THE CROSS-CULTURAL VALIDITY OF THE EDI-3 EATING DISORDER RISK
SUBSCALES: A COMPARATIVE FACTOR ANALYSIS WITH CAUCASIAN
AMERICAN AND AFRICAN AMERICAN SAMPLES

By

Lauren A. Rothstein

Submitted to the

Faculty of the College of Arts and Sciences

of American University

in Partial Fulfillment of

the Requirements for the Degree

of Master of Arts

In

Psychology

Chair:

Michele Carter, Ph.D.

James Gray, Ph.D.

Tracy Sbrocco, Ph.D.

Dean of the College of Arts and Sciences

Date

April 24, 2014

2014
American University
Washington, D.C. 20016
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ABSTRACT

This study examined the cross-cultural validity of the eating disorder subscales of the Eating Disorder Inventory-3 (EDI-3) in Caucasian American and African American female samples. A comparative factor analysis was conducted in order to determine the fit of a three-factor model of Eating Disorder Risk, within the EDI-3, proposed by Garner (2004). The sample consisted of 197 Caucasian American and 104 African American females. Confirmatory Factor Analyses (CFA) of the three-factor model were conducted separately for each ethnic group using Lisrel 9.1. CFA results indicated the 3-factor model was an adequate fit for the Caucasian American sample, but only a mediocre fit in the African American sample. Follow-up EFAs indicated that the Caucasian American data produced a pattern matrix consisting of three factors (DT, B, BD) while the African American data produced a pattern matrix consisting of four factors (DT, B, BD, BS). Assessment of item composition differences under similar factors, mean differences, and correlations further elucidated differences found between the two samples. The overall results of the factor analyses suggest that the EDI-3 may be capturing different constructs for African American Americans compared to Caucasian Americans.
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CHAPTER 1

INTRODUCTION

With evidence that ethnicity may be an important moderator variable that may account for differences in the expression of psychopathology and its epidemiology (Carter et al, 1999), research examining ethnic differences in the measurement of various psychological constructs has increased over the years. At the center of ethnic identity is a sense of self that develops over time through being a member of a group. Unlike personal identity, ethnic identity involves a common sense of identity that is shared among other members of the same ethnic group. It is important to be aware of the role that ethnic identity plays in an individual’s well being, as people derive positive self-attitudes from belonging to groups that are meaningful to them (Phinney & Ong, 2007; Phinney, 1989; Tajfel & Turner, 1986). With ethnic identity serving as a significant contributor to the development of an individual’s sense of self, beliefs and attitudes, it is important to measure it. Previous studies have found differences between Caucasian Americans and African Americans on measures of anxiety (Carter et al, 1999; Chapman et al, 2009; & Melka et al, 2010), depression (Hambrick et al, 2009), worry (Carter et al, 2005; Chapman et al, 2009), and eating pathology (Abrams et al, 1993). Previous research has found that 50% to 60% of African American women are overweight or obese. Being overweight or obese makes these women more susceptible to serious health risks, such as; hypertension, type 2 diabetes, stroke and congestive heart failure (Gaillard, Schuster & Osei, 2012). However, the psychometric properties of one of the most widely used measurements of eating pathology, the EDI-3, have not been evaluated among African Americans. The majority of the measures of
eating pathology have been developed and validated using Caucasian American samples, leading the focus to be on risk factors and symptoms that are less relevant to African American women; such as dieting, body dissatisfaction and the thin-ideal internalization (Kelly et al, 2011). The purpose of this study is to examine the factorial structure of the EDI-3 among African Americans.

Cross-Cultural Differences on Measures of Psychopathology

Previous research examining ethnic differences on measures of psychopathology have found cross-cultural differences between African American and Caucasian Americans on measures of anxiety (Carter et al, 1999; Chapman et al, 2009; & Melka et al, 2010), depression (Hambrick et al, 2009), and worry (Carter et al, 2005; Chapman et al, 2009). Carter, Miller, Sbrocco, Suchday, & Lewis (1999) examined the factor structure of the Anxiety Sensitivity Index (ASI) among African American college students. The results of the analyses indicated that the factor composition of the ASI differed for African Americans compared to Caucasian Americans. Similarly, Chapman, Williams, Mast, and Woodruff-Borden (2009) conducted a confirmatory factor analysis of the Beck Anxiety Inventory in African American and European American young adults. Their findings suggested that the current version of the BAI was not well suited for Caucasian Americans or African Americans. The results of a secondary exploratory factor analysis of the BAI, suggested that an alternative two-factor model structure yielded the best fit, particularly in the African American sample (Chapman et al, 2009). Melka, Lancaster, Adams, Howarth, and Rodriguez (2010) evaluated the factor structure of the Fear of Negative Evaluation (FNE) and Social Avoidance and Distress Scales (SAD). Results indicated that in order for these measures to be a good fit with African American samples, seven items needed to be removed from each scale. Therefore, it could be concluded that the original
versions of the FNE and SAD do not adequately capture the construct of social anxiety in African Americans (Melka et al, 2010).

Carter, Sbrocco, Miller, Suchday, Lewis, and Freedman (2005) examined the factor structure of the Penn State Worry Questionnaire (PSWQ). Differences between African Americans and Caucasian American college students were explored and the results of the analyses of the questionnaire indicated that some overlap could be seen on the measure between the two groups. There were, however, significant differences in the scores on the PSWQ, as African Americans scored lower than Caucasian American group members (Carter et al, 2005).

Hambrick, Rodebaugh, Balsis, Woods, Mendez, and Heimberg (2010) examined the cross-ethnic validity of the Beck Depression Inventory (BDI-II). Differences between African Americans and Caucasian Americans were found on two items in the BDI-II (punishment feelings and indecisiveness). Hambrick et al suggested that removing the two items from the measure could make it a better fit for African Americans.

Chapman, Kertz, and Woodruff-Borden (2009) examined the impact of perceived control and psychological distress on worry in Caucasian American and African American samples. Using measures of depression (Beck Depression Inventory), anxiety (State Trait Anxiety Inventory and the Anxiety Control Questionnaire), and worry (the Penn State Worry Questionnaire), Chapman et al found that although the factors that contribute to worry are the same in both African American and Caucasian Americans (psychological distress and perceived control). Differences were found, however, between groups for which one was a better predictor of worry in each of the populations. Chapman and colleagues (2009) concluded that psychological distress was a significant predictor of worry in the African American sample, while low perceived control was a stronger predictor for the European American sample. Despite
clear indication that the measurement of a variety of psychopathological conditions, little has been done to evaluate the validity of the Eating Disorder Inventory with African Americans; one of the more common measures of eating pathology.

Cross-Cultural Differences in Body Image and Body Satisfaction

Previous research indicates that the standards of beauty and self-perception with regards to weight and body image held by African Americans and Caucasian Americans are quite different, as African American women are less concerned about weight, dieting and being thin (Molloy & Herzberger, 1998; Abrams et al, 1993; Akan & Grilo, 1995; Rucker & Cash, 1992) despite having greater Body Mass Indexes (BMI) than Caucasian American women. The majority of research examining disordered eating and body dissatisfaction in African American and Caucasian Americans has found that African American women are significantly more pleased with their bodies (Shuttlesworth & Zotter, DeBraganza & Hausenblas, 2010; Frisby, Jacobs, 2001; Tyler, 2003). Different factors, such as, attitude towards weight gain, the perceived standards of beauty of potential mates, the beliefs regarding beauty and weight in the dominant cultural group and ethnic identity; contribute to the differences found between African American and Caucasian American women regarding body image and eating pathology.

Previous research has suggested that African American women are significantly less concerned with dieting and losing weight and more tolerant of weight gain than Caucasian American women (Bagley et al, 2003; Kumanyika et al, 1993; Root, 1990; Thomas, 1987; Villarosa, 1994). In addition to being less fearful of gaining weight, research has suggested that African American women endorse fuller-figured models as portraying the ideal body size in
comparison to Caucasian American females and have greater BMIs (Shuttlesworth & Zotter, 2011; Frisby, 2004; Perez & Joiner, 2003).

Thomas (1987) found that although a relationship could be found between self-esteem and body image in African American women, an even more significant relationship existed between body image satisfaction and the perception of potential significant others. The belief held by many African American women that their African American males prefer for women to be larger, they experience less internal pressure to be thinner. Caucasian American females on the other hand, encounter pressure to be thin due to the fact that they believe that Caucasian American males prefer very thin women (Molloy & Herzberger, 1998). Research conducted on the preferences of men regarding body type has supported these perceptions, as its has suggested that African American men are more accepting of larger body size than Caucasian American men (Molloy & Herzberger, 1998; Freedman et al; 2004; Cunningham et al, 1995; Greenberg & Laporte, 1996, Powell & Kahn, 1995; Cohn & Adler, 1992; Fallon & Rozin, 1985; Thompson et al, 1996). With the preference of African American men being for a fuller body size, those women who view them as potential mates will experience less pressure to adhere to the thin ideal (Freedman et al, 2004).

Traditionally, the African culture has viewed a fuller figure as being more attractive and desirable (Bagley et al, 2003; Cogan et al, 1996). Research has suggested that the strong ethnic identity of an African American woman may protect them against adopting the Caucasian American thinness ideal by encouraging the internalization of the African American ideal of a fuller-figured female (Shuttlesworth & Zotter, 2011; Abrams et al, 1993; Turnage, 2004).

The more positive body image perceptions held by African American women as a result of strong ethnic identities and differing perceptions of beauty from the norm have been thought
to serve as protective factors against the development of eating disorders in African American females. However, despite the differences in body image perception and satisfaction found between African American and Caucasian American females, research has suggested that African American women are at risk for eating disorder to the same degree as Caucasian American women (Bagley et al, 2003; Villarosa, 1994). A potential reason for the deficit in evidence for the presence of eating disorders in African Americans can be that many African Americans do not seek treatment for their eating disorders through the use of traditional mental health services (Bagley et al, 2003).

Although eating disorders, such as anorexia and bulimia, have previously been viewed as problems that more frequently affect Caucasian American females, more recent research has refuted this.

Kelly, Cotter, and Mazzeo (2012) aimed to provide EDE-Q norms for African American women and to compare them with their Caucasian American peers and with a primarily Caucasian American community sample. Kelly et al (2012) found that the levels of eating disorder symptoms reported by the African American women in their undergraduate sample was comparable to the Caucasian American community sample and lower than their Caucasian American peers. Additionally, it was determined that the African American women in this sample above the EDE-Q cut-off score only differed from their Caucasian American counterparts on weight concerns, which the African Americans were twice as likely to endorse (Kelly et al, 2012). Although this is contradictory to previous research that suggests that African American women are more accepting of weight gain, Kelly et al suggested that this difference was a result of the African American females reaction to finding out their BMIs, which were higher than the average BMI of the Caucasian American undergraduate sample. Previous research suggests that
being exposed to the unrealistic mainstream ideals of beauty and thinness may significantly influence body satisfaction. With the pressure to be thin being so prominent on college campuses, despite the fact that it has been reported that African Americans embrace larger body sizes, is a precursor to body satisfaction concerns in African Americans (Kelly et al, 2012). Additionally, Kelly et al determined that the African American women endorsed significantly less concern about their eating and dietary restraint than their Caucasian American peers and even less reported that they engaged in behavior characteristic of eating disorders (binge eating, self-induced vomiting, etc.). The fact that the African American sample in this study was most similar to the Caucasian American community sample could potentially be attributed to the Caucasian American female undergraduates’ increased risk for behaviors associated with eating disorders (Kelly et al, 2012). Despite the fact that the percentage of women above the EDE-Q clinical cut-off, the African American females still endorsed fewer of the eating disorder symptoms and behaviors than their peers (Kelly et al, 2012). Kelly et al suggested that this could mean that the concerns regarding weight and eating in the African American sample could have less to do with compensatory or binge eating behavior. With the root of these maladaptive behaviors coming into question, it has been suggested that other factors may be involved in the African American samples. Kelly et al (2012) reported that acculturative stress, ethnic identity, and experiences of racism and oppression could potentially be some of the factors influencing the development and maintenance of eating disordered behaviors in African American women. Kelly et al (2012) ultimately determined that EDE-Q cutoff scores might not be the most accurate predictor of eating disorders in African Americans. In being aware of the differences that have been found to exist between African American and Caucasian American females, it is
imperative to ensure that one of the widely used measures of eating pathology, the Eating Disorder Inventory-3, is valid cross-culturally.

**The Eating Disorder Inventory**

Garner, Olmstead, and Polivy (1983) developed the original version of the Eating Disorder Inventory (EDI) in 1983 as a measure of psychological and behavioral characteristics related to eating disorders. In its earliest version, the 64 items of the EDI were organized in three subscales measuring eating disorders symptoms (drive for thinness, bulimia, and body dissatisfaction), and five general psychological features related to eating disorders (ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, and maturity fears). The validity and psychometric properties of the EDI has been examined and confirmed using populations in Germany (Rathner & Rumpold, 1994), Hong Kong (Lee et al, 1997), Portugal (Machado et al, 2001), and New Zealand (Wicks et al, 2004), among others. Although the measure had been validated in clinical populations, concerns arose regarding the validity within non-clinical populations (Shoemaker et al, 1993). Studies conducted using non-clinical populations (Welch & Walkey, 1988; Cole & Edelmann, 1987; Shore & Porter, 1990; Klemchuk et al, 1990; Rosen, Silberg, & Gross, 1988) found the internal consistency, factorial integrity, and concurrent validity of the subscales to be unsatisfactory (Shoemaker et al, 1993).

In order to address concerns with the first version of the EDI, a second version (EDI-2) was developed (Garner et al, 1991). The second version was expanded to 91 items, including 11 subscales (Niv et al, 1998). According to Garner et al (1991), the items were chosen based on their capacity to distinguish between groups of patients and non-patients (Niv et al, 1998). The items that were added were intended to measure asceticism, impulse regulations, and social
insecurity (Garner et al, 1991). Niv, Kaplan, Mitrani, and Shiang (1998) evaluated the validity of the Hebrew version EDI-2. Results indicated that this version of the EDI-2 was reliable and valid (Niv et al, 1998). Thiel and Paul (2006) examined the test-rest reliability of the EDI-2 using a clinical eating disordered sample and a clinical mental health sample. Results indicated that the internal consistency was high, with $\alpha = .82-.93$ and the test-retest reliability in the eating disorder group ranged from $.81-.89$ and from $.75-.94$ in the mental health sample. These results suggested that the EDI-2 exhibits sufficient stability over time, therefore providing further evidence of the reliability of the EDI-2 for assessing eating disorder symptoms (Thiel and Paul, 2006).

Nevonen, Clinton, and Norrig (2006) examined the validity of the EDI-2 using a clinical sample of females with eating disorder diagnoses, a sample of females participating in psychiatric outpatient without eating disorder diagnoses, and a normal control group. The results indicated that the EDI-2 could discriminate between patients with eating disorders and both the psychiatric and control individuals. The original subscales of EDI-2 were found to demonstrate good internal consistency (Eating disorder patients $\alpha = .74-.90$) and preliminary subscales had $\alpha$ between $.62-.76$ (Nevonen et al, 2006).

Clausen, Rokkedal, and Rosenvinge (2009) evaluated the EDI-2 in clinical and nonclinical samples of Danish women. The results indicated that the internal consistency was acceptable ($\alpha = .73-.90$ (eating disorder patients), $\alpha = .36-.90$ (normal controls)). It was also determined that the EDI-2 was able to discriminate between the eating disordered patients and the control group (Clausen et al, 2009). This study established that the EDI-2 is in fact a valid instrument that can be used for the purposes of measuring eating disorder symptomology in adults (Clausen et al, 2009). One caveat to their findings was that while the EDI-2 may be a good measure for screening purposes, their findings did not support the use of the EDI-2 for diagnostic
purposes due to the heterogeneity of the patient group used in their sample (Clausen et al, 2009). Although changes made in the development of the EDI-2 made it appropriate for use with non-clinical populations, some researchers believed that more could be done to increase the psychometric properties in non-clinical populations (Clausen et al, 2011). Additionally, concerns regarding the internal consistency of the original eight subscales of the EDI-2 \( r = .68 - .87 \), as the variation was greater than that for the additional three subscales \( r = .65 - .70 \), brought about criticism concerning the factor structure of the EDI-2 (Clausen et al, 2011; Clausen et al, 2009; Muro-Sans et al, 2006; Limbert, 2004)

The most recent, version of the eating disorder inventory (EDI-3) (Garner, 2004) was developed with the goal of increasing internal consistency reliabilities by incorporating subscales that reflected more recent eating disorder research and theory (Clausen et al, 2009). The norm group utilized by Garner (2004) in the development of the EDI-3 consisted of 1,980 females. The sample differed from samples used in previous versions of the measure in that it included individuals with prior EDNOS diagnoses, adolescents, and some international participants. 622 participants (33% of the sample) were from outside the United States (Cumella, 2006). The EDI-3 retains the original 91 items from and the same three eating disorder symptom subscales (drive for thinness, bulimia, and body dissatisfaction) from the EDI-2 (Cronbach’s \( \alpha = .90-.97 \); test-retest \( r = .98 \) (Clausen et al, 2011; Garner, 2004; Wildes et al, 2010)). New subscales were developed based on results of factor analyses of the sum scores of the EDI-2 (Clausen et al, 2011; Garner, 2004). Nine psychological subscales were derived from the EDI-2; including low self esteem, personal alienation, interpersonal insecurity, interpersonal alienation, interoceptive deficits, emotional dysregulation, perfectionism, asceticism, and maturity fear. In addition to the now twelve subscales, six composite scores were added in the development of the EDI-3. The
composite scores are eating disorder risk, ineffectiveness, interpersonal problems, affective problems, over control, and general psychological maladjustment. Adequate discriminant validity of the EDI-3's subscales and composites is suggested based on it's correlations with two multifactorial measures of general psychopathology, the Symptom Checklist–90 and Millon Clinical Multiaxial Inventory–II (Cumella, 2006; Garner, 2004). The EDI-3 is reported to yield adequate convergent validity (EDI-3 LSE scale correlation of .82 with Rosenberg Self-Esteem Scale), as it correlated with six other measures of eating disorder behavior (Cumella, 2006; Garner, 2004).

Clausen, Rosenvinge, Friborg, and Rokkedal (2011) examined the validity the EDI-3 in a sample of 564 Danish women receiving treatment for an eating disorder and a control group consisting of 878 women from the Danish Civil Registration System. Through this study, the 12-factor structure of the EDI-3 was confirmed. The EDI-3 was determined to have good discriminant validity, as it was able to strongly and significantly distinguish between patients and non-patients ($\alpha = .76-.92$ for patients, $\alpha = .78-.93$ for normal controls) (Clausen et al, 2011).

Elousa and Lopez-Jauregui (2012) used a Spanish adaptation of the EDI-3 in order to evaluate the internal structure of the measure. Through administering the EDI-3 to 394 women in Spain who had already been diagnosed with an eating disorder and were receiving treatment, Elousa and Lopez-Jauregui (2012) were able to confirm the psychometric qualities of the EDI-3. The results confirmed the internal structure, temporal stability ($r_{xx} = .85-.99$), and the high internal consistency (eating disorder scales $\alpha = .90-.92$; psychological scales $\alpha = .75-.93$) of the EDI-3 (Elousa & Lopez-Jauregui, 2012). A confirmatory factor analysis was run on different models (unidimensional, scale composite theoretical model, scale composite theoretical model with general factors, and scale composite theoretical model with general factors and eating
disorder risk composite), the results of which confirmed the internal structure of the EDI-3 (Elousa & Lopez-Jauregui, 2012).

Cordero, Julian, and Murray (2013) examined the factor structure of the eating disorder risk subscales of the EDI-3 in a sample of Latina college women. Results of an Exploratory Factor Analysis indicated that most of the items loaded with the factors stipulated in the original version by Garner (2004). There were two items (EDI2 and EDI19) that crossloaded under Body Dissatisfaction and Drive for Thinness and six items (EDI1, EDI4 EDI12 EDI47, EDI53, and EDI59) that failed to load under any of the factors (Cordero et al., 2013). According to Cordero and colleagues, the crossloading of the items and the failure of the six items to load were indicative of there being different attitudes overall regarding body shape in Latina college women and that concerns with stomach size, their buttocks, and feelings of bloating were not relevant experiences relating to body dissatisfaction in Latina college women. Additionally, it was determined that eating sweets (EDI11) was not related to drive for thinness and that vomiting as a means to control weight (EDI53) was not common in Latinas (Cordero et al., 2013). Cordero et al. (2013) determined that the eating disorder risk subscales were reliable overall in this sample, but that the differences they found alluded to the potential existence of unique attitudes towards food and bodies in this sample.

Although the earlier versions of the EDI have been used as measures in previous studies with African American individuals in their samples (Jones et al, 1999; Gordon et al, 2002; Bagley et al, 2003; James et al, 2001), there have not been studies conducted in order to examine the validity of the EDI in this population. The psychometric properties and other aspects of this eating disorder measure have also been examined internationally, as the EDI has been translated into Dutch, Bulgarian, Swedish, Portuguese, Chinese, Korean, and Spanish (Elousa & Lopez-
Jauregui, 2012). Changes have been made to the EDI since it was developed in 1983 in order to make it a more effective measure among clinical and non-clinical samples, yet there has not been a consideration of the role that ethnicity may potentially play in the validity of this measure. Based on the fact that differences have been detected on previously mentioned measures between African American and Caucasian Americans, it could be posited that ethnicity and ethnic identity may also play a role in the expression and measurement of eating pathology as well.

The Present Study

The purpose of this study was to determine the validity of the Eating Disorder Risk Subscales of the EDI-3 when used in African American samples. This study aimed to establish whether differences existed between African Americans and Caucasian Americans on these subscales, through the use of a comparative factor analysis. It was predicted that there would be differences found between African Americans and Caucasian Americans on the EDI-3 subscales and that it will be found that different constructs are being measured in each sample. Due to the fact that African American women are more accepting of fuller figures and have less concerns with dieting and the thin ideal, and have greater BMIs, it is predicted that they will endorse less of the items on the EDI-3 relating to those constructs than their Caucasian American counterparts. It is also predicted that African American women with stronger ethnic identity scores, as measured by the Multigroup Ethnic Identity Measure-Revised (MEIM-R), will endorse fewer items having to do with dieting, thinness, and other related constructs than Caucasian American women.
CHAPTER 2

METHOD

Participants

The sample included 104 African American and 197 Caucasian American women, unselected for diagnoses. Participants were recruited through the use of flyers around the American University campus, through the Today at AU emails, through the Community Research Outreach Workers Network (CROWN), through the Amazon Mechanical Turk (MTurk) website and through social networking sites (i.e. Facebook). Participants must have been at least 18 years old, able to read and write in English. Reading and writing ability were confirmed based on the individuals’ responses regarding education and ethnicity on the demographic questionnaire. Current or past eating disorder treatment was not grounds for exclusion from the study, but participants were asked to report treatment history in demographic questionnaire. Participants completed the MEIM-R in order to provide information about their ethnic identity. Discriminant validity of the measure was established through the use of the psychoticism and paranoid ideation subscales of the Symptom Checklist-90-R (SCL-90-R) and convergent validity was established through the use of the Eating Attitudes Test (EAT-26).

Measures

Demographic Questionnaire

A demographic questionnaire was developed in order to gather information on age, race/ethnicity, education, SES and history of any prior eating disorder treatment.
Eating Disorder Inventory-3 (EDI-3)

The EDI-3 is a 91 item self-report measure of eating pathology (Garner et al, 2004). It contains three of the subscales of eating disorder symptoms from the EDI-2 (drive for thinness (DT), bulimia (B), and body dissatisfaction (BD)); nine additional psychological subscales are used on the EDI-3 that reflects more recent eating disorder theory and research. These subscales are low self esteem (LSE), personal alienation (PA), interpersonal insecurity (II), interpersonal alienation (IA), interoceptive deficits (ID), emotional dysregulation (ED), perfectionism (P), asceticism (AS), and maturity fear (MF) (Clausen et al, 2011). The original scoring format was changed in this most recent revision from 0-3 to 0-4. The EDI-3 is reported to yield adequate convergent and discriminant validity (Cumella, 2006). The internal consistency of the Eating Disorder Risk subscale items in this study was high (α = .94).

The Eating Attitudes Test (EAT-26)

The EAT-26 (Garner et al, 1982) is a condensed version of the original EAT-40, which contains three subscales: dieting, bulimia and food preoccupation, and oral control subscale items. The EAT-26 is highly correlated with the original version (r = .98) (Garner et al, 1982). This measure yields scores that are stable and internally consistent (α = .90) and is able to effectively discriminate between people with and without eating disorders (Kelly et al, 2011). Studies examining the reliability and construct validity of the EAT-26 in African American women have found that it can be used with this population but recommend the additional supplemental use of measures of racial identity, acculturation, and cultural beliefs and values (Kelly et al, 2011; Dana, 2002). This measure will be used as a means to establish and confirm
the convergent validity of the EDI-3. The internal consistency of the EAT-26 in this study was high (α = .93).

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

The MEIM-R (Roberts et al., 1999) is a twelve item self-report measure that is a revision of the MEIM (Phinney, 1992). This measure provides information regarding the strength and security of the ethnic identity across different ethnic groups. The twelve items, split between two subscales the two established subscales of ethnic identity search and affirmation, belonging, and commitment, are rated from 1 (strongly disagree) to 4 (strongly agree). Previous research has reported the internal consistency of the MEIM-R is relatively high (.81-.92). Consistent with previous research, the internal consistency of the MEIM-R in this study was .92.

The Beck Depression Inventory (BDI-II)

The BDI-II (Beck, 1996) is a 21-item self-report measure composed of items relating to different symptoms of depression (i.e. hopelessness and irritability, guilt or feelings of being punished, and physical symptoms such as fatigue, weight loss, and lack of interest in sex). The BDI-II has high test-retest reliability (r = .93) and high internal consistency (α = .88-.91) (Beck et al, 1996; Beck et al, 1996; Chapman et al, 2009). The internal consistency of the BDI-II is reported to be high in both Caucasian American (α = .89) and African American samples (α = .86) (Chapman et al, 2009). The internal consistency of the BDI-II in this study was .94.

The Symptom Checklist-90-R (SCL-90-R)

The SCL-90-R (Derogatis, 1977) is a 90-item self-report measure of psychological symptom patterns. This version is a revision of original Symptom Checklist-90 (Derogatis, 1973). The SCL-90-R assesses nine primary symptom dimensions; somatization, obsessive-
compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The test-retest reliability of this measure after one week has been reported to be 0.78-0.90 (Holi, 2003; Derogatis, 1983) and was reported to be between 0.68-0.80 in a second study with 10-week intervals (Holi, 2003; Derogatis, 2000). The items from the psychoticism and paranoid ideation subscales of the SCL-90-R will be used to establish discriminant validity of the EDI-3. The internal consistency of the paranoid ideation and psychoticism items of the SCL-90-R in this study was .93.

Procedure

Those individuals interested in participating contacted researcher for survey link and password. Upon reading the informed consent, they clicked the “next” button, therefore providing consent and confirming that they meet the inclusion criteria for this study. Participants completed the basic demographic questionnaire, the Eating Disorders Inventory-3 (EDI-3) Eating Disorder Risk Items (26 items), The Eating Attitudes Test (EAT-26), the Multigroup Ethnic Identity Measure-R (MEIM-R), the psychoticism and paranoid ideation items from the Symptom Checklist-90-R (SCL-90-R), and the Beck Depression Inventory (BDI-II). MTurk participants received 25-cent honorarium through the Mechanical Turk on Amazon upon their completion of the questionnaires and all other participants were entered into drawings for $100 gift cards. The drawings were conducted for every 100 participants, not including the MTurk participants. The email address for the experimenter was provided on the flyers/in emails/on website as to ensure that any questions that participants had were addressed.
CHAPTER 3

RESULTS

The sample consisted of 301 women (197 Caucasian American and 104 African American) between 18 and 72 years of age. The mean age was 27.3 for Caucasian Americans and 29.0 for African Americans (See Table 1). The majority of Caucasian American participants indicated that their highest level of education was either high school graduate (35.5%) or college graduate (35.5%). In the African American sample, 37.5% indicated that their highest education was high school graduate (See Table 1). The majority of Caucasian American participants (27.7%) indicated that their income was greater than $80,000 and the majority of African American participants (29.3%) indicated that their income was between $20,000 - $40,000 (See Table 1). The results of a MANOVA indicated there were significant differences between Caucasian American and African American participants on the EDI subscales, BMI, the EAT-26 scores, BDI, MEIM scores, and SCL item scores (Wilk's $\lambda = .722$ $F(12,282) = 9.04$, $p = .000$, partial $\epsilon^2 = .278$). Specifically, the results of an ANOVA indicated that compared for the Caucasian Americans, African Americans had higher BMIs ($F(1,293) = 24.11$, partial $\epsilon^2 = .076$, $p = .000$), lower drive for thinness ($F(1,293) = 5.33$, partial $\epsilon^2 = .018$, $p = .022$), and lower MEIM total scores $F(1,293) = 49.14$, partial $\epsilon^2 = .144$, $p = .000$). Additionally, results suggested that African American were less concerned with overall eating attitudes ($F(1,293) = 4.84$, partial $\epsilon^2 = 0.016$, $p = .029$), dieting ($F(1,293) = 7.95$, partial $\epsilon^2 = .026$, $p = .005$) and food preoccupation ($F(1,293) = 5.14$, partial $\epsilon^2 = .017$, $p = .024$) and EAT-26 total scores $F(1,295) = 4.84$, partial $\epsilon^2 = .016$, $p = .029$) (See table 1). As indicated in Table 1, chi-squares on categorical variables
indicated a significant difference in previous treatment for an eating disorder, \( x(1) = 11.78, p = .000 \).

<table>
<thead>
<tr>
<th></th>
<th>Caucasian American</th>
<th>African American</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Age</td>
<td>27.30</td>
<td>9.82</td>
</tr>
<tr>
<td>BMI (^a)</td>
<td>24.50</td>
<td>6.08</td>
</tr>
<tr>
<td>EDI-3: Drive For Thinness Subscale (^a)</td>
<td>11.35</td>
<td>8.77</td>
</tr>
<tr>
<td>EDI-3: Body Dissatisfaction Subscale</td>
<td>18.26</td>
<td>10.39</td>
</tr>
<tr>
<td>EDI-3: Bulimia Subscale</td>
<td>7.85</td>
<td>7.78</td>
</tr>
<tr>
<td>EAT-26: Dieting (^a)</td>
<td>10.18</td>
<td>9.50</td>
</tr>
<tr>
<td>EAT-26: Food Preoccupation</td>
<td>2.85</td>
<td>4.32</td>
</tr>
<tr>
<td>EAT-26: Oral Control</td>
<td>2.31</td>
<td>3.18</td>
</tr>
<tr>
<td>EAT-26: Total (^a)</td>
<td>14.80</td>
<td>14.54</td>
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<tr>
<td>BDI</td>
<td>13.51</td>
<td>12.02</td>
</tr>
<tr>
<td>MEIM: Total (^a)</td>
<td>2.45</td>
<td>0.60</td>
</tr>
<tr>
<td>SCL: Paraphobic Ideations and Psychoticism Score</td>
<td>9.99</td>
<td>10.41</td>
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<table>
<thead>
<tr>
<th>Highest Education Level</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
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<td>Grade school or left before</td>
<td>4</td>
<td>2.03</td>
<td>0</td>
<td>0</td>
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<tr>
<td>graduation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Graduate</td>
<td>70</td>
<td>35.5</td>
<td>39</td>
<td>37.5</td>
</tr>
<tr>
<td>Community College/Trade School</td>
<td>15</td>
<td>7.6</td>
<td>15</td>
<td>14.4</td>
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<tr>
<td>College Graduate</td>
<td>70</td>
<td>35.5</td>
<td>30</td>
<td>28.9</td>
</tr>
<tr>
<td>Post-Graduate Work</td>
<td>38</td>
<td>19.3</td>
<td>20</td>
<td>19.2</td>
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<table>
<thead>
<tr>
<th>Income (SES)</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
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<tr>
<td>Below $20,000</td>
<td>45</td>
<td>23.9</td>
<td>25</td>
<td>25.3</td>
</tr>
<tr>
<td>$20,000-$40,000</td>
<td>47</td>
<td>25</td>
<td>29</td>
<td>29.3</td>
</tr>
<tr>
<td>$40,000-$60,000</td>
<td>12</td>
<td>6.4</td>
<td>13</td>
<td>13.1</td>
</tr>
<tr>
<td>$60,000-$80,000</td>
<td>32</td>
<td>17.0</td>
<td>9</td>
<td>9.1</td>
</tr>
<tr>
<td>Greater than $80,000</td>
<td>52</td>
<td>27.7</td>
<td>23</td>
<td>23.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EATA: Gone on binges?</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>112</td>
<td>56.9</td>
<td>68</td>
<td>68</td>
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<tr>
<td>Once a month or less</td>
<td>50</td>
<td>25.4</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>2-3 times/week</td>
<td>19</td>
<td>9.6</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Once a week</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Frequency</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>-------------</td>
<td>----</td>
<td>-----</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>2-6 times/week</td>
<td>7</td>
<td>3.6</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Once or more/day</td>
<td>3</td>
<td>1.5</td>
<td>2</td>
<td>2</td>
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</tbody>
</table>

**EATB: Made self sick?**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>151</td>
<td>76.7</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Once a month or less</td>
<td>21</td>
<td>10.7</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>2-3 times/week</td>
<td>5</td>
<td>2.5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Once a week</td>
<td>7</td>
<td>3.55</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2-6 times/week</td>
<td>9</td>
<td>4.6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Once or more/day</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**EATC: Laxatives/pills/diuretics?**

<table>
<thead>
<tr>
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<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>159</td>
<td>80.7</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>Once a month or less</td>
<td>14</td>
<td>7.1</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>2-3 times/week</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Once a week</td>
<td>10</td>
<td>5.08</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2-6 times/week</td>
<td>4</td>
<td>2</td>
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<tr>
<td>Once or more/day</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**EATD: Exercise > 60 mins/day?**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>95</td>
<td>48.2</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>Once a month or less</td>
<td>28</td>
<td>14.7</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>2-3 times/week</td>
<td>26</td>
<td>13.19</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Once a week</td>
<td>10</td>
<td>5.1</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>2-6 times/week</td>
<td>34</td>
<td>17.3</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Once or more/day</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**EATE: Lost 20 lbs + in last 6 months?**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>23</td>
<td>11.7</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>No</td>
<td>174</td>
<td>88.3</td>
<td>84</td>
<td>84</td>
</tr>
</tbody>
</table>

**EATF: Previous Treatment? a**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33</td>
<td>16.8</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>No</td>
<td>164</td>
<td>83.3</td>
<td>97</td>
<td>97</td>
</tr>
</tbody>
</table>

*a: p < .05

Confirmatory Factor Analyses

Confirmatory Factor Analyses (CFA) were conducted using Lisrel 9.1 software. Three subscales identified by Garner (2004), Drive for Thinness, Body Dissatisfaction, and Bulimia, were used to determine how well the data from each group fit with the model. Path diagrams of the three-factor model were created in Lisrel 9.1 for both the Caucasian American and African American samples separately (See Appendix B).

In examining the unstandardized factor loadings and standard errors produced in the CFA output, the significance of the different items can be evaluated. In order to be significant at the .05 level, the unstandardized loading must be at least two times the standard error (Albright & Park, 2009). The z-score (Tables 2 and 4) value for each item indicates whether or not the loading was at least two times the standard error. The R² for the items assist in determining the reliability of the various items. Items with an R² ≥ .49 should be considered to have acceptable reliability (Doll et al, 1995).

Although X² and RMSEA are commonly used to measure goodness of fit of a model, previous research has suggested that X² significance levels are sensitive to sample size (Joreskog & Sorbom, 1989; Doll et al, 1995) and that RMSEA can also be impacted by a small sample size (Hu & Bentler, 1999; Brown, 2006). Due to the potential drawbacks associated with reporting only these statistics, additional measures of goodness of fit, such as the Comparative Fit Index (CFI), the Normed Fit Index (NFI) and the Tucker-Lewis Index (TLI), are often utilized to establish goodness of fit. CFI, NFI, and TLI values can range from 0 to 1, with values closer to 1 (between .90 and .95 are thought to indicate acceptable fit) indicating better model fit (Brown, 2006; Bentler & Bonnet, 1980; Hooper et al 2008). Previous research has also recommended a
cut off of .80 for the TLI (Hooper et al, 2008). The results of the CFAs for each of the samples can be found in the tables below.

CFA for Caucasian American Sample

In examining the unstandardized factor loadings for the Caucasian American sample, it was determined that all of the items were significant at the .05 level. In considering the cut-off for $R^2$ in order for item to be considered to be reliable, items 1 (.29), 47 (.30), 12 (.34), 2 (.36), 31 (.40), 5 (.32), and 4 (.36) were considered to have unacceptable reliability in the Caucasian American sample. The rest of the items were considered to have acceptable reliability, as the $R^2$ ranged from .49-.77 (See Table 2).

The $X^2$ was statistically significant ($p = .000$) in the Caucasian American sample, which is not the desired outcome (Brown, 2006). Also, and the RMSEA (0.11) is well above the cut-off value of 0.06 (Hu and Bentler, 1999). Both the $X^2$ and RMSEA would cause the conclusion to be drawn that the model was not a good fit for the Caucasian American sample. However, given the sensitivity issues related to $X^2$ and RMSEA; CFI, NFI, and TLI were utilized as measures of goodness of fit in this sample. Examination of the CFI (0.94), NFI (0.92) and TLI (0.94) indicated that the values fall within the range of acceptable fit (See Table 3).

<p>| Table 2. Factor Loadings, Standard Errors, Z Scores, and $R^2$ for Caucasian Americans |
|-----------------------------------------------|----------------|-------------|-------------|--------------|
| Unstandardized Factor Loading | Standardized Factor Loading | Standard Error | Z Score | $R^2$ |
| EDI1 | 1.000** | 0.54** | 0.20 | 7.69 | 0.290 $^b$ |
| EDI25 | 1.548 | 0.77 | 0.20 | 7.80 | 0.627 |
| EDI7 | 1.593 | 0.79 | 0.24 | 8.09 | 0.724 |
| EDI49 | 1.944 | 0.85 | 0.24 | 8.10 | 0.731 |
| EDI16 | 1.913 | 0.85 | 0.24 | 8.14 | 0.745 |
| EDI11 | 1.941 | 0.86 | 0.24 | 8.20 | 0.767 |
| EDI32 | 1.865 | 0.88 | 0.23 | 8.20 | 0.767 |</p>
<table>
<thead>
<tr>
<th></th>
<th>EDI47</th>
<th>0.854</th>
<th>0.74</th>
<th>0.13</th>
<th>6.63</th>
<th>0.298b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EDI12</td>
<td>0.842</td>
<td>0.59</td>
<td>0.12</td>
<td>7.01</td>
<td>0.343b</td>
</tr>
<tr>
<td></td>
<td>EDI2</td>
<td>1.000**</td>
<td>0.60**</td>
<td></td>
<td></td>
<td>0.361b</td>
</tr>
<tr>
<td></td>
<td>EDI31</td>
<td>1.016</td>
<td>0.63</td>
<td>0.14</td>
<td>7.46</td>
<td>0.403b</td>
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<tr>
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<td>EDI19</td>
<td>1.033</td>
<td>0.70</td>
<td>0.13</td>
<td>8.02</td>
<td>0.491</td>
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<tr>
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<td>EDI55</td>
<td>1.152</td>
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<td>8.33</td>
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<td>EDI59</td>
<td>1.275</td>
<td>0.78</td>
<td>0.15</td>
<td>8.60</td>
<td>0.601</td>
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<td>EDI62</td>
<td>1.234</td>
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<td>0.14</td>
<td>8.64</td>
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<td></td>
<td>EDI19</td>
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<td>0.16</td>
<td>8.79</td>
<td>0.640</td>
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<td>EDI45</td>
<td>1.457</td>
<td>0.83</td>
<td>0.16</td>
<td>8.99</td>
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<td>EDI5</td>
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<td>6.84</td>
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<td></td>
<td>EDI4</td>
<td>1.000**</td>
<td>0.50**</td>
<td></td>
<td></td>
<td>0.361b</td>
</tr>
<tr>
<td></td>
<td>EDI53</td>
<td>1.285</td>
<td>0.70</td>
<td>0.16</td>
<td>7.98</td>
<td>0.486</td>
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<td></td>
<td>EDI61</td>
<td>1.214</td>
<td>0.72</td>
<td>0.15</td>
<td>8.22</td>
<td>0.529</td>
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<td>EDI64</td>
<td>1.542</td>
<td>0.78</td>
<td>0.18</td>
<td>8.66</td>
<td>0.616</td>
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<td>EDI38</td>
<td>1.299</td>
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<td>EDI46</td>
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<td>0.14</td>
<td>8.87</td>
<td>0.662</td>
</tr>
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<td></td>
<td>EDI28</td>
<td>1.444</td>
<td>0.85</td>
<td>0.16</td>
<td>9.15</td>
<td>0.730</td>
</tr>
</tbody>
</table>

** Items were fixed in path diagram (factor loading = 1.00)

b: R2 < .49 (item not reliable)

Table 3. Goodness of Fit Indexes

<table>
<thead>
<tr>
<th></th>
<th>X² (df)</th>
<th>X²/df</th>
<th>RMSEA</th>
<th>CFI</th>
<th>NFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian American</td>
<td>938.68  (272)*</td>
<td>3.45</td>
<td>0.11</td>
<td>0.94</td>
<td>0.92</td>
<td>0.94</td>
</tr>
<tr>
<td>African American</td>
<td>716.69  (272)*</td>
<td>2.64</td>
<td>0.12</td>
<td>0.84</td>
<td>0.77</td>
<td>0.82</td>
</tr>
</tbody>
</table>

X²: Chisquared, df: degrees of freedom, RMSEA: Root Mean Square Error of Approximation, CFI: Comparative Fit Index, NFI: Normed Fit Index, TLI: Tucker-Lewis Index

CFA for African American Sample

All but one item (EDI47) for the African American samples were significant at the .05 level in the African American sample. Items 1 (.09), 11 (.35), 47 (.02), 59 (.22), 2 (.27), 12 (.28), 45 (.42), 9 (.47), 4 (.11), 5 (.34), 46 (.41), and 53 (.48) were determined to have unacceptable reliability since the R² value for these items was less than .49 (See Table 4). The rest of the items
had $R^2$ values that ranged from .50 - .67 and were therefore considered to have acceptable reliability (See Table 4).

The $X^2$ was statistically significant ($p = .000$) and the RMSEA (0.12) was above the 0.06 cut-off, both of which would indicate a poor model fit with the African American sample (Brown, 2006; Hu and Bentler, 1999). In further examining the CFA results, and considering the potential drawbacks associated with $X^2$ and RMSEA, the CFI (.84) and NFI (.77) for the African American data indicate that the model fit is mediocre for this sample. Additionally, the TLI (0.82) for the African American sample is above the 0.80 cutoff (See Table 3).

### Table 4. Factor Loadings, Standard Errors, Z Scores, and $R^2$ for African Americans

<table>
<thead>
<tr>
<th>African American</th>
<th>Unstandardized Factor Loading</th>
<th>Standardized Factor Loading</th>
<th>Standard Error</th>
<th>Z Score</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDI11</td>
<td>1.000**</td>
<td>0.29**</td>
<td></td>
<td></td>
<td>0.087b</td>
</tr>
<tr>
<td>EDI111</td>
<td>2.306</td>
<td>0.59</td>
<td>0.85</td>
<td>2.72</td>
<td>0.346b</td>
</tr>
<tr>
<td>EDI25</td>
<td>2.504</td>
<td>0.70</td>
<td>0.89</td>
<td>2.82</td>
<td>0.497</td>
</tr>
<tr>
<td>EDI7</td>
<td>2.867</td>
<td>0.71</td>
<td>1.02</td>
<td>2.82</td>
<td>0.506</td>
</tr>
<tr>
<td>EDI16</td>
<td>3.009</td>
<td>0.75</td>
<td>1.06</td>
<td>2.85</td>
<td>0.556</td>
</tr>
<tr>
<td>EDI32</td>
<td>3.056</td>
<td>0.77</td>
<td>1.07</td>
<td>2.86</td>
<td>0.596</td>
</tr>
<tr>
<td>EDI49</td>
<td>3.285</td>
<td>0.78</td>
<td>1.15</td>
<td>2.86</td>
<td>0.601</td>
</tr>
<tr>
<td>EDI47</td>
<td>0.175</td>
<td>0.12</td>
<td>0.15</td>
<td>1.15a</td>
<td>0.015b</td>
</tr>
<tr>
<td>EDI59</td>
<td>0.850</td>
<td>0.47</td>
<td>0.23</td>
<td>3.77</td>
<td>0.220b</td>
</tr>
<tr>
<td>EDI31</td>
<td>0.789</td>
<td>0.47</td>
<td>0.21</td>
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<td>0.222b</td>
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<td>EDI2</td>
<td>1.000**</td>
<td>0.52**</td>
<td></td>
<td></td>
<td>0.268b</td>
</tr>
<tr>
<td>EDI12</td>
<td>0.902</td>
<td>0.53</td>
<td>0.22</td>
<td>4.09</td>
<td>0.279b</td>
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<tr>
<td>EDI45</td>
<td>1.097</td>
<td>0.65</td>
<td>0.24</td>
<td>4.65</td>
<td>0.424b</td>
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<tr>
<td>EDI9</td>
<td>1.345</td>
<td>0.69</td>
<td>0.28</td>
<td>4.78</td>
<td>0.470b</td>
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<tr>
<td>EDI19</td>
<td>1.235</td>
<td>0.71</td>
<td>0.25</td>
<td>4.87</td>
<td>0.505</td>
</tr>
<tr>
<td>EDI62</td>
<td>1.350</td>
<td>0.73</td>
<td>0.27</td>
<td>4.94</td>
<td>0.534</td>
</tr>
<tr>
<td>EDI55</td>
<td>1.358</td>
<td>0.75</td>
<td>0.27</td>
<td>5.02</td>
<td>0.569</td>
</tr>
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<td>EDI4</td>
<td>1.000**</td>
<td>0.33**</td>
<td></td>
<td></td>
<td>0.112b</td>
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<tr>
<td>EDI5</td>
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<td>0.59</td>
<td>0.53</td>
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<tr>
<td>EDI46</td>
<td>1.660</td>
<td>0.64</td>
<td>0.53</td>
<td>3.15</td>
<td>0.409b</td>
</tr>
<tr>
<td>EDI53</td>
<td>2.052</td>
<td>0.70</td>
<td>0.64</td>
<td>3.22</td>
<td>0.484b</td>
</tr>
<tr>
<td>EDI64</td>
<td>1.936</td>
<td>0.72</td>
<td>0.60</td>
<td>3.24</td>
<td>0.520</td>
</tr>
<tr>
<td>EDI61</td>
<td>1.807</td>
<td>0.77</td>
<td>0.55</td>
<td>3.29</td>
<td>0.590</td>
</tr>
<tr>
<td>EDI38</td>
<td>2.093</td>
<td>0.80</td>
<td>0.63</td>
<td>3.31</td>
<td>0.642</td>
</tr>
</tbody>
</table>
** Items were fixed in path diagram (factor loading = 1.00)

\[a\] : unconstrained loading not at least 2.0 times standard error (item not significant at .05 level)

\[b\] : \(R^2 < .49\) (item not reliable)

**Exploratory Factor Analyses**

Exploratory Factor Analyses (EFA), using promax rotation, were conducted in SPSS following the CFA in order to further elucidate the differences in model fit found between the Caucasian American and African American samples. These analyses were also conducted in order to clarify the item composition differences between the two samples. Items with loadings of .30 and higher were considered to be significant and were attached to the corresponding factors. Items with significant loadings under multiple items, where the difference between the loadings were greater than 0.1, were kept under the factor with the highest loading. Items with multiple loadings where the difference was less than 0.1 were not kept, as it was not possible to discriminate between them. Only one item (EDI19) in the Caucasian American sample was not kept because of this. The results of the EFA can be found in tables 5 and 6.

**EFA for the Caucasian American Sample**

For the first Drive for Thinness factor, all of the items that Garner (2004) reported under this factor in addition to two other (EDI47 and EDI53) loaded under the first factor for the Caucasian American sample. In examining the factor matrix for the Caucasian American sample, the most obvious difference between the two groups was the inclusion of EDI47 ("I feel bloated after eating a normal meal") and EDI53 ("I have thought of trying to vomit in order to lose weight") under Factor 1. The inclusion of these two items indicates that there are additional
things that may fuel drive for thinness in the Caucasian American sample that were not originally included by Garner (2004).

All of the items reported by Garner (2004) for the Bulimia subscale, with the exception of EDI53 (“I have thought of trying to vomit in order to lose weight”), loaded under Factor 2 (bulimia) in the Caucasian American sample. As previously reported, EDI53 loaded under Factor 1 in the Caucasian American sample (See Table 5). The item in the Caucasian American sample with the highest factor loading of .822, EDI28 (“I have gone on eating binges where I felt that I could not stop”), accounts most for this factor in this population.

All items reported by Garner (2004) for the Body Dissatisfaction subscale, with the exception of EDI19 (“I feel satisfied with the shape of my body”) and EDI47 (“I feel bloated after eating a normal meal”), loaded under Factor 3 (body dissatisfaction) in the Caucasian American sample. EDI19 did not load under any of the factors and, as previously reported, EDI47 loaded under Factor 1 (drive for thinness). The items under factor 3 in the Caucasian American sample had to do with both positive and negative perceptions of one’s body. Items 62, 31, and 55 all focused on positive cognitions about body image (“I think that my hips are just the right size”, “I like the shape of my buttocks”, and “I think that my thighs are just the right size”). Items 45, 59, and 9 focused on negative cognitions about body image (“I think my hips are too big”, “I think my buttocks are too large”, and “I think that my thighs are too large”). The highest loading for the Caucasian American sample was .909 and the lowest was .587. Item 19 did not load on any of the factors and item 47 loaded on the first factor in the Caucasian American sample (See Table 5). Overall, with the exception of the one item that did not load under any of the factors (EDI19) and the items that loaded under different factors (47 and 53), all of the items loaded under the factors as proposed by Garner (2004).
<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDI32: I am preoccupied with the desire to be thinner</td>
<td>.990</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI25: I exaggerate or magnify the importance of weight.</td>
<td></td>
<td>.923</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI16: I am terrified of gaining weight.</td>
<td></td>
<td></td>
<td>.832</td>
<td></td>
</tr>
<tr>
<td>EDI11: I feel extremely guilty after overeating.</td>
<td></td>
<td></td>
<td></td>
<td>.729</td>
</tr>
<tr>
<td>EDI49: If I gained a pound, I worry that I will keep gaining.</td>
<td></td>
<td></td>
<td></td>
<td>.692</td>
</tr>
<tr>
<td>EDI1: I eat sweets and carbohydrates without feeling nervous.</td>
<td></td>
<td></td>
<td></td>
<td>.666</td>
</tr>
<tr>
<td>EDI7: I think about dieting.</td>
<td></td>
<td></td>
<td></td>
<td>.615</td>
</tr>
<tr>
<td>EDI53: I have thought of trying to vomit in order to lose weight</td>
<td></td>
<td></td>
<td></td>
<td>.546</td>
</tr>
<tr>
<td>EDI47: I feel bloated after eating a normal meal.</td>
<td></td>
<td></td>
<td></td>
<td>.301</td>
</tr>
<tr>
<td>EDI28: I have gone on eating binges where I felt that I could not stop</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI14: I eat when I am upset.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI46: I eat moderately in front of others and stuff myself when they are gone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI15: I stuff myself with food.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI61: I eat or drink</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
in secrecy.  .633
EDI64: When I am upset, I worry that I will start eating.  .609
EDI38: I think about binging (overeating).  .586
EDI62: I think that my hips are just the right size.  .909
EDI59: I think my buttocks are too large.  .862
EDI31: I like the shape of my buttocks.  .813
EDI55: I think that my thighs are just the right size  .771
EDI45: I think my hips are too big.  .692
EDI9: I think that my thighs are too large.  .587

*a: not retained as a factor
*EDI: Eating Disorder Inventory

EFA for the African American Sample

Similar to the data from the Caucasian American sample, the items stipulated by Garner (2004) having to do with Drive for Thinness were present under Factor 1 in the African American sample. EDI49 (“If I gained a pound, I worry that I will keep gaining”) and EDI7 (“I think about dieting”) were the only two items that had higher factor loadings in the African American sample compared to the Caucasian American sample. The item with the highest loading under Factor 1 was EDI16 (“I am terrified of gaining weight”) (See Table 6). This suggests ethnic equivalence for this factor.
The items specified by Garner (2004) as being related to the bulimia subscale, with the exception of EDI4 ("I eat when I am upset") and EDI5 ("I stuff myself with food"), were present under Factor 2 (bulimia) in the African American sample. EDI4 and EDI5 did not load under any of the factors. One additional item not previously suggested by Garner as having to do with bulimia, EDI47 ("I feel bloated after eating a normal meal"), also loaded under Factor 2 in this sample (See Table 6). In the African American sample, eating or drinking in secret (EDI61) accounted most for this factor, as it had the highest factor loading (.914) (See Table 6).

However, the Body Dissatisfaction factor was portioned into two factors for African Americans. For factor 3 (Body Dissatisfaction) only items focusing on negative cognitions about body image (45, 59, and 9), were present in the African American data. EDI45 ("I think my hips are too big") had the highest loading (.767) and EDI9 ("I think that my thighs are too large") had the lowest (.577). Items 2 and 12 did not load on any of the factors and item 47 loaded on the second factor in the African American sample.

For African Americans, the remainder of the Body Dissatisfaction factor items loaded onto a fourth factor, Body Satisfaction. This factor consisted of three items (EDI62, EDI55, EDI31) that loaded under Body Dissatisfaction in the Caucasian American data and one item (EDI19) that did not load on any factors in the Caucasian American data. All of these items focused on positive cognitions about body image ("I think that my hips are just the right size", "I think that my thighs are just the right size", "I like the shape of my buttocks", and "I feel satisfied with the shape of my body"). EDI62 ("I think that my hips are just the right size") had the highest loading (.778) and EDI19 ("I feel satisfied with the shape of my body") had the lowest loading (.553) in the African American sample (See Table 6). All of the items, as
proposed by Garner (2004) loaded under factor 1, all but 2 items (EDI4 and EDI5) loaded under factor 2, and factor 3 was portioned into two factors in this sample.

Table 6. Pattern Matrix for AA Data

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5a</th>
<th>Factor 6a</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDI16: I am terrified of gaining weight.</td>
<td>0.832</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI49: If I gained a pound, I worry that I will keep gaining.</td>
<td></td>
<td>0.761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI32: I am preoccupied with the desire to be thinner</td>
<td></td>
<td></td>
<td>0.678</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI17: I think about dieting.</td>
<td></td>
<td></td>
<td></td>
<td>0.640</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI25: I exaggerate or magnify the importance of weight.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.583</td>
<td></td>
</tr>
<tr>
<td>EDI11: I feel extremely guilty after overeating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.536</td>
</tr>
<tr>
<td>EDI11: I eat sweets and carbohydrates without feeling nervous.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.450</td>
</tr>
<tr>
<td>EDI61: I eat or drink in secrecy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI28: I have gone on eating binges where I felt that I could not stop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.914</td>
</tr>
<tr>
<td>EDI38: I think about bingeing (overeating).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.844</td>
</tr>
<tr>
<td>EDI53: I have thought of trying to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.782</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.680</td>
</tr>
</tbody>
</table>
vomit in order to lose weight.

| EDI64: When I am upset, I worry that I will start eating. | .507  
| EDI46: I eat moderately in front of others and stuff myself when they are gone | .499 .326  
| EDI47: I feel bloated after eating a normal meal. | .382  
| EDI45: I think my hips are too big. | .767  
| EDI59: I think my buttocks are too large. | .696  
| EDI19: I think that my thighs are too large. | .577  
| EDI62: I think that my hips are just the right size | .778  
| EDI55: I think that my thighs are just the right size | .358 .677  
| EDI31: I like the shape of my buttocks | .594 .392  
| EDI19: I feel satisfied with the shape of my body | .553 .384  

\(^a\): not retained as a factor

*EDI: Eating Disorder Inventory

Mean Differences

The mean scores for each of the similar items found under each factors were examined using an independent t-test. The Caucasian American mean scores were higher than the African American sample mean scores on all items except for EDI38 ("I think about bingeing..."
(overeating)\(^t\)). Only mean scores for the Caucasian American sample on EDI1 \(t(299) = 2.63, p < .05\) and EDI11 \(t(299) = 2.49, p < .05\) were significantly higher than the African American sample (See Table 7) As previously mentioned, mean scores for Drive for Thinness, Bulimia, and Body Dissatisfaction were higher in the Caucasian American sample, but only Drive for Thinness was significantly higher (See Table 8).

<p>| Table 7. Independent Sample T-Test: Mean Differences |
|------------------------------------------|-----------------|----------|-----------------|
| EDI-3: Drive for Thinness Score(^a)    | Caucasian American | 11.35    | 8.77            | 2.33            |
|                                        | African American  | 9.02     | 6.79            |                 |
| EDI-3: Body Dissatisfaction Score       | Caucasian American | 18.26    | 10.39           | 1.45            |
|                                        | African American  | 16.81    | 8.95            |                 |
| EDI-3: Bulimia Score                    | Caucasian American | 7.85     | 7.78            | 1.42            |
|                                        | African American  | 6.43     | 6.56            |                 |
| EDI1 (DT)(^a)                        | Caucasian American | 1.33     | 1.33            | 0.41            |
|                                        | African American  | 0.92     | 1.17            |                 |
| EDI7 (DT)                               | Caucasian American | 1.93     | 1.44            | 0.15            |
|                                        | African American  | 1.79     | 1.39            |                 |
| EDI11 (DT)(^a)                       | Caucasian American | 1.79     | 1.61            | 0.46            |
|                                        | African American  | 1.33     | 1.35            |                 |
| EDI16 (DT)                              | Caucasian American | 1.98     | 1.60            | 0.29            |
|                                        | African American  | 1.69     | 1.39            |                 |
| EDI25 (DT)                              | Caucasian American | 1.32     | 1.44            | 0.32            |
|                                        | African American  | 1.01     | 1.23            |                 |
| EDI32 (DT)                              | Caucasian American | 1.47     | 1.52            | 0.20            |
|                                        | African American  | 1.27     | 1.37            |                 |
| EDI49 (DT)                              | Caucasian American | 1.53     | 1.64            | 0.19            |
|                                        | African American  | 1.23     | 1.46            |                 |
| EDI28 (B)                               | Caucasian American | 0.92     | 1.27            | 0.12            |
|                                        | African American  | 0.81     | 1.21            |                 |
| EDI38 (B)                               | Caucasian American | 0.78     | 1.24            | -0.06           |
|                                        | African American  | 0.84     | 1.16            |                 |
| EDI46 (B)                               | Caucasian American | 0.78     | 1.16            | 0.05            |
|                                        | African American  | 0.73     | 1.15            |                 |
| EDI61 (B)                               | Caucasian American | 0.84     | 1.25            | 0.21            |
|                                        | African American  | 0.63     | 1.04            |                 |</p>
<table>
<thead>
<tr>
<th></th>
<th>Caucasian American</th>
<th>African American</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDI64 (B)</td>
<td>1.16</td>
<td>1.48</td>
</tr>
<tr>
<td></td>
<td>0.87</td>
<td>1.19</td>
</tr>
<tr>
<td>EDI9 (BD)</td>
<td>1.86</td>
<td>1.57</td>
</tr>
<tr>
<td></td>
<td>1.67</td>
<td>1.56</td>
</tr>
<tr>
<td>EDI45 (BD)</td>
<td>1.38</td>
<td>1.54</td>
</tr>
<tr>
<td></td>
<td>1.14</td>
<td>1.34</td>
</tr>
<tr>
<td>EDI59 (BD)</td>
<td>1.19</td>
<td>1.44</td>
</tr>
<tr>
<td></td>
<td>1.06</td>
<td>1.44</td>
</tr>
<tr>
<td>Factor 1 (DT)(^a)</td>
<td>13.34</td>
<td>10.66</td>
</tr>
<tr>
<td></td>
<td>9.24</td>
<td>6.74</td>
</tr>
<tr>
<td>Factor 2 (B)</td>
<td>6.93</td>
<td>6.84</td>
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<tr>
<td></td>
<td>5.55</td>
<td>6.25</td>
</tr>
<tr>
<td>Factor 3 (BD)(^a)</td>
<td>10.41</td>
<td>7.16</td>
</tr>
<tr>
<td></td>
<td>3.88</td>
<td>3.65</td>
</tr>
<tr>
<td>Factor 4 (BS)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>7.04</td>
<td>4.46</td>
</tr>
</tbody>
</table>

\(^a\): p < .05

* EDI: Eating Disorder Inventory, DT: Drive for Thinness Subscale, B: Bulimia Subscale, BD: Body Dissatisfaction Subscale

Correlations

Two-tailed Pearson’s correlations were used in both the Caucasian American and African American datasets in order to analyze the overall correlation between the MEIM total scores and the other dependent measures. The results of the correlation with the Caucasian American data indicated that MEIM total scores were significantly and negatively correlated with the EAT-26 subscale for oral control, \(r(195) = -.143, p < .05\). The results also indicated that Factor 1 (drive for thinness) was significantly and positively correlated with Factor 2 (bulimia) \(r(195) = .687, p < .05\) and Factor 3 \(r(195) = .580, p < .05\). Additionally, Factor 2 (bulimia) and Factor 3 (body dissatisfaction) were significantly and positively correlated, \(r(195) = .467, p < .05\).

In the African American sample, there were significant and positive correlations between MEIM total scores and Drive for Thinness \(r(99) = .207, p < .05\), BDI \(r(99) = .233, p < .05\),
SCL items ($r(99) = .201$, $p < .05$), Factor 1 (Drive for Thinness) ($r(99) = .207$, $p < .05$), and factor 4 ($r(99) = .257$, $p < .05$). Factor 1 (drive for thinness) was significantly and positively correlated with Factor 2 ($r(99) = .584$, $p < .05$), Factor 3 ($r(99) = .446$, $p < .05$), and Factor 4 ($r(99) = .300$, $p < .05$). Factor 2 (bulimia) was significantly and positively correlated with Factor 3 ($r(99) = .285$, $p < .05$). Factor 3 (body dissatisfaction) was significantly and positively correlated with Factor 4 (body satisfaction), $r(99) = .513$, $p < .05$ (see Appendix B).
CHAPTER 4

DISCUSSION

The Eating Disorder Inventory-3 (EDI-3) is one of the most commonly used measures to evaluate eating pathology and related issues. While previous research supports the 3-factor model of eating disorder risk as proposed by Garner (2004) in various populations, the psychometric properties have not been evaluated in a sample of African Americans.

Our cross-cultural evaluation of the Eating Disorder Risk Subscales of the Eating Disorder Inventory-3 (EDI-3) indicated different factor structures for Caucasian American and African American samples. The initial CFA indicated that the 3-factor model fit proposed by Garner (2004) was adequate in the Caucasian American sample but only mediocre in the African American sample. The follow-up EFA conducted on the Caucasian American data yielded results primarily consistent with previous literature. Only slight deviations from what is stated in the literature were found in the Caucasian American data, which is consistent with the results of the CFA suggesting that the 3-factor model is an acceptable fit in this population.

The results of the CFA on the African American data indicated that the 3-factor model was only a mediocre fit. Further exploration of the date through the use of a follow-up EFA indicated some consistencies with previous studies (Garner, 2004). The consistencies with previous studies seen in the African American data were seen in some of the item composition under factors 1, 2 and 3. The names of the first three factors (drive for thinness, bulimia, body dissatisfaction) were also consistent with previous studies. However, there were also significant inconsistencies suggesting that the Eating Disorder Risk subscales of the EDI-3 may not be cross-culturally consistent. In our African American sample, the absence of items 4 ("I eat when
I am upset”) and 5 (“I stuff myself with food”) under Factor 2 (bulimia) suggests that emotional eating and stuffing oneself with food may not be relevant in African American samples. Additionally, the presence of item 47 (“I feel bloated after eating a normal meal”) on the Bulimia factor suggests that feeling bloated after eating has more to do with bulimia in the African American sample rather than body dissatisfaction. Emotional eating and stuffing oneself are behaviors commonly seen in eating disordered individuals, as supported by previous research and the Caucasian American data in this study. However, the results of the EFA in the African American sample suggest that they may not be relevant in this population. The bloating component, previously believed to be related to body dissatisfaction, appears to have more to do with bulimia in the African American sample.

Significant inconsistencies were found in examining the item composition for Factor 3 (body dissatisfaction) in the African American sample. Although three of the ten items proposed by Garner to relate to body dissatisfaction were present in African Americans, the absence of the remaining seven under this factor was inconsistent with previous studies. The three items were the only ones loading on this Factor in the African American sample and focused solely on negative cognitions about body image (EDI45, EDI59, and EDI9). This factor was still identified as Body Dissatisfaction, as the items dealt with dissatisfaction with one’s body (“I think my hips are too big”, “I think my buttocks are too large”, and “I think that my thighs are too large”). The absence of items EDI2 (“I think my stomach is too big”) and EDI12 (“I think that my stomach is just the right size”) suggest that concerns regarding stomach size are not relevant in African American samples.

The presence of a fourth factor in the African American sample is the most significant inconsistency found in this data, as previous research supports the presence of only three eating
disorder risk factors (Garner, 2004). This fourth factor, identified as Body Satisfaction, consisted of four items (EDI62, EDI55, EDI31, EDI19) that according to previous research should have loaded under Factor 3. The four items under Factor 4 focused on positive cognitions about body image ("I think that my hips are just the right size", "I think that my thighs are just the right size", "I like the shape of my buttocks", and "I feel satisfied with the shape of my body"). The presence of this factor provides support for there being a distinction between body satisfaction and body dissatisfaction in African American samples that is not seen in Caucasian American samples or in previous research. Traditionally, the African culture has viewed a fuller figure as being more attractive and desirable (Bagley et al, 2003; Cogan et al, 1996).

Additionally, previous research has suggested that African American women are significantly less concerned with dieting and losing weight and more tolerant of weight gain than Caucasian American women (Bagley et al, 2003; Kumanyika et al, 1993; Root, 1990; Thomas, 1987; Villarosa, 1994). Research has suggested that the strong ethnic identity of an African American woman may protect them against adopting the Caucasian thinness ideal by encouraging the internalization of the African American ideal of a fuller-figured female (Shuttesworth & Zotter, 2011; Abrams et al, 1993; Turnage, 2004). In addition to being less fearful of gaining weight, research has suggested that African American women endorse fuller-figured models as portraying the ideal body size in comparison to Caucasian American females. (Shuttesworth & Zotter, 2011; Frisby, 2004; Perez & Joiner, 2003). The presence of this unique fourth factor leads to the consideration of how body satisfaction may cause eating disorders in African American women. This idea of body satisfaction, in combination with the internalization of a fuller-figure ideal, may help to explain why previous research has found that 50% to 60% of African American women are overweight or obese. The risk for being overweight or obese may
be higher in those women that embrace the fuller figures and are more satisfied with their bodies. These women, in turn, are more susceptible to serious health risks, such as; hypertension, type 2 diabetes, stroke and congestive heart failure (Gaillard, Schuster & Osei, 2012).

The high scores on drive for thinness and bulimia in the African American sample in the study suggest that these issues may be becoming more relevant concerns within this population. However, the presence of the separate and unique fourth factor in the African American sample suggests that despite increasing concern in drive for thinness and bulimia, the construct of body satisfaction is still present and pertinent in this population. Although this data shows that African American women may still struggle with the pressure of societal norms regarding the thin ideal, they are still more accepting of their bodies, compared to Caucasian Americans. A potential explanation behind the greater acceptance can be found in the cultural values within African American culture. Although there may have been a shift within the individual regarding standard of beauty due to being exposed to mainstream beauty ideals, there is still clear distinction between body dissatisfaction and body satisfaction in the African American sample.

The two-tailed Pearson’s correlation used in the African American dataset in order to analyze the overall correlation between the Factors and other dependent measures indicated that Factor 1 (drive for thinness) was significantly and positively correlated with Factor 2 (bulimia) \( (r(102) = .584, p < .05) \), Factor 3 (body dissatisfaction) \( (r(102) = .446, p < .05) \), and Factor 4 (body satisfaction) \( (r(102) = .300, p < .05) \). Therefore, high drive for thinness is associated with more bulimia and body dissatisfaction, and less body satisfaction. (Note: Items under Factor 4 (Body Satisfaction) were originally reversed scored but were recoded during analysis. Therefore, higher scores on this factor were indicative of less body satisfaction). Factor 2 (bulimia) was significantly and positively correlated with Factor 3 \( (r(102) = .285, p < .05) \). Factor 3 (body
dissatisfaction) was significantly and positively correlated with Factor 4 (body satisfaction), $r(102) = .513$, $p < .05$. This pattern indicates that the maladaptive cognitions regarding eating pathology are interrelated and high scores on one of the factor are associated with high scores on the others. Specifically, experiencing more of one type of maladaptive cognition regarding body image corresponds with the increase in other maladaptive cognitions and attitudes and ultimately less satisfaction with one’s body. The same pattern was seen in Factors 1, 2 and 3 when examining the correlations in the Caucasian American sample in the study.

Among African Americans, Factor 1 was significantly and positively correlated with EAT-26 totals ($r(98) = .605$, $p < .05$), EAT_Dieting ($r(98) = .707$, $p < .05$), EAT_Bulimia ($r(98) = .426$, $p < .05$), EAT_Oral Control ($r(98) = .198$, $p < .05$), BDI ($r(98) = .211$, $p < .05$), SCL items ($r(96) = .240$, $p < .05$), and MEIM ($r(97) = .207$, $p < .05$). Therefore, higher drive for thinness is associated with higher overall maladaptive attitudes about eating, higher depression, and higher scores on symptom checklist. The positive and significant correlation between drive for thinness and MEIM scores in the African American sample is contradictory to what previous research has suggested. The same was found in the correlation results for Factor 2 ($r(97) = .131$, $p < .05$) and Factor 4 ($r(97) = .257$, $p < .05$) with MEIM. The contradictory findings in this study regarding MEIM and drive for thinness may suggest that ethnic identity may not be predictive of or protective against the development of eating disorders in African Americans. It is possible that there may be additional constructs or mechanisms behind the development of eating pathology, despite having strong ethnic identity. A potential explanation for the presence of eating pathology in African American females is the exposure to and internalization of the westernized thin ideal. It is possible for African American women to believe that they have a strong ethnic identity and indicate that on the MEIM, but the protective nature of the ethnic identity is
weakened by exposure and internalization of the thin ideal. Additionally, it is possible that the ethnic identity scores on the MEIM being reported by African American females are lower than would be expected as a result of exposure to and internalization of the thin ideal.

Factor 2 was positively and significantly correlated with EAT-26 totals \((r(98) = .672, p < .05)\), EAT_Dieting \((r(98) = .625, p < .05)\), EAT_Bulimia \((r(98) = .708, p < .05)\), EAT_Oral Control \((r(98) = .360, p < .05)\), BDI \((r(98) = .424, p < .05)\), and SCL items \((r(96) = .323, p < .05)\). Therefore, high bulimia is associated with more overall maladaptive attitudes about eating, higher depression, and higher scores on symptom checklist. Factor 3 was positively and significantly correlated with EAT-26 totals \((r(98) = .273, p < .05)\), EAT_Dieting \((r(98) = .273, p < .05)\), EAT_Bulimia \((r(98) = .239, p < .05)\), and BMI \((r(102) = .337, p < .05)\). Therefore, higher body dissatisfaction is associated with more overall maladaptive attitudes about eating and higher BMI. Factor 4 was positively correlated with BDI \((r(98) = .225, p < .05)\) and BMI \((r(102) = .405, p < .05)\) and was negatively and significantly correlated EAT_OralControl \((r(98) = -.246, p < .05)\). Therefore, less body satisfaction is associated with more depression, higher BMI, and less concern regarding oral control.

The mean scores of Factor 1 (Drive for Thinness), Factor 2 (Bulimia), and Factor 3 (Body Dissatisfaction) were examined using an independent sample t-test. This analysis revealed that Caucasian Americans scored significantly higher than African Americans on Factor 1, \(t(299) = 3.56, p < .05\), which is consistent with previous analyses in this study on the drive for thinness subscale of the EDI-3. Additionally, a significant difference in mean scores on Factor 3 (body dissatisfaction) was found between the two samples, with Caucasian Americans having significantly higher scores. Although Caucasian Americans had higher scores than the African Americans in the previous analysis of the EDI-3 subscale for body dissatisfaction, the difference
was not statistically significant. This significant difference between the two groups and the decrease in mean score observed in the African American sample may be attributed to body dissatisfaction and satisfaction being separate constructs in African Americans. These results suggest that scores in the African American sample were previously inflated by the presence of the items later classified as “body satisfaction” items. Upon allocating the items to either body dissatisfaction or body satisfaction based on the results of the EFA, it appears as though a more realistic measure of body (dis)satisfaction is obtained for the African American sample.

Two additional things of note in the data for this study are fact that the Caucasian American sample had significantly higher MEIM scores than the African American sample (CA: 2.45; AA: 1.92) and that the African Americans had higher body dissatisfaction scores than would be expected based on what previous literature has posited about the acceptance of fuller figures in African American culture. These findings were also surprising because there was such a strong emphasis on the protective nature of strong ethnic identities against eating disorders in African Americans (Bagely et al, 2008).

**Implications**

The idea that African Americans are protected against developing eating disorders by the differing views held by their culture about attractiveness can be found in much of the literature on eating pathology (Gordon et al, 2001). However, in recent years, literature has begun to shed light on the fallacies present in this train of thought. Previous literature suggests that African Americans are more accepting of weight gain, that they hold a different idea of attractiveness than Caucasian American females, and that the stronger their “black identity” the less likely they are to develop eating disorders (Bagely et al, 2008). As such, it should follow that individuals
with strong ethnic identities would experience less symptoms of eating pathology and endorse fewer items on the EDI-3 eating disorder risk scale items.

However, previous research has also found evidence of the impact of acculturation on standard of beauty and increased eating disorder risk in African Americans (Gordon et al, 2001; Freedman et al, 2007). Gordon et al (2001) explained that eating disorder risk for African Americans females exposed to mainstream standards of beauty could potentially put them at equal risk for developing an eating disorder as Caucasian American females. Through the internalization of the Western thin ideal, according to Gordon and colleagues, would lead African American women to reject the ideals belonging to their cultural group. This rejection of previous cultural beliefs would then lead to a weakening (or even loss) of the ethnic identity, which has previously been believed to serve as a protective factor against eating disorders. Freedman et al (2007) further supported these findings as they found numerous studies suggesting that the taking on of mainstream views by African American women puts them at an increased risk for developing eating disorders. The changes in standards of beauty through acculturation and exposure to the Western thin ideal may help to explain the low MEIM and high body dissatisfaction scores in the African American sample.

Given the significant inconsistencies found between the African American data and previous research, it is recommended that this measure, in its current state, be used with caution when attempting to measure eating pathology in African American samples. With such significant inconsistencies in the item composition and CFA results indicate only a mediocre fit, an accurate depiction of eating disorder risk may not be obtained through use of this measure. The results of this study suggest that there may be adjustments that should be made in order to make this measure valid in African American samples.
Limitations

With this study being the first to examine the cross cultural validity of the eating disorder risk subscales of the EDI-3, there are limitations to be noted. The use of a smaller sample size may have limited the findings in the study. Using a larger sample size could possibly result in different findings. Additionally, using a clinical as opposed to a nonclinical sample may also produce different results. Since this study only examined the three eating disorder risk subscales, there is more to be studied about the EDI-3 as a whole.

Future Directions

Future studies should consider examining the cross-cultural validity of EDI-3 in its entirety, including the nine general psychological risk subscales. Doing so will allow for further evaluation and of the overall cross-cultural validity of the EDI-3 and for a greater understanding of potential changes that may need to be made to the measure. Future studies may also want to utilize a measure to examine the level of exposure to and internalization of the westernized thin ideal as a means to gage the impact of exposure on the strength of one’s ethnic identity. This study did not capture this information, which may have further elucidated some of the findings. It may be interesting to evaluate the validity of the subscales after removing items determined to be irrelevant to African Americans. Given the findings of this study, it might also be interesting to examine the validity of this measure in other minority groups. Additionally, future studies should consider examining the 4-factor model of eating disorder risk in African American female samples in order to determine if it is in fact a better fit in that sample. In considering the findings of the current study, it is recommended that data collected from African Americans on this measure be interpreted with caution. Due to the fact that an entirely separate factor not originally
accounted for in previous research was found in the African American sample, it is possible for inaccurate conclusions regarding the actual eating disorder risk in this population to be drawn. The findings of this study have led the investigators to conclude that, in its current state, the eating disorder subscales of the EDI-3 may be tapping into different constructs in Caucasian American and African American samples.
APPENDIX A

Figure 1. Path Diagram for CA Data

*EDI: Eating Disorder Inventory, DT: Drive for Thinness, BD: Body Dissatisfaction, B: Bulimia
Figure 2. Path Diagram for AA Data

*EDI: Eating Disorder Inventory, DT: Drive for Thinness, BD: Body Dissatisfaction, B: Bulimia
### APPENDIX B

Table 8. Correlation Table for CA Data

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