Caucasian women. Lovejoy (2001) argues that institutional racism in the United States has made it challenging for African American women to depend on men for economic support as African American men often receive lower income and are incarcerated at high rates (Lovejoy, 2001 as cited in Grabe & Hyde, 2006). This could contribute to different gender roles and different relationships between African American women. For example, African American mothers may raise their daughters to be strong and independent rather than dependent and deferential according to the traditional Caucasian gender role in the United States (Lovejoy, 2001 as cited in Grabe & Hyde, 2006). It has also been found that African American mothers express their positive weight-related attitudes to their daughters (Brown, Schreiber, McMahon, Crawford, & Ghee, 1995 as cited in Edwards George and Franko, 2010). This may differ from the family pressure to be thin that Caucasian women sometimes experience. In addition, it has been proposed that African American women may be more supportive of each other's body image within friendships. Parker et al. (1995) found that the African American women in their study described themselves as being supportive of each other which contrasted with Caucasian women's descriptions of being jealous and competitive with their peers. Instead, African American women often described times where they had received positive feedback from friends, family members, and community members about "looking good" (Parker et al., 1995). Wilfley, Schreiber, Pike, Striegel-Moore, Wright & Rodin (1996) found similar results with their sample of African American and Caucasian mothers as they found that Caucasian women were significantly more likely to report

that they perceived that they were heavier than their best friend, indicating that social comparison in terms of body size is occurring for the Caucasian women in this study.

Individual Differences in Body Image in African American Women

As a result of the findings that African American women report less body dissatisfaction than their Caucasian peers, many researchers have described the cultural aspects of being African American in a Western country as "protective" in terms of risk of the presence of negative body image and eating disorder behavior. However, Root (1990) emphasizes that while using the term "protective factors" as part of the cultural context of African American women may accurately capture some of the group findings, this does not necessarily capture the experience of individuals and may in fact be a disservice to African American women. In particular, African American women can still be at-risk for developing eating disorders or having body dissatisfaction but by identifying that individuals of this race/ethnicity are not at-risk, this may limit clinician's and physicians' sensitivity to the experiences of an individual who could benefit from prevention or treatment programs and it may limit the amount of research being conducted in this area (Fernandez, Malacrne, Wilfley, & McQuaid, 2006; Root, 1990; Sabik, Cole & Ward, 2010). Investigators emphasize the need for research looking at both individual experiences of African American women and the need for additional understanding of particular aspects of the culture of African American women living in Western countries that may elucidate specific ways to target treatment and prevention strategies to meet the needs of African American women. The intersection of race and gender may result in different experiences for African American women which is important to assess.

Research findings have supported the notion that despite group findings of African American women reporting less drive for thinness, a larger ideal body shape, and less body

dissatisfaction than their Caucasian peers, African American women still report distress at the presence of eating disorder behaviors or body image dissatisfaction. For example, Franko, Becker, Thomas, and Herzog (2007) found that the presence of binge eating and restricting were significant predictors of distress among African Americans. Flowers, Levesque, and Fischer (2012) found that binge eating and purging behavior were associated with increased body dissatisfaction in a sample of female college students who identify as African American. Before beginning a treatment program, although obese African American women reported higher satisfaction with their bodies than Caucasian women despite no significant difference in body weight at this time, African American women in this study still reported considerable dissatisfaction with their bodies (Annesi & Gorjala, 2010). In a study conducted with adolescents, African American women reported higher self-esteem and lower body dissatisfaction than many other ethnic groups and had a weaker relationship between body dissatisfaction and self-esteem when compared to Caucasian women (van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010). However, the authors emphasize that although elevated body dissatisfaction may not be as prevalent in African American women, that when it does occur, it may have similar implications for self-esteem since a relationship was still found between body dissatisfaction and self-esteem for this group (van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010). Additionally, Snapp (2009) looked at within-group differences with low-income African American and Hispanic adolescent women and found that those with high thin-ideal internalization and those with low thin-ideal internalization did not differ based on weight categorization or race/ethnicity and that those in the low thin-ideal internalization reported higher athletic competence and body satisfaction ratings for weight when compared to their high thin-ideal internalization peers. This provides evidence for the differences

in body satisfaction and thin-ideal internalization that can occur within a particular ethnic group and emphasizes the need for additional study within ethnic groups as well as between them.

Proposed reasons for Body Dissatisfaction in African American Women

Although African American women often report lower levels of body dissatisfaction than Caucasian women, it is important to also explore the potential reasons for the existence of any levels of body dissatisfaction in African American women since it exists. Roberts, Cash, Feingold, and Johnson (2006) argue that a single factor such as sociocultural pressure to be thin cannot account for both the decrease over time that has been found in ethnic differences using weight-related measures and the increase over time in ethnic differences in global body image assessments. Instead they argue that it is possible that African American women are becoming less satisfied with their bodies due to the impact of Caucasian cultural values to be thin, that the Caucasian cultural value to be thin is decreasing as it is impacted by minority culture and values, that changes in self-esteem may be impacting these findings as African American women have consistently been found to have higher self-esteem than Caucasian women, or that body satisfaction may have increased or decreased for both groups but more sharply for one or the other (Roberts, Cash, Feingold, and Johnson, 2006). Other theorists have proposed that perhaps some African American women will feel conflicted between the value placed on thinness in Western societies and the value placed on larger body sizes within their culture and may in fact experience risk for body dissatisfaction or eating pathology (Edwards George & Franco, 2010). Other women may reject the cultural value placed on larger body sizes and instead value thinness either to fit in with the values of the majority culture or due to the belief that it will allow for upward class mobility (Williamson, 1998 as cited in Sabik, Cole, & Ward, 2010). Finally, although many researchers equate body image with dissatisfaction with one's weight or body

size, this may overlook many other areas of body image that could be particularly important to African American women. In particular, African American women may focus on other aspects of body image such as the length of their hair, the texture of their hair, or the shade of their skin (Mosley, 2004 as cited in Roberts, Cash, Feingold & Johnson; Parker et al., 1995). It is possible that other factors are contributing to body dissatisfaction in African American women which may not be captured through many of the commonly used measures of body satisfaction.

Competitiveness

In addition to sociocultural factors, many individual factors have been proposed to play a role in the development of behaviors associated with eating disorders and body dissatisfaction. For example, personality traits such as perfectionism, impulsivity, and obsessive-compulsive traits have been found to be associated with eating disorder symptoms (Halmi, 2005 as cited in Gentile, Raghavan, Rajah & Gates, 2007; Wiseman, Peltzman, Halmi, & Sunday, 2004 as cited in Gentile, Raghavan, Rajah & Gates, 2007). One variable that has been studied often is perfectionism. Perfectionism has been found to be correlated with negative body image and eating disorder behaviors (Garner, 2004). However, while perfectionism focuses on an individual aspiring to an ideal or standard within oneself, the variable of competitiveness assesses an individual aspiring to an ideal or standard based on achievements of others and has not been studied as often in relation to eating behavior and body image (Striegel-Moore, Silberstein, Grunberg, & Rodin, 1990).

Many research studies have focused on the role of competitiveness in athletes' body image and disordered eating behavior, but work with non-athletes is more limited. It has been found that some athletes engage in "competitive thinness" where they notice others who appear thin and feel a competitive need to lose weight (Powers & Thompson, 2007). This is often

confounded by the fact that athletes tend to be more competitive than their non-athlete counterparts (Powers & Thompson, 2007). Athletes may also perceive thinness as performance-enhancing, particularly those athletes who participate in sports that emphasize leanness or have weight restrictions (Powers & Thompson, 2007 and Thompson & Sherman 1999 as cited in Powers & Thompson, 2007). In addition, Picard (1999) found that athletes who are in more competitive athletic environments were at an increased risk for the development of eating disorders and showed more signs of pathological eating. De Bruin, Bakker, and Oudejans (2009) also found that a stronger ego orientation in female gymnasts and dancers was a significant predictor of the frequency of dieting behavior. These authors defined ego orientation as, “the goal of action is to demonstrate ability relative to the ability of others,” and emphasized that this construct is often highly related to the constructs of competitiveness and hypercompetitiveness (De Bruin, Bakker, & Oudejans, 2009, p. 73). Peden, Stiles, Vandehey, and Diekhoff (2008) found that competitiveness levels reported by college athletes was positively correlated with body dissatisfaction, but not characteristics of eating disorders.

Additional research has also found evidence that competitiveness may play a role in disordered eating and body dissatisfaction in non-athletes as well, though this research is more limited. For example, Striegel-Moore, Silberstein, Grunberg, and Rodin (1990) found that college women who reported high levels of disordered eating had significantly higher scores on the competitiveness subscale of the Work and Family Orientation Questionnaire when compared to college women who did not report disordered eating. Peden, Stiles, Vandehey, and Diekhoff (2008) found that within a general sample of both male and female college non-athletes, competitiveness was positively correlated with characteristics of eating disorders and body dissatisfaction. Studies have also found that individuals in less competitive situations and had

fewer competitive pressures were less likely to endorse disordered eating behavior and body dissatisfaction (Fulkerson, Keel, Leon, & Dorr, 1999 as cited in Peden, Stiles, Vandehey & Diekhoff, 2008 and Ryujin, Breaux, & Marks, 1999 as cited in Peden, Stiles, Vandehey & Diekhoff, 2008). However, some studies have suggested that only certain types of competitiveness are linked to disordered eating behavior among non-athletes. For example, Burckle, Ryckman, Gold, Thornton, and Audesse (1999) found that hypercompetitiveness was linked to disordered eating behavior but general competitiveness and a general need to achieve were not significant predictors of disordered eating behavior among a sample of Caucasian female university students.

Competitiveness has also been linked to social comparison, an important construct in disordered eating behavior and body dissatisfaction. Schutz, Paxton, & Wertheim (2002) found that girls in seventh grade, eighth grade, and tenth grade reported comparing their bodies most frequently with peers and fashion models, that these social comparisons increased with age, and that one variable that significantly predicted body comparison was competitiveness. If competitiveness increases body comparison, this may result in competitive women evaluating their body shape and size more often which may cause body dissatisfaction. Social comparison in body shape has been found to be strongly associated with body dissatisfaction in many studies on college women (Heinberg & Thompson, 1992 as cited in Schutz, Paxton, & Wertheim, 2002; Thomson & Heinberg, 1993 as cited in Schutz, Paxton, & Wertheim, 2002). In addition, college women with higher levels of social comparison with peers or celebrities had increased body dissatisfaction, particularly if they focused on weight and body size (Stormer & Thompson, 1996 as cited in Peden, Stiles, Vandehey & Diekhoff, 2008).

Social comparison theory asserts that when individuals compare themselves to others who they perceive as better off than themselves (upward comparisons), it may result in motivation to change or emotional distress, depending on a number of variables such as perceived similarity to the comparison target (Festinger (1954) as cited in Leahey, Crowther & Ciesla (2011); Collins (1996) as cited in Leahey, Crowther & Ciesla (2011); Buunk and Ybema (1997) as cited in Leahey, Crowther & Ciesla (2011)). Upward social comparisons relevant to body image and appearance can be made to women seen in person or media portrayals of women. In a study of appearance-focused social comparisons naturally occurring among female college students, most of whom identified as Caucasian, Leahey, Crowther, and Ciesla (2011) found that women with high body dissatisfaction engaged in more comparisons with women they perceived as more attractive than themselves than women with low levels of body dissatisfaction. These researchers also found that when women made upward social comparisons, an association with negative emotions was found for all women, but individuals with eating disorder pathology had a larger increase in negative emotions, thoughts of dieting, thoughts of exercising, thought of engaging in compensatory behaviors, actual increases in compensatory behaviors, and a decrease in social esteem (Leahey, Crowther, & Ciesla, 2011).

Another theory that has been proposed which focuses on competitiveness, specifically competitiveness among peers, as a predictor of body dissatisfaction is an evolutionary model proposed by Ferguson, Munoz, Contreras, and Velasquez (2011) that is based on the Catalyst Model which focuses on aggressiveness (Ferguson & Beaver, 2009 as cited in Ferguson, Munoz, Contreras, and Velasquez, 2011). The newer model is an evolutionary model that proposes that the interaction of genetic predisposition and competition among peers has a direct impact on body dissatisfaction as well as an indirect effect on body dissatisfaction through personality

variables (Ferguson, Munoz, Contreras, and Velasquez, 2011). From an evolutionary perspective, body dissatisfaction is considered to be related to competition for available mates, implying that in circumstances where mates are scarce or highlighted, competitiveness will increase and so will body dissatisfaction (Ferguson, Munoz, Contreras, and Velasquez, 2011). These researchers argue that peer influences on body dissatisfaction are stronger than media influences as peers are immediate competition for potential mates (Ferguson, Munoz, Contreras, and Velasquez, 2011). In a lab study these researchers conducted with female college students, the majority of whom identified as Mexican-American, body dissatisfaction increased in the presence of female peers in formal attire, particularly when an attractive male peer was present, and television exposure did not impact body dissatisfaction once peer influences were controlled for (Ferguson, Munoz, Contreras, and Velasquez, 2011). However, in a correlational study, these researchers found that peer influences did not have a direct effect on body dissatisfaction but did negatively predict feelings of inferiority in response to other girls (Ferguson, Munoz, Contreras, and Velasquez, 2011). In a later study conducted by Munoz and Ferguson (2012), it was found that among female college students, the majority of whom identified as Mexican-American, body dissatisfaction was predicted by larger BMI, depressive symptoms, and perceived competition with and feelings of inferiority in comparison to other women (Munoz and Ferguson, 2012). Body dissatisfaction was also a significant predictor of reduced life satisfaction (Munoz and Ferguson, 2012). The authors concluded that this supported this theoretical model as competition with peers was a strong predictor of body dissatisfaction while television exposure to thin ideal actresses was not a predictor of body dissatisfaction in this study (Munoz and Ferguson, 2012). Although these authors provide interesting evidence that peer competitiveness may have a larger influence than media exposure on body dissatisfaction, their definition of exposure to media was

somewhat limited in these studies as television was the only media included and participants were only asked to describe their three favorite shows (Munoz and Ferguson, 2012). However, the importance of peer influences and competitiveness on body dissatisfaction is evident in this and other studies (Clark & Tiggerman (2008) as cited in Ferguson, Munoz, Contreras & Velasquez, 2011; Jones, Vigfudottir & Lee (2004) as cited in Ferguson, Munoz, Contreras & Velasquez, 2011; McCabe & Ricciardelli (2005) as cited in Ferguson, Munoz, Contreras & Velasquez, 2011).

Although competitiveness frequently appears to be related to disordered eating and body dissatisfaction, research on the role of competitiveness in body dissatisfaction with ethnic minorities is limited. In addition to the studies already mentioned, Parker et al. (1995) found that African American women in their study described themselves as being supportive of their peers which differed from Caucasian women's descriptions of being jealous and competitive with their peers. This suggests that levels of peer competitiveness may differ between African American and Caucasian women, but this has not yet been assessed.

Ethnic Identity

Many other individual factors have also been proposed to play a role in the development of behaviors associated with eating disorders and body dissatisfaction. Ethnic identity and acculturation have been identified as variables that may impact body image dissatisfaction as this can affect the individual's cultural context and the importance placed on body shape or size. Some theorists argue that increased adherence to the dominant culture increases the risk for developing body concerns and eating disorders as thinness is often valued in Western societies (Harris & Kuba, 1997 as cited in Shaw, Ramirez, Trost, Randall & Stice, 2004). However, others have suggested that rejecting the dominant culture and adhering to the ethnic culture leads to

increased risk instead (Edwards George & Franco, 2010; Lake, Staiger, & Glowinski, 2000 as cited in Shaw, Ramirez, Trost, Randall & Stice, 2004).

Research findings of the importance of ethnic identity and acculturation in relation to body image dissatisfaction have been mixed, though the majority of studies have found that a relationship exists between ethnic identity and body dissatisfaction. Petrie, Tripp, and Harvey (2002) found body image dissatisfaction was independent from acculturation in their sample (as cited in Gentile, Raghavan, Rajah & Gates, 2007) while other investigators found it did relate (Gowen, Hayward, Killen, Robinson, & Taylor, 1999 as cited in Gentile, Raghavan, Rajah & Gates, 2007). Sabik, Cole & Ward (2010) found that for African American women, other-group orientation acted as a moderator so that for African American women high in other-group orientation, appearance esteem had a greater association with drive for thinness than for African American women low in other-group orientation. Rogers Wood and Petrie (2010) found that ethnic identity was inversely related to internalization of societal beauty ideals in female African American college students, which had a significant relationship with disordered eating. In a sample of female African American college students, Flowers, Levesque, and Fischer (2012) found that self-hatred of African American group membership was related to binge eating and purging behaviors and that body dissatisfaction mediated this relationship. Oney, Cole, and Sellers (2011) found that both male and female African American college students who view race as central to their identities were more likely to report high self-esteem even if they have body dissatisfaction. Shuttlesworth and Zotter (2011) found that higher levels of ethnic identity were related to different behaviors associated with eating disorders for African American and Caucasian female university students. These researchers found that higher levels of ethnic identity were related to lower levels of binge eating behavior, lower levels of bulimic behavior,

and did not significantly relate to global eating disorder behaviors (such as those related to Anorexia Nervosa) for African American women, while for Caucasian women, high ethnic identity was related to higher levels of binge eating behavior, higher levels of global eating disorder behavior, and did not significantly related to bulimic behaviors (Shuttlesworth & Zotter, 2011). Given these research findings, it is important to further explore the potential impact of ethnic identity on body image among diverse populations.

Phinney expanded on Erikson and Marcia's identity development work and proposed a theory of ethnic identity that applies to individuals across multiple ethnic groups and provides a testable model (Ong, Fuller-Rowell & Phinney, 2010). This theory focuses on the process of identity formation, or how individuals develop ethnic identity, rather than the content of this identity (Ong, Fuller-Rowell & Phinney, 2010). This theory focuses on two constructs of ethnic identity: exploration and commitment (Phinney & Ong, 2007). Exploration includes actively seeking information about one's ethnic group and participation in cultural experiences related to one's ethnicity (Phinney & Ong, 2007). Commitment involves a sense of belonging to one's ethnic group (Phinney & Ong, 2007).

Socioeconomic Status

Socioeconomic status (SES) has also been found to be associated with body image. For example, van den Berg, Mond, Eisenberg, Ackard & Neumark-Sztainer (2010) found that for girls, the association between body satisfaction and self-esteem was significant among all SES groups but smaller in the lowest SES group. Other investigators have suggested that SES has an impact on body image, but emphasize that they are unsure of the exact nature of this relationship (Fernandez, Malacrne, Wilfley & McQuaid, 2006). As a result, it is important to explore the potential impact of SES on body image dissatisfaction in the present study.

Global Self-Esteem

Global Self-Esteem has been found to be strongly associated with body dissatisfaction in samples of ethnically diverse adolescents (van den Berg, Mond, Eisenberg, Ackard & Neumark-Sztainer, 2010). Low self-esteem is associated with being a risk-factor for the development of eating disorders (Halmi, 2005 as cited in Gentile, Raghavan, Rajah & Gates, 2007; Wiseman, Peltzman, Halmi, & Sunday, 2004 as cited in Gentile, Raghavan, Rajah & Gates, 2007). Self-esteem was also found to relate to positive body image in a diverse sample of college women (Swami, Airs, Chouhan, Padilla Leon, & Towell, 2009). As a result, it is important to consider the potential impact of global self-esteem on body image in the present study.

Depression

Although body dissatisfaction may put an individual at-risk for developing depressive symptoms, depressive symptoms may also impact how an individual evaluates his or her body shape and size (Grabe & Hyde, 2006). Depression symptoms have been found to correlate with body dissatisfaction for women in a number of studies (Fabian & Thompson, 1989; Fung, Stewart, Ho, Wong, Lam, 2010). As a result, it is important to examine the association between depressive symptoms and body dissatisfaction in the present study.

Body Mass Index

Body mass has been found to be associated with body image in a number of studies (Rhea, 1999). In addition, because on average, African American women weigh more than Caucasian women, it is important to control for BMI to ensure comparisons are being made among women who have similar levels of body fat.

Age

Age has been found to be related to body dissatisfaction. Studies often report that during adolescence or college years, the differences between African American and Caucasian women tend to be the largest and that body dissatisfaction may be higher during these years (Grabe & Hyde, 2006; Wildes, Emery & Simons, 2001). However, Demarest and Allen (2000) found that body dissatisfaction may not differ between participants under 25 years old and those over 30 years old, although internalization of the thin ideal might. They found that participants under 25 years old estimated that members of the opposite sex would want to date someone much thinner than this group actually indicated while participants over 30 years old were more accurate in their estimations (Demarest & Allen, 2000). In one of few studies assessing positive and negative affect in adult and older adults, Diehl, Hay, and Berg (2011) found a small but significant decrease in negative affect as age increased and found that young adults (which they defined as ages 18-39) had significantly lower positive affect than middle aged adults (which they defined as ages 40-59) and older adults (which they defined as ages 60-89). They did not find a difference in positive affect between middle-aged adults and older adults. An increase in positive affect and decrease in negative affect from young adulthood to middle-aged adulthood and old age could have an impact on self-esteem scores, depression scores, body dissatisfaction, and a number of other variables. Stability of self-esteem has also been found to be related to age. For example, Tresniewski, Donnellan, and Robbins (2003) conducted two meta-analyses and found some evidence that that self-esteem remains largely stable for many individuals over the lifespan in response to life changes, though it also can fluctuate within certain ranges. These authors found that self-esteem is least stable during childhood (which they defined as ages 6-11), that stability increases through adolescence and into early adulthood (which they defined as ages 12-

29), and stability may decrease in old age (which they defined as ages 60-82), though they note that due to the paucity of research on self-esteem in adulthood or old age, this finding may have limited generalizability (Tresniewski, Donnellan, & Robbins, 2003). As a result, it is important to consider the potential impact of age on body dissatisfaction in samples that capture a broader age range than focusing only on college-aged participants.

Number of Children

The number of children a woman has had can affect her body size and shape, as well as body dissatisfaction. Sanchez-Johnsen et al. (2004) argued for the importance of controlling for the potentially confounding variable of the number of children women have in their study assessing body image and correlates of obesity among an ethnically diverse sample of participants from 18 years old to 67 years old. It is important to consider the potential impact of this variable on body dissatisfaction.

Present Study

The goal of this research project was to investigate the relationships between competitiveness, social comparison, and body dissatisfaction in African American and Caucasian women who vary in their degree of ethnic identity. Although competitiveness has been linked to body dissatisfaction in athletes (Peden, Stiles, Vandehey, and Diekhoff, 2008), work with non-athletes is more limited, particularly among ethnically diverse populations. Competitiveness also may be reflected in women's body images and/or in their everyday lives outside of body shape so it is important to consider this construct to be multi-faceted. In addition, tests will be run to assess the possible impact of the variable ethnic identity as recent research has indicated this identity variable relates to body dissatisfaction (Flowers, Levesque, and Fischer, 2012). Analyses will control for age of participant, BMI, household income (which serves as a proxy for

SES), the number of children the participant has, Global Self-Esteem, and Depression since each of these variables has been found to correlate with body dissatisfaction.

Hypotheses

Hypothesis 1. General competitiveness scores will positively correlate with body dissatisfaction for all participants.

Hypothesis 2. Dieting peer competitiveness scores will positively correlate with body dissatisfaction for all participants.

Hypothesis 3. Caucasian participants will have higher body dissatisfaction across all BMI's.

Hypothesis 4. Dieting peer competitiveness scores will be higher for Caucasian women than African American women so race/ethnicity will impact the relationship between this type of competitiveness and body dissatisfaction.

Hypothesis 5. Ethnic Identity will impact the relationship between competitiveness and body dissatisfaction. As ethnic identity scores increase, body dissatisfaction scores will decrease.

CHAPTER 2

METHOD

Participants

Four hundred and ninety-two female volunteers from locations within the United States completed the measures online. All participants were over 18 years old and were recruited online. Participants were excluded from the study if they did not identify as either African American or Caucasian. Data from 49 participants was removed, because these participants did not complete at least one entire measure. This resulted in a sample of 443 participants, 165 of whom identified as African American and 278 of whom identified as Caucasian. A random number generator was used to select a random sample of 178 of the participants who identified as Caucasian in order to allow comparisons using similar sample sizes. This resulted in a final sample of 343 female participants, 165 of whom identified as African American and 178 of whom identified as Caucasian.

Participants were asked about current household income, number of individuals the current household income applied to, and the number of children the participant has. For current household income among participants in this sample, a larger percentage of African American participants than Caucasian participants reported having a current household income in all income categories under \$80,000 while a larger percentage of Caucasian participants reported having a current household income in both income categories over \$80,000 (see Table 1). For the number of individuals this income currently applies to, both African American ($M = 2.34$ individuals, $SD = 1.44$, $\min = 1$, $\max = 6$ or more individuals) and Caucasian participants ($M = 2.07$ individuals, $SD = 1.20$, $\min = 1$, $\max = 6$ or more individuals), had an average of 2 individuals that this current income applied to. Finally, for number of children, a larger

percentage of African American participants reported having no children or one child than Caucasian participants while a larger percentage of Caucasian participants reported having two, three, or four children (see Table 2). A small percentage of participants in this study reported having 5 or more children. Number of children is typically confounded by age (see results section for more information on age of participants in this study).

Table 1. Current Household Income by Race/Ethnicity

	African American participants	Caucasian participants
Less than \$20,000	23.0%	11.9%
Greater than \$20,000 and less than \$40,000	13.9%	11.3%
Greater than \$40,000 and less than \$60,000	17.0%	14.1%
Greater than \$60,000 and less than \$80,000	13.9%	11.9%
Greater than \$80,000 and less than \$100,000	10.9%	13.6%
Greater than \$100,000	21.2%	37.3%
Total*	99.9%	100.1%

*Note: Total percentages do not sum to 100 due to rounding.

Table 2. Number of Children by Race/Ethnicity

	African American participants	Caucasian participants
No children	75.2%	61.2%
One	10.9%	9.6%
Two	6.1%	16.9%
Three	6.1%	9.6%
Four	1.2%	2.2%
Five	0.0%	0.6%
Six or more	0.6%	0.0%
Total*	100.1%	100.1%

*Note: Total percentages do not sum to 100 due to rounding.

Using power analysis and assuming an effect size of $f = .30$ (which is a “medium” effect size according to Cohen's generally accepted classifications for social sciences), a high degree of power ($\beta = .95$), and $\alpha = .05$, we found that at least 281 participants would be needed to

determine an effect of this size using an F test or ANCOVA with 2 groups for race/ethnicity and 8 covariates in the model (Cohen, 1988; Faul, Erdfelder, Buchner & Lang, 2009). Since our final sample size exceeded this cutoff, we should be able to demonstrate a statistical effect of this size if such an effect is present in our data using 8 or fewer covariates.

Measures

The Dieting Peer Competitiveness Scale

The Dieting Peer Competitiveness Scale (DPC) is a 9-item self-report measure used to assess the degree to which an individual compares her appearance and body shape with that of her friends as well as what she eats or avoids eating around friends (Huon, Piira, Hayne & Strong, 2002). Within a sample of adolescent women, Huon, Piira, Hayne, and Strong (2002) found support for the reliability and validity of this measure. They determined that DPC scores were positively correlated with measures of body dissatisfaction and drive for thinness, but that DPC scores were not simply replicating the findings from these measures (Huon, Piira, Hayne & Strong, 2002). They also found evidence for discriminative validity as DPC scores successfully distinguishes between individuals who reported being serious dieters and individuals who reported not being serious dieters (Huon, Piira, Hayne & Strong, 2002). However, these authors do not mention using this measure with ethnically diverse samples or with older female participants. As a result, little is known about the psychometric properties of this measure when used with these individuals.

Cronbach's alpha was poor in this sample ($\alpha = .527$). When one item, item 6, "I don't mind going out in form-fitting clothing that shows my shape even if my friend is wearing form-fitting clothing and looks better than I do", was removed, alpha was near the cutoff for acceptable reliability ($\alpha = .679$ for all participants, $\alpha = .664$ for African American participants,

and $\alpha = .686$ for Caucasian participants). As a result, this item was removed for all analyses conducted in this study.

The Revised Competitiveness Index

The Revised Competitiveness Index (CI-R) is a 14-item self-report measure designed to assess the desire to win in interpersonal situations (Houston, Harris, McIntire & Francis, 2002). Evidence has been found for the existence of two factors: Enjoyment of Competition and Contentiousness (Houston, Harris, McIntire & Francis, 2002). This measure demonstrates good reliability in a sample of college students, suggesting that the measure assesses a stable trait of competitiveness (Harris & Houston, 2010).

Cronbach's alpha was high in this sample ($\alpha = .896$ for all participants, $\alpha = .894$ for African American participants, and $\alpha = .921$ for Caucasian participants). Cronbach's alpha was acceptable for both subscales as well ($\alpha = .930$ for all participants, $\alpha = .909$ for African American participants, and $\alpha = .946$ for Caucasian participants for enjoyment of competition and $\alpha = .821$ for contentiousness for all participants, $\alpha = .799$ for African American participants, and $\alpha = .834$ for Caucasian participants).

The Body-Image Ideals Questionnaire

The Body-Image Ideals Questionnaire (BIQ) is an 11-item self-report questionnaire that asks participants to rank each item on two dimensions to measure the discrepancy between an individual's views of her own physical attributes versus her ideal physical attributes as well as the importance of each of these physical attributes to the individual (Cash & Szymanski, 1995). The BIQ incorporates physical attributes beyond weight-related body parts and includes attributes that have been found to be important in body image for African American women, such as skin complexion and hair texture (Cash & Szymanski, 1995). Evidence has been found

for the reliability and validity of this scale when used with college women (Cash & Szymanski, 1995).

Cronbach's alpha was acceptable in this sample ($\alpha = .755$ for all participants, $\alpha = .776$ for African American participants, and $\alpha = .721$ for Caucasian participants).

The Eating Disorder Inventory-3 Body Dissatisfaction Subscale

The Body Dissatisfaction subscale of the Eating Disorder Inventory -3 (EDI-3) is a 10-item scale which measures self-reported discontentment with the size and shape of body parts that have been found to cause distress in individuals with eating disorders, including the stomach, hips, thighs, and buttocks (Garner, 2004). Many studies have supported the validity and reliability of the EDI-3 and its subscales (Garner, 2004). However, it is important to note that some of these items only assess body dissatisfaction in the direction of a particular body part being too large which may not accurately capture the experiences of some African American women who may feel particular body parts are too small so this may not accurately reflect all participant's views of their body.

Cronbach's alpha was high in this sample ($\alpha = .887$ for all participants, $\alpha = .857$ for African American participants, and $\alpha = .903$ for Caucasian participants).

The Revised (12-item) Multigroup Ethnic Identity Measure (MEIM-R)

The 12-item Multigroup Ethnic Identity Measure-Revised (MEIM-R) is a self-report measure designed to assess ethnic identity across diverse ethnic groups (Phinney & Ong, 2007). This measure contains two subscales to assess two constructs of ethnic identity: exploration and commitment (Phinney & Ong, 2007). Evidence has been found for the reliability and validity of this measure for use with diverse populations (Phinney & Ong, 2007).

Cronbach's alpha was high in this sample ($\alpha = .908$ for all participants, $\alpha = .910$ for African American participants, and $\alpha = .861$ for Caucasian participants). Cronbach's alpha was acceptable for both subscales as well ($\alpha = .791$ for all participants, $\alpha = .792$ for African American participants, and $\alpha = .653$ for Caucasian participants for ethnic identity search and $\alpha = .908$ for all participants, $\alpha = .914$ for African American participants, and $\alpha = .866$ for Caucasian participants for affirmation, belonging, and commitment).

The Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale is a 10-item self-report scale that has been used in numerous studies and is widely accepted as a valid and reliable measure to use for assessing general self-esteem (Rosenberg, 1989). This scale has been used both as a measurement of one factor representing general self-esteem which contains items that are both positively and negatively worded, and as a measurement of two factors of self-esteem: self-confidence which contains the positively worded items and self-deprecation which contains the negatively worded items (Rosenberg, 1989). Many investigators have found evidence for this measure being empirically valid for use with diverse populations (Everaert, Koster, Schacht, & De Raedt, 2010; Flowers, Levesque, & Fischer, 2012; Gongora & Casullo, 2009; Roberts, Phinney, Masse, Chen, Roberts, & Romero, 1999). However, some investigators have argued that this measure may not be as valid for use with African American women (Hatcher & Hall, 2009). For example, Hatcher and Hall (2009) argue that the positively and negatively worded items may capture different aspects of African American single mother's self-esteem and that one item had a poor item-total correlation, suggesting that the item, "I am able to do things as well as most other people," may be functioning differently for their sample of African American women than the other individuals (Hatcher & Hall, 2009). However, the participants in their sample had high levels of

depression and were experiencing many stressors that may be unique to single mothers which could affect the generalizability of their findings (Hatcher & Hall, 2009). In addition, Hatcher and Hall (2009) also found support for other aspects of the reliability and validity of this measure within their sample of African American single mothers, suggesting that although the use of this measure with diverse populations may warrant caution in some aspects of the interpretation, it still appears to be a psychometrically sound self-report measure of self-esteem for use with ethnically diverse samples.

Cronbach's alpha was high in this sample ($\alpha = .904$ for all participants, $\alpha = .900$ for African American participants, and $\alpha = .907$ for Caucasian participants).

The Center for Epidemiological Studies-Depression Scale

The Center for Epidemiological Studies-Depression Scale (CES-D) is a 20-item self-report questionnaire that was developed to assess depressive symptoms with non-clinical populations (Radloff, 1977). Radloff (1977) found support for the reliability and validity of this measure with a general population and with a clinical population. Evidence has also been found for the predictive validity of using this measure with college-student populations (Shean & Baldwin, 2008).

Cronbach's alpha was high in this sample ($\alpha = .904$ for all participants, $\alpha = .890$ for African American participants, and $\alpha = .915$ for Caucasian participants).

Demographic Information

Participants were also asked to report their age, race/ethnicity, height, weight, and household income. Height and weight were used to calculate BMI. Household income served as a proxy for socioeconomic status.

Interpretation of Scores

Higher scores on the EDI-3 body dissatisfaction subscale indicate increased dissatisfaction. Higher scores on the Dieting peer competitiveness scale reflect increased dieting peer competitiveness and higher scores on the CI-R overall score and its subscales, Enjoyment of Competition and Contentiousness, reflect increased competitiveness. Higher scores on the CES-D indicate increased endorsement of depressive symptoms. Higher scores on the MEIM-R and its subscales, ethnic identity search and affirmation, belonging, and commitment, reflect increased ethnic identity. Higher scores on the BIQ reflect increased self-ideal discrepancies with strong physical ideals. Finally, higher scores on the RSE reflect increased self esteem.

Procedure

Participants were recruited online through psychological research websites, social media websites, websites advertising volunteer opportunities, and electronic mail. Once consent was obtained, all participants were asked to complete the questionnaires online through surveymonkey.com. Participants completed background and demographics questions, the Dieting Peer Competitiveness Scale, the Revised Competitiveness Index, the Body-Image Ideals Questionnaire, the Body Dissatisfaction subscale of the Eating Disorder Inventory -3, the 12-item Multigroup Ethnic Identity Measure-Revised, the Rosenberg Self-Esteem Scale, and The Center for Epidemiological Studies-Depression Scale. The order of questionnaires was randomized to control for potential order effects. Participants were offered the opportunity to view the final results once the study was completed and were also offered the choice to voluntarily submit their name and email account in order to enter a raffle to win a \$50 gift card (to their choice of Amazon.com or Starbucks) for participating (overall odds of winning approximately 1:34).

CHAPTER 3

RESULTS

Preliminary Analyses

T-tests were used to examine if there were differences between African American and Caucasian participants with respect to age and BMI before controlling for the potential impacts of other variables (see Table 3). There was a significant difference in the mean age and mean BMI between groups. African American participants ($M = 28.93$, $SD = 9.92$) were significantly younger than Caucasian participants ($M = 36.69$, $SD = 13.84$). African American participants ($M = 26.95$, $SD = 6.91$) also had significantly larger BMIs than Caucasian participants ($M = 24.99$, $SD = 5.60$). In addition, BMI was significantly positively correlated with DPC scores, EDI-3 body dissatisfaction subscale scores, and BIQ scores for all participants, but was also significantly negatively correlated with self-esteem and significantly positively correlated with depression for only Caucasian participants (see Table 6 and 7). As a result of these differences between groups, it is important to control for the potential impact of these variables in analyses assessing body dissatisfaction.

Table 3. T-tests for Age and BMI by Race/Ethnicity

	African American participants M(sd)	Caucasian participants M(sd)	t	p value
Age**	28.93 (9.92)	36.69 (13.84)	-5.91	.000
BMI**	26.95 (6.91)	24.99 (5.60)	2.86	.004

**denotes significance at $p < .01$

*denotes significance at $p < .05$

T-tests were also used to examine if there were differences between African American and Caucasian participants for psychological characteristics including self-esteem, depression,

and ethnic identity before controlling for the potential impacts of other variables (see Table 4). There was not a significant difference between groups in self-esteem scores or depression scores. These variables have been shown to be related to body dissatisfaction in other studies, so they were statistically controlled in the analysis of body dissatisfaction. There was a significant difference in the mean ethnic identity total and subscale scores between groups. African American participants had significantly higher mean scores ($M = 3.18$, $SD = .56$) than Caucasian participants ($M = 2.56$, $SD = .50$) for total ethnic identity scores and each of the ethnic identity subscale scores. As a result of these differences between groups, it is important to consider the impact of ethnic identity in analyses assessing the relationships between competitiveness and body dissatisfaction.

Table 4. T-tests for Psychological Characteristics by Race/Ethnicity

	African American participants M(sd)	Caucasian participants M(sd)	t	p value
Self-esteem	33.50 (5.63)	32.70 (5.48)	1.31	.192
Depression	13.12 (8.98)	12.08 (9.50)	1.00	.317
Ethnic Identity search**	2.98 (.64)	2.21 (.56)	11.81	.000
Ethnic Identity affirmation, belonging, and commitment**	3.33 (.62)	2.79 (.57)	8.17	.000
<u>Ethnic Identity total**</u>	<u>3.18 (.56)</u>	<u>2.56 (.50)</u>	<u>10.36</u>	<u>.000</u>

**denotes significance at $p < .01$

*denotes significance at $p < .05$

The mean self-esteem scores in our sample ($M = 33.50$ for African American participants and $M = 32.70$ for Caucasian participants) are similar to those Swami, Airs, Chouhan, Padilla Leon, and Towell (2009) found for female university students ($M = 34.39$ for African Caribbean

participants, $M = 32.11$ for Caucasian participants). The mean depression scores in our sample ($M = 13.12$ for African American participants and $M = 12.08$ for Caucasian participants) appear lower than those Radloff (1977) found for male and female participants in their sample ($M = 16.2$).

T-tests were also used to examine if there were differences between African American and Caucasian participants for outcome variables, including EDI-3 body dissatisfaction subscale scores, BIQ scores, DPC scores, and CI-R scores before controlling for the potential impact of age, BMI, self-esteem, depression, and ethnic identity (see Table 5). There was not a significant difference between groups in CI-R total scores or the CI-R enjoyment of competition subscale. There was a significant difference in mean EDI-3 body dissatisfaction subscale scores, BIQ scores, DPC scores, and the CI-R contentiousness subscale scores between groups. For EDI-3 subscale scores, African American participants had significantly lower mean scores ($M = 12.81$, $SD = 8.49$) than Caucasian participants ($M = 16.13$, $SD = 10.01$). For BIQ scores, African American participants had significantly lower mean scores ($M = 1.08$, $SD = 1.37$) than Caucasian participants ($M = 1.42$, $SD = 1.09$). For DPC scores, African American participants had significantly lower mean scores ($M = 19.93$, $SD = 5.91$) than Caucasian participants ($M = 22.84$, $SD = 5.94$). Finally, for CI-R contentiousness subscale scores, African American participants had significantly higher mean scores ($M = 15.24$, $SD = 4.54$) than Caucasian participants ($M = 13.70$, $SD = 4.47$). For most findings, African Americans had significantly lower scores in terms of body dissatisfaction and competitiveness, with the exception of CI-R scores. No difference was found in CI-R total scores and CI-R enjoyment of competition and African American participants had higher scores for CI-R contentiousness. These variables have

been shown to be related to body dissatisfaction in other studies, so they were statistically controlled in the analysis of body dissatisfaction.

Table 5. T-tests for Outcome Variables by Race/Ethnicity

	African American participants M(sd)	Caucasian participants M(sd)	t	p value
EDI-3 BD subscale**	12.81 (8.49)	16.13 (10.01)	-3.23	.001
BIQ*	1.08 (1.37)	1.42 (1.09)	-2.48	.014
DPC**	19.93 (5.91)	22.84 (5.94)	-4.50	.000
CI-R Enjoyment of Competition	29.36 (8.00)	30.63 (9.11)	-1.36	.176
CI-R Contentiousness**	15.24 (4.54)	13.70 (4.47)	3.11	.002
CI-R total	44.54 (10.69)	44.29 (11.73)	.20	.844

**denotes significance at $p < .01$

*denotes significance at $p < .05$

The mean EDI-3 body dissatisfaction scores in our sample ($M = 12.81$ for African American participants and $M = 16.13$ for Caucasian participants) fall into the low clinical range (Garner, 2004). The mean BIQ scores in our sample ($M = 1.08$ for African American participants and $M = 1.42$ for Caucasian participants) appear lower than those Cash and Szymanski (1995) found for female college students ($M = 1.75$). The mean DPC scores in our sample ($M = 19.93$ for African American participants and $M = 22.84$ for Caucasian participants) average to an item mean score of 2.49 for African American participants and 2.86 for Caucasian participants, which is similar to the range of item mean scores from 2.10 to 2.91 that Huon, Piira, Hayne, and Strong (2002) found for female high school students ranging in age from 12 to 17 years old. Finally, the mean CI-R total scores in our sample ($M = 44.54$ for African American participants and $M =$

44.29 for Caucasian participants) appear to be lower than those (Harris & Houston, 2010) found for female college students ($M = 47.07$).

T-tests were also used to examine if there were differences between African American participants who reported having a current household income over \$80,000 and African American participants who reported having a current household income of less than \$80,000. There were no significant differences between these two groups for any of the outcome variables.

T-tests were also used to examine if there were differences between Caucasian participants who reported having a current household income over \$80,000 and Caucasian participants who reported having a current household income of less than \$80,000 before controlling for the potential impacts of other variables (see Table 6). There was a significant difference in the mean EDI-3 score and DPC score between groups. Caucasian participants who reported an income over \$80,000 had a significantly higher score on the EDI-3 ($M = 17.99$, $SD = 10.10$) than Caucasian participants who reported an income under \$80,000 ($M = 14.40$, $SD = 9.70$) and Caucasian participants who reported an income over \$80,000 had a significantly higher score on the DPC ($M = 23.94$, $SD = 5.87$) than Caucasian participants who reported an income under \$80,000 ($M = 21.82$, $SD = 5.88$). As a result of these differences within groups that are consistent with existing literature suggesting that socioeconomic status may impact body dissatisfaction, it is important to control for the potential impact of household income in analyses assessing body dissatisfaction.

Table 6. T-tests for Outcome Variables by Household Income among Caucasian Participants

	Caucasian participants over \$80,000 M(sd)	Caucasian participants under \$80,000 M(sd)	t	p value
EDI-3 BD subscale*	17.99 (10.11)	14.40 (9.70)	-2.39	.018
BIQ	1.55 (1.17)	1.30 (1.00)	-1.60	.111
DPC*	23.94 (5.87)	21.82 (5.88)	-2.38	.018
CI-R Enjoyment of Competition	30.34 (9.12)	30.99 (9.16)	.47	.638
CI-R Contentiousness	13.24 (4.35)	14.12 (4.58)	1.32	.189
CI-R total	43.60 (11.43)	45.00 (12.09)	.78	.435

*denotes significance at $p < .05$

T-tests were also used to examine if there were differences between Caucasian participants who identified as "Caucasian" or "White" on the MEIM-R and Caucasian participants who identified as any other ethnicity on the MEIM-R, such as Jewish, Irish-American, and Italian-American. There were no significant differences between these two groups for any of the outcome variables.

Correlation analyses were used with 13 quantitative variables in order to test our first two hypotheses and to explore the relationships between variables for African American participants and Caucasian participants (see Table 7 and 8). Among African American participants, BMI, depression, and dieting peer competitiveness scores were significantly positively correlated with both EDI-3 body dissatisfaction subscale scores and BIQ scores and self-esteem, ethnic identity affirmation, belonging, and commitment subscale scores, and total ethnic identity scores were significantly negatively correlated with both EDI-3 and BIQ scores, indicating that higher BMI,

depression, and peer competitiveness is associated with an increased risk for body dissatisfaction while higher self-esteem and ethnic identity appear to act more like protective factors for body dissatisfaction among these participants. EDI-3 body dissatisfaction subscale scores and BIQ scores were also significantly positively correlated, indicating that both measures of body dissatisfaction were highly related despite assessing different aspects of body dissatisfaction. Among Caucasian participants, BMI, depression, and dieting peer competitiveness scores were also significantly positively correlated with both EDI-3 body dissatisfaction subscale scores and BIQ scores and self-esteem while CI-R: enjoyment of competition subscale scores, and total CI-R scores were significantly negatively correlated with both EDI-3 and BIQ scores, indicating that higher BMI, depression, and peer competitiveness is also associated with an increased risk for body dissatisfaction while self-esteem, general competitiveness overall, and enjoyment of competition may be protective factors for body dissatisfaction among these participants. CI-R contentiousness subscale scores were also significantly negatively correlated with BIQ scores, suggesting that contentiousness scores are protective of this type of body dissatisfaction among these participants. EDI-3 body dissatisfaction subscale scores and BIQ scores were again significantly positively correlated, indicating that both measures of body dissatisfaction were highly related despite assessing different aspects of body dissatisfaction. Many of these correlational relationships appear similar between African American and Caucasian participants, but additional analysis is required in order to control for the potential impact of these variables in analyses assessing body dissatisfaction as the effects of these variables may differ between groups once the effects of other variables are controlled for as well.

Table 7. Correlation Matrix for Quantitative Variables for African American Participants

		Correlations												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	Pearson	1.000												
	Sig. (2-tailed)													
2. BMI	Pearson	.137	1.000											
	Sig. (2-tailed)	.087												
3. Self-esteem	Pearson	.269**	-.098	1.000										
	Sig. (2-tailed)	.001	.233											
4. Depression	Pearson	-.325**	.052	-.665**	1.000									
	Sig. (2-tailed)	.000	.541	.000										
5. Ethnic Identity: EIS	Pearson	-.230**	-.080	.168*	-.006	1.000								
	Sig. (2-tailed)	.003	.316	.037	.945									
6. Ethnic Identity: ABC	Pearson	.146	-.019	.397**	-.201*	.588**	1.000							
	Sig. (2-tailed)	.067	.816	.000	.015	.000								
7. Ethnic Identity: Overall	Pearson	-.031	-.054	.330**	-.131	.854**	.923**	1.000						
	Sig. (2-tailed)	.697	.508	.000	.118	.000	.000							
8. Dieting Peer Competitiveness	Pearson	-.285**	.269**	-.515**	.454**	-.016	-.244**	-.155	1.000					
	Sig. (2-tailed)	.000	.001	.000	.000	.839	.002	.054						
9. CI-R: EOC	Pearson	-.216**	.013	.099	-.076	.088	.071	.092	.144	1.000				
	Sig. (2-tailed)	.006	.875	.227	.365	.268	.381	.259	.072					
10. CI-R: Contentiousness	Pearson	-.009	.071	.208*	-.188*	.087	.191*	.167*	.011	.423**	1.000			
	Sig. (2-tailed)	.911	.387	.011	.026	.279	.019	.041	.888	.000				
11. CI-R: Overall	Pearson	-.181*	.026	.149	-.107	.112	.132	.142	.111	.925**	.736**	1.000		
	Sig. (2-tailed)	.025	.754	.074	.212	.166	.110	.085	.174	.000	.000			
12. EDI-3: Body Dissatisfaction	Pearson	.038	.571**	-.343**	.357**	-.153	-.188*	-.197*	.540**	.062	.106	.089	1.000	
	Sig. (2-tailed)	.637	.000	.000	.000	.057	.021	.015	.000	.452	.198	.289		
13. BIQ	Pearson	-.093	.333**	-.530**	.440**	-.081	-.366**	-.280**	.507**	-.027	-.095	-.051	.649**	1.000
	Sig. (2-tailed)	.245	.000	.000	.000	.309	.000	.000	.000	.736	.246	.539	.000	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 8. Correlation Matrix for Quantitative Variables for Caucasian Participants

		Correlations												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	Pearson	1.000												
	Sig. (2-tailed)													
2. BMI	Pearson	.065	1.000											
	Sig. (2-tailed)	.393												
3. Self-esteem	Pearson	.152*	-.265**	1.000										
	Sig. (2-tailed)	.046	.000											
4. Depression	Pearson	-.134	.308**	-.700**	1.000									
	Sig. (2-tailed)	.079	.000	.000										
5. Ethnic Identity: EIS	Pearson	-.202**	-.077	.082	.020	1.000								
	Sig. (2-tailed)	.007	.318	.285	.800									
6. Ethnic Identity: ABC	Pearson	.002	-.013	.164*	-.030	.613**	1.000							
	Sig. (2-tailed)	.976	.865	.036	.704	.000								
7. Ethnic Identity: Overall	Pearson	-.106	-.023	.132	-.017	.860**	.930**	1.000						
	Sig. (2-tailed)	.175	.771	.094	.834	.000	.000							
8. Dieting Peer Competitiveness	Pearson	-.228**	.383**	-.393**	.367**	.084	.110	.121	1.000					
	Sig. (2-tailed)	.002	.000	.000	.000	.271	.159	.124						
9. CI-R: EOC	Pearson	.069	-.138	.277**	-.161*	.146	.145	.162*	-.130	1.000				
	Sig. (2-tailed)	.366	.071	.000	.035	.056	.063	.039	.089					
10. CI-R: Contentiousness	Pearson	-.012	-.076	.253**	-.158*	.095	.111	.110	-.162*	.414**	1.000			
	Sig. (2-tailed)	.873	.324	.001	.039	.214	.154	.161	.034	.000				
11. CI-R: Overall	Pearson	.039	-.134	.322**	-.190*	.152*	.154*	.169*	-.161*	.937**	.705**	1.000		
	Sig. (2-tailed)	.608	.082	.000	.013	.047	.048	.032	.035	.000	.000			
12. EDI-3: Body Dissatisfaction	Pearson	-.006	.605**	-.433**	.352**	.002	.010	.021	.649**	-.188*	-.141	-.200**	1.000	
	Sig. (2-tailed)	.937	.000	.000	.000	.980	.895	.790	.000	.014	.065	.009		
13. BIQ	Pearson	.012	.486**	-.520**	.498**	-.101	-.102	-.111	.570**	-.159*	-.193*	-.205**	.656**	1.000
	Sig. (2-tailed)	.873	.000	.000	.000	.185	.190	.154	.000	.035	.010	.007	.000	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlations for Hypothesis 1

For the first hypothesis, we predicted that scores on the general competitiveness measure, the CI-R, would positively correlate with body dissatisfaction scores for both African American and Caucasian participants. These correlations were not significant for African American participants (see Table 7). Among these participants, CI-R enjoyment of competition subscale scores were not significantly correlated with EDI-3 body dissatisfaction subscale scores or with BIQ scores. CI-R contentiousness scores were not significantly correlated with EDI-3 body dissatisfaction subscale scores or with BIQ scores. CI-R total scores were not significantly correlated with EDI-3 body dissatisfaction subscale scores or with BIQ scores.

Most of these correlations were significant in a negative direction for Caucasian participants (see Table 8). Among these participants, CI-R enjoyment of competition subscale scores were significantly negatively correlated with EDI-3 body dissatisfaction subscale scores and with BIQ scores. Thus, increased enjoyment of competition scores was associated with increased body dissatisfaction scores as measured by the EDI-3 subscale decreased for this population. CI-R contentiousness scores were not significantly correlated with EDI-3 body dissatisfaction subscale scores but were significantly negatively correlated with BIQ scores. CI-R total scores were significantly negatively correlated with EDI-3 body dissatisfaction subscale scores and with BIQ scores.

Correlations for Hypothesis 2

For the second hypothesis, we predicted that dieting peer competitiveness scores would positively correlate with body dissatisfaction for both African American and Caucasian participants. DPC scores were significantly positively correlated with EDI-3 body dissatisfaction

subscale scores for African American participants (see Table 7) and Caucasian participants (see Table 8). DPC scores were also significantly positively correlated with BIQ scores for African American and Caucasian participants.

Analysis of Covariance for Hypothesis 3

For the third hypothesis, we predicted that Caucasian would have higher scores on both measures of body dissatisfaction when controlling for BMI. Table 9 displays the results for weighted least squares analysis of covariance of BIQ scores controlling for race/ethnicity and BMI. The overall model level of significance was $p < .01$. Initial analysis of the data showed unequal variances for each group based on race/ethnicity. Although results remained unchanged between the original model and the model run with weighted least squares, the weighted least squares model is presented to account for unequal variances. Additionally, although there were several outliers, results were insensitive to their removal so the full data set was analyzed. For all analyses of covariance conducted in this study, histograms and plots were examined to assess for normality. The interaction between race/ethnicity and BMI was explored, but this effect was not significant, so this model includes only the main effects of race/ethnicity and BMI. There was a significant group difference found between African American participants and Caucasian participants ($F(1, 325) = 14.862, p < .01$). Caucasian participants had significantly higher adjusted mean BIQ scores for body dissatisfaction ($adj\ M = 1.473, 95\% CI [1.329, 1.618]$) after controlling for the effect of BMI than African American participants ($adj\ M = .975, 95\% CI [.767, 1.183]$). The group differences in BIQ scores after the main effect of BMI and race/ethnicity had a large effect size of 0.50 (Cohen, 1988).

Table 9. Analysis of Covariance Summary of BIQ Scores Controlling for Race/Ethnicity and BMI

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	14.995	1	14.995	14.862	.000
BMI	70.308	1	70.308	69.686	.000
Error	327.905	325	1.009		

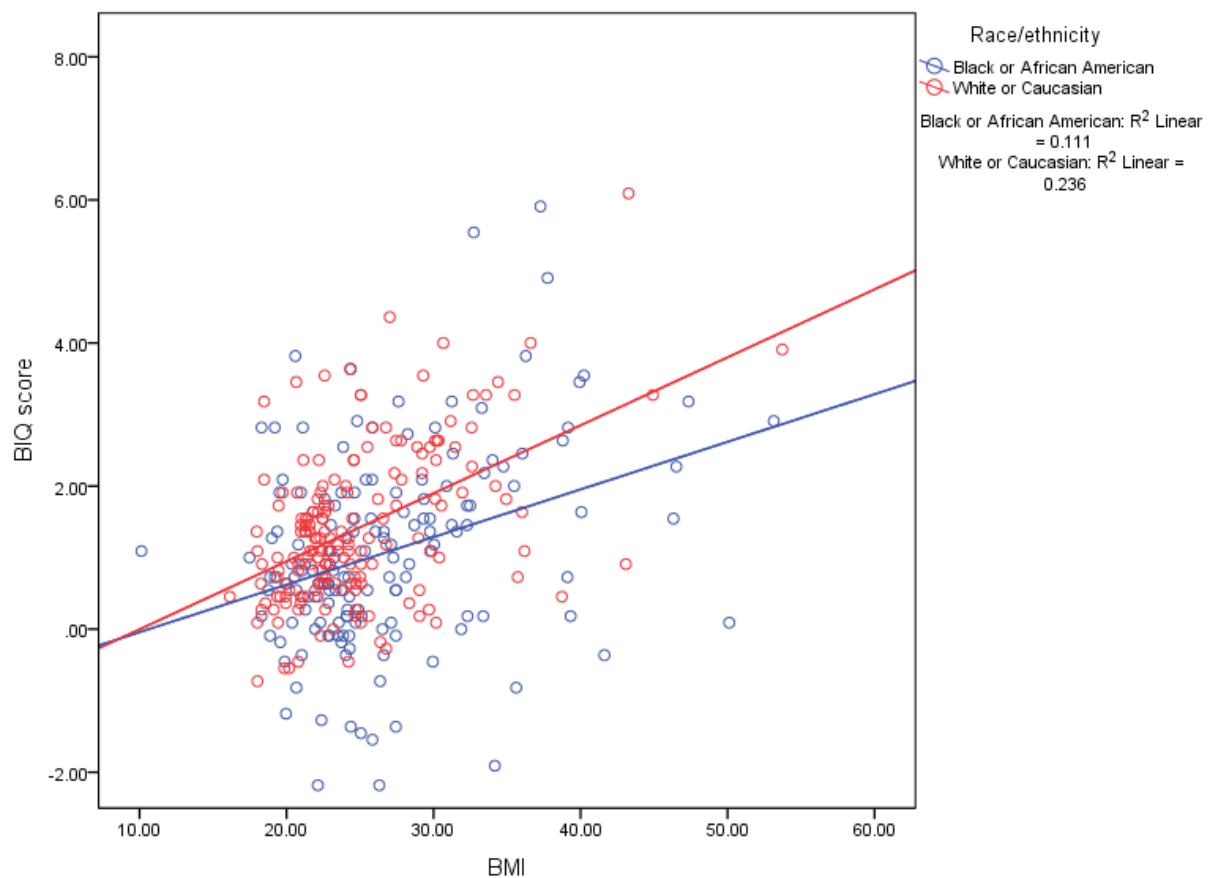


Figure 1: Scatterplot of BMI and BIQ scores for African American and Caucasian Women with Regression Lines for Each Group.

An analysis of covariance (ANCOVA) was conducted to assess the effect of race/ethnicity on EDI-3 body dissatisfaction subscale scores while controlling for BMI (see

Table 10). Initial analysis of the data showed unequal variances for each group based on race/ethnicity. Although results remained unchanged between the original model and the model run with weighted least squares, the weighted least squares model is presented to account for unequal variances. Additionally, although there were several outliers, results were insensitive to their removal so the full data set was analyzed. Since the interaction term of race/ethnicity and BMI was significant, it was retained in this model. The overall model level of significance was $p < .01$. There was a significant interaction between race/ethnicity and BMI ($F(1, 317) = 7.710, p < .01$) indicating a different slope of the regression line for these two groups. At lower scores for BMIs, such as a BMI score of approximately 15, the groups were fairly similar on EDI-3 subscale scores, with an EDI-3 subscale score of about 6. Both groups increased in EDI-3 subscale scores as BMI scores increased. However, the group of Caucasian women increased more sharply than the group of African American women, so that at a BMI of 40, they differ by about 13 EDI-3 points. The group differences in EDI-3 body dissatisfaction subscale scores after the main effect of BMI and race/ethnicity as well as the interaction effect of these variables has been accounted for indicated that Caucasian participants had significantly higher adjusted mean scores for body dissatisfaction at the mean level of BMI ($adj\ M = 17.280, 95\% \text{ CI } [16.122, 18.438]$) as measured by the EDI-3 body dissatisfaction subscale than African American participants ($adj\ M = 12.190, 95\% \text{ CI } [10.964, 13.416]$). The group differences in EDI-3 body dissatisfaction subscale scores after the main effect of BMI and race/ethnicity as well as the interaction effect of race/ethnicity*BMI had a large effect size of 0.67 (Cohen, 1988).

Table 10. Analysis of Covariance Summary of EDI-3 Scores Controlling for Race/Ethnicity, BMI, and the Interaction of Race/Ethnicity and BMI

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	97.098	1	97.098	1.689	.195
BMI	9811.163	1	9811.163	170.627	.000
Race/Ethnicity*BMI	443.312	1	443.312	7.710	.006
Error	18227.670	317	57.501		

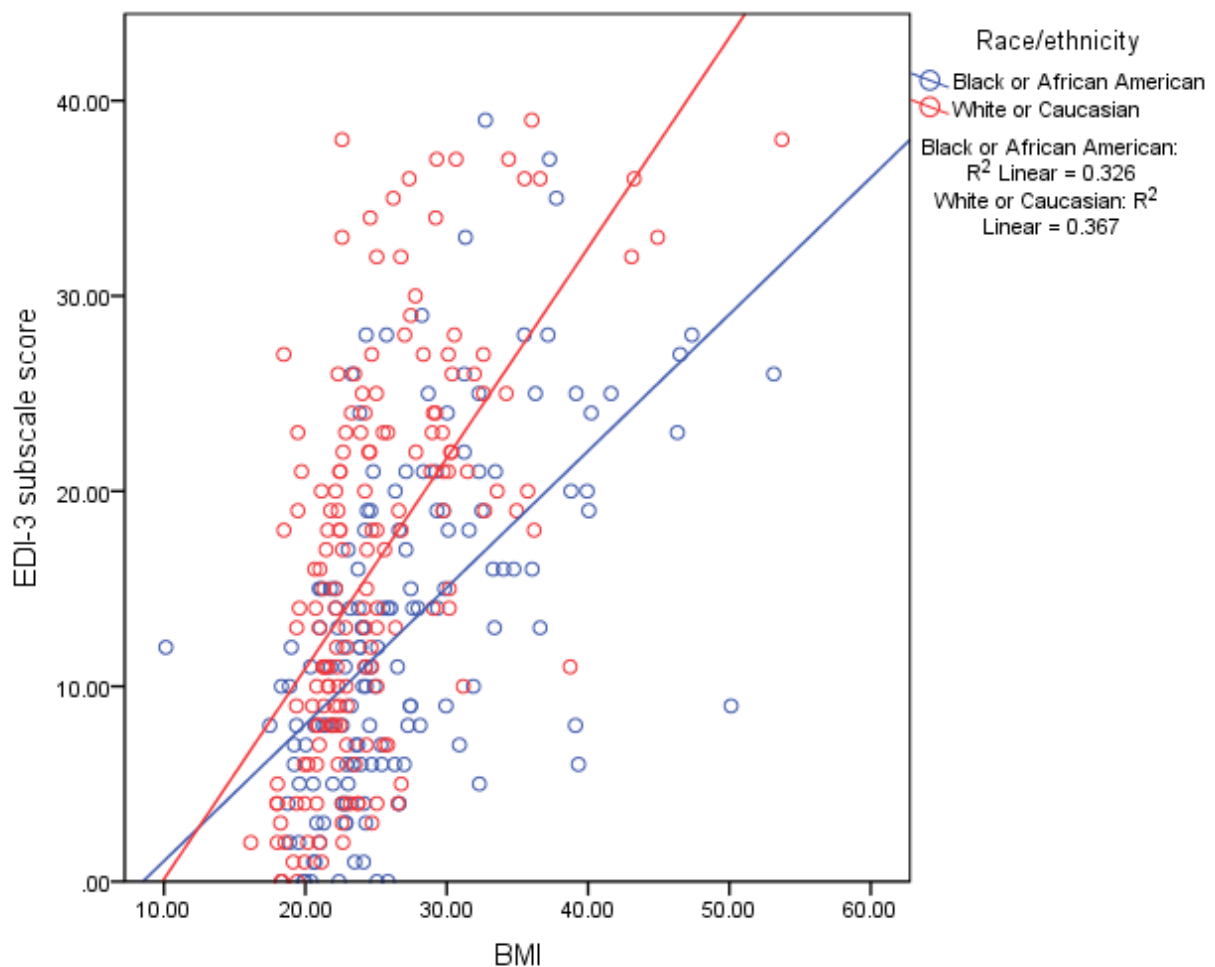


Figure 2: Scatterplot of BMI and EDI-3 Body Dissatisfaction Subscale Scores for African American and Caucasian Women with Regression Lines for Each Group.

Analysis of Covariance for Hypothesis 4

For hypothesis 4, we predicted that dieting peer competitiveness scores will be higher for Caucasian women than African American women, so that race/ethnicity would impact the relationship between this type of competitiveness and body dissatisfaction. Exploratory analyses were also conducted first to assess potential differences in both measures of body dissatisfaction among African American and Caucasian participants while controlling for additional variables, including household income, depression, number of children, self-esteem, age, and BMI. Then analyses were run to assess the relationship between both types of competitiveness scores with both measures of body dissatisfaction among participants while controlling for household income, depression, number of children, self-esteem, age, and BMI.

Table 11 displays the results for an analysis of covariance of BIQ scores controlling for age, BMI, household income, number of children, self-esteem, and depression. The overall model level of significance was $p < .01$. Although there were several outliers, results were insensitive to their removal so the full data were analyzed. The interaction between race/ethnicity and BMI was explored but this effect was not significant, so this model includes only the main effects of all covariates. There was a significant group difference found between African American participants and Caucasian participants ($F(1, 285) = 8.752, p < .01$). After the effects of age, BMI, household income, number of children, self-esteem, and depression were controlled, Caucasian participants had significantly higher adjusted mean BIQ scores for body dissatisfaction (*adj M* = 1.431, 95% *CI* [1.276, 1.586] than African American participants (*adj M* = 1.065, 95% *CI* [.890, 1.240]). The group differences in BIQ scores after the main effect of race/ethnicity, age, BMI, income, number of children, self-esteem, and depression had an effect size between medium and large classifications of 0.38 (Cohen, 1988).

Table 11. Analysis of Covariance Summary of BIQ scores Controlling for Race/Ethnicity, Age, BMI, Household Income, Number of Children, Self-Esteem, and Depression

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	8.115	1	8.115	8.752	.003
Age	2.586	1	2.586	2.789	.096
BMI	38.965	1	38.965	42.022	.000
Income	.577	1	.577	.622	.431
Number of Children	.080	1	.080	.086	.769
RSE	25.182	1	25.182	27.157	.000
CESD	7.173	1	7.173	7.736	.006
Error	264.270	285	.927		

Table 12 displays the results for an analysis of covariance of EDI-3 body dissatisfaction subscale scores controlling for age, BMI, household income, number of children, self-esteem, and depression. The overall model level of significance was $p < .01$. Although there were several outliers, results were insensitive to their removal so the full data were analyzed. There was a significant interaction of race/ethnicity and BMI ($F(1, 281) = 4.072$, $p < .05$), indicating a different slope of the regression line for these two groups. At lower scores for BMIs, the groups were fairly similar on EDI-3 subscale scores. Both groups increased in EDI-3 subscale scores as BMI scores increased. However, the group of Caucasian women increased more sharply than the group of African American women, so that at higher BMI scores, Caucasian women have higher EDI-3 subscale scores. Caucasian participants had significantly higher adjusted mean EDI-3 subscale scores for body dissatisfaction at the mean level of the covariates ($adj\ M = 1.431$, 95%

CI [1.276, 1.586]) than African American participants (*adj M* = 1.00, 95% CI [10.964, 13.416]).

The group differences in EDI-3 body dissatisfaction subscale scores after the main effect of race/ethnicity, age, BMI, income, number of children, self-esteem, and depression as well as the interaction effect of race/ethnicity*BMI had a small effect size of 0.06.

Table 12. Analysis of Covariance Summary of EDI-3 Subscale Scores Controlling for Race/Ethnicity, Age, BMI, Household Income, Number of Children, Self-Esteem, Depression, and the Interaction of Race/Ethnicity and BMI

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	30.186	1	30.186	.583	.446
Age	8.953	1	8.953	.173	.678
BMI	6022.948	1	6022.948	116.238	.000
Income	6.249	1	6.249	.121	.729
Number of Children	219.126	1	219.126	4.229	.041
RSE	716.078	1	716.078	13.820	.000
CESD	153.696	1	153.696	2.966	.086
Race/Ethnicity*BMI	210.990	1	210.990	4.072	.045
Error	14560.225	281	51.816		

Table 13 displays the results for weighted least squares analysis of covariance of BIQ scores controlling for dieting peer competitiveness, age, BMI, household income, number of children, self-esteem, and depression. The overall model level of significance was $p < .01$. Initial analysis of the data showed unequal variances for each group based on race/ethnicity. Although results remained unchanged between the original model and the model run with weighted least squares, the weighted least squares model is presented to account for unequal variances.

Additionally, although there were several outliers, results were insensitive to their removal so the full data were analyzed. The interaction between race/ethnicity and BMI was explored but this effect was not significant, so this model includes only the main effects of race/ethnicity and BMI. There was no significant group difference found between African American and Caucasian participants in BIQ scores ($F(1, 282) = .832, p > .05$). Interestingly, Dieting Peer Competitiveness Scores were a significant predictor of BIQ scores for all participants ($F(1, 282) = 35.846, p < .01$) after controlling for the effects of race/ethnicity, age, BMI, household income, number of children, self-esteem, and depression. Age was also a significant predictor of BIQ scores in this model ($F(1, 282) = 7.199, p < .01$).

Table 13. Analysis of Covariance Summary of BIQ Subscale Scores controlling for Race/Ethnicity, DPC, Age, BMI, Household Income, Number of Children, Self-Esteem, and Depression

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	.851	1	.851	.832	.362
DPC	36.641	1	36.641	35.846	.000
Age	7.359	1	7.359	7.199	.008
BMI	27.916	1	27.916	27.311	.000
Income	.181	1	.181	.177	.674
Number of children	.183	1	.183	.179	.673
RSE	15.643	1	15.643	15.304	.000
CES-D	6.995	1	6.995	6.843	.009
Error	288.251	282	1.022		

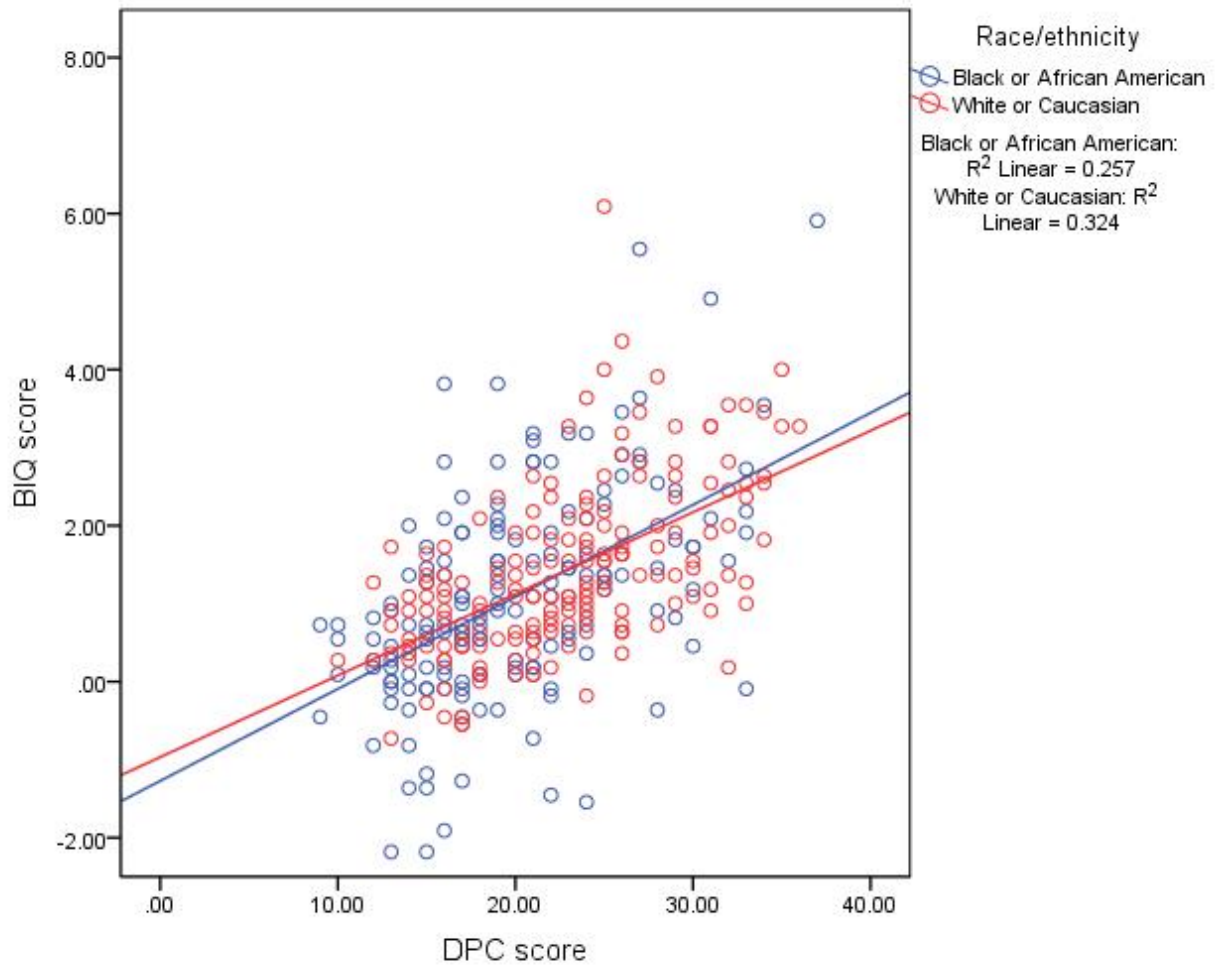


Figure 3: Scatterplot of DPC and BIQ Scores for African American and Caucasian Women with Regression Lines for Each Group.

Table 14 displays the results an analysis of covariance of EDI-3 body dissatisfaction subscale scores controlling for dieting peer competitiveness, age, BMI, household income, number of children, self-esteem, depression, and the interaction of race/ethnicity and DPC scores. The overall model level of significance was $p < .01$. Although there were several outliers, results were insensitive to their removal, so the full data were analyzed. The interaction between race/ethnicity and BMI was explored but this effect was not significant so this model does not include this interaction term. There was not a significant group difference found between African American participants and Caucasian participants in EDI-3 body dissatisfaction

subscale scores ($F(1, 277) = 3.149, p > .05$). Interestingly, Dieting Peer Competitiveness Scores were a significant predictor of EDI-3 body dissatisfaction subscale scores for all participants ($F(1, 277) = 67.420, p < .01$) after controlling for the effects of age, BMI, household income, number of children, self-esteem, and depression. Also, a significant interaction effect was found between race/ethnicity and DPC scores ($F(1, 277) = 6.001, p < .05$) indicating a different response to DPC depending upon race/ethnicity. At lower scores for DPC, such as a DPC score of approximately 15, the groups were fairly similar on EDI-3 subscale scores, with an EDI-3 subscale score of about 9. Both groups increase in EDI-3 subscale scores as DPC scores increase. However, the group of Caucasian women increases more sharply than the group of African American women, so that at a DPC of about 35, they differ by about 5 EDI-3 points.

Table 14. Analysis of Covariance Summary of EDI-3 Subscale Scores Controlling for Race/Ethnicity, DPC, Age, BMI, Household Income, Number of Children, Self-Esteem, Depression, and the Interaction of Race/Ethnicity and DPC Scores

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	129.965	1	129.965	3.149	.077
DPC	2782.676	1	2782.676	67.420	.000
Race/Ethnicity*DPC	247.667	1	247.667	6.001	.015
Age	106.972	1	106.972	2.592	.109
BMI	3145.112	1	3145.112	76.202	.000
Income	4.468	1	4.468	.108	.742
Number of children	70.034	1	70.034	1.697	.194
RSE	173.747	1	173.747	4.210	.041
CES-D	75.179	1	75.179	1.821	.178
Error	11432.775	277	41.274		

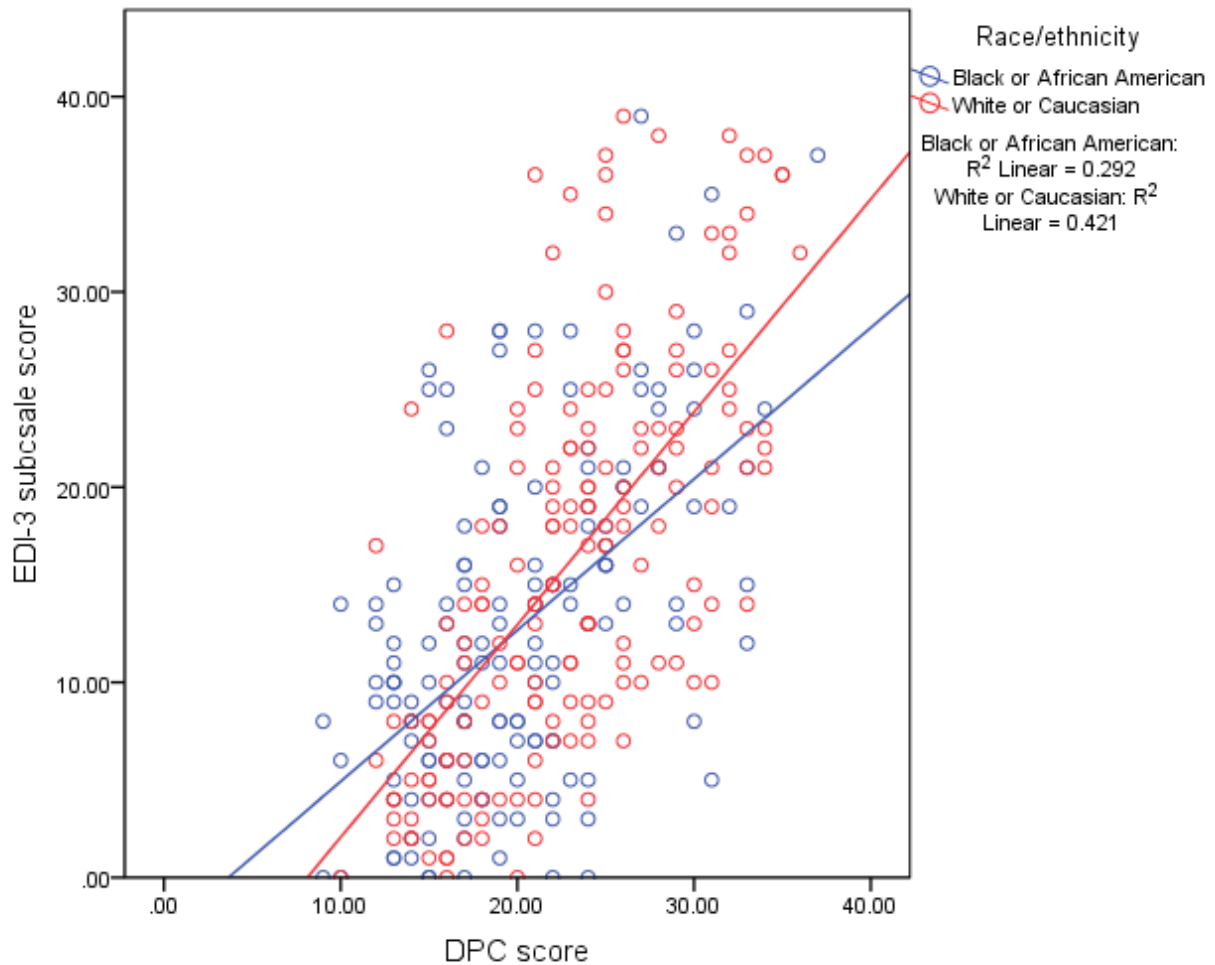


Figure 4: Scatterplot of DPC and EDI-3 Body Dissatisfaction Subscale Scores for African American and Caucasian Women with Regression Lines for Each Group.

Table 15 displays the results an analysis of covariance of BIQ scores controlling for general competitiveness, race/ethnicity, age, BMI, household income, number of children, self-esteem, and depression scores. The overall model level of significance was $p < .01$. Although there were several outliers, results were insensitive to their removal, so the full data were analyzed. The interaction between race/ethnicity and BMI was explored but this effect was not significant so this model does not include this interaction term. There was a significant group difference found between African American participants and Caucasian participants ($F(1, 276) =$

8.882, $p < .01$). Caucasian had significantly higher adjusted mean scores for body dissatisfaction ($adj M = 1.433$, 95% CI [1.276, 1.590]) as measured by the BIQ after controlling for the effect of the covariates than African American participants ($adj M = 1.056$, 95% CI [.875, 1.236]) at the mean values of the covariates. The group differences in BIQ scores after the main effect of race/ethnicity, general competitiveness, age, BMI, income, number of children, self-esteem, and depression had an effect size between medium and large classifications of 0.39 (Cohen, 1988). Interestingly, CI-R scores were not a significant predictor of BIQ scores ($F(1, 276) = .001$, $p > .05$) after controlling for the effects of age, BMI, household income, number of children, self-esteem, and depression.

Table 15. Analysis of Covariance Summary of BIQ Scores Controlling for Race/Ethnicity, CI-R, Age, BMI, Household Income, Number of Children, Self-Esteem, and Depression

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	8.394	1	8.394	8.882	.003
CI-R	.001	1	.001	.001	.974
Age	1.979	1	1.979	2.094	.149
BMI	37.451	1	37.451	39.629	.000
Income	.490	1	.490	.518	.472
Number of children	.064	1	.064	.067	.795
RSE	22.639	1	22.639	23.956	.000
CES-D	7.073	1	7.073	7.485	.007
Error	260.829	276	.945		

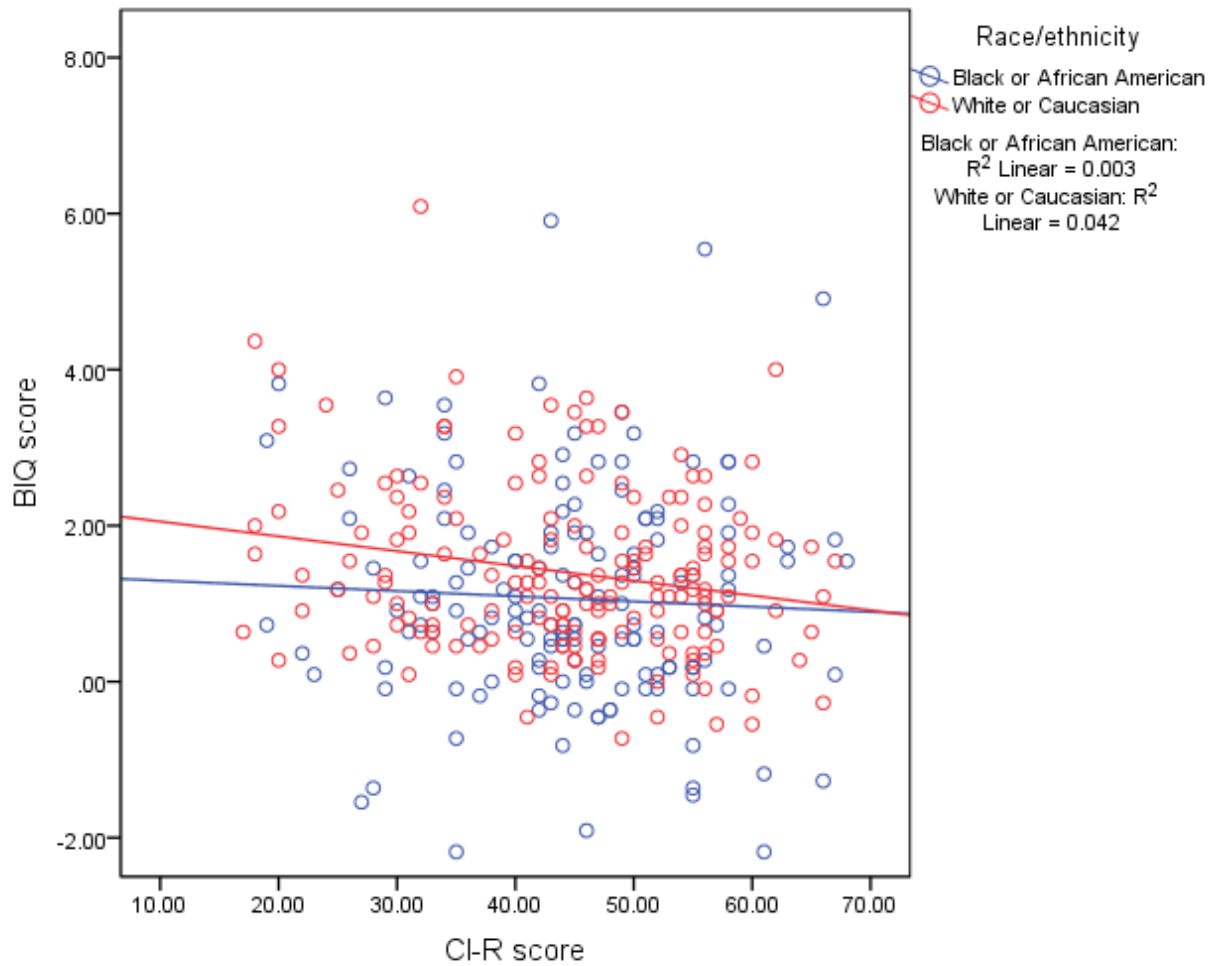


Figure 5: Scatterplot of CI-R and BIQ Scores for African American and Caucasian Women with Regression Lines for Each Group.

Table 16 displays the results for weighted least squares analysis of covariance of EDI-3 body dissatisfaction subscale scores controlling for general competitiveness, the interaction between race/ethnicity and general competitiveness, age, BMI, household income, number of children, self-esteem, and depression. The overall model level of significance was $p < .01$. Although there were several outliers, most results were insensitive to their removal, so that the full data were analyzed. The one result that did change was that number of children was found to be a significant predictor ($p=.034$) in the model when outlying values were removed. The interaction between race/ethnicity and BMI was explored but this effect was not significant so

this model does not include this interaction term. There was a significant group difference found between African American and Caucasian participants in EDI-3 body dissatisfaction subscale scores when controlling for the covariates ($F(1, 272) = 14.886, p < .01$). Caucasian participants had significantly higher adjusted mean scores for body dissatisfaction ($adj\ M = 16.860, 95\% CI [15.681, 18.039]$) as measured by the EDI-3 after controlling for the effect of the covariates than African American participants ($adj\ M = 12.635, 95\% CI [11.290, 13.981]$) at the mean values for the covariates. The group differences in EDI-3 body dissatisfaction subscale scores after the main effect of race/ethnicity, general competitiveness, age, BMI, household income, number of children, self-esteem, and depression as well as the interaction effect of race/ethnicity*general competitiveness had a large effect size of 0.58 (Cohen, 1988). General competitiveness scores were not a significant predictor of EDI-3 body dissatisfaction subscale scores for all participants ($F(1, 272) = .485, p > .05$). Interestingly, the interaction of general competitiveness scores and race/ethnicity was a significant predictor of EDI-3 body dissatisfaction subscale scores for all participants ($F(1, 272) = 7.654, p < .01$). As can be seen in the graph below, Caucasian score higher than African American participants on the EDI-3 at lower values of CI-R, nearly 10 units apart at CI-R of 20, and both groups approach an EDI-3 subscale score of about 15 as CI-R approaches a score of 60.

Table 16. Analysis of Covariance Summary of EDI-3 Subscale Scores Controlling for Race/Ethnicity, CI-R, Age, BMI, Household Income, Number of Children, Self-Esteem, Depression, and the Interaction between Race/Ethnicity and CI-R Scores

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	778.506	1	778.506	14.886	.000
CI-R	25.363	1	25.363	.485	.487
Race/Ethnicity*CI-R	400.275	1	400.275	7.654	.006
Age	.596	1	.596	.011	.915
BMI	5343.690	1	5343.690	102.175	.000
Income	.050	1	.050	.001	.975
Number of children	182.127	1	182.127	3.482	.063
RSE	651.725	1	651.725	12.461	.000
CES-D	208.495	1	208.495	3.987	.047
Error	14225.412	272	52.299		

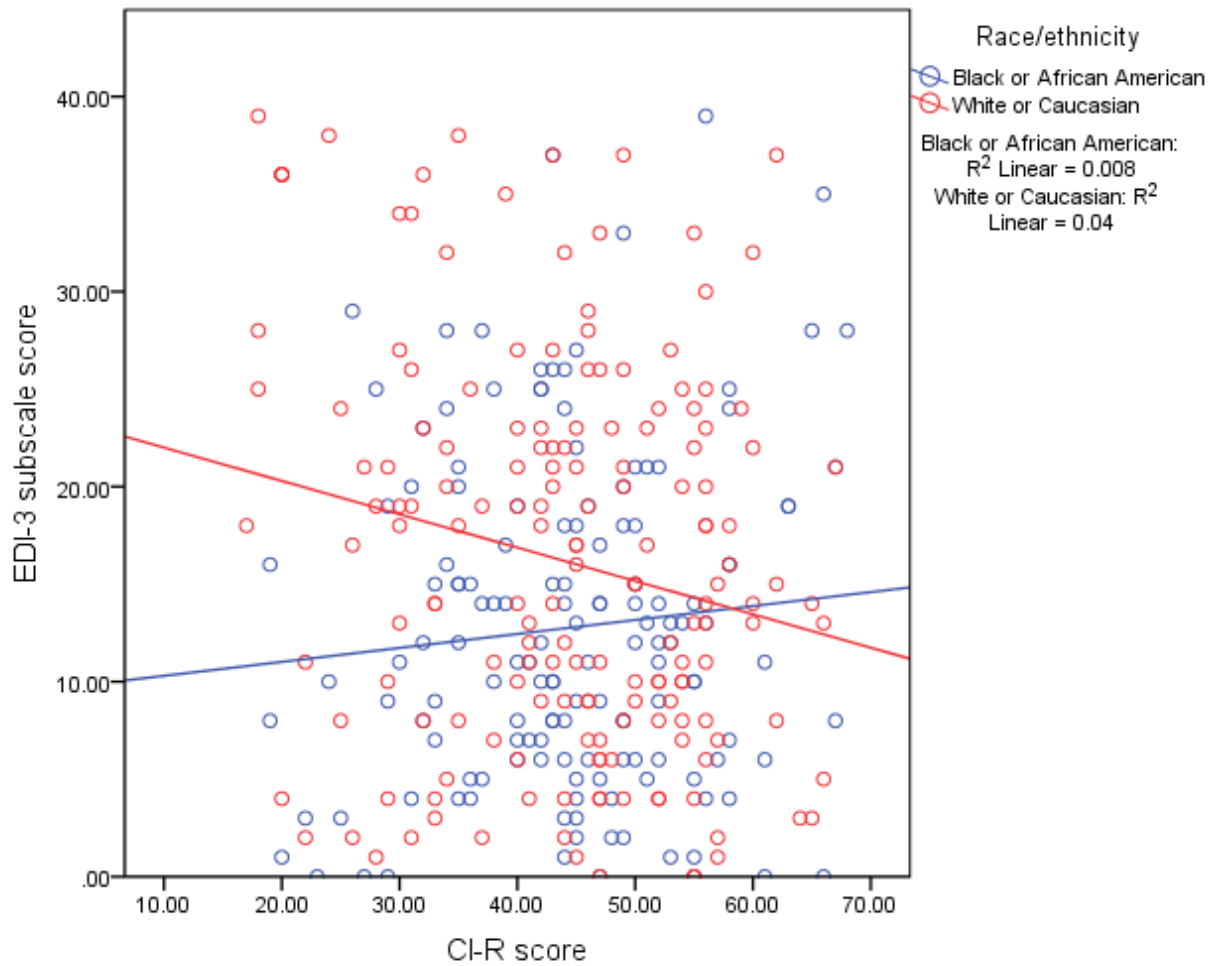


Figure 6: Scatterplot of CI-R and EDI-3 Body Dissatisfaction Subscale Scores for African American and Caucasian Women with Regression Lines for Each Group.

Analysis of Covariance for Hypothesis 5

For our fifth hypothesis, we predicted that Ethnic Identity will impact the relationship between competitiveness and body dissatisfaction. As ethnic identity scores increase, body dissatisfaction scores will decrease. Table 17 displays the results for an analysis of covariance of BIQ scores controlling for MEIM-R scores, dieting peer competitiveness, age, BMI, household income, number of children, self-esteem, and depression. The overall model level of significance was $p < .01$. Although there were several outliers, results were insensitive to their removal, so that the full data were analyzed. The interaction between race/ethnicity and BMI, the interaction

between race/ethnicity and MEIM-R scores, and the interaction between race/ethnicity and DPC scores were explored but none of these effect were significant so this model only includes main effects. There was not a significant group difference found between African American and Caucasian participants in BIQ scores when controlling for the covariates ($F(1, 267) = .019, p > .05$). Interestingly, MEIM-R scores were a significant predictor of BIQ scores for all participants ($F(1, 267) = 6.631, p < .05$). Dieting peer competitiveness scores were also a significant predictor of BIQ scores for all participants ($F(1, 267) = 32.197, p < .01$). Age was also a significant predictor of BIQ scores in this model ($F(1, 282) = 7.199, p < .01$).

Table 17. Analysis of Covariance Summary of BIQ Scores Controlling for Race/Ethnicity, MEIM, DPC, Age, BMI, Household Income, Number of Children, Self-Esteem, and Depression

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	.016	1	.016	.019	.890
MEIM	5.387	1	5.387	6.631	.011
DPC	26.154	1	26.154	32.197	.000
Age	7.449	1	7.449	9.171	.003
BMI	18.708	1	18.708	23.031	.000
Income	.601	1	.601	.740	.390
Number of children	1.277	1	1.277	1.572	.211
RSE	8.852	1	8.852	10.898	.001
CES-D	5.076	1	5.076	6.249	.013
Error	216.883	267	.812		

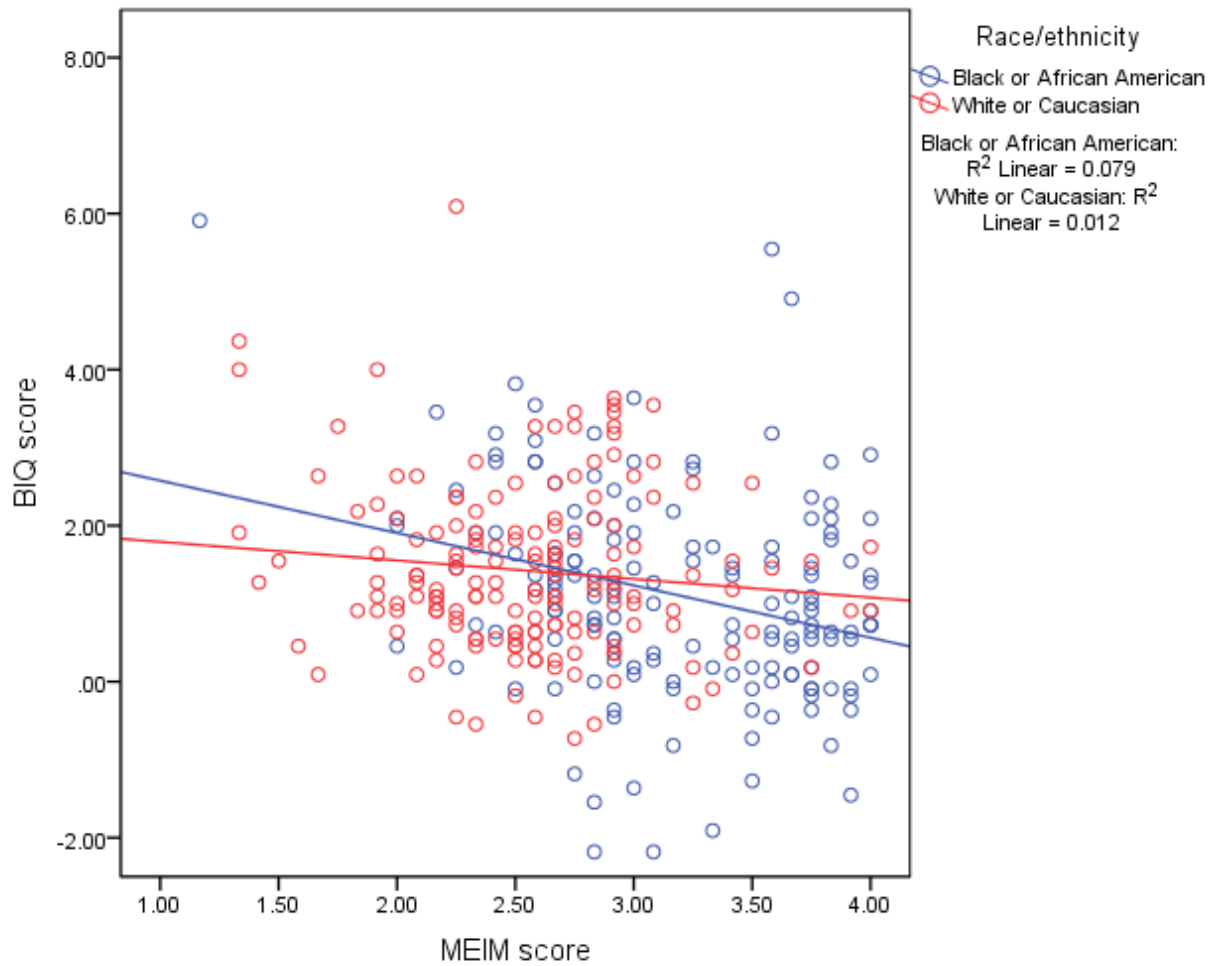


Figure 7: Scatterplot of MEIM and BIQ Scores for African American and Caucasian Women with Regression Lines for Each Group.

Table 18 displays the results for an analysis of covariance of EDI-3 body dissatisfaction subscale scores controlling for MEIM-R scores, DPC scores, the interaction between race/ethnicity and BMI, the interaction between race/ethnicity and DPC scores, age, BMI, household income, number of children, self-esteem, and depression. The overall model level of significance was $p < .01$. Although there were several outliers, results were insensitive to their removal so that the full data were analyzed. The interaction between race/ethnicity and BMI and the interaction between race/ethnicity and DPC scores were significant in smaller models so these were retained, though neither remained significant in this model. The interaction between

race/ethnicity and MEIM-R scores was also explored but it was not significant so it was not included in this model. There was a significant group difference found between African American and Caucasian participants in EDI-3 body dissatisfaction subscale scores when controlling for the covariates ($F(1, 261) = 4.667, p < .05$). Caucasian participants had significantly higher adjusted mean scores for body dissatisfaction (*adj M* = 15.390, 95% *CI* [14.093, 16.687]) as measured by the EDI-3 than African American participants (*adj M* = 13.753, 95% *CI* [12.375, 15.132]) at the mean values for the covariates. The group differences in EDI-3 body dissatisfaction subscale scores after the main effect of race/ethnicity, ethnic identity, dieting peer competitiveness, age, BMI, income, number of children, self-esteem, and depression as well as the interaction effect of race/ethnicity*BMI and race/ethnicity*dieting peer competitiveness had an effect size between small and medium of 0.25 (Cohen, 1988). MEIM-R scores were not a significant predictor of EDI-3 body dissatisfaction subscale scores for all participants ($F(1, 261) = .443, p > .05$). Dieting peer competitiveness scores were a significant predictor of EDI-3 body dissatisfaction subscale scores for all participants ($F(1, 261) = 61.928, p < .01$) after controlling for the effects of the covariates.

Table 18. Analysis of Covariance Summary of EDI-3 Subscale Scores Controlling for Race/Ethnicity, MEIM, DPC, Age, BMI, Household Income, Number of Children, Self-Esteem, Depression, the Interaction of Race/Ethnicity and BMI, and the Interaction of Race/Ethnicity and DPC Scores

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	196.731	1	196.731	4.677	.031
MEIM	18.641	1	18.641	.443	.506
DPC	2604.938	1	2604.938	61.928	.000
Race/Ethnicity*BMI	116.088	1	116.088	2.760	.098
Race/Ethnicity*DPC	69.409	1	69.409	1.650	.200
Age	111.346	1	111.346	2.647	.105
BMI	2699.252	1	2699.252	64.170	.000
Income	1.625	1	1.625	.039	.844
Number of children	38.311	1	38.311	.911	.341
RSE	94.605	1	94.605	2.249	.135
CES-D	59.052	1	59.052	1.404	.237
Error	10978.711	261	42.064		

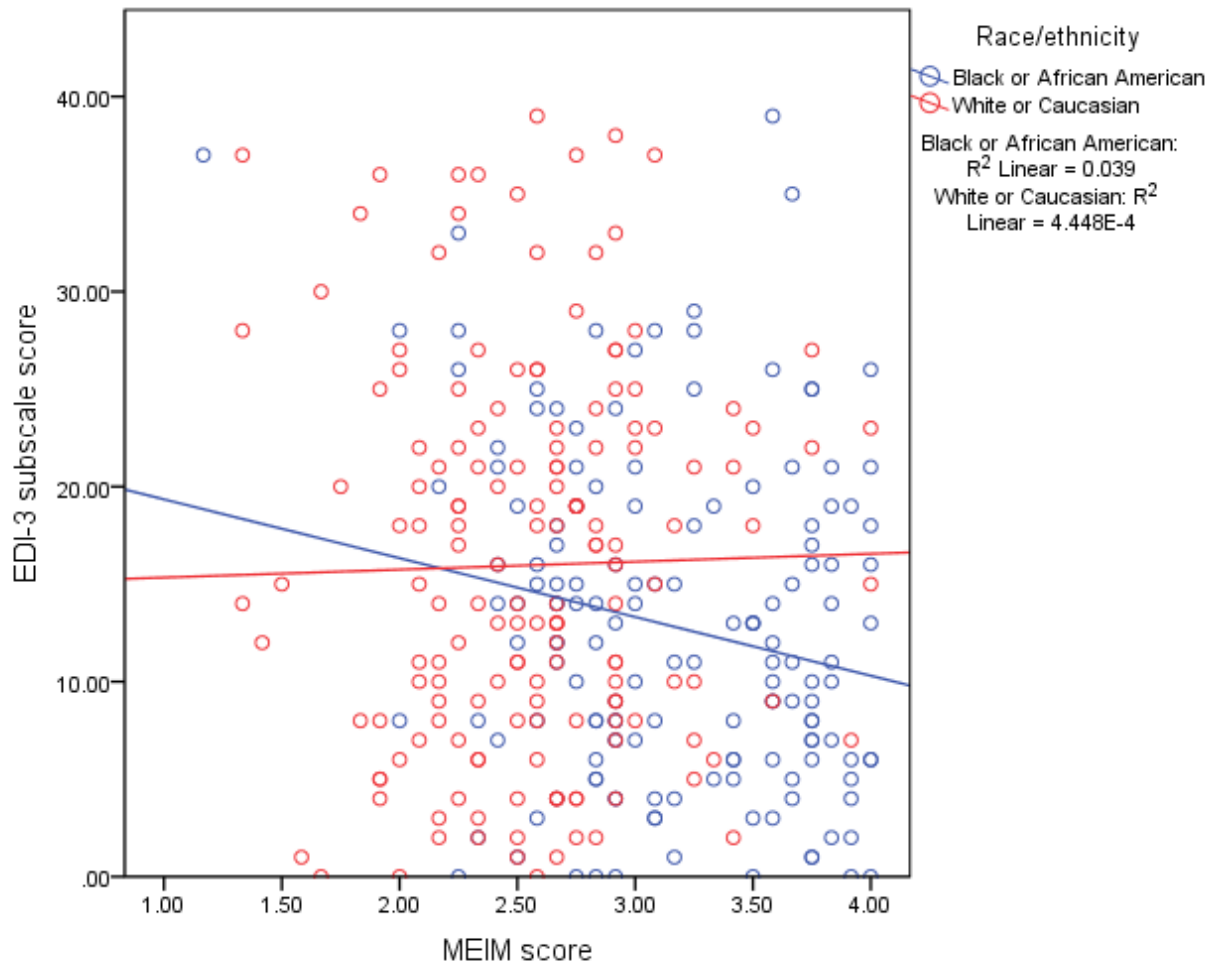


Figure 8: Scatterplot of MEIM and EDI-3 Body Dissatisfaction Subscale Scores for African American and Caucasian Women and Regression Lines for Each Group.

Table 19 displays the results for an analysis of covariance of BIQ scores controlling for MEIM-R scores, CI-R scores, age, BMI, household income, number of children, self-esteem, and depression. The overall model level of significance was $p < .01$. Results were sensitive to the removal of four outliers so the full dataset was not used here. The interaction between race/ethnicity and BMI, the interaction between race/ethnicity and CI-R scores, and the interaction between race/ethnicity and MEIM-R scores were explored but none were significant so the model presented includes only main effects. There was no significant group difference found between African American and Caucasian participants when controlling for these

covariates ($F(1, 257) = 2.678, p > .05$). MEIM-R scores were a significant predictor of BIQ scores for all participants ($F(1, 257) = .5140, p < .05$). General competitiveness scores were not a significant predictor of BIQ subscale scores for all participants ($F(1, 257) = .142, p > .05$).

Table 19. Analysis of Covariance Summary of BIQ Scores Controlling for Race/Ethnicity, MEIM, CI-R, Age, BMI, Household Income, Number of Children, Self-Esteem, and Depression

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	2.096	1	2.096	2.678	.103
MEIM	4.024	1	4.024	5.140	.024
CI-R	.111	1	.111	.142	.707
Age	1.964	1	1.964	2.509	.114
BMI	34.982	1	34.982	44.690	.000
Income	.292	1	.292	.373	.542
Number of children	.480	1	.480	.613	.435
RSE	18.404	1	18.404	23.511	.000
CES-D	5.120	1	5.120	6.541	.011
Error	201.173	257	.783		

Table 20 displays the results for an analysis of covariance of EDI-3 body dissatisfaction subscale scores controlling for MEIM-R scores, CI-R scores, the interaction of race/ethnicity and CI-R scores, the interaction of race/ethnicity and BMI, age, BMI, household income, number of children, self-esteem, and depression. The overall model level of significance was $p < .01$. No outliers were present. The interaction between race/ethnicity and BMI and the interaction between race/ethnicity and CI-R scores were found to be significant in smaller models so these

values were included in this model. The interaction between race/ethnicity and MEIM-R scores was also explored but was not significant so this term was not included in the model presented. There was no significant difference found between African American participants and Caucasian participants in EDI-3 subscale scores when controlling for these covariates ($F(1, 256) = .560, p > .05$). MEIM-R scores were not a significant predictor of EDI-3 body dissatisfaction subscale scores for all participants ($F(1, 256) = .002, p > .05$). General competitiveness scores were not a significant predictor of EDI-3 subscale scores for all participants ($F(1, 256) = .334, p > .05$) after controlling for the effects of the covariates. Interestingly, there was an interaction between race/ethnicity and general competitiveness scores ($F(1, 256) = 8.172, p < .01$). Specifically, at lower scores for CI-R, such as a score of about 20, Caucasian participants had higher EDI-3 subscale scores than African American participants by about ten units. For Caucasian participants, as CI-R scores increased EDI-3 subscale scores decreased while for African American participants, as CI-R scores increased, EDI-3 subscale scores also increased.

Table 20. Analysis of Covariance Summary of EDI-3 Subscale Scores Controlling for Race/Ethnicity, MEIM, CI-R, Age, BMI, Household Income, Number of Children, Self-Esteem, Depression, the Interaction between Race/Ethnicity and CI-R Scores, and the Interaction between Race/Ethnicity and BMI

Source	Sum of Squares	Df	Mean Square	F	p
Race/Ethnicity	28.906	1	28.906	.560	.455
MEIM	.110	1	.110	.002	.963
CI-R	17.233	1	17.233	.334	.564
Race/Ethnicity*CI-R	421.792	1	421.792	8.172	.005
Race/Ethnicity*BMI	372.360	1	372.360	7.214	.008
Age	4.653	1	4.653	.090	.764
BMI	5288.582	1	5288.582	102.466	.000
Income	.021	1	.021	.000	.984
Number of children	84.687	1	84.687	1.641	.201
RSE	441.922	1	441.922	8.562	.004
CES-D	163.144	1	163.144	3.161	.077
Error	13212.876	256	51.613		

CHAPTER 4

DISCUSSION

This study identified relationships between body dissatisfaction and dieting peer competitiveness, general competitiveness, and ethnic identity among African American and Caucasian women using two different types of measures of body dissatisfaction. One measure focuses on the size and shape of specific body parts (such as thighs, stomach, and buttocks) while the other broadens the definition of body dissatisfaction to include variables that have been found to be important in body image of African American women, such as skin complexion, hair texture and thickness, and body proportion. It was found that ethnic differences in body dissatisfaction appear to persist in the current time period as well as over the lifespan for women as differences were found among women ranging in age from 18 to 73 years old. It was also found that peer competitiveness focused on eating behaviors and body image appears to have a different relationship with body dissatisfaction than general competitiveness, that peer competitiveness and social comparisons are related to body dissatisfaction for African American and Caucasian women, and that the type of measure used to assess body dissatisfaction may influence the relationship between ethnic identity and body dissatisfaction.

Body mass index has been found to be related to body dissatisfaction in previous studies conducted with women of different ethnicities (Ferguson, Munoz, Contreras & Velasquez, 2011; Rhea, 1999). Although the size of differences as well as patterns over time in differences in body dissatisfaction between African American and Caucasian women is debated in existing literature, after controlling for BMI, significantly lower rates of body dissatisfaction are often found among African American women in comparison to Caucasian women (Wilfley, Schreiber, Pike, Striegel-Moore, Wright, and Rodin, 1996). As a result, it was predicted that after controlling for

BMI, Caucasian participants would have higher scores on both measures of body dissatisfaction. BMI was significantly positively correlated with participant scores on both the EDI-3 body dissatisfaction subscale and BIQ scores for African American and Caucasian women. After controlling for BMI, Caucasian participants had significantly higher adjusted mean BIQ scores than African American participants, indicating higher body dissatisfaction. For EDI-3 body dissatisfaction subscale scores, an interaction effect was found such that at lower scores for BMI, both groups were similar on EDI-3 subscale scores but Caucasian participants' body dissatisfaction scores increased more sharply as BMI scores increased so that at higher BMI scores, they had increasingly higher EDI-3 body dissatisfaction scores. Caucasian participants also had significantly higher adjusted mean scores for EDI-3 body dissatisfaction subscale scores at the mean level of BMI. These results add support to previous findings in the literature that suggest that after controlling for BMI, African American women often have lower body dissatisfaction than Caucasian women. These findings also provide initial support to the argument that differences in body dissatisfaction scores between African American and Caucasian participants currently exist (Grabe and Hyde, 2006; Rhea, 1999; Roberts, Cash, Feingold, and Johnson, 2006; Shaw, Ramirez, Trost, Randall, & Stice, 2004; Wildes, Emery & Simons, 2001; Wilfley, Schreiber, Pike, Striegel-Moore, Wright, and Rodin, 1996).

In addition to BMI, many other variables are important to consider when assessing body image in women, including self-esteem, depression, age, socioeconomic status, and number of children. Global self-esteem has been linked to body dissatisfaction in samples of ethnically diverse adolescents (van den Berg, Mond, Eisenberg, Ackard & Neumark-Sztainer, 2010). High scores have been linked to positive body image (Swami, Airs, Chouhan, Padilla Leon, & Towell, 2009) and low scores have been linked to development of eating disorders (Halmi, 2005 as cited

in Gentile, Raghavan, Rajah & Gates, 2007; Wiseman, Peltzman, Halmi, & Sunday, 2004 as cited in Gentile, Raghavan, Rajah & Gates, 2007). As expected, in the current study, self-esteem was significantly negatively correlated with scores on the EDI-3 body dissatisfaction subscale and with BIQ scores for both African American women and Caucasian women. An increase in self-esteem scores is associated with a decrease in body dissatisfaction scores for all participants. Depressive symptoms have also been linked with body dissatisfaction in numerous studies as body dissatisfaction may result in an individual developing depressive symptoms and depressive symptoms may impact how an individual assesses her body image (Grabe & Hyde, 2006; Fung, Stewart, Ho, Wong, Lam, 2010). As expected, in the current study, depression scores were significantly positively correlated with EDI-3 body dissatisfaction subscale scores and BIQ scores for African American and Caucasian women. An increase in depression scores was associated with an increase in body dissatisfaction scores for all women. Age has also been linked to body dissatisfaction. In particular, most argue that the largest differences in body dissatisfaction between African American and Caucasian women tend to emerge when women are in early adolescence or in college years (Grabe & Hyde, 2006; Wildes, Emery & Simons, 2001). Unexpectedly, age was not significantly correlated with EDI-3 body dissatisfaction subscale scores or BIQ scores for either African American or Caucasian participants in the present study. The mean age of African American participants was approximately 29 years old and the mean score for Caucasian participants was approximately 37 years old so it is possible that this difference is due to surveying participants that are older than those included in many of the previous studies focusing on body dissatisfaction. However, age was significantly positively correlated with self-esteem and was significantly negatively correlated with dieting peer competitiveness scores so this variable may still have an indirect impact on body dissatisfaction

in the present study. This is an important area of research since many other studies focus on college students but it is important to know about body dissatisfaction across an entire lifespan.

When controlling for age, BMI, household income, number of children, self-esteem, and depression, the same patterns were found for body dissatisfaction among African American and Caucasian women that were found when controlling for only BMI. Caucasian participants had significantly higher body dissatisfaction as measured by adjusted mean BIQ scores than African American participants. An interaction effect was found between race/ethnicity and BMI when using EDI-3 body dissatisfaction subscale scores so that at lower BMI scores, both African American and Caucasian participants had similar EDI-3 subscale scores but as BMI increased, Caucasian participants' body dissatisfaction increased more than African Americans participants' body dissatisfaction scores. Caucasian participants also had significantly higher body dissatisfaction as measured by EDI-3 body dissatisfaction subscale scores at the mean levels of age, BMI, household income, number of children, self-esteem, and depression. This provides evidence in support of existing differences in body dissatisfaction scores between African American and Caucasian women (Grabe and Hyde, 2006; Rhea, 1999; Roberts, Cash, Feingold, and Johnson, 2006; Shaw, Ramirez, Trost, Randall, & Stice, 2004; Wildes, Emery & Simons, 2001; Wilfley, Schreiber, Pike, Striegel-Moore, Wright, and Rodin, 1996). This study also expands the previous findings to a sample of women who represent larger age ranges rather than focusing only on adolescents or college students. While the largest differences tend to be found during adolescence or young adulthood (Grabe & Hyde, 2006; Wildes, Emery & Simons, 2001), differences in body dissatisfaction appear to persist as differences were found among a slightly older group of participants. The present study assessed body dissatisfaction rather than assessing

eating behavior needed for clinical diagnosis, which may also account for the finding that differences exist in this sample (Wildes, Emery & Simons, 2001).

Previous research has also indicated that these differences in body dissatisfaction can be impacted by the type of measure used. The present study used two measures of body dissatisfaction, one of which aims to include aspects of body image beyond just size and shape, which may be more relevant to African American women. Findings were similar using both measures. Using the BIQ, which includes variables that capture other aspects of body image, including chest size and skin complexion, Caucasian participants reported higher body dissatisfaction than African American participants. On the measure focused specifically on body shape and size, Caucasian and African American women had similar body dissatisfaction at low BMI but Caucasians' body dissatisfaction increased more sharply as BMI increased, suggesting a higher level of distress as body shape and size moved further from the thin ideal. African American women showed an increase in body dissatisfaction as BMI increased but body dissatisfaction was lower than Caucasian participants. These differences are important to note to increase understanding of body dissatisfaction among ethnically diverse populations but it is equally important to highlight that African American women endorsed body dissatisfaction increases as BMI increased on both measures of body dissatisfaction. This means that even on a measure that may not capture all of the aspects of body image that have been found to be important to African American women, African American participants showed an increase in body dissatisfaction as BMI increased. This argues for the need for careful use of the description of race/ethnicity as "protective" because body dissatisfaction is still present among African American women, which is important to consider in treatment considerations for overall mental health as well as treatment of eating and mood disorders. It is also important to note that some

dissatisfaction over certain levels of BMI in both populations may reflect realistic concerns about health concerns that are associated with higher weight levels (Ferguson, Munoz, Contreras, & Velasquez, 2011).

Social comparison theory proposes that when individuals compare themselves to others who they perceive as better off than themselves, they may experience emotional distress (Festinger (1954) as cited in Leahey, Crowther & Ciesla (2011)). This has been found to relate to body image and appearance as naturally occurring upward social comparisons were associated with negative emotions for a sample of women in college, most of whom were Caucasian (Leahey, Crowther, and Ciesla, 2011). Research has linked competitiveness to body comparisons in women (Schutz, Paxton, & Wertheim, 2002). If increased competitiveness is associated with increased body comparison, this may result in competitive women evaluating their body shape and size more often which may cause body dissatisfaction. It is unclear in the current literature whether general competitiveness, peer competitiveness specific to eating behavior and body image which includes the construct of social comparison, or both are linked to body dissatisfaction among African American and Caucasian women. Using social comparison theory as a model, both dieting peer competitiveness scores and general competitiveness scores were predicted to positively correlate with body dissatisfaction for all participants before controlling for other variables. Dieting peer competitiveness scores were significantly positively correlated with both measures of body dissatisfaction for all participants. In contrast, for African American participants, CI-R scores did not significantly correlate with scores on either measure of body dissatisfaction. For Caucasian participants, CI-R total scores were significantly negatively correlated with both measures of body dissatisfaction, which is the opposite direction from our predictions. CI-R items focus on competitive situations in general so individuals high in general

competitiveness may choose other outlets for this, such as athletics or career. This suggests that the relationship between competitiveness and body dissatisfaction differs between these different types of competitiveness, as Burckle, Ryckman, Gold, Thornton, and Audesse (1999) found in their study of Caucasian female university students. It appears that general competitiveness is unrelated or in fact negatively related to body dissatisfaction while dieting peer competitiveness is related to body dissatisfaction for all women in this study. This suggests that only individuals who compete in terms of diet and body image are at risk for higher body dissatisfaction. As a result, social comparison theory is supported as this appears to be an important variable. These differences may result from any number of possibilities, including more frequent social comparison or more meaning or value being attributed to social comparisons focused on body image, due to a higher internalization of the thin ideal among this population, fewer outlets for competitiveness, lower self-esteem, greater importance put on thinness as a result of familial, cultural, or media messages, or other reasons. Regardless of the causes, this has implications for prevention of body dissatisfaction that focusing on reducing social comparison and competitiveness between peers in terms of diet and body image may result in decreased body dissatisfaction and that interventions targeted at decreasing general competitiveness may not reduce body dissatisfaction. This also implies that these constructs continue across the lifespan so interventions aimed at reducing social comparison and dieting peer competitiveness should not be limited to women in adolescence.

The findings from the present study demonstrating an association between dieting peer competitiveness and body dissatisfaction add support to existing literature that argue for the significance of social comparisons and peer competitiveness in body dissatisfaction for women, including social comparison theory, and broaden these findings to a sample of African American

and Caucasian women of a broader age range (Buunk and Ybema (1997) as cited in Leahey, Crowther & Ciesla (2011); Collins (1996) as cited in Leahey, Crowther & Ciesla (2011); Ferguson, Munoz, Contreras, and Velasquez (2011); Festinger (1954) as cited in Leahey, Crowther & Ciesla (2011); Heinberg & Thompson, 1992 as cited in Schutz, Paxton, & Wertheim, 2002; Leahey, Crowther, and Ciesla (2011); Munoz and Ferguson, 2012; Stormer & Thompson, 1996 as cited in Schutz, Paxton, & Wertheim, 2002; Thomson & Heinberg, 1993 as cited in Schutz, Paxton, & Wertheim, 2002). After controlling for the effects of age, BMI, household income, number of children, self-esteem, and depression, dieting peer competitiveness score was a significant predictor of body dissatisfaction on both measures for women of both ethnicities. Dieting peer competitiveness remained a significant predictor for BIQ scores and EDI-3 subscale scores for all participants, even after controlling for ethnic identity scores. As DPC Scores increased, BIQ and EDI-3 subscale scores increased for all participants. As Parker et al. (1995) found that the African American women reported supporting their peers while Caucasian women reported being competitive with their peers, we predicted that dieting peer competitiveness scores would be higher for Caucasian women than African American women and that race/ethnicity will impact the relationship between DPC scores and body dissatisfaction, which was partially supported. Before controlling for other variables, DPC scores were significantly lower for African American participants than Caucasian participants as predicted. No significant differences were found between African American and Caucasian participants in BIQ scores or EDI-3 body dissatisfaction scores after controlling for dieting peer competitiveness, age, BMI, household income, number of children, self-esteem, and depression. However, a significant interaction effect was found between race/ethnicity and DPC scores using EDI-3 subscale scores indicating that at lower scores for DPC, African American and Caucasian

participants' EDI-3 body dissatisfaction subscale scores were fairly similar but Caucasian participants' EDI-3 subscale scores increased more sharply than African American participants' scores. At a higher level of DPC, Caucasians reported higher body dissatisfaction, reflecting that some ethnic differences exist in the relationship between peer competitiveness and body dissatisfaction as measured by the EDI-3 subscale in the predicted direction as Caucasians' body dissatisfaction scores increased more sharply as DPC scores increased. Overall though, a similar pattern is seen between increased dieting peer competitiveness being associated with increased body dissatisfaction for all women. This supports social comparison theory as dieting peer competitiveness requires social comparison and dieting peer competitiveness is associated with increased body dissatisfaction for all women. These findings partially support the findings from Parker et al.'s 1995 study. The differences that emerged between the findings in Parker et al.'s 1995 study and the present study for African American women may reflect a an increase in peer competitiveness among African American women over time, which could reflect a shift in cultural values. It may also reflect a difference in age of participants as the current sample is older than the sample used by Parker et al.(1995). It may also reflect a difference in methodology as interviews were part of the method used by Parker et al. (1995).

Although no significant differences were found on any of the outcome variables between African American participants who reported having a current household income over \$80,000 and African American participants who reported having a current household income of less than \$80,000, differences found among Caucasian participants who reported having a current household income over \$80,000 and Caucasian participants who reported having a current household income of less than \$80,000 suggest that SES is related to body dissatisfaction among this population. Caucasian participants reporting a higher income reported greater dieting peer

competitiveness and also endorsed higher body dissatisfaction scores, but only when body dissatisfaction was assessed by the measure focusing on size and shape of specific body parts. Social comparison theory proposes that when individuals make upward comparisons, they may experience greater distress so among Caucasian participants of higher income, social comparisons in terms of body size and distress may be occurring more frequently or hold more value to these women, which may impact body dissatisfaction. Van den Berg, Mond, Eisenberg, Ackard & Neumark-Sztainer (2010) found that the association between body satisfaction and self-esteem was smaller in the lowest SES group among their sample, which may mean that increased value placed on body dissatisfaction and self-worth is associated with having a higher income, where other daily stressors may be less prominent. The history of racism within the United States that is often associated with higher economic stressors and lower income among African Americans may contribute to this group having different findings than Caucasian participants in terms of SES.

It appears that general competitiveness may not relate to all types of body dissatisfaction in women of varying age ranges while dieting peer competitiveness does, implying that these are two separate constructs that should be assessed separately in future body image research. Previous research has found support for an association between competitiveness and disordered eating and/or body dissatisfaction in non-athlete samples of college students (Peden, Stiles, Vandehey, and Diekhoff, 2008; Striegel-Moore, Silberstein, Grunberg, & Rodin, 1990) although one study had different findings as they argued that hypercompetitiveness was linked to disordered eating behavior but general competitiveness and a general need to achieve were not significant predictors of disordered eating behavior among a sample of Caucasian female university students (Burckle, Ryckman, Gold, Thornton, & Audesse, 1999). In the present study

conducted with older participants who identify as African American or Caucasian, an association between general competitiveness and body dissatisfaction was only partially supported for one measure of body dissatisfaction. After controlling for the effects of age, BMI, household income, number of children, self-esteem, and depression, CI-R scores were not a significant predictor of BIQ scores or EDI-3 body dissatisfaction subscale scores for all participants. General competitiveness scores were also not a significant predictor of BIQ scores or EDI-3 subscale scores for all participants after controlling for ethnic identity scores. However, an interaction effect was found between general competitiveness scores and race/ethnicity which was a significant predictor of EDI-3 subscale scores for all participants. At low levels of general competitiveness, Caucasian women reported higher body dissatisfaction than African American while at a higher level of general competitiveness, both groups of women reported similar levels of body dissatisfaction. This finding may reflect a higher internalization of the thin ideal among Caucasian women. This also suggests that for ethnically diverse samples, general competitiveness may be a contributor of body dissatisfaction when body dissatisfaction is assessed by measures focusing on size and shape of particular body parts but not when assessed by a measure that is more inclusive of other aspects of body image as well as captures the importance in the individual's perceived discrepancies from an ideal standard. Overall, general competitiveness did not relate to body dissatisfaction in the expected ways among this sample of participants. General competitiveness appears to reflect a different construct than dieting peer competitiveness that should be assessed separately in future studies on body dissatisfaction in ethnically diverse populations. Women who are high in general competitiveness may have chosen other outlets for this competitiveness, such as career or athletics, rather than focusing on competition in terms of appearance and body image as Burckle, Ryckman, Gold, Thornton, and

Audesse (1999) found that hypercompetitiveness, general competitiveness, and a general need to achieve had different relationships with disordered eating behavior among a sample of Caucasian female university students. Women who are high on dieting peer competitiveness may be engaging in more social comparisons and trying to compete with peers in terms of body image, which is related to increased body dissatisfaction while women who are high on general competitiveness may have quite different experiences.

Age may also be an important variable to consider in the interpretation of the findings in this study. Without controlling for the potential impact of other variables, general competitiveness was significantly negatively associated with age for African American women but not for Caucasian women while Dieting Peer Competitiveness was significantly negatively correlated with age for both groups. A decrease in general competitiveness scores with age among African American participants also suggests there may be some patterns in competitiveness that differ between groups similar to what Parker et al. (1995) found that African American women in their study described themselves as being supportive of their peers which differed from Caucasian women's descriptions of being jealous and competitive with their peers, though this finding may exist among older participants in the present study. Age was also significantly positively correlated with self-esteem among participants in this study. As age increased, DPC scores decreased for all participants. Age was not a significant predictor of body dissatisfaction once the potential impact of other variables was also controlled for using ANCOVAs in most of the models in this study. The exception to this was that age remained a significant predictor in both models assessing dieting peer competitiveness and using BIQ scores as the measure of body dissatisfaction. This suggests that peer competitiveness and social comparisons for one type of body dissatisfaction may decrease with age while the other type of

body dissatisfaction may remain consistent across the lifespan. Specifically, as age did not remain a significant predictor of body dissatisfaction in any of the models using the EDI-3 body dissatisfaction subscale as the measure of body dissatisfaction, perhaps dieting peer competitiveness and social comparisons remain constant throughout the lifespan for body dissatisfaction measured in terms of size and shape of thighs, stomach, and buttocks or perhaps variables other than age account for variability in EDI-3 body dissatisfaction subscale scores. However, it appears that dieting peer competitiveness and social comparisons may decrease with age for body dissatisfaction measured in terms of variables such as height, skin complexion, or hair texture and thickness or the importance of discrepancy from ideal standards as the BIQ assesses both perceived discrepancy and perceived importance. Perhaps as women age, they no longer place as much importance on perceived discrepancies. Social comparisons related to body shape and size have been found to increase with age among girls in seventh grade, eighth grade, and tenth grade (Schutz, Paxton, & Wertheim (2002)) and have been found to exist in studies among college women (Heinberg & Thompson, 1992 as cited in Schutz, Paxton, & Wertheim, 2002) but this study provides evidence that dieting peer competitiveness and social comparisons of this type may decrease with age. As age is also linked with an increase in self-esteem in this study, participants may feel better about themselves as a whole and not look to body comparisons to define their self-worth. Diehl, Hay, and Berg (2011) found a small but significant decrease in negative affect as age increased and found that young adults (which they defined as ages 18-39) had significantly lower positive affect than middle aged adults (which they defined as ages 40-59) and older adults (which they defined as ages 60-89). An increase in positive affect and a decrease in negative affect could be related to lower body dissatisfaction and/or lower peer competitiveness in a number of ways such as an improved mood may reduce desire to make

social comparisons or compete with peers in terms of body image, an improved mood may be caused by a reduced frequency of social comparisons and competition in terms of body image, or both may be caused by an underlying third variable. An increase in age may also be associated with less internalization of the thin ideal as Demarest and Allen (2000) found that participants over 30 years old were able to more accurately estimate the level of thinness that members of the opposite sex would rate as ideal in a romantic partner than were participants under 25 years old, who rated the ideal level of thinness as much thinner. Also, from an evolutionary perspective, body dissatisfaction is often considered to be related to competition for available mates, so if mates have already been selected in older age, participants may not feel a need to compete with peers and may decrease the frequency or importance of social comparisons and body dissatisfaction (Ferguson, Munoz, Contreras, and Velasquez, 2011).

Previous research has often found a link between different definitions of ethnic identity and body dissatisfaction and/or disordered eating behavior (Flowers, Levesque, & Fischer, 2012; Oney, Cole, & Sellers, 2011; Rogers Wood & Petrie, 2010; Sabik, Cole & Ward, 2010; Shuttlesworth & Zotter, 2011). Using Phinney's theory and model of ethnic identity, it was predicted that ethnic identity, as defined by two constructs of exploration and commitment, would impact the relationship between competitiveness and body dissatisfaction. Specifically, we predicted that as ethnic identity scores increase, body dissatisfaction scores will decrease. This hypothesis was largely supported for BIQ scores but only partially supported for EDI-3 subscale scores. Before controlling for the potential impact of other variables, total ethnic identity scores were significantly negatively correlated with BIQ scores and EDI-3 body dissatisfaction subscale scores as predicted for African American participants but were not significantly correlated with either measure of body dissatisfaction for Caucasian participants.

After controlling for the potential impact of other variables, the relationship between ethnic identity and body dissatisfaction differed depending on the body dissatisfaction measure used. There were no significant differences in body dissatisfaction scores measured by the BIQ between African American and Caucasian women after controlling for MEIM-R scores, dieting peer competitiveness scores, age, BMI, household income, number of children, self-esteem, and depression or after controlling for MEIM-R scores, general competitiveness scores, age, BMI, household income, number of children, self-esteem, and depression. MEIM-R scores were a significant predictor of BIQ scores for all participants, both in the model assessing dieting peer competitiveness and in the model assessing general competitiveness. As expected, as ethnic identity scores increased, BIQ scores decreased. In contrast, MEIM-R scores were not a significant predictor of EDI-3 subscale scores in either the model assessing dieting peer competitiveness or the model assessing general competitiveness for all participants. In the model assessing dieting peer competitiveness, Caucasian participants had higher adjusted mean scores for EDI-3 subscale scores than African American participants but there was no difference between groups in the model assessing general competitiveness. Shuttlesworth and Zotter (2011) found that high ethnic identity was related to different eating disorder behaviors for African American and Caucasian women. The findings in this study largely reflect that the same pattern is seen between ethnic identity and body dissatisfaction for African American and Caucasian women as no significant interaction effects were found between race/ethnicity and MEIM scores. The difference between the findings from Shuttlesworth and Zotter (2011) and the current study may be a result of using the MEIM-R in the current study rather than the MEIM, due to the focus on body dissatisfaction rather than eating disorder behaviors, or because the average age of participants in the current study is higher so they are likely to be further along in the process of

developing their ethnic identity. The findings from the current study suggest that the type of measure used to assess body dissatisfaction may influence association with ethnic identity. When using a measure that assesses broader constructs of body image as well as the perceived discrepancy from an ideal and the importance of this discrepancy, higher ethnic identity scores are associated with lower body dissatisfaction for all participants. This reflects Phinney's concept of focusing on the process of ethnic identity formation rather than the content in order to capture the experiences of multiple ethnic groups. Among African American and Caucasian women, actively seeking information about one's ethnic group, participation in cultural experiences, and/or having a sense of belonging to one's ethnic group may be a protective factor in body dissatisfaction through a number of possible avenues such as increased self-esteem, reduced negative affect, or a reduced focus or value on appearance. These findings add support to the argument that ethnic identity plays a role in body dissatisfaction when using a measure of body dissatisfaction that captures many facets of body dissatisfaction. The finding that ethnic identity was not a significant predictor of EDI-3 subscale scores may reflect a weaker tie between the process of ethnic identity and body dissatisfaction as defined specifically by the shape and size of particular body parts.

Overall, the means scores on outcome variables among our sample appeared similar to or, in some cases, somewhat lower than those found in previous studies. Thus, our participant sample may have experienced lower levels of depression or body dissatisfaction. The age of our participants may account for some of these differences since much of the research focuses on adolescent and college-aged women. Overall, however, mean scores are similar to participants in previous studies.

Although the results appear to be robust, there are several limitations to this study. First, the measures used in this study were all self-report. Using self-report measures raises concerns about social desirability bias, errors in recall, and honesty in answers provided. In addition, some of the correlations may be due to method similarities since all of the measures were self-report. Second, questionnaires were completed online so participants may have been distracted at the time of filling out questionnaires in an uncontrolled environment and there is no way to verify that participants met the required criteria of being female, over age 18, and identifying as either African American or Caucasian. However, conducting research online is a methodology that many studies use today and high incentives were not provided for participation, reducing the likelihood of false representation. Third, a number of analyses were conducted which increases the likelihood of making a Type I error which means it is possible that the relationships in some of the models that demonstrated significance were found by chance alone. Fourth, many of these concepts, such as ethnic identity or competitiveness, may change over time and in different contexts but as data was only collected once in the current study, patterns over time could not be observed. Finally, as this is a correlational study, no determinations can be made about causality or temporal order of the relationships in the variables assessed.

It is important for additional work to be conducted in order to make further progress in understanding the relationships between body dissatisfaction and general competitiveness, peer competitiveness, and ethnic identity in ethnically diverse populations. In particular, the results of this study raise additional research questions to explore in the areas of peer competitiveness focused on eating behavior and body shape/size and social comparison. It would also be interesting to measure potential outlets in areas outside of physical appearance used for expression of general competitiveness among women who are high on general competitiveness

scores but low on peer competitiveness focused on eating behavior and body shape/size as these outlets may provide additional insight on potential avenues for individuals to focus on instead of body shape/size that may reduce disorder eating behaviors. In addition, it would be interesting to assess the relationships between these variables in an ethnically diverse sample of men as well. Another potential area of study is to further explore the link between ethnic identity and body dissatisfaction through other methods, such as qualitative research, in order to assess the potential reasons for this connection in greater detail. Finally, this study focused on body dissatisfaction and did not assess eating behaviors related to the diagnoses of eating disorders, which could be another important area of future research with the constructs of peer competitiveness, general competitiveness, and ethnic identity among ethnically diverse women.

This study identified relationships between body dissatisfaction and dieting peer competitiveness, general competitiveness, and ethnic identity among African American and Caucasian women using two different types of measures of body dissatisfaction. It was found that ethnic differences in body dissatisfaction appear to persist in the current time period as well as over the lifespan for women as differences were found among a slightly older group of participants. It was also found that peer competitiveness focused on eating behaviors and body image appears to have a different relationship with body dissatisfaction than general competitiveness, that peer competitiveness and social comparisons are related to body dissatisfaction for African American and Caucasian women, and that the type of measure used to assess body dissatisfaction may influence the relationship between ethnic identity and body dissatisfaction.

Each of these findings has implications for the direction of future research and for interventions for overall mental health and eating disorder behavior. Although body

dissatisfaction scores are often lower for African American women than Caucasian women, body dissatisfaction was present in this population. It is important to continue researching the unique experiences of African American women in order to identify specific ways to target treatment and prevention strategies to meet the needs of African American women as their cultural experiences and the history of institutional racism within the United States may result in different needs for this population. Overall, it seems that prediction of body dissatisfaction is associated with increased dieting peer competitiveness, and depending on the measure used to assess body dissatisfaction, lower ethnic identity. In order to inform interventions with ethnically diverse women who experience body dissatisfaction, it is important to identify the variables that influence their psychological well-being. Such interventions should focus on helping women develop skills that will enable them to achieve improved well-being such as decreased dieting peer competitiveness or increased attention to the process of ethnic identity formation.

APPENDIX 1

DIETING PEER COMPETITIVENESS SCALE

Please read each of the following statements carefully, and indicate how characteristic it is of you by placing a tick (X) in the appropriate brackets.

All are assessed on the following scale: Not at all like me, Slightly like me, Moderately like me, Reasonably like me, Extremely like me

1. I do not like wearing a bathing suit because I don't think I look as good as other women
2. I don't mind having junk food even if my friends are having healthy food
3. When I look at my slim friends I wish I could look just like them
4. Before going to a party I spend a long time worrying about whether I will look as attractive as some of my friends
5. I feel happier about my figure when I am with someone who is larger than myself
6. I don't mind going out in a short skirt even if my friend is wearing a short skirt and looks better than I do
7. I look at other women's figures to see how well I measure up
8. At a party I don't mind eating dessert, even if my friends decide not to have any
9. I am likely to buy low calorie things even when everyone else isn't doing so

APPENDIX 2

REVISED COMPETITIVENESS INDEX

(Note: this should be administered using a generic title such as "Attitude Questionnaire")
Please answer the following questions and avoid spending too much time on any one item.

1. I like competition.
2. I am a competitive individual.
3. I enjoy competing against an opponent.
4. I don't like competing against other people.
5. I get satisfaction from competing with others.
6. I find competitive situations unpleasant.
7. I dread competing against other people.
8. I try to avoid competing with others.
9. I often try to outperform others.
10. I try to avoid arguments.
11. I will do almost anything to avoid an argument.
12. I often remain quiet rather than risk hurting another person.
13. I don't enjoy challenging others even when I think they are wrong.
14. In general, I will go along with the group rather than create conflict.

APPENDIX 3

BIQ

Each item on this questionnaire deals with a different physical characteristic. For each characteristic, think about how you would describe yourself as you actually are. Then think about how you wish you were. The difference between the two reveals how close you come to your personal ideal. In some instances, your looks may closely match your ideal. In other instances, they may differ considerably. On Part A of each item, rate how much you resemble your personal physical ideal by selecting the appropriate rating.

Your physical ideals may differ in their importance to you, regardless of how close you come to them. You may feel strongly that some ideals embody the way you want to look or to be. In other areas, your ideals may be less important to you. On Part B of each item, rate how important your ideal is to you by selecting the most appropriate rating.

A: How much you resemble your personal physical ideal

Rated with: Exactly As I Am, Almost As I Am, Fairly Unlike Me, Very Unlike Me

B: How important your ideal is to you

Rated with: Not Important, Somewhat Important, Moderately Important, Very Important

1. My ideal height is:
2. My ideal skin complexion is:
3. My ideal hair texture and thickness are:
4. My ideal facial features (eyes, nose, ears, facial shape) are:
5. My ideal muscle tone and definition is:
6. My ideal body proportions are:
7. My ideal weight is:
8. My ideal chest size is:
9. My ideal physical strength is:
10. My ideal physical coordination is:
11. My ideal overall physical appearance is:

APPENDIX 4

EDI-3 BODY DISSATISFACTION SUBSCALE

I think that my stomach is too big.

I think that my thighs are too large.

I think that my stomach is just the right size.

I feel satisfied with the shape of my body.

I like the shape of my buttocks.

I think my hips are too big.

I feel bloated after eating a normal meal.

I think that my thighs are just the right size.

I think my buttocks are too large.

I think that my hips are just the right size.

APPENDIX 5

REVISED (12-ITEM) MULTIGROUP ETHNIC IDENTITY MEASURE

In this country, people come from a lot of different cultures and there are many different words to describe the different backgrounds or ethnic groups that people come from. Some examples of the names of ethnic groups are Hispanic, Black, Asian-American, Native American, Irish-American, and White. These questions are about your ethnicity or your ethnic group and how you feel about it or react to it.

Please fill in: In terms of ethnic group, I consider myself to be _____

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

(4) Strongly agree; (3) Agree; (2) Disagree; (1) Strongly disagree

1. I have spent time trying to find out more about my 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 think a lot about how my life will be affected by my ethnic group membership.

5. I am happy that I am a member of the group I belong to.

6. I have a strong sense of belonging to my own ethnic group.

7. I understand pretty well what my ethnic group membership means to me.

8. To learn more about my ethnic background, I have often talked to other people about my ethnic group.

9 I have a lot of pride in my ethnic group and its accomplishments.

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

11. I feel a strong attachment towards my own ethnic group.

12. I feel good about my cultural or ethnic background.

APPENDIX 6

ROSENBERG SELF-ESTEEM SCALE

BELOW IS A LIST OF STATEMENTS DEALING WITH YOUR GENERAL FEELINGS ABOUT YOURSELF. IF YOU **STRONGLY AGREE**, CIRCLE **SA**. IF YOU **AGREE** WITH THE STATEMENT, CIRCLE **A**. IF YOU **DISAGREE**, CIRCLE **D**. IF YOU **STRONGLY DISAGREE**, CIRCLE **SD**.

	1. STRONGLY AGREE SA	2 AGREE A	3. DISAGREE D	4. STRONGLY DISAGREE SD
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1. I feel that I am a person of worth, at least on an equal plane with others.
2. I feel that I have a number of good qualities.
3. All in all, I am inclined to feel that I am a failure.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I take a positive attitude toward myself.
7. On the whole I am satisfied with myself.
8. I wish I could have more respect for myself.
9. I certainly feel useless at times.
10. At times I think that I am no good at all.

APPENDIX 7

CENTER FOR EPIDEMIOLOGICAL STUDIES-DEPRESSION SCALE (CES-D)

Below is a list of some of the ways you may have felt or behaved in general (i.e. in non-athletic situations). Please read each question below and then click on the bubble that corresponds to the most relevant point on the scale for you. Please indicate how often you felt this way during the past week. Use the scale below to guide your answers.

During the past week...

1 = Rarely or none of the time (less than 1 day)

2 = Some or a little of the time (1-2 days)

3 = Occasionally or a moderate amount of time (3-4 days)

4 = All of the time (5-7 days)

- | | | | | |
|--|---|---|---|---|
| 1. I was bothered by things that usually don't bother me. | 1 | 2 | 3 | 4 |
| 2. I did not feel like eating; my appetite was poor. | 1 | 2 | 3 | 4 |
| 3. I felt that I could not shake off the blues, even with help from my family. | 1 | 2 | 3 | 4 |
| 4. I felt that I was just as good as other people. | 1 | 2 | 3 | 4 |
| 5. I had trouble keeping my mind on what I was doing. | 1 | 2 | 3 | 4 |
| 6. I felt depressed. | 1 | 2 | 3 | 4 |
| 7. I felt that everything I did was an effort. | 1 | 2 | 3 | 4 |
| 8. I felt hopeful about the future. | 1 | 2 | 3 | 4 |
| 9. I thought my life had been a failure. | 1 | 2 | 3 | 4 |
| 10. I felt fearful. | 1 | 2 | 3 | 4 |
| 11. My sleep was restless. | 1 | 2 | 3 | 4 |
| 12. I was happy. | 1 | 2 | 3 | 4 |
| 13. I talked less than usual. | 1 | 2 | 3 | 4 |
| 14. I felt lonely. | 1 | 2 | 3 | 4 |
| 15. People were unfriendly. | 1 | 2 | 3 | 4 |

16. I enjoyed life.	1	2	3	4
17. I had crying spells.	1	2	3	4
18. I felt sad.	1	2	3	4
19. I felt that people disliked me.	1	2	3	4
20. I could not “get going”	1	2	3	4

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