

Revising The Body Esteem Scale For The Next Quarter Century

Katherine Frost
Marquette University

Recommended Citation

Frost, Katherine, "Revising The Body Esteem Scale For The Next Quarter Century" (2013). *Dissertations (2009 -)*. Paper 294.
http://epublications.marquette.edu/dissertations_mu/294

REVISING THE BODY ESTEEM SCALE FOR THE NEXT QUARTER CENTURY

by

Katherine A. Frost, M.S.

A Dissertation submitted to the Faculty of the Graduate School,
Marquette University,
in Partial fulfillment of the Requirements for
the Degree of Doctor of Philosophy

Milwaukee, Wisconsin

August 2013

ABSTRACT
REVISING THE BODY ESTEEM SCALE FOR THE NEXT QUARTER CENTURY

Katherine A. Frost, M.S.

Marquette University, 2013

Recently, Frost, Franzoi and Oswald (2012) found evidence suggesting that the way individuals evaluate their physical selves, also called *body esteem*, may have changed over the past quarter century. The findings were particularly strong regarding men's self-evaluations. Because Frost et al.'s (2012) findings focused on the Body Esteem Scale (BES: Franzoi & Shields, 1984), which is a measure that captures dimensions uniquely important to adult self-perception and physical evaluation within a multidimensional and gender-specific framework, one obvious implication of this study is that the BES may need revising in order to remain as current and relevant as possible. With that goal in mind, a series of principal components analyses of the BES responses of 315 women and 353 men were conducted. Results indicated that an addition of a fourth sexuality component, as well as some item level changes were necessary in order for the BES to retain its cultural validity as a body esteem measure in the 21st century for men and women. Strong internal consistency was demonstrated for each revised subscale. New norms and subscale correlations were also computed. Finally, the associations between the revised BES subscales and measures of validity provided further support that the revised BES measures meaningful and important body constructs for women and men, and should continue to do so for the next several years. Cultural implications reflected in BES item changes, and future directions are discussed.

ACKNOWLEDGMENTS

Katherine A. Frost, M.S.

In no particular order, I would like to thank my husband, my family, and my friends for their love and support during this process. I would like to thank my committee, Dr. Stephen Franzoi, Dr. Debra Oswald, and Dr. Jim Hoelzle for their ongoing guidance. Finally, I would like to thank the Graduate School and Marquette University administration.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	i
TABLE OF CONTENTS	ii
LIST OF TABLES	iv
LIST OF FIGURES	v
CHAPTER	
I. INTRODUCTION	1
History of Body Image Ideals and Current Cultural Trends	1
Defining and Measuring Body Esteem	6
Contributions of Body Esteem Research to Social and Clinical Psychology	9
Reevaluation of the Factor Structure of the Body Esteem Scale.....	12
Current Study.....	17
II. METHOD	18
Participants and Procedure	18
Materials	25
Plan for Data Analysis	33
III. RESULTS	34
Item Analysis	34
Item Threshold and Principal Components Analysis	34
Partial Confirmatory Factor Analysis for Female Data	48
Internal Consistency, Subscale Correlations, and Norms for the Revised BES Dimensions.	50
Validity	52

IV. DISCUSSION	60
Analyses of Female Data	62
Analyses of Male Data	68
Limitations	78
Future Studies	79
Conclusion	80
V. REFERENCES	82
VI. APPENDIX	91

LIST OF TABLES

Table 1. Demographic Table for Race/Ethnicity (%), Sexual Orientation (%), Age, and Sample Size by Data Collection Location	21
Table 2. Means, Standard Deviations, and Item Total Correlations for the Male and Female Items of the BES	35
Table 3. Means, Standard Deviations, and Item Total Correlations for Male and Female BES Importance Ratings.....	37
Table 4 BES Component Loadings from the Initial Male BES Data.....	41
Table 5. BES Component Loadings from the Revised Male BES Data.....	44
Table 6. BES Component Loadings from the Initial Female BES Data.....	46
Table 7. BES Component Loadings from the Revised Female BES Data.....	49
Table 8. Model Fit Statistics and Indexes Associated with Four-component Model using Female Data	50
Table 9. Intercorrelations for the Revised BES Subscales	51
Table 10. Body Item Means and Standard Deviations for the Revised BES Items	52
Table 11. Correlations Between Validity Measures and Revised BES Components for Men	54
Table 12. Correlations Between Validity Measures and Revised BES Components for Women	55

LIST OF FIGURES

Figure 1. Scree Test and Parallel Analysis for the Initial Male BES Data.....	39
Figure 2. Scree Test and Parallel Analysis for the Revised Male BES Data.....	42
Figure 3. Scree Test and Parallel Analysis for the Initial Female BES Data.....	45
Figure 4. Scree Test and Parallel Analysis for the Revised Female BES Data.....	47

INTRODUCTION

Body esteem, an important dimension of self-esteem, refers to self-evaluations of one's body. This concept has received considerable attention in the literature for more than 50 years due in part to evidence suggesting that both women and men in North America are growing increasingly dissatisfied with their bodies (Adams, Turner & Bucks, 2005). Understanding and accurately assessing body esteem is of particular relevance due to its association with behavioral and psychological problems including poor self-esteem, eating disorders, anxiety, depression and other mental health issues (Erickson, Hahn-Smith, & Smith, 2009; Jonsdottir, Arnarson, & Smari, 2008; Mayer, Bos, Muris, Huijding, & Vlieland, 2008; Parent, 2013; Rayner, Schniering, Hutchinson, Rapee, & Taylor, 2013; Schuster, Negy, & Tantleff-Dunn, 2013). Given the link between body esteem and mental health, this research is essential in guiding effective techniques for treatment, as well as prevention and protection against the deleterious effects of negative body evaluation (Bhatnagar, Wisniewski, Solomon, & Heinberg, 2013; Duncan, Al-Nakeeb, & Nevill, 2009; Franzoi & Klaiber, 2007; McKinley, 2004; McLaren & Kuh, 2004; Murnen, Smolak, Mills & Good, 2003; Quinlan, Kolotkin, Fuemmeler, & Costanzo, 2009; Stice, Rohde, Shaw, & Marti, 2013). In such inquiries, it is useful to have easily administered instruments that are valid for nonclinical populations rather than measures employed solely in clinical studies, such as with eating disorder patients.

History of Body Image Ideals and Current Cultural Trends

Formal body esteem research has only been conducted for a little over half a century. However, to different degrees, women and men have both been comparing

themselves to ‘ideal’ and difficult-to-attain body standards throughout history. Both the immediate environment and the larger societal context shape body self-evaluations, more specifically, the body parts and functions that carry the most importance across time.

History of body image ideals. In Western culture, images of femininity have been influenced over time by the social, economic and political climate. Some theorists assert that beauty and fashion trends followed women’s perceptions of economic and sexual freedom and independence (Wykes & Gunter, 2005). Others contend that these trends actually increased the objectification and oppression of women by setting difficult-to-attain beauty standards, which undermined women’s development of non-physical qualities that are essential for success in culturally valued positions traditionally held by men (Wykes & Gunter, 2005). For example, in the late 19th and early 20th centuries, body ideals consisted of an hourglass figure emphasizing larger busts and hips, and tiny waists. This “voluptuous” appearance accentuating soft curves stood as a symbol of economic means; however, this frame also indicated strength and ability to work if needed, such as during times of war (Derenne & Beresin, 2006). This figure also highlighted fertility, and became a symbol for a woman’s capabilities as a wife and mother (Hesse-Biber, 1996). Yet, in the 1920s and again in the mid-1960s, women embraced a slender and boyish look, preferring pants and short hair. While this shift may have symbolized for some women pushing for independence and equality, this slender and ultra-thin ideal was nearly impossible to achieve. Today, women continue their pursuit of social equality and the ultra-slim ideal holds steadfast, while simultaneously remaining perpetually unattainable (Rayner et al., 2013).

While much of the literature examining the history of body image ideals is focused on women, men have not been impervious to physical scrutiny. Athletic body shapes have served as long-standing attractiveness standards for men. In the 1800s, physically fit bodies signified strength and leadership qualities in the business world. Additionally, engaging in sports and collegial athletics signified youth, prowess and virility (Luciano, 2001). While large and plump male body frames were also associated with high socioeconomic status in the 19th century, cultural messages of gluttony inundated media sources in the early 1900s associating ‘soft’ bodies with weakness and other physical ailments (Luciano, 2001). More specifically, Hollywood movies have depicted physically attractive men since the 1930s as fit, youthful, energetic, slim, and possessing full, healthy heads of hair. In the 1950s and 60s, muscularity and a physically fit appearance became particularly desired characteristics for men as exposure to media-promoted “gym culture” and male-focused sexually explicit advertising increased. In fact, analyses of *Playgirl*, *Vogue* and *GQ* magazines from the 1950s to the 1990s revealed increases in BMIs (body mass index) due to increased muscularity and lean muscle mass (Spitzer et al., 1999; Thompson, 2000).

Another important consideration for potential societal shifts in body image is the changing nature of gender roles, as opportunities have increased for women to enter higher paying occupations that have been traditionally male-dominated (Eagly & Wood, 1999). As women gain their own economic resources and positions of authority within society, it is possible that they may now expect male romantic partners to pay more attention to their own physical appearance than previous generations of men (Hesse-Biber, 1996). For example, Gil-Burmann, Pelaez, and Sanchez (2002) suggested that

younger career-oriented women place more importance on physical attractiveness as an important quality for potential romantic partners than do older women who have experienced less profitable career opportunities. These potential cultural changes may be reflected in the BES revisions if younger men are more likely to attend to their physical appearance and conceive of their bodies as beauty objects to be desired by women than in the past.

Current beauty ideals. In addition to the influence of the economic, political and social climate on attractiveness ideals, recent technological advances have also perpetuated ideals for men and women by increasing accessibility to movies, television and other media, where icons dictate the latest and most desired trends in appearance (Hesse-Biber, 1996). In other words, access to the media through the Internet has bombarded women and men with nearly unattainable messages about ideal and sexy bodies (Pope, Olivardia, Borowiecki, and Cohane, 2001; Spitzer, Henderson, & Zivian, 1999; Thompson, 2000; Tiggemann, 2005). For men, physical attractiveness standards emphasizing fit, toned and muscular bodies hold steadfast. Today's physically ideal man has a defined chest, lean abs, a muscular upper body, and narrow hips emphasizing an athletic V-shape (Thompson & Cafri, 2002). Furthermore, hair growth remedies, shampoos, and conditioners promising thick and healthy heads of hair continue to be leading consumer products (Luciano, 2001; Schuster et al., (2013).

Women have also been flooded with messages about what is sexy, such as “waif-thin Kate Moss” and “Barbie-like Pamela Anderson” prototypes (Derenne & Beresin, 2006). The only slight shift in the ultra-slim ideal since the 1960s has been an increased emphasis on muscularization of the still-slender body. This shift was likely influenced by

increases in female participation in athletics over the past 30 years (Hausenblas & Fallon, 2006). It seems that as Americans become increasingly “consumer-oriented” and media driven, both men’s and women’s bodies will be evaluated increasingly in terms of how they measure up to media-hyped attractiveness standards (Hesse-Biber, 1996).

It is clear that the media and other societal factors continue to be powerful forces in shaping men’s and women’s body image perceptions, and several researchers are exploring the influence of these cultural messages. For example, Derenne and Beresin (2006) argue that body image evaluations are the result of interplay between the cultural and political climate, the media, and influences from the immediate environment, such as family eating and exercise patterns. Thompson and Cafri (2002) assert that pressures from the media, as well as interpersonal factors, have produced a harsh environment in which meeting attractiveness standards is highly desired, and failing to meet them results in dissatisfaction with physical appearance and negative self-evaluations. Yet, these standards remain practically unattainable.

Unfortunately, internalization of these unattainable depictions of attractiveness has negative consequences on men’s and women’s well-being and health. O’Dea and Abraham (2002) examined rates of men’s eating and exercise behaviors in a college setting; results indicated that 20% of college men surveyed reported eating behaviors and attitudes characteristics of eating disorders, and 34% reported distress when they could not exercise as much as they wanted. Fitzsimmons-Craft et al. (2012) reviewed recent body dissatisfaction rates among college women and found statistics as high as 80 percent. Furthermore, numerous studies have been conducted that associate body image concerns and mental health issues across a broad range of ages (McLaren & Kuh, 2004;

Parent, 2013; Rayner et al., 2013; Schuster et al., 2013; Tassava & Ruderman, 1999; Waddell-Kral & Thomas, 1990). The complex interplay of social and psychological influences on physical self-evaluation highlights the importance of utilizing sound assessment tools that facilitate our understanding of body evaluation.

Defining and Measuring Body Esteem

Measures of body esteem have provided researchers with the opportunity to explore the influence of body esteem on individuals at the personal level, as well as examine larger societal implications. Three measures have been developed with the purpose of defining and assessing body esteem.

Body Cathexis Scale (BCS). Secord and Jourard (1953) provided the first documented assessment of body esteem using the Body Cathexis Scale (BCS). The BCS measures the “degree of feeling of satisfaction or dissatisfaction with the various parts or processes of the body” (343). Participants rate their degree of satisfaction on 46 body parts and functions using a 5-point Likert scale. The BCS is a short and easily administered assessment of body esteem. Secord and Jourard were the first researchers to relate feelings about the body to feelings about the overall self. They also explored the relationship between body esteem and mental health, as well as possible gender differences in body esteem. However, the assumption underlying the BCS is that body-cathexis is a unidimensional construct. Gunderson and Johnson (1965) questioned this assumption by examining the relevance of the items within the BCS. Principal components analysis with a sample of male Navy sailors yielded three components specific to body-cathexis: *Body Build*, *Strength*, and *Profile* (facial features). Gunderson and Johnson concluded that these three components “provided a more meaningful

differentiation of attitudes toward the self” than the global measure of body cathexis (320). It was clear that further exploration into the possible multidimensional nature of body evaluation was warranted.

Body-esteem Scale. A second measure of body esteem developed by Mendelson and White (1982; 1985) was initially created to assess body esteem in children. These researchers defined body esteem as the physical counterpart to self-esteem: “an individual’s attitudes, evaluations, and feelings about the body” (90). This scale contained 24 body-related statements such as “I like what I look like in pictures.” Similar to the BCS, the Body-esteem Scale served as a short and easily administered self-report of body esteem. In 1996, Mendelson, White, and Mendelson developed a Body-esteem Scale for adolescents. Several changes to the Body-esteem Scale for children were utilized to make it suitable for an adolescent population. They adopted a 3-factor solution; *Appearance*, *Weight* and *Attribution* were the dimensions. Mendelson and colleagues also addressed methodological issues for adolescents, such as revising the dichotomous response format (yes/no) to a more suitable 5-point Likert scale, and improving the reliability of each dimension by adding items to the *Weight* and *Attribution* subscales. In 2001, they designed a 30-item Body-esteem Scale for Adolescents and Adults (BESAA) utilizing factor analysis with a large sample of both adolescent and young adults representative of the range of ages relevant to the scale. The Body-esteem scale for Children and the BESAA provide a unique assessment of body esteem in children and adolescents. However, they did not validate any scales using an older adult population.

Body Esteem Scale (BES). The third scale developed to assess body esteem is the Body Esteem Scale (BES; Franzoi & Shields, 1984). Doubts about the unidimensional nature of the BCS structure prompted Franzoi and Shields to examine the possibility of a multidimensional measure of body esteem for use with an adult population. A series of principal components analyses originally based on BCS items yielded a final 35-item scale. Participants are asked to rate their degree of satisfaction or dissatisfaction with various body parts and functions on a 5-point Likert scale making the BES a concise, and easily administered assessment of body esteem. Additionally, the BES factor structure is both multidimensional and gender specific. In other words, the dimensions comprising body esteem are unique for men and women. The three dimensions for men are: *Physical Attractiveness*, *Upper Body Strength*, and *Physical Condition*. The three dimensions for women are: *Sexual Attractiveness*, *Weight Concern*, and *Physical Condition*.

As with the BCS and Body-esteem Scales, the construct of body esteem measured by the BES is correlated with overall self-esteem. Studies have been conducted to examine the internal consistency and test-retest reliability of the BES (Franzoi & Shields, 1984; Franzoi, 1994) as well as construct, convergent, and divergent validity (Franzoi & Herzog, 1986; Franzoi & Shields, 1984; Thomas & Freeman, 1990). Additionally, the BES *Weight Concern* subscale discriminated women diagnosed with anorexia from women without a history of anorexia. The BES *Upper Body Strength* subscale discriminated male weightlifters from non-weightlifters. Because the dimensions of body esteem are gender specific, different items comprise the dimensions for men and women.

One potential difficulty with use of the BES is that the body esteem of men and women cannot be directly compared.

Both the BES, and the Body-esteem Scales are psychometrically sound, reliable, valid, and multidimensional assessments of body esteem. Differences between the scales occur when considering the age group of interest. The Body-esteem Scales (Mendelson et al., 1982; 1985; 2001) were originally developed for use with children and adolescents, while the BES (Franzoi & Shields, 1984) was developed for adults. Furthermore, the content of items varies in that the Body-esteem Scales contain items of general statements of body characteristics (i.e. “Kids my own age like my looks”) whereas the BES identifies specific body parts and functions (i.e. “face,” “waist,” “chest”). The BES serves as the only multidimensional measure that assesses evaluation of specific body parts and functions that are then summed into discrete body esteem dimensions. Because men and women consider different body parts and functions relevant in evaluation of the physical self, the BES dimensions are also gender specific, which is unique among body measures.

Contributions of Body Esteem Research to Social and Clinical Psychology

Taken together, these assessment measures have greatly enhanced our understanding of the relationships between body esteem and multiple constructs within social and clinical psychology. Within social psychology, body esteem has been conceptualized as one important component of overall self-esteem (Franzoi & Shields, 1984; Wardle & Watters, 2003). While, negative body evaluations have been linked to poor self-esteem, programs focused on improving body esteem in adolescent and young

adult women also demonstrated corresponding improvements in overall self-esteem (Erickson & Gerstle, 2007; Franzoi & Klaiber, 2007).

Personal characteristics such as BMI (Body Mass Index) have also been related to body esteem such that higher BMI was related to lower body esteem particularly regarding weight concern in women (McKinley, 1999; McLaren & Kuh, 2004). Personal relationships including familial and peer attitudes toward eating and weight have also been investigated (Ata, Ludden, & Lally, 2007; McKinley, 1999). For example, Ata et al. (2007) revealed links between family attitudes toward eating and weight, dieting concerns, and problematic eating behaviors among girls. These researchers also found positive associations between peer support and peer perception of physical attributes and body esteem ratings.

Scales measuring body esteem, the BES in particular, have also been utilized in cultures outside North America, such as Germany (Swami, Stieger, Haubner, & Voracek, 2008) and Japan (Kowner, 2002). Most of these cross-cultural studies depicted lower self-reported body esteem scores as ultra-thin North American 'ideal' media images increased in popularity and availability (Forbes & Jung, 2008; Franzoi & Chang, 2002; Frisen & Holmqvist, 2010; Kornblau, Pearson, & Breitkopf, 2007).

A broad area of research utilizing body evaluation measures has occurred within the examination of media influences on body esteem. Researchers (i.e. Daniel & Bridges, 2010; Henderson-King, Henderson-King and Hoffman, 2001; McKinley & Hyde, 1996; Strelan & Hargreaves, 2005) have contended that exposure to media and advertising images depicting unattainable body figures can be damaging to body esteem for women and men. One well-contended theory, highlighted by McKinley and Hyde

(1996) as objectification theory, suggests that through media depiction, women have become painfully aware of their bodies as objects of beauty and attractiveness to be assessed by others, and particularly by potential mates. It is likely that men have also become increasingly susceptible to viewing their bodies as objects to be evaluated, as increases in media-driven male ideal body types have become more accessible (Schuster et al., 2013). Furthermore, internalization of these of these unattainable body standards has been linked to increased body surveillance and body shame (Grabe & Hyde, 2009; McKinley & Hyde, 1996).

Body esteem scales have also impacted the understanding of body evaluation in health-guided research, such as eating disorder prevention and treatment. Weight concern and other aspects of body evaluation are important components for understanding anorexia, bulimia, binge eating disorders, and other problematic dieting and exercise behaviors (Davis, 1997; Kaminski & McNamara, 1996; Martz & Bazzini, 1999; Mayer et al., 2008; Rieder & Ruderman, 2001; Striegel-Moore, Silberstein, & Rodin, 1993; Tassava & Ruderman, 1999). Fortunately, treatment focusing on education of healthy eating habits and promotion of self-esteem has been effective in increasing body esteem in individuals at risk for these problems (Kaminski & McNamara, 1996; Martz & Bazzini, 1999).

In addition to eating disorders, mental health issues such as depression and anxiety have also been related to body esteem (Davis, Brewer, & Weinstein, 1993; Jonsdottir et al., 2008; Parent, 2013). For example, depression significantly predicted body esteem appearance scores in a sample of adolescents, such that individuals who reported higher levels of depression also tended to report lower levels of body esteem

(Jonsdottir et al., 2008). The authors of this research stressed the importance of body esteem to overall psychological well-being, and suggested that positive body esteem promotion be considered when treating depression, particularly in adolescents.

Due to the importance of body-focused research in the fields of social and clinical psychology, it is important that the measures used provide accurate and meaningful assessments of body esteem. The BES in particular has been a primary tool utilized in adult body esteem research over the past 25 years. Associations with the areas within social and clinical psychology described above (i.e. self-esteem, physical attractiveness standards, body shape and size, sexuality, disordered eating, and exercise behaviors) were considered during validation of the original BES. These associations provided valuable information for considering measures best suited for revised BES scale validation.

Reevaluation of the Factor Structure of the Body Esteem Scale

Due to the frequent use of the BES in adult body esteem assessment, it was important to keep the scale as current and relevant as possible. Until recently however, the factor structure of the BES had not been analyzed in any published studies since its creation in 1984. Because cultural attractiveness ideals are ever changing, we suspected that item and even structural changes to the BES could be warranted in order to keep the measure current, accurate, and relevant as a measure of body esteem. In light of these possible changes, Frost et al. (2012) reanalyzed the factor structure of the BES.

For the development of the original scale, Franzoi & Shields (1984) conducted two separate principal components analyses with oblique rotations on BCS responses of college undergraduates. A Scree Test revealed three components for both genders as the best fit. For men, items related to upper body strength, balanced body proportions and

general health. The female components contained items related to weight control, facial features, and general health/physical strength. Based on the multidimensional nature of the results, Franzoi and Shields concluded that a new measure was needed to evaluate body esteem. A series of adjustments from two additional principal components analyses for both male and female data were made to determine the final 35-item scale.

For women, the *Sexual Attractiveness* subscale was comprised of 13 items focused on facial and physical appearance that could be changed through diet and exercise. Items associated with sexuality also loaded on this subscale. The *Weight Concern* subscale contained ten body parts that assess weight and body size, and could be changed through exercise and food intake. The *Physical Condition* subscale contained nine items measuring with agility, fitness, and strength.

For men, the *Physical Attractiveness* subscale contained 11 items assessing facial features and aspects of physique that determine how “handsome,” or “attractive” a man is judged, particularly when considering facial profile. The *Upper Body Strength* subscale contained nine upper body parts and functions that change with strength-building exercises. Items associated with sexuality also loaded on this subscale. The *Physical Condition* subscale consisted of 13 items focused on body parts and functions measuring agility, and physical fitness.

Reexamination of the BES factor composition. The recent reexamination of the BES closely followed the methodology of the original scale development (Frost, Franzoi, and Oswald, 2012). Two separate principal components analyses were conducted with data collected in 2010 from both male ($n = 350$) and female ($n = 448$) Marquette University undergraduate participants. For the female data, the principal components

analysis with oblique rotation and promax method revealed a component composition that was extremely similar to the original BES subscales. Only two item shifts were evident. *Arms* met the minimum-loading criterion (.35) on the component that most closely resembled weight concern. *Feet* met the minimum-loading criterion on the component most closely resembling sexual attractiveness. Neither of these items previously loaded on any female BES dimensions. However, both of these items seemed to fit appropriately on their respective components. *Feet*, like other items on the sexual attractiveness component, addresses a characteristic of beauty that cannot be altered through traditional diet or exercise, but may reflect attractiveness through proportion and symmetry (Eagly & Wood, 1999). *Arms* fit appropriately on the component measuring weight concern because it is a body part that changes in appearance as a function of weight. Overall, the analysis of the female data suggested that the BES remains relatively accurate in capturing the way women are physically evaluating themselves in today's society.

Principal components analysis of the male data also revealed a component structure similar to the original BES subscales. However, some item changes were evident. Changes to the component most closely resembling physical condition were as follows: *reflexes* no longer met the minimum-loading criterion, and *body build* and *chest* newly met the minimum-loading criterion. Because this component continued to represent functions of stamina, agility and other measures of physical activity, *reflexes* was no longer an item ideally representative of physical condition, as it could not likely be altered significantly through traditional exercises. The addition of the items *body build* and *chest* when coupled with other items comprising this factor like *figure/physique* and

waist appeared to reflect ideal male shape or proportion, which is likely the result of physical fitness, and are therefore representative of this component.

Changes to items on the component most closely resembling physical attractiveness included the following: *reflexes*, *thighs*, *sex drive*, *legs*, and *body hair* met the minimum-loading criterion, while *sex organs* no longer met the minimum-loading criterion. This component contained characteristics that are often judged by others as traditionally “good-looking,” as well as body parts and functions that cannot traditionally be changed through diet and exercise. *Reflexes* and *body hair* appeared to represent this component because they are body functions and parts that cannot traditionally be changed through diet or exercise. Interestingly, *thighs* and *legs* met the minimum-loading criterion on this factor. One thought was that men currently view a lean and toned shape as physically attractive more than the ultra-muscular look more representative of the component resembling upper body strength. In addition to physical characteristics, *sex drive* met the minimum-loading criterion on this component, while surprisingly, *sex organs* no longer met the minimum-loading criterion on this component. It is possible that both components resembling physical attractiveness and upper body strength contain aspects of sexual virility. However, further investigation of body parts and functions representing sexuality was warranted.

Finally, changes to the component most closely resembling upper body strength included the following shifts: *physical coordination* and *figure/physique* newly met minimum-loading criteria and *sex drive* no longer met minimum-loading criteria. Both *physical coordination* and *figure/physique* are body parts and functions that can change with strength-based exercises and therefore, appeared to fit well on this component. The

failure of *sex drive* to meet the minimum-loading criterion provided further evidence that men's sense of sexuality and sexual virility may be associated more closely to physical attractiveness. Overall, these analyses suggest that men might be evaluating themselves somewhat differently than in the past. Frost et al. (2012) determined that further exploration was necessary to determine the most meaningful changes to the BES in order to best capture how men are currently evaluating their physical selves.

Preliminary analysis for the addition of new items. Frost et al. (2012) conducted a second round of principal component analyses for men and women after adding five new items to determine body parts and functions that could increase the relevance of the BES: *head hair*, *skin condition*, *neck*, *calves*, and *speed*. These items were chosen during a focus group of lab members under the direction of Dr. Stephen Franzoi at Marquette University after discussing their hypothesized relevance to the three major components for men and women.

For the female data, all items met the minimum-loading criterion (.35) on components in an expected way. *Head hair*, *skin condition*, and *neck* met the minimum-loading criterion on the component most closely resembling sexual attractiveness. These additions were expected given that the items cannot be altered through exercise, and they are also body parts that contribute to physical beauty. *Speed* met the minimum-loading criterion on the component most closely resembling physical condition. Which was expected given that the body function provides an evaluation of physical activity and athleticism. No new items met the minimum-loading criterion for the factor resembling weight concern. This was expected, given that none of the new body parts or functions contributed to perceptions of weight.

For the male data, principal components analysis revealed additions of *head hair*, *skin condition*, *neck*, and *calves* to the component most closely resembling physical attractiveness. These body parts continued to represent attractiveness that could not be changed through diet or exercise. The addition of *calves* may also further illustrate men's shifting perception to a lean and fit body as attractive, rather than an ultra-muscular one. Similar to the female components, *speed* met the minimum-loading criterion on the component most closely resembling physical condition. No items were added to the component most closely resembling upper body strength, which was not surprising given that none of the body parts or functions contributed to perceptions of strength or muscularity of the upper body.

Current Study

Taken together, these results suggested that some changes within the dimensions as well as new item additions to the BES are likely to improve the scale's relevance and significance in today's society. With this thought in mind, I began formulating plans to finalize the necessary steps to complete the revision of the BES. My goals for the current study were twofold. The first goal was to develop a revised Body Esteem Scale. Included in this formulation was one important step that had not been a part of the original BES scale construction or of the just-described BES-item analysis: obtaining respondents' importance judgments of body items, and using such judgments in selecting the items to include in subsequent principal components analyses. Selecting only the body items that are considered sufficiently important in body evaluations by young adults would provide additional confidence that the revised scale contains a relevant and meaningful collection of items to men and women in today's society. After selecting the items for inclusion in

the analysis, principal components analysis was conducted for both female and male data. Those analyses were followed with partial confirmatory factor analysis.

The second goal of the study was to validate the revised BES. The correlations between the revised BES components and seven established body-focused measures were examined to assess convergent and divergent validity in areas commonly associated with body esteem (i.e. physical attractiveness, body shape and size, sexuality, disordered eating and exercise patterns). Four measures were also created to specifically assess construct validity for the revised BES components. Providing comprehensive information regarding the reliability and validity of the BES enhances our confidence in the accuracy and relevancy of using the BES as a primary tool for measuring body esteem for the next several years.

METHOD

Participants and Procedure

Sample size. Recent recommendations for determining sample size for factor and principal components analysis are guided less by “rules of thumb,” and more by communality information (Fabrigar, Wegener, MacCallum, & Strahan, 1999; MacCallum, Widaman, Zhang, & Hong, 1999). Based on the most recent BES findings, communalities were low to moderate (range = .2 - .7). Additionally, there were a sizable number of indicators for each component, particularly with the inclusion of new items. Given this information, both Fabrigar et al. (1999), and MacCallum et al. (1999) suggested sample sizes between 200 and 300 to be sufficient for analyses. Participant

recruitment was large enough that separate principal components analyses could be conducted for women and men.

Additionally, confirmatory factor analysis (CFA) was attempted on the 2010 BES data outlined above in order to test the fit of the conceptual model to the data, yet the model failed to achieve adequate fit. However, I believed that it was important for an additional analysis to be conducted on the current data that would help me gain insight into patterns of loadings obtained through principal components analysis (PCA) (Gignac, 2009). For a slightly less restrictive analysis, Gignac (2009) suggests partial confirmatory factor analysis (PCFA) as a supplement to PCA in that “the number of factors is expected to be known but the specific pattern of salient and nonsalient loadings may not be” (40). Conducting partial confirmatory factor analysis called for an additional dataset large enough for analysis for both male and female participants. Therefore, the ideal sample size needed for PCA and PCFA was about 600 male and 600 female participants. While enough female participants were obtained, data from only 350 men were gathered. Therefore, PCFA was conducted only with female data. Male data will continue to be gathered with the goal of obtaining enough information to complete PCFA for this group.

Recruitment, compensation and procedures. Nine hundred and seventy seven adults (624 women and 353 men) enrolled in psychology courses at both Marquette University and Penn State University participated in this study either for extra credit in their respective courses or as a course requirement. Specifically, 497 participants (280 women and 217 men) were recruited from Marquette University between December 2011 and January 2013. Due to the necessity of gathering as large a sample size as possible, administration of the survey was somewhat flexible. Most data collected at Marquette

University was accessed online in a classroom, with a research assistant present to answer any questions from the assembled participants. However, some participants completed a paper copy of the measures in a group setting, also with a researcher present to answer any questions.

Four hundred and eighty participants (344 women and 136 men) were recruited from Penn State University between July 2011 and November 2011. These students completed the BES with new items, BES Importance ratings, and the Rosenberg Self-esteem Scale (RSE: Rosenberg, 1965) as part of a larger packet for incoming first-year students considering psychology as a major. These measures are described in detail below. Completion of the packet was a requirement for students in this major. The Penn State University surveys could be completed by participants online from remote locations, wherever they could obtain an Internet connection.

Demographics. Demographic breakdown by location of data collection is provided in Table 1. An independent-samples t-test was conducted to compare the mean ages for male participants at Penn State and Marquette University. There was no significant difference in mean age; $t(352) = .03, p = .98$ (two-tailed). The magnitude of the differences in the means (mean difference = .007, 95% CI: -.48 to .49) was very small (eta squared <.001). An additional independent-samples t-test was conducted to compare the mean ages for female participants at Penn State and Marquette University. There was a significant difference in mean age; $t(624) = -5.52, p < .001$ (two-tailed), with the Marquette women being, on average, about six months older than the Penn State women. This age difference is likely due to the fact that the Penn State data was collected at the beginning of the participants' first semester at the university, while the Marquette data

Table 1

Demographic Table for Race/Ethnicity (%), Sexual Orientation (%), Age, and Sample Size by Data Collection Location

Demographic Characteristic	Marquette University		Pennsylvania State University	
	Women	Men	Women	Men
Race/ethnicity				
White/ Caucasian	76.8	83.4	87.2	86.5
Black/ African American	5.4	2.3	3.8	0.8
American Indian/ Alaska Native	0.4	0.9	0	0
Asian American/ Asian Descent	5.7	5.1	4.1	6.8
Native Hawaiian/ Pacific Islander	0.4	0.5	0	0.8
Hispanic/ Latino(a)	4.3	5.1	3.2	4.5
Biracial	5.7	2.8	1.5	0.8
Other	1.4	0	0.3	0
Sexual Orientation				
Straight	97.1	97.7	95.6	97.1
Gay/Lesbian	0.4	0.5	0	2.2
Bisexual	1.8	0.9	3.5	0
Don't know	0.7	0.5	0.9	0.7
Age (M, SD)	19.09(1.12)	19.41(1.88)	18.40(0.92)	19.49(2.58)
<i>n</i>	280	217	344	136

was collected throughout the academic year and included some non-first-year students. However, the magnitude of the differences in the means (mean difference = .91, 95% CI: -1.23 to -.58) was small (eta squared = .04). Chi-square tests for independence were planned to assess categorical ethnicity and sexual orientation demographic proportions for males and females across data collection location. Unfortunately, there were not at least 5 cases in each cell, so the basic assumption was violated. However, the majority of participants identified as White/Caucasian across genders and location. No minority groups comprised more than 6.8% of the data across locations. Additionally, the majority of participants identified their sexual orientation as “straight” across genders and location. Therefore, data was combined for all analyses (i.e. PCAs contained data from both Marquette University and Penn State). Demographic variables listed in the next paragraph represent the total dataset.

Five hundred and seventeen women listed their ethnicity as Caucasian/White (82.6%), 30 as Asian American (4.8%), 23 as Hispanic/Latina (3.7%), 28 as African American/Black (4.5%), one as Native American/Pacific Islander (0.2%), 21 as biracial (3.3%), and five as “other” (0.8%). Almost all women listed their sexual orientation as “straight” ($n = 602$; 96.0%); the remaining women identified themselves as “lesbian” ($n = 1$; 0.2%), “bisexual” ($n = 17$; 2.7%), “other” ($n = 2$; 0.3%), and “don’t know” ($n = 3$; 0.5%). The mean age of female participants was 18.81 ($SD = 2.10$).

Two hundred and ninety-six men listed their ethnicity as Caucasian/White (84.3%), 20 as Asian American (5.7%), 18 as Hispanic/Latino (5.1%), six as African American/Black (1.7%), two as Native American/Pacific Islander (0.6%), and seven as biracial (2.0%). Almost all men listed their sexual orientation as “straight” ($n =$

345; 97.7%), with the remaining men identifying themselves as “gay” ($n = 4$; 1.1%), “bisexual” ($n = 2$; 0.6%), and “don’t know” ($n = 2$; 0.6%), the mean age of male participants was 19.47 ($SD = 2.23$).

Furthermore, an analysis was conducted to determine whether college students from these two universities differed significantly in their body evaluations. Two one-way between group multivariate analyses of variance (MANOVA) were performed to identify any differences in body esteem evaluations according to geographic location. One MANOVA was conducted using the female data and the other was conducted using the male data. The three BES dimensions were used as dependent variables, and the independent variable was location.

There was a statistically significant difference between male participants at Marquette University and male participants at Penn State University on the combined dependent variables, $F(3, 350) = 5.30, p < .01$; Wilks’ Lambda = .96, partial eta squared = .04. When the results for the dependent variables were considered separately, the three subscales reached statistical significance (Physical Condition: $F(1, 352) = 6.66, p < .05$, partial eta squared = .02; Physical Attractiveness: $F(1, 352) = 15.83, p < .001$, partial eta squared = .04; Upper Body Strength: $F(1, 352) = 7.81, p < .01$, partial eta squared = .02. While some differences were observed based on location, the effect sizes indicate that they are small. Additionally, when follow-up MANOVAs were conducted to determine item level differences among evaluations based on data collection location for men for each of the three significant dimensions, the model was not significant for physical condition, $F(13, 332) = 1.24, p = .24$; Wilks’ Lambda = .95, partial eta squared = .05, or

upper body strength $F(9, 337) = 1.37, p = .20$; Wilks' Lambda = .97, partial eta squared = .04. The model for physical attractiveness was significant, $F(11, 332) = 2.42, p = .01$; Wilks' Lambda = .93, partial eta squared = .07. Five items, ears, cheek/cheekbones, appearance of eyes, sex organs and face demonstrated significant differences such that Marquette University participants (ears: $M = 3.41, SD = .88$; cheek/cheekbones: $M = 3.61, SD = .82$; sex organs: $M = 3.69, SD = .92$; face = $M = 3.82, SD = .86$) evaluated their body esteem more positively than Penn State University participants on four of these items (ears: $M = 3.19, SD = .77$; cheek/cheekbones: $M = 3.43, SD = .68$; sex organs: $M = 3.43, SD = .98$; face = $M = 3.48, SD = .87$). Penn State University (appearance of eyes: $M = 4.14, SD = .88$) participants evaluated their body esteem more positive than Marquette university participants (appearance of eyes: $M = 3.75, SD = .89$) on one item.

There was a statistically significant difference between female participants at Marquette University and female participants at Penn State University on the combined dependent variables, $F(3, 311) = 3.60, p < .05$; Wilks' Lambda = .97, partial eta squared = .03. When the results for the dependent variables were considered separately, three of the three subscales reached statistical significance (Sexual Attractiveness: $F(1, 313) = 10.07, p < .01$, partial eta squared = .03; Weight Concern: $F(1, 313) = 5.36, p < .05$, partial eta squared = .02; Physical Condition: $F(1, 313) = 3.97, p = .05$, partial eta squared = .01. While some differences were observed, the effect sizes indicate that they are small to very small. Additionally, when a follow-up MANOVA was conducted to determine item level differences among evaluations based on data collection location for women for each of the three significant dimensions, the model was not significant for sexual attractiveness, $F(13, 296) = 1.71, p = .06$; Wilks' Lambda = .93, partial eta

squared = .07 or weight concern, $F(19, 296) = 1.68, p = .08$; Wilks' Lambda = .95, partial eta squared = .05. The model for physical condition was significant, $F(8, 301) = 2.32, p < .05$; Wilks' Lambda = .94, partial eta squared = .07. Three items, physical stamina, physical coordination, and physical condition demonstrated significant differences such that Marquette University participants (physical stamina: $M = 3.35, SD = 1.15$; physical coordination: $M = 3.75, SD = 1.13$; physical condition: $M = 3.61, SD = 1.05$) evaluated their body esteem more positively than Penn State University participants (physical stamina: $M = 3.05, SD = 1.13$; physical coordination: $M = 3.42, SD = .99$; physical condition: $M = 3.28, SD = 1.06$).

Overall these results suggest that while there were some minor differences in body evaluations on the physical attractiveness component for men, and the physical condition component for women, the effect sizes were small, as were the actual differences in evaluation (no items differed more than half of one point on a 5-point Likert scale). It does not appear that these differences in location are likely to affect the outcome of the analyses that determined the revised BES.

Materials

A copy of the survey used for this study can be found in the *Appendix*. A summary of each measure is described below.

Body Esteem Scale (BES; Franzoi & Shields, 1984). The Body Esteem Scale was used to measure evaluations of the physical self. The BES consists of 35 body parts and functions rated on a 5-point Likert scale (1 = *have strong negative feelings* to 5 = *have strong positive feelings*). Body esteem subscales for women (*Sexual Attractiveness, Weight Concern, Physical Condition*) and men (*Physical Attractiveness, Upper Body*

Strength, and *Physical Condition*) are computed so that higher scores indicate more positive body evaluation.

In addition to evaluating the regular BES items, participants were also asked to rate 18 additional body parts and functions that were being considered for inclusion on a revised version of the BES. These items were: *head hair, facial hair, eyelashes/eyebrows, forehead, neck, hands, calves, ankles, perspiration, speed, flexibility, metabolism, skin condition, skin color, fingernails, teeth, back, and sexual performance*. The new items considered for possible inclusion in the BES were identified in focus sessions with the graduate and undergraduate students of the Franzoi Research Lab, as well as with Professor Stephen Franzoi, co-creator of the BES. Items were chosen based on discussion of body parts and functions that were not represented in the original BES, and have been notably addressed or advertised in recent media outlets (i.e. skin condition has been prominently displayed in *Proactiv* and *Clean and Clear* skincare line commercials).

Body Esteem Scale Item Importance Ratings. Besides evaluating the BES items in the traditional manner, participants were also asked to rank the importance of each body esteem item in physical evaluations of their bodies (1 = *not at all important* to 5 = *very important*). Inspired by Franzoi and Herzog (1987), this measure served as an important first-step filter in determining which body parts and functions on the current BES and among the possible new BES items may not be sufficiently important in young adults' body evaluations to warrant inclusion in the subsequent analyses that would ultimately determine the content of the revised BES.

Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965). The Rosenberg Self-Esteem Scale is a measure of participants' evaluations of their overall self. The scale

consists of 10 items rated on a 5-point Likert scale (1 = *extremely uncharacteristic* to 5 = *extremely characteristic*). Higher scores indicate higher self-esteem. The RSE has demonstrated good test-retest reliability and construct validity (Robinson & Shaver, 1973; Silbert & Tippett, 1965).

The Rosenberg Self-Esteem scale was used as a measure of convergent validity with the BES. Because body esteem is a part of the overall concept of self-esteem, participants with higher body esteem should tend to also have higher self-esteem scores. Therefore, I anticipated moderate positive correlations between the RSE and each of the revised BES components for women and men. The coefficient alpha for this subscale was $\alpha = .74$.

Sexual Esteem Scale (SES: Snell & Papini, 1989). The Sexual Esteem Scale is a subscale of the Sexuality Scale. The SES is a measure of participants' evaluations of their sexual competence. The scale consists of 10 items rated on a 5-point Likert scale from (1 = *agree* to 5 = *disagree*). Higher scores indicate higher sexual esteem. This subscale demonstrated adequate internal consistency reliability (Snell, Fisher, & Walters, 1993). The coefficient alpha for this subscale was $\alpha = .92$.

The SES was used as a measure of convergent validity with the BES. I expected positive correlations only with the body esteem components that assess sexual body parts and functions, such as the physical attractiveness component and upper body strength component for men, and the sexual attractiveness component for women. I did not expect correlations with any other components. Because sexual esteem is an important element of body esteem for both men and women, participants with higher body esteem should tend to also have higher sexual esteem scores.

Drive for Thinness, Bulimia, and Body Dissatisfaction subscales on the Eating Disorders Inventory – 2 (EDI-2; Garner, 1991). The Eating Disorders Inventory – 2, is a 64-item self-report inventory designed to assess attitudes and behaviors common to anorexia and bulimia. Although the EDI contains several subscales, only three (Drive for Thinness, Bulimia, and Body Dissatisfaction) are considered appropriate for nonclinical samples (Garner, Olmstead, & Polivy, 1983). Participants are asked to answer whether each item applies to them using a 6-point Likert scale (1 = *always* to 6 = *never*). Higher scores indicate more distorted eating and body attitudes and behaviors. The coefficient alphas were: Drive for Thinness $\alpha = .92$; Bulimia $\alpha = .81$, and Body Dissatisfaction $\alpha = .89$.

In 1990, Thomas and Freeman utilized the EDI as a measure of construct validity for female weight concern body esteem with the BES. Therefore, I anticipated higher scores on these scales being strongly associated with decreased body esteem only on components concerning weight and body shape (i.e. weight concern and to a lesser degree, physical condition). It would also make sense that a positive correlation would exist between the EDI subscales and the revised BES components for men that address body parts and functions that can be changed through diet and exercise (i.e. physical condition).

Measure of aerobic activity. Questions were developed for the current study to assess the degree to which individuals engage in aerobic activity, the level of satisfaction with one's physical conditioning, and the importance of exercise. Participants were asked to indicate the degree to which each statement is characteristic of him/her using a 5-point Likert scale (1 = *extremely uncharacteristic* to 5 = *extremely characteristic*). A PCA was

conducted, and as expected, all items loaded on one component. The model accounted for 56.67% of the total variance. Item loadings can be found after the items: “I enjoy participating in exercises that improve my cardiovascular health (e.g. running, biking, walking, swimming)” (.82), “It is important that my body is healthy” (.84), “I think about my body in terms of the way it moves (i.e. agility, speed)” (.73), and “I am satisfied with my current physical condition” (.59). This measure also demonstrated adequate internal consistency, $\alpha = .74$. The measure of aerobic activity was used as a measure of construct validity for the revised BES dimensions. I expected that aerobic activity would be strongly positively correlated with the male and female BES physical condition components, but not with other BES components. While it is possible that aspects of physical fitness may also be related to factors assessing body shape, weight and muscularity (i.e. weight concern and upper body strength), I anticipated weaker correlations with those related BES components.

Measure of anaerobic activity. Questions were also developed for the current study to assess the degree to which individuals engage in anaerobic activity, the importance of anaerobic exercise, and the level of satisfaction with the muscular aspects of one’s body. Participants were asked to indicate the degree to which each of four statements was characteristic of him/her using a 5-point Likert scale (1 = *extremely uncharacteristic* to 5 = *extremely characteristic*). A PCA was conducted, and as expected, all items loaded on one component. The model accounted for 69.02% of the total variance. Item loadings can be found after the items: “I enjoy participating in exercises that improve my body strength and muscle mass (i.e. weight lifting, hill climbing)” (.86), “The appearance of my muscles is important to me” (.84), “I am proud

of my muscular body build” (.76), and “I work toward achieving/maintaining a toned and muscular physique” (.86). This measure also demonstrated good internal consistency, $\alpha = .85$. The measure of anaerobic activity was used as a measure of construct validity for the revised BES dimensions. I expected that anaerobic exercise would be strongly positively associated with body esteem components concerning body strength, and to a lesser degree physical condition (i.e. upper body strength, physical condition). While anaerobic activity is linked to physical condition and fitness, these questions specifically addressed the physical appearance of muscles and a possessing a muscular body.

Measure of physical attractiveness. Questions were developed for the current study to assess participants’ perceptions of their own attractiveness, in particular, facial attractiveness. Participants were asked to indicate the degree to which they agree or disagree with four statements using a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Higher scores indicated a greater degree of satisfaction. A PCA was conducted, and as expected, all items loaded on one component. The model accounted for 65.64% of the total variance. Item loadings can be found after the items: “I am satisfied with my general appearance” (.79), “I consider myself physically attractive” (.86), “I am satisfied with the attractiveness of my face” (.87), and “I wish I could change the way my face looks” (reverse scored) (.70). This measure also demonstrated good internal consistency, $\alpha = .82$. The measure of physical attractiveness was used for construct validity for the revised BES dimensions. I anticipated that this measure would positively correlate with components assessing physical attractiveness and facial attractiveness in both men and women (i.e. physical/sexual attractiveness).

Measure of body size, weight and shape. Questions were developed for the current study to assess participants' perceptions of their own body size, weight, and shape. Participants were asked to indicate the degree to which they agreed or disagreed with statements on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). A PCA was conducted, and as expected, all items loaded on one component. The model accounted for 65.64% of the total variance. Item loadings can be found after the items: "I am satisfied with my weight" (.90), "I am satisfied with the overall shape of my body" (.89), "I am unhappy with my body size because of my weight" (.90) (reverse scored), and "I wish I could change the overall shape of my body" (.85) (reverse scored). Higher scores indicated a greater degree of satisfaction. This measure also demonstrated excellent internal consistency, $\alpha = .91$. The measure of body size, weight, and shape was used as a measure of construct validity for the revised BES components. I expected that these measures would be strongly positively associated with body esteem components concerning weight and body shape (i.e. weight concern). I did not anticipate strong correlations with other components.

Body Shame subscale of the Objectified Body Consciousness Scale (OBC; McKinley & Hyde, 1996). The body shame subscale of the OBC assesses the degree to which women experience body shame, defined as the degree to which a woman believes she is a bad person if she does not fulfill cultural expectations for her body. The subscale contains eight items rated on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). The coefficient alpha for this subscale was $\alpha = .80$.

The body shame subscale was used as a measure of convergent validity with the BES female weight concern subscale. I expected moderate correlations with the female

subscale components assessing weight concern, and less so on components containing items that evaluate physical activity and other measures of attractiveness and sexuality. Because the OBC was created for female samples, I did not expect strong correlations with male BES components. However, given that the items concern weight and fitness, it is entirely possible that this subscale would correlate weakly with body esteem component(s) assessing these areas for men, such as the physical condition component.

Muscularity and Low Body Fat Subscales of the Male Body Attitudes Scale (MBAS; Tylka, Bergeron, & Schwartz, 2005). The muscularity and low body fat subscales of the MBAS assess the degree of satisfaction and preoccupation with muscularity and attitudes toward body fat. The muscularity subscale consists of 14 items and the low body fat subscale consists of eleven items. Participants are asked to rate each item along a 6-point Likert scale (1 = *never* to 6 = *always*). Higher scores reflect more negative body attitudes. The coefficient alphas were: Muscularity $\alpha = .82$ and Low Body Fat $\alpha = .84$.

These subscales were used as measures of convergent validity. I expected strong correlations between the muscularity subscale of the MBAS and body esteem component(s) representative of muscularity and strength (i.e. upper body strength and physical condition). Given that this scale was developed for men, I did not expect strong correlations for female BES components. However, given that some items assess one's perceptions of weight and body shape, it was entirely possible that these subscales would correlate weakly with body esteem component(s) assessing these areas for women, such as the weight concern component.

Demographics. Demographic information collected included age, gender, ethnicity, sexual orientation, height, and weight.

Plan for Data Analysis

Analysis of the BES data was completed in four stages. In the first stage, BES item importance ratings were used as a filter to determine which items to include in the analyses that guided the scale revision. Choosing only the items that men and women rated as ‘moderately important’ or above provided additional confidence that the body parts and functions comprising the revised BES are relevant for men and women in the 21st century. Parallel analyses, as well as examination of the Scree test were then used as guides for component retention (Hayton, Allen & Scarpello, 2004; Velicer, Eaton & Fava, 2000). Then a series of principal components analyses were conducted separately for men and women. An oblique method was employed given that I expected the items to be correlated. I used a promax method of rotation with Kaiser normalization for PCAs of BES data in order to obtain the most distinctive set of components.

After the BES was revised to reflect the most meaningful collection of items, partial confirmatory factor analysis was conducted for the female data. Half the female data for stages one and two of analysis came from Marquette and half came from Penn State University.

In the third phase of the study, norms and subscale correlations were computed. Reliability measures (coefficient alphas) were also determined for all dimensions to ensure that all components on the revised scale were adequately internally consistent. I also examined how different body esteem components related to body mass (Klaczynski et al., 2009; McLaren & Kuh, 2004). I anticipated that for men and women, BMI would

be inversely related to body esteem scores on components that contained body parts and functions which are traditionally malleable as a result of exercise and diet (i.e. for men: physical condition and, to a lesser degree, upper body strength; for women: weight concern and, to a lesser degree, physical condition).

In the final stage of analysis, the additional convergent, divergent, and construct validity measures outlined in the scale descriptions (MBAS, OBC, EDI, SES, RSE, and measures created for this study) were investigated.

RESULTS

Item Analysis

All items for both men and women had total-item correlations at or above .35. These correlations suggest that both the items comprising the original 35, and each new item has the potential to contribute meaningfully to the BES. Means, standard deviations, and item correlations can be found in Table 2.

Importance Threshold and Principal Components Analyses

Male data. As a first step in determining items to be included in the PCA, importance ratings were examined. Importance ratings were obtained for the original 35 items as well as potential new items, which provided very valuable information for considering body parts and functions that have the most meaning for men and women when evaluating their physical selves in the 21st century. As previously mentioned, I utilized importance ratings to determine the inclusion/exclusion criteria for original BES items as well as possible new item additions for the PCAs that defined the revised BES

Table 2

Means, Standard Deviations, and Item Total Correlations for the Male and Female Items of the BES

Item	Female Items		Male Items	
	Mean (SD)	Item-Total Correlation	Mean (SD)	Item-Total Correlation
Body scent	3.74 (.94)	.35	3.74 (.91)	.41
Appetite	3.17 (1.13)	.53	3.53 (.97)	.48
Nose	3.25 (1.13)	.39	3.28 (.91)	.42
Physical stamina	3.23 (1.14)	.52	3.51 (1.13)	.57
Reflexes	3.58 (.90)	.46	3.84 (.96)	.53
Lips	3.82 (.89)	.50	3.48 (.84)	.62
Muscular strength	3.28 (1.10)	.42	3.39 (1.11)	.51
Waist	2.92 (1.23)	.54	3.23 (.99)	.64
Energy level	3.31 (1.11)	.51	3.60 (1.05)	.55
Thighs	2.55 (1.20)	.56	3.29 (.93)	.54
Ears	3.52 (.86)	.46	3.34 (.82)	.60
Biceps	3.16 (.95)	.57	3.25 (1.05)	.54
Chin	3.25 (.87)	.55	3.42 (.83)	.55
Body build	3.04 (1.16)	.62	3.34 (1.07)	.63
Physical coordination	3.53 (1.09)	.51	3.95 (1.02)	.53
Buttocks	3.42 (1.16)	.48	3.51 (.96)	.49
Agility	3.45 (.97)	.58	3.78 (.95)	.59
Width of shoulders	3.37 (.96)	.58	3.66 (.90)	.58
Arms	3.22 (1.08)	.66	3.58 (.96)	.59
Chest/breasts	3.34 (1.22)	.38	3.38 (1.03)	.56
Appearance of eyes	4.17 (.88)	.38	4.02 (.90)	.36
Cheeks/cheekbones	3.68 (.92)	.55	3.55 (.78)	.60
Hips	3.03 (1.18)	.61	3.30 (.78)	.68
Legs	3.14 (1.22)	.58	3.48 (.90)	.49
Figure/Physique	2.99 (1.13)	.65	3.51 (1.03)	.69
Sex drive	3.57 (.90)	.50	3.78 (.90)	.44
Feet	3.14 (1.08)	.40	3.26 (.91)	.42
Sex organs	3.32 (.86)	.50	3.62 (.94)	.50
Appearance of stomach	2.57 (1.22)	.53	3.14 (1.15)	.58
Health	3.59 (1.03)	.52	3.81 (.99)	.57
Sex activities	3.52 (.94)	.46	3.61 (1.02)	.50
Body hair	2.86 (1.02)	.45	3.18 (.99)	.54

Physical condition	3.42 (1.08)	.64	3.70 (1.02)	.64
Face	3.66 (1.00)	.62	3.71 (.88)	.63
Weight	2.79 (1.22)	.56	3.42 (1.10)	.58
*Head hair	3.97 (.96)	.40	3.82 (.91)	.52
*Facial hair	3.05 (.94)	.44	3.38 (.99)	.42
*Eyelashes/Eyebrows	3.71 (.94)	.43	3.46 (.85)	.52
*Forehead	3.38 (.86)	.55	3.30 (.75)	.60
*Neck	3.46 (.83)	.40	3.34 (.78)	.64
*Hands	3.47 (.92)	.52	3.42 (.89)	.56
*Calves	3.45 (1.03)	.57	3.49 (.91)	.46
*Ankles	3.37 (.92)	.58	3.28 (.80)	.53
*Perspiration	2.70 (1.02)	.44	2.84 (1.04)	.45
*Speed	3.16 (1.04)	.54	3.63 (1.06)	.62
*Flexibility	3.37 (1.11)	.40	3.13 (1.07)	.39
*Metabolism	3.04 (1.17)	.52	3.64 (1.14)	.53
*Skin Condition	3.17 (1.20)	.44	3.34 (1.04)	.48
*Skin Color	3.55 (1.04)	.53	3.62 (.94)	.43
*Fingernails	3.42 (1.06)	.43	3.29 (.84)	.46
*Teeth	3.55 (1.05)	.45	3.34 (.94)	.52
*Back	3.33 (.99)	.57	3.38 (.90)	.57
*Sexual Performance	3.58 (.88)	.43	3.69 (.95)	.46

Note. An asterisk (*) denotes a potential item addition to the scale.

items for men. In order to retain a significant number of indicators for multiple dimensions as well as ensure that all items were a bit above the midpoint (rating of 3) of this importance scale and therefore suggesting that all items included in the analyses were considered above moderate importance, I set the inclusion criterion at 3.25. Importance rating means for each item are found in Table 3.

For the male data, 24 of the original 35 items were included in the current analyses (*body scent, appetite, physical stamina, reflexes, muscular strength, waist, energy level, biceps, body build, physical coordination, agility, arms, chest/breasts, health, sex activities, physical condition, face, weight, appearance of stomach, appetite, sex drive, and sex organs*). Eight new items were also included in the analyses (*head hair,*

Table 3

Means, Standard Deviations, and Item Total Correlations for Male and Female BES Importance Ratings

Item	Female Items		Male Items	
	Mean (SD)	Item-Total Correlation	Mean (SD)	Item-Total Correlation
Body scent	4.13(.92)	.32	3.97 (.94)	.37
Appetite	3.48 (1.06)	.27	3.26 (1.06)	.33
Nose	3.14 (.99)	.48	2.92 (.98)	.50
Physical stamina	3.81 (1.01)	.37	4.15 (.78)	.45
Reflexes	3.27 (1.11)	.39	3.70 (1.06)	.46
Lips	3.39 (.89)	.56	3.00 (1.03)	.59
Muscular strength	3.63 (1.10)	.35	4.14 (.84)	.46
Waist	4.02 (1.23)	.51	3.32 (1.09)	.46
Energy level	4.11 (1.11)	.27	4.22 (.76)	.36
Thighs	3.86 (1.20)	.54	3.12 (.98)	.60
Ears	2.67 (.86)	.52	2.73 (1.05)	.56
Biceps	3.06 (.95)	.43	3.76 (.91)	.51
Chin	2.76 (.87)	.52	2.81 (1.06)	.59
Body build	3.90 (1.16)	.43	4.19 (.77)	.51
Physical coordination	3.74 (1.09)	.42	4.11 (.96)	.52
Buttocks	3.90 (1.16)	.53	3.21 (1.09)	.49
Agility	3.42 (.97)	.46	3.77 (.99)	.56
Width of shoulders	2.80 (.96)	.52	3.13 (1.10)	.64
Arms	3.39 (1.08)	.59	3.65 (1.00)	.64
Chest/breasts	3.89 (1.22)	.54	3.74 (1.03)	.52
Appearance of eyes	4.09 (.88)	.50	3.62 (1.17)	.44
Cheeks/cheekbones	3.27 (.92)	.53	2.86 (1.06)	.50
Hips	3.74 (1.18)	.60	2.85 (1.02)	.53
Legs	4.00 (1.22)	.60	3.32 (1.06)	.62
Figure/Physique	4.36 (1.13)	.56	4.23 (.80)	.47
Sex drive	3.58 (.90)	.54	3.77 (.99)	.42
Feet	2.61 (1.08)	.51	2.53 (1.03)	.52
Sex organs	3.21 (.86)	.52	3.89 (.95)	.45
Appearance of stomach	4.24 (1.22)	.53	3.94 (.94)	.45
Health	4.56 (1.03)	.31	4.56 (.74)	.28
Sex activities	3.55 (.94)	.51	3.73 (1.04)	.41
Body hair	3.28 (1.02)	.57	3.13 (.99)	.48

Physical condition	4.38 (1.08)	.30	4.44 (.74)	.47
Face	4.42 (1.00)	.45	4.11 (.88)	.39
Weight	4.35 (1.22)	.35	4.07 (.93)	.51
*Head hair	4.05 (.96)	.49	3.82 (1.02)	.38
*Facial hair	3.17 (.94)	.33	3.15 (1.09)	.41
*Eyelashes/Eyebrows	3.47 (.94)	.50	2.70 (1.01)	.56
*Forehead	2.70 (.86)	.52	2.61 (1.05)	.61
*Neck	2.67 (.83)	.54	2.50 (1.03)	.61
*Hands	2.93 (.92)	.51	2.77 (1.10)	.58
*Calves	3.19 (1.03)	.58	2.95 (1.10)	.66
*Ankles	2.69 (.92)	.60	2.53 (1.05)	.57
*Perspiration	3.58 (1.02)	.33	3.50 (1.01)	.43
*Speed	3.23 (1.04)	.46	3.72 (1.07)	.59
*Flexibility	3.61 (1.11)	.53	3.52 (1.04)	.53
*Metabolism	3.96 (1.17)	.40	3.76 (1.06)	.52
*Skin Condition	4.29 (1.20)	.45	3.86 (1.00)	.52
*Skin Color	3.08 (1.04)	.40	2.94 (1.29)	.47
*Fingernails	2.85 (1.06)	.57	2.68 (1.10)	.54
*Teeth	4.30 (1.05)	.46	4.08 (.92)	.44
*Back	3.12 (.99)	.48	3.05 (1.16)	.61
*Sexual Performance	3.65 (.88)	.49	3.96 (.98)	.45

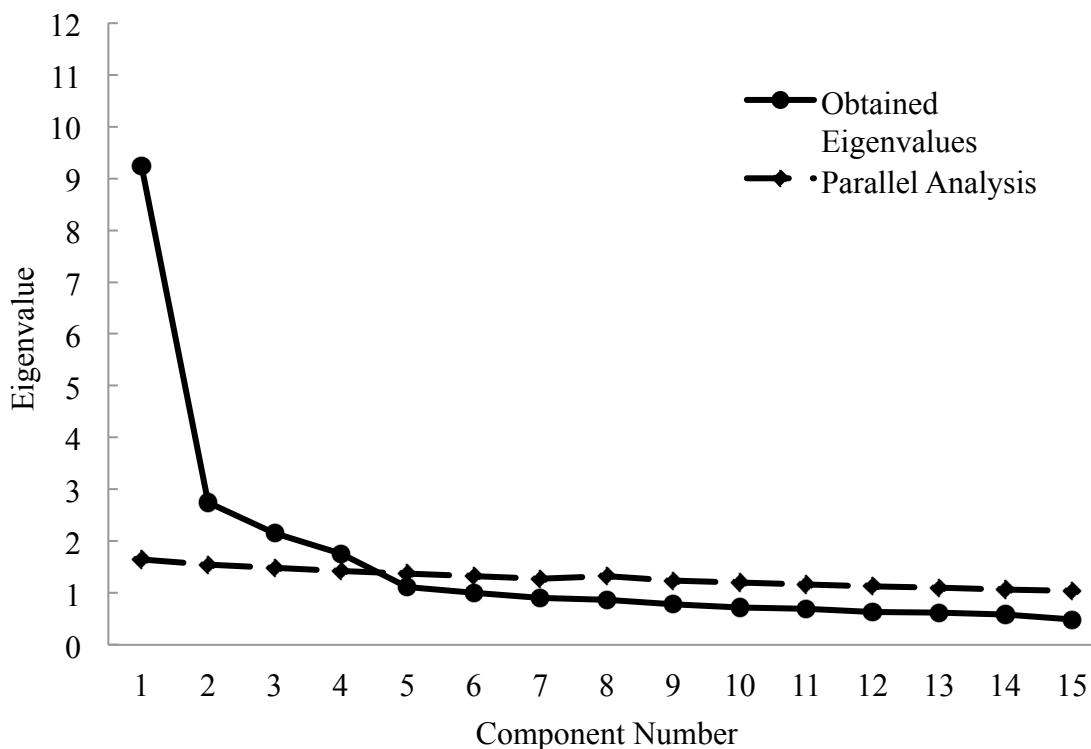
Note. An asterisk (*) denotes a potential item addition to the scale. (*perspiration, speed, flexibility, metabolism, skin condition, teeth, and sexual performance*).

After items were determined for inclusion in the PCA based on the importance ratings, parallel analysis was conducted to facilitate in determining component retention.¹ Parallel analysis utilizing 500 random datasets with 95th percentile retention for the male data, as well as the Scree Test suggested four-component retention (See Figure 1). The

¹ Although principal components analysis was previously conducted without initially separating items by gender in 2010, those 2010 findings strongly indicated that the BES should continue to have separate components for men and women, which guided my current analysis strategy. However, out of curiosity, a PCA involving both male and female respondents was conducted for the current data. As with the 2010 analyses, and consistent with Franzoi and Shields' original 1984 analyses, the structure and composition of the suggested components in this current PCA confirmed my decision to continue to utilize a gender-specific framework in conducting further PCAs.

Figure 1

Scree Test and Parallel Analysis for the Initial Male BES Data



PCA model accounted for 53.89% of the total variance. In order to make the revised BES components as strong and theoretically meaningful as possible, a minimum-loading criterion of .40 was implemented. The criterion in the current analyses was more conservative than the criterion used in 1984. With the additional information of the importance ratings, I expected that the resulting collection of items that met minimum-loading criteria for each component would be more representative of each theoretical construct than in the past.

The first component contained 14 body parts and functions (*physical stamina, reflexes, waist, energy level, physical coordination, agility, figure/physique, appearance of stomach, health, physical condition, weight, speed, metabolism, and appetite*) that

change with exercise and physical conditioning. The second component contained seven items (*appetite, body scent, face, head hair, perspiration, skin condition, and teeth*) that consisted of facial features and other body parts that cannot be altered through traditional diet or exercise. The third component contained five body parts and functions (*muscular strength, biceps, body build, arms, and chest or breasts*) that assess muscularity and upper body strength. The fourth component contained four body parts and functions (*sex drive, sex organs, sex activities, and sexual performance*) that assess sexuality.

Component loadings can be found in Table 4. Three items did not meet minimum loading criteria (*appearance of eyes, legs, and flexibility*) and were therefore removed from the next analysis.

Because three items were removed, a second parallel analysis was conducted with the remaining 29 items. Parallel analysis well as the Scree Test suggested four-component retention (See Figure 2). The PCA model accounted for 57.16% of the total variance. The minimum-loading criterion remained at .40. The first component contained 13 of the 14 items described in the first PCA. This component continued to contain body parts and functions that measure physical activity, exercise, and fitness, and resembles the Physical Condition component of the original BES for men. This revised component will continue to be labeled *Physical Condition*. *Appetite* no longer met the minimum-loading criterion on this component, and met minimum loading criteria only on the second component. The second component contained the same seven items as the first PCA. This component contained body parts and functions measuring facial characteristics, and body parts and functions that cannot traditionally be altered through exercise or fitness, yet contribute to perceptions of attractiveness. This component

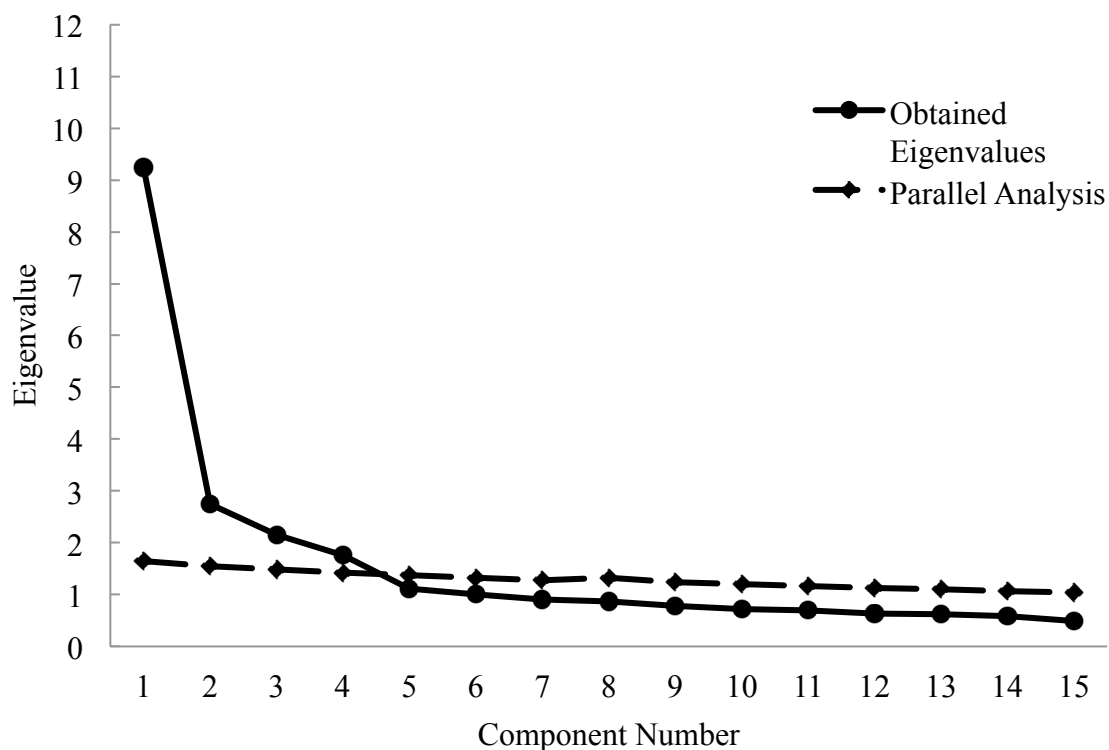
Table 4

BES Component Loadings from the Initial Male BES Data

Item	Physical Condition	Physical Attractiveness	Upper Body Strength	Sexuality
Physical Stamina	.66	-.13	.22	.03
Reflexes	.60	-.29	.01	.37
Waist	.61	.34	-.02	-.13
Energy Level	.65	-.03	.07	.02
Physical Coordination	.57	-.31	.18	.28
Agility	.82	-.22	.01	.12
Figure/Physique	.57	.16	.25	-.02
Appearance of Stomach	.73	.19	-.12	-.06
Health	.71	.09	.01	-.13
Physical Condition	.75	.01	.19	-.09
Weight	.60	.30	-.01	-.12
Speed	.76	-.02	-.02	.06
Metabolism	.84	.20	-.38	-.05
Appetite	.40	.44	-.20	-.03
Body Scent	-.19	.65	.10	.13
Face	.18	.44	.09	.23
Head Hair	-.03	.46	.17	.17
Perspiration	.16	.56	-.05	-.06
Skin Condition	-.01	.58	-.01	.16
Teeth	-.03	.62	.10	.11
Muscular Strength	-.07	-.03	.94	-.03
Biceps	.03	.02	.88	-.14
Body Build	.34	-.02	.54	.03
Arms	-.06	.13	.83	.01
Chest/Breasts	.12	.27	.53	-.05
Sex Drive	-.02	.05	.02	.76
Sex Organs	.03	.12	-.07	.74
Sex Activities	-.003	.17	-.08	.80
Sexual Performance	-.02	.11	-.12	.86
Appearance of eyes	-.13	.29	.16	.32
Legs	.26	.28	.09	-.03
Flexibility	.34	.13	.04	.06

Note. Loadings at or above .40 are in bold.

Figure 2

Scree Test and Parallel Analysis for the Revised Male BES Data

resembles the Physical Attractiveness component of the original BES. This revised component will continue to be labeled *Physical Attractiveness*. The third component contained the same five items on the first PCA. These body parts and functions appeared to measure strength and muscularity of the upper body. This component closely resembles the Upper Body Strength component on the original BES. Therefore, the revised component will continue to be labeled *Upper Body Strength*. The fourth component contained the same four items on the first PCA. All items contribute to evaluations of sexual body parts and functions. Due to the content of the items on this

component, the label for this component was *Sexuality*. This was a significant change from the original BES. These body parts and functions met minimum loading criteria either on the physical attractiveness or upper body strength components on the original BES. Component loadings can be found in Table 5.

Female data. In determining inclusion/exclusion criteria for the female data, I also utilized importance ratings set at 3.25 for the original 35 items as well as the potential new items. Twenty-eight of the original 35 items were included in the analysis (*body scent, appetite, physical stamina, reflexes, lips, muscular strength, waist, energy level, thighs, body build, physical coordination, buttocks, agility, arms, chest/breasts, appearance of eyes, cheeks/cheekbones, hips, legs, figure or physique, sex drive, appearance of stomach, health, sex activities, body hair, physical condition, face, weight*). Eight new items were also included in the analyses (*head hair, eyelashes/eyebrows, perspiration, flexibility, metabolism, skin condition, teeth, and sexual performance*).

Parallel analysis for the female data, as well as the Scree Test suggested four-component retention (See Figure 3). The PCA model accounted for 48.79% of the total variance. A minimum-loading criterion of .40 was implemented to maintain consistency with the male BES data. The first component contained eleven items (*appetite, waist, thighs, body build, arms, hips, legs, figure/physique, appearance of stomach, weight, and metabolism*). This component appeared to contain body parts that fluctuate with weight and could be altered through diet and exercise. The second component contained eight items (*physical stamina, reflexes, muscular strength, energy level, physical coordination, agility, health, physical condition*), which consisted of body parts and functions that

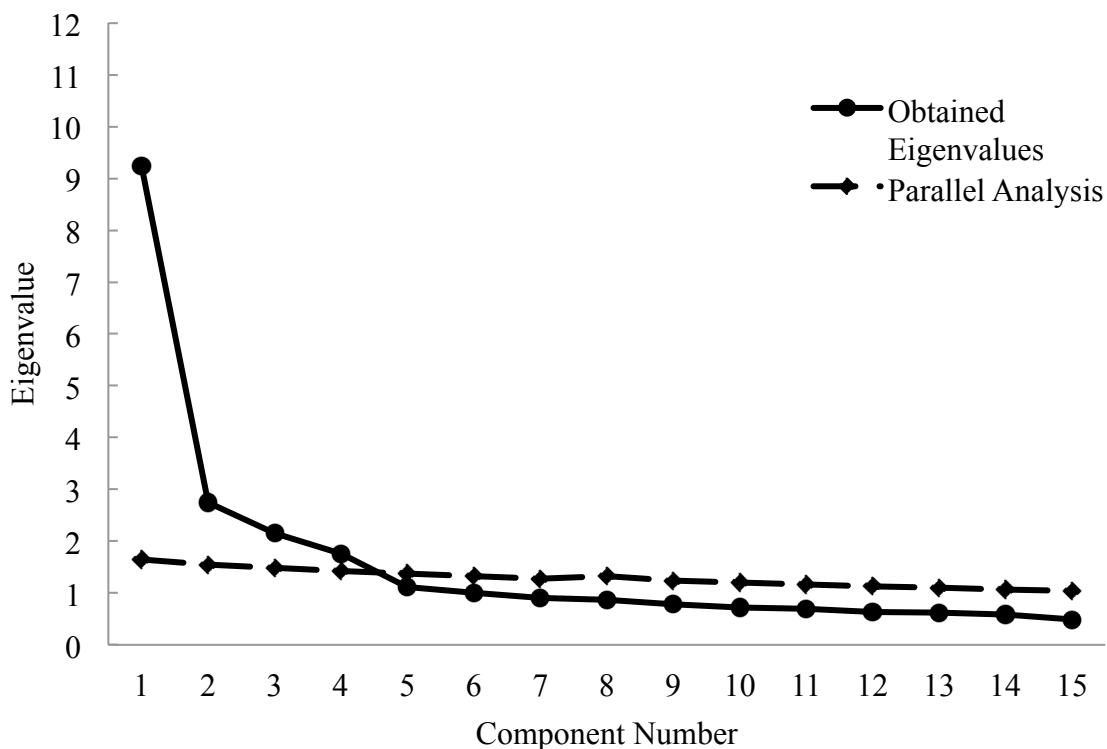
Table 5

BES Component Loadings from the Revised Male BES Data

Item	Physical Condition	Physical Attractiveness	Upper Body Strength	Sexuality
Physical Stamina	.66	-.10	.22	.02
Reflexes	.66	-.31	-.01	.35
Waist	.55	.39	-.01	-.14
Energy Level	.63	-.02	.08	.02
Physical Coordination	.64	-.33	.15	.25
Agility	.86	-.22	.002	.10
Figure/Physique	.55	.20	.25	-.01
Appearance of Stomach	.67	.25	-.10	-.07
Health	.68	.13	.02	-.13
Physical Condition	.73	.03	.20	-.10
Weight	.55	.35	-.003	-.13
Speed	.76	-.02	-.02	.06
Metabolism	.81	.24	-.38	-.06
Appetite	.35	.48	-.19	-.02
Body Scent	-.23	.65	.11	.15
Face	.17	.45	.10	.22
Head Hair	.01	.42	.16	.15
Perspiration	.08	.57	-.03	-.01
Skin Condition	-.05	.59	.004	.18
Teeth	-.09	.62	.13	.14
Muscular Strength	-.06	-.04	.93	-.02
Biceps	.03	.02	.88	-.12
Body Build	.33	.01	.54	.02
Arms	-.05	.11	.83	.02
Chest/Breasts	.10	.29	.53	-.06
Sex Drive	-.001	.07	.04	.74
Sex Organs	.03	.14	-.05	.73
Sex Activities	-.01	.20	-.06	.79
Sexual Performance	-.02	.14	-.10	.85

Note. Loadings at or above .40 are in bold.

Figure 3

Scree Test and Parallel Analysis for the Initial Female BES Data

reflect physical condition, exercise and fitness. Component three contained seven items (*chest/breasts, appearance of eyes, cheeks/cheekbones, face, head hair, eyelashes/eyebrows, and skin condition*), which consisted of facial features and other body parts that cannot be altered through traditional means. The fourth component (*sex drive, sex activities, and sexual performance*) contained three items that assess sexual body parts and functions. Component loadings can be found in Table 6. Seven items did not meet minimum loading criteria (*body scent, lips, buttocks, body hair, perspiration, flexibility, and teeth*) and were therefore removed from the next analysis.

Because seven items were removed, a second parallel analysis was conducted with the remaining 29 items. Parallel analysis, as well as the Scree Test, suggested a four-

Table 6

BES Component Loadings from the Initial Female BES Data

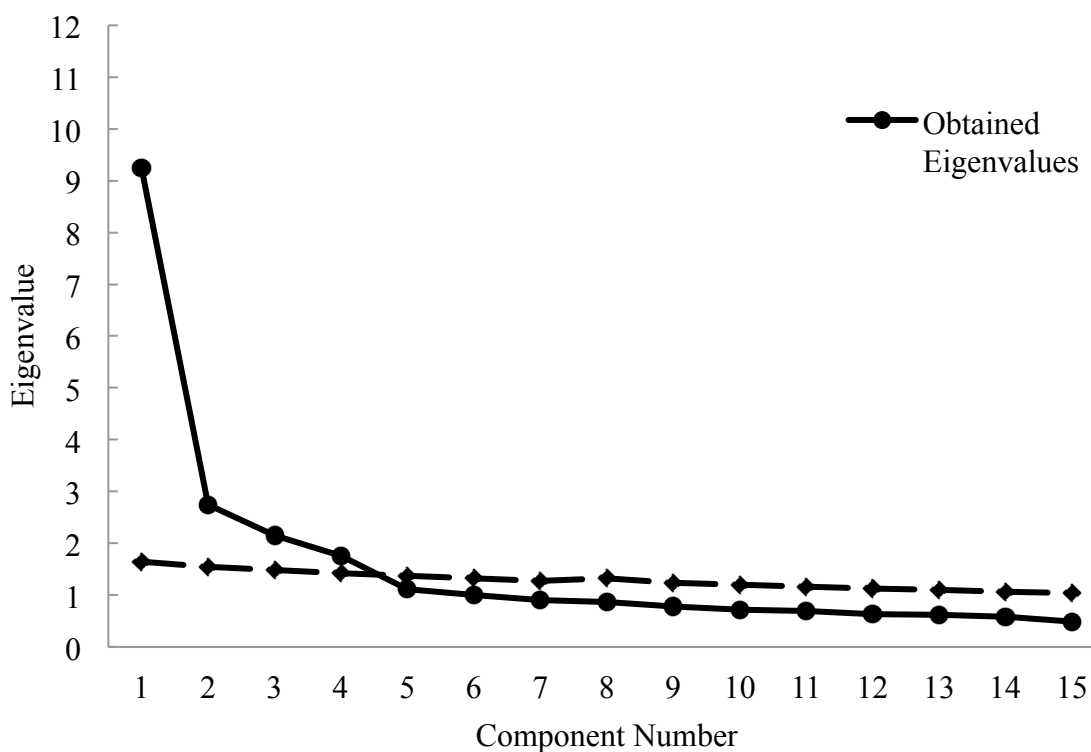
Item	Weight Concern	Physical Condition	Physical Attractiveness	Sexuality
Appetite	.44	.09	.04	.06
Waist	.81	-.002	-.13	.02
Thighs	.79	-.06	.07	-.12
Body Build	.76	.05	-.01	-.02
Arms	.46	.14	.13	.07
Hips	.63	-.08	.27	-.07
Legs	.64	-.12	.15	.02
Figure/Physique	.76	.09	-.01	.06
Appearance of Stomach	.84	.004	-.20	.04
Weight	.92	-.06	-.09	-.05
Metabolism	.82	-.09	-.02	-.03
Physical Stamina	.14	.82	-.18	-.06
Reflexes	-.20	.75	.07	-.04
Muscular Strength	-.13	.78	-.12	.06
Energy Level	.32	.47	-.004	-.06
Physical Coordination	-.09	.73	.17	-.10
Agility	-.02	.82	.05	-.05
Health	.17	.46	-.09	.20
Physical Condition	.24	.64	-.02	.03
Chest/Breasts	-.04	-.02	.56	.08
Appearance of Eyes	-.07	-.02	.77	-.16
Cheek/Cheekbones	.06	-.001	.74	-.01
Face	.18	-.05	.60	.14
Head Hair	-.10	.01	.60	.07
Eyelashes/Eyebrows	.003	-.05	.75	-.11
Skin Condition	.12	-.07	.52	.02
Sex Drive	.005	-.01	-.04	.85
Sex Activities	.04	-.08	-.04	.89
Sexual Performance	-.12	.002	-.03	.89
Body scent	-.11	.18	.36	.16
Lips	-.04	.17	.30	.33
Buttocks	.16	.21	.24	.15
Body Hair	.19	-.05	.14	.34
Perspiration	.35	-.03	.20	.05
Flexibility	-.09	.39	.26	-.02
Teeth	.06	.22	.37	-.14

Note. Loadings at or above .40 are in bold.

component retention (See Figure 4). The PCA model accounted for 54.79% of the total variance. The minimum-loading criterion remained at .40.

Figure 4

Scree Test and Parallel Analysis for the Revised Female BES Data



The first component contained the same eleven items at the first PCA. This component closely resembled the Weight Concern component on the original BES. Therefore, this component will continue to be labeled *Weight Concern*. The second component contained the same eight items as the first PCA. This component closely resembled the original Physical Condition component of the original BES, so the revised component will continue to be labeled *Physical Condition*. The third component contained the same seven items as the first PCA. This component contained body parts

and functions measuring facial characteristics, and body parts and functions that cannot traditionally be altered through diet or exercise, yet contribute to perceptions of attractiveness. Items assessing sexuality also met minimum loading criteria on the dimension closely resembling this collection of items on the original BES. This component was previously labeled Sexual Attractiveness. However, the items assessing sexuality have now been divided into a separate component, suggesting that this component more closely resembles the male Physical Attractiveness component. For these reasons, this revised component will also be labeled *Physical* Attractiveness. The fourth component contained the same three items on the first PCA. All items contribute to evaluations of sexual body parts and functions. Due to the content of the items on this component, the label for this component will be *Sexuality*. Component loadings can be found in Table 7.

Partial Confirmatory Factor Analysis for Female Data

Partial confirmatory factor analysis was conducted for the female data to provide insight into the patterns of loadings obtained through the PCAs by testing the fit of the conceptual model to the data. Indices for the female data can be found in Table 8. The last two indices (RSMEA and SRMR) are measures of “absolute close-fit” which indicate the overall size of the residual correlations (Gignac, 2009; Hoelzle & Meyer, 2013). Values at or less than .06 and .08, respectively, indicate acceptable levels of fit. The first three indices (NFI, TLI and CFI) are measure of “incremental close fit,” which indicate the size of the residual correlations relative to the size of the original correlations (Gignac, 2009; Hoelzle & Meyer, 2013). Values of .95 or larger indicate an acceptable level of fit. While the measures of incremental close fit do not approximate an acceptable

Table 7

BES Component Loadings from the Revised Female BES Data

Item	Weight Concern	Physical Condition	Physical Attractiveness	Sexuality
Appetite	.48	.09	<.001	.05
Waist	.82	-.03	-.12	.03
Thighs	.78	-.05	.07	-.11
Body Build	.76	.05	.01	-.02
Arms	.45	.15	.14	.09
Hips	.64	-.07	.26	-.07
Legs	.64	-.12	.16	.03
Figure/Physique	.75	.10	.01	.05
Appearance of Stomach	.84	-.01	-.18	.04
Weight	.91	-.06	-.07	-.04
Metabolism	.81	-.08	-.02	-.03
Physical Stamina	.14	.80	-.19	-.04
Reflexes	-.18	.74	.07	-.05
Muscular Strength	-.15	.76	-.17	.10
Energy Level	.32	.49	-.01	-.08
Physical Coordination	.11	.74	.20	-.08
Agility	-.04	.82	.09	-.05
Health	.15	.49	-.06	.21
Physical Condition	.22	.65	.01	.03
Chest/Breasts	-.05	.04	.58	.05
Appearance of Eyes	-.09	.003	.76	-.09
Cheek/Cheekbones	.04	.04	.74	<.001
Face	.18	-.02	.61	.12
Head Hair	-.09	.03	.60	.09
Eyelashes/Eyebrows	.004	-.02	.70	-.07
Skin Condition	.10	-.05	.54	.05
Sex Drive	.03	-.001	-.01	.84
Sex Activities	.03	-.05	.02	.87
Sexual Performance	-.10	.02	.02	.87

Note. Loadings at or above .40 are in bold.

Table 8

Model Fit Statistics and Indexes Associated with Four-component Model using Female Data

Symbol	Three-component Structure
χ^2 Original	4276.00
df Original	406
χ^2 Residual	641.36
df Residual	296
NFI	.85
CFI	.91
TLI	.79
RMSEA	.06
SRMR	.06

Note. NFI = normed fit index; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean residual.

standard, the measures of absolute close fit suggest that the model is reasonably well fitting. It remains uncertain whether this model will fare well when tested with CFA. Male data will continue to be obtained and PCFA will be conducted. PCFA results from the male data will contribute significantly to information regarding whether this model could fare well when tested with CFA. If some measures of fit using the male data also suggest the possibility that these models could fare well when tested with CFA, CFA will be conducted for the male and female data.

Internal Consistency, Subscale Correlations, and Norms for the Revised BES Dimensions

Internal consistency ratings for the revised female BES components are as follows: physical attractiveness $\alpha = .78$, weight concern $\alpha = .91$, sexuality $\alpha = .84$, and physical condition $\alpha = .86$. Internal consistency for the revised male BES components

are: physical attractiveness $\alpha = .78$, upper body strength $\alpha = .87$, physical condition $\alpha = .92$, and sexuality, $\alpha = .85$. These alphas indicate that all revised components are internally consistent.

Subscale correlations for the data can be found in Table 9. The subscale correlations for men ranged from $r = .39$ to $r = .62$, and the subscale correlations for women ranged from $r = .30$ to $r = .52$ suggesting that the components are significantly related, but still contain items representing unique dimensions of body esteem.

Norms were created for the components. The means and standard deviations are found in Table 10. Higher numbers represent more positive body esteem.

Table 9

Intercorrelations for the Revised BES Subscales

	Physical Attractiveness / Physical Attractiveness	Weight Concern / Upper Body Strength	Physical Condition / Physical Condition	Sexuality / Sexuality
Physical Attractiveness/ Physical Attractiveness	-----	.43	.40	.33
Weight Concern / Upper Body Strength	.48	-----	.52	.30
Physical Condition / Physical Condition	.60	.62	-----	.34
Sexuality / Sexuality	.43	.39	.42	-----

Note. Female subscale names and values are above the diagonal and male subscale names and values are below the diagonal.

Table 10

Body Item Means and Standard Deviations for the Revised BES Items

	Female Data		Male Data	
	M	SD	M	SD
Physical Attractiveness / Physical Attractiveness	25.37	4.74	24.21	4.43
Weight Concern / Upper Body Strength	32.40	9.32	16.87	4.29
Physical Condition / Physical Condition	27.33	5.94	46.46	9.79
Sexuality / Sexuality	10.54	2.35	14.52	3.27

Note. Standard Deviations are in parentheses ().

Validity

In addition to the measures of internal consistency, measures of validity were computed in a similar fashion to the original BES in order to determine if the revised BES continues to assess meaningful and culturally relevant measures of body esteem. First, I examined the relationship between BMI and the body esteem components for men and women. I anticipated that BMI would be inversely related to body esteem components that contained body parts and functions that change as a result of exercise and diet (i.e. the physical condition component, and perhaps weakly with the upper body strength component for men; the weight concern component, and perhaps weakly with

the physical condition component for women). For men, as predicted, BMI correlated significantly with the physical condition component, $r = -.38, p < .001$. BMI also correlated significantly, but weakly with upper body strength: $r = .10, p = .05$. As expected, BMI was not correlated significantly with sexuality: $r = -.01, p = .81$). The same pattern emerged for the female data. As predicted, BMI correlated most strongly with the weight concern component, $r = -.36, p < .001$ and was correlated significantly, but weakly with the physical condition component, $r = -.12, p < .01$. BMI was not significantly correlated with the revised sexuality component $r = -.08, p = .06$. Interestingly, BMI was also inversely correlated with the physical attractiveness components for men and women, $r = .10, p = .02$ and $r = -.13, p = .02$, respectively.

Additionally, because body esteem is viewed as a part of overall self-esteem, the RSE (Rosenberg, 1965) was used as a measure of convergent validity with the revised BES components such that body esteem scores for every component for women and men should correlate positively with RSE scores. As expected, and consistent with Franzoi and Shields' (1984) original BES findings, the RSE correlated significantly with all male and female BES revised components. Correlations for the following measures of validity are found in Table 11 for male data and Table 12 for female data.

I also anticipated significant positive correlations between the SES (Snell & Papini, 1989) and the revised BES dimensions assessing sexuality. For men, the SES did correlate most strongly with the revised sexuality dimension. However, it was somewhat surprising that the SES also correlated significantly, though weakly, with the physical attractiveness and physical condition components. For women, as expected, the SES correlated most strongly with the revised sexuality component. Interestingly, the SES

Table 11

Correlations Between Validity Measures and Revised BES Components for Men

Validity Measure	Men			
	Physical Attractiveness	Upper Body Strength	Physical Condition	Sexuality
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
RSE	.39***	.32***	.38***	.38***
SES	.25**	.15	.26**	.73***
EDI				
Drive for Thinness	-.18	-.01	-.44***	-.04
Bulimia	-.25**	-.07	-.21*	-.02
Body Dissatisfaction	-.26**	-.30**	-.62***	-.11
Aerobic Activity	.33***	.41***	.64***	.13
Anaerobic Activity	.22*	.62***	.37***	.04
Physical Attractiveness	.56***	.40***	.53***	.43***
Body Size, Shape, and Weight	.35***	.41***	.72***	.13
OBC: Body Shame	-.26**	-.05	-.35***	-.14
MBAS				
Muscularity	-.32***	-.39***	-.53***	-.36***
Low Body Fat	-.29**	-.21*	-.56***	-.10

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. RSE: Rosenberg Self-esteem Scale; SES: Sexual Esteem Scale; EDI: Eating Disorders Inventory; OBC: Objectified Body Consciousness Scale; MBAS: Male Body Attitudes Scale

Table 12

Correlations Between Validity Measures and Revised BES Components for Women

Validity Measure	Women			
	Physical Attractiveness	Weight Concern	Physical Condition	Sexuality
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
RSE	.27***	.33***	.32***	.23**
SES	.17*	.13	.11	.56***
EDI				
Drive for Thinness	-.11	-.48***	-.05	-.08
Bulimia	-.15*	-.23**	-.16*	-.15*
Body Dissatisfaction	-.18*	-.72***	-.15*	-.17*
Aerobic Activity	-.01	.23**	.55***	.10
Anaerobic Activity	-.03	-.01	.46***	.16*
Physical Attractiveness	.45***	.42***	.27**	.29***
Body Size, Shape, and Weight	.13	.70*	.13	.14*
OBC: Body Shame	-.09	-.44***	-.11	-.17*
MBAS				
Muscularity	-.19*	-.54***	-.25**	-.19*
Low Body Fat	-.10	-.60***	-.14	-.14

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. RSE: Rosenberg Self-esteem Scale; SES: Sexual Esteem Scale; EDI: Eating Disorders Inventory; OBC: Objectified Body Consciousness Scale; MBAS: Male Body Attitudes Scale

also correlated significantly with the physical attractiveness component. The SES did not correlate significantly with the other components for men and women.

The EDI (Garner, 1991) subscales of Drive for Thinness, Bulimia, and Body Dissatisfaction were used as measures of construct validity for the revised female BES components. I expected that each of the EDI subscales would correlate most strongly with the BES weight concern component because it contains body parts and functions

that can be traditionally altered through food intake and exercise. As expected, the Drive for Thinness subscale correlated with the weight concern component, such that a higher weight concern score was related to stronger endorsement for a desire to be thin. This subscale was not correlated significantly with the other BES components for women. Similarly, the Bulimia subscale of the EDI correlated most strongly with the weight concern component. The EDI Body Dissatisfaction subscale also correlated most strongly with weight concern, as anticipated. This Body Dissatisfaction and Bulimia subscales also correlated significantly, but weakly with the three other components.

While the EDI subscales were not used for construct validity for 1984 male BES components like they were for the 1984 female components (Thomas & Freeman, 1991), I anticipated that positive correlations could occur between the EDI subscales and revised male BES components that contained body parts and functions that can traditionally be altered through diet or exercise, such as the physical condition component. As anticipated, the Drive for Thinness subscale correlated significantly with the male physical condition component of the revised BES. This subscale was not correlated significantly with the other BES components for men. Similarly, the Bulimia subscale correlated significantly with the revised physical condition component. The Body Dissatisfaction subscale of the EDI also correlated most strongly with the physical condition component. Both the Bulimia and Body Dissatisfaction subscales also correlated with the physical attractiveness component. The Body Dissatisfaction subscale also correlated significantly with upper body strength revised component.

The measure of aerobic activity was created for assessing the content validity of aerobic exercise and fitness with the BES components that assess physical conditioning

and cardiovascular-based exercises. I anticipated that this measure would correlate most strongly with the female and male physical condition components of the revised BES, and perhaps less so other components alterable through exercise (i.e. upper body strength for men and weight concern for women). For men, the measure of aerobic activity correlated most strongly with the physical condition component and upper body strength component, as anticipated. However, this measure also correlated significantly with the physical attractiveness component. For the female revised BES components, the measure of aerobic activity was most strongly correlated with the physical condition component, and was weakly correlated with the weight concern component, as anticipated. This subscale was not significantly correlated with other revised components.

The measure of anaerobic activity was created for assessing the content validity of anaerobic exercise and strength building practices with the revised BES components that assess upper body strength, and, to a lesser extent, physical conditioning. I anticipated that this measure would correlate most strongly with the upper body strength dimension of the male revised BES components and the physical conditioning dimension of the female revised BES components. For the male BES components, the measure of anaerobic activity correlated most strongly with the upper body strength component, as expected. The measure of anaerobic activity also correlated significantly with the physical condition dimension. Interestingly, the measure of aerobic activity was also significantly correlated with the physical attractiveness dimension. For the revised female BES components, the measure of anaerobic activity correlated most strongly with physical condition, as predicted. However, the measure of anaerobic activity and the

revised sexuality component were also significantly correlated. Other correlations were not significant with this measure.

The measure of physical attractiveness was created for assessing the content validity of physical attractiveness (with an emphasis on facial attractiveness) with BES components that assess body parts and functions that contribute to perceptions of attractiveness and beauty for men and women. I anticipated that this measure would correlate most strongly with the revised physical attractiveness components. For the revised male BES components, the measure of physical attractiveness correlated most strongly with the physical attractiveness dimension, as predicted. The measure of physical attractiveness also correlated significantly but less strongly with the other three components. A similar pattern emerged for correlations between the measure of physical attractiveness and the revised female BES components, such that the correlation was strongest with the physical attractiveness component. The measure of physical attractiveness also correlated moderately with the other three components.

The measure of body size, shape and weight was created for assessing the content validity of an assessment of overall body size and shape with BES components that assess items that can be changed through diet and exercise. I anticipated that this measure would correlate most strongly with the weight concern component of the revised BES for women, and the physical condition component for men. As expected the measure of body size, shape and weight correlated most strongly with the physical condition dimension for men. The measure of body size, shape and weight also correlated significantly with the revised upper body strength and physical attractiveness components for men. For women, the measure of body size, weight, and shape correlated most strongly with the revised

weight concern component, as predicted. Interestingly, a weak correlation was noticed between this measure and the revised sexuality component. The measure of body size, weight, and shape was not correlated with physical condition or physical attractiveness components, as expected.

The Body Shame subscale of the OBC (McKinley & Hyde, 1996) was developed specifically for women to assess the degree of shame they feel when failing to meet perceived cultural expectations for their bodies. Based on the nature of the questions assessing diet and exercise as a means of shaping one's body to meet these ideals, I anticipated a strong correlation with the revised female BES component of weight concern. For the female data, the Body Shame subscale of the OBC correlated significantly with weight concern dimension, as expected. A weak correlation was also detected between the body shame subscale and the revised sexuality component for women. Although the OBC was developed for women, some items on this subscale concern weight and fitness, so it was entirely possible that this subscale would correlate weakly with body esteem component(s) assessing these areas for men, such as the physical condition component. Weak but significant correlations were evident between the OBC subscale and the male physical attractiveness and physical condition components, such that low body esteem scores were associated with higher levels of body shame.

The Muscularity and Low Body Fat subscales of the MBAS (Tylka et al., 2005) assess the degree of satisfaction and preoccupation with muscularity and attitudes toward body fat. I expected strong correlations between the muscularity and low body fat subscales of the MBAS and body esteem components that assess muscularity and

strength, such as the upper body strength component, and the physical condition component for men. As expected, the correlations were strongest between the muscularity subscale and the revised physical condition and upper body strength components. The low body fat subscale also correlated most strongly with the physical condition and upper body strength components. Interestingly, the low body fat subscale also correlated significantly with the physical attractiveness component. The muscularity subscale also correlated significantly with the revised physical attractiveness and sexuality components.

Given that this scale was developed for men, I did not expect strong correlations between the MBAS subscales and the revised female BES components. However, some items on the MBAS subscales assess perceptions of weight and body shape. Therefore, it was possible that these subscales could correlate with body esteem components assessing these areas for women, such as the weight concern and physical condition components. For women, the low body fat subscale and muscularity subscale correlated significantly with the weight concern component. The muscularity subscale also correlated significantly with the physical condition component. Interestingly, the muscularity subscale correlated significantly with the physical attractiveness and sexuality components.

DISCUSSION

This study had two aims. First, I planned to revise the BES to reflect body parts and functions that are most relevant to physical evaluations for men and women in the 21st century. Then, I planned to validate the revised BES dimensions by correlating the components with measures similar to those used for original 1984 BES scale validation.

Because the BES has been used across numerous populations, and has facilitated understanding of several constructs within social and clinical psychology research for both women and men, it was important that the scale relate to areas within these disciplines including self-esteem, weight-related concerns (and associated mental health implications such as eating disorders), body shape, physical fitness and muscularity, attractiveness and beauty, and sexuality.

The principal components analyses for women revealed four components. The most significant change was the addition of the component, *Sexuality*. The items assessing sexuality previously met minimum loading criteria on the sexual attractiveness dimension. Because that dimension continued to contain body parts and functions that cannot traditionally be altered through diet and exercise, and contribute to perceptions of beauty and attractiveness even after the sexual body parts and functions were removed, the component was relabeled *Physical Attractiveness*. The two remaining components remained similar to the 1984 dimensions of *Weight Concern*, and *Physical Condition*, so the labels remained the same. However, some item shifts and deletions occurred, and several new body parts and functions were added to each revised component that improved the relevance of the BES for women's physical self-evaluations in the 21st century.

The principal components analyses for men also revealed four components. Again, the most significant change was the addition of the fourth *Sexuality* component. The items assessing sexuality previously loaded on both the physical condition and upper body strength dimensions. Because one revised component continued to assess body parts and functions that cannot traditionally be altered through exercise, and contribute to

perceptions of attractiveness that were similar to the 1984 BES, the label remained *Physical Attractiveness*. Additionally, another revised component continued to assess muscularity, particularly of the upper body. This revised component continued to be labeled *Upper Body Strength*. The final revised component closely resembled the *Physical Condition* dimension of 1984, and therefore was not relabeled. However, some item shifts and deletions occurred, and new body parts and functions were added to some revised components that improved the relevance of the BES for men's physical self-evaluations. The cultural implications of these changes are discussed below.

Analyses of Female Data

While a number of revised BES components for women remained very similar to the 1984 BES dimensions, some structural and item changes from the original BES were observed. First, the sexuality component emerged as a new dimension of body esteem and consisted of three items, *sex drive*, *sex activities*, and *sexual performance*. It is possible that cultural changes highlighting increased sexual portrayals of women in the media (Thompson, 2000) has impacted women's awareness of their sexuality, as an object to be desired, and as a part of oneself to be independently evaluated in a way that may not exclusively coincide with physical attractiveness (Grabe & Hyde, 2009). Items assessing sexual function for women were included on the original BES, and based on significant correlations between this dimension and scales assessing physical attractiveness, muscularity, body dissatisfaction, body shape and weight, eating disordered behavior, and body shame, it is likely that women's evaluations of their sexuality also relate to evaluations of their attractiveness, shape/weight and fitness. Furthermore, failure to meet these ideals could result in negative consequences such as

shame and appearance-management strategies. Given these relationships, it appears that the addition of this dimension could provide richer data regarding sexuality as it exists for women independently, and as it relates to body parts and functions assessing physical attractiveness as well as other body esteem components.

The revised physical attractiveness component continued to contain body parts and functions that assess beauty, particularly facial beauty, as well as body parts and functions that cannot be altered through diet or exercise. Interestingly, a number of facial features did not meet minimum loading criteria on the revised component that were included on the original dimension (*nose, ears, lips, and chin*). It is possible that the item *face* encompasses many of these more specific facial parts. It was hypothesized that this component also assessed perceptions of beauty through symmetry and proportionality (Frost et al., 2010). The addition of the facial feature *eyelashes/eyebrows* as well as the remaining facial features: *appearance of eyes* and *cheeks/cheekbones* seem to be body parts that contribute to traditional standards of beauty that often signify youthfulness and body proportionality (Eagly & Wood, 1999). As such, they may be particularly relevant to women when assessing their level of satisfaction with facial beauty.

Additional differences in the physical attractiveness component between the 1984 analysis and the current analysis included the removal of the item *body hair*. However, *head hair* was a new item added to the revised sexual attractiveness component. It is likely that for women, *head hair* better represented the assessment of the appearance of one's hair than the item, *body hair*. For example, Swami, Furnham, and Joshi (2008) reviewed the importance of head hair for women as it related to perceptions of physical attractiveness as seen by the other sex. Considerations including hair length, luster, and

shape and contour of the face (such that long, lustrous hair that softened the contour of the face) were particularly associated with the desired characteristics of youthfulness, and to a lesser degree, health and fertility.

Another noteworthy addition to the revised physical attractiveness component was the item, *skin condition*. The contribution of skin condition to judgments of physical attractiveness has been clearly supported in body image literature. For example, Fink, Grammer, and Thornhill (2001) demonstrated the importance of skin texture, particularly facial skin texture in affecting perceptions of attractiveness, such that clear, wrinkle-free skin has signified youth and health to potential mates. This link was particularly strong for men's judgment of women's facial skin (Fink, Grammer & Matt, 2006). It also makes sense that this item would be particularly relevant to the revised BES when considering the exponential growth in visual media accessibility over the past 25 years. Mahler, Beckerley and Vogel (2010) reviewed the influence of visual media in the form of magazine advertisements on today's youth; approximately 60% of American girls ages 10-14 who subscribed to a popular fashion or beauty magazine indicated that the magazines were an important source for beauty and fitness information. Maher and colleagues (2010) asserted that most of the advertisements in these magazines promoted clear, smooth, and light or tanned skin.

The correlations between the revised physical attractiveness component and measures of validity were also examined. Most correlations between the measures were as predicted (i.e. the correlations between the revised physical attractiveness component and overall self-esteem (RSE), with sexual esteem (SES), and with the measure of physical attractiveness). The correlations between the physical attractiveness component

and the EDI subscales of Bulimia and Body Dissatisfaction were not anticipated, as the body parts and functions on the sexual attractiveness component are not thought to be alterable through diet and food intake. However, some of the items on this component do contribute to a facial and upper body profile, which could change slightly based on significant changes in weight or body size. Additionally, if the contribution of items on the sexual attractiveness component to a physical profile is considered, the other unexpected correlation between this revised component and the muscularity subscale of the MBAS is explainable. It is possible that the ideal body shape for women, potentially visible through the body parts of the sexual attractiveness component, has been slightly altered over the past 25 years to increase the muscularization and tone of the still slender female body (Hausenblas & Fallon, 2006). One reason for this shift over the past quarter century could be the increase in female athletic participation since Title IX (Women's Sports Foundation, 2008).

The revised weight concern BES component for women also remained very similar to the weight concern component from the original BES. This component continued to contain body parts and functions that can be changed in accordance with diet and food intake. The items on this component also contribute to women's perceptions of body weight and shape. Two changes between the 1984 weight concern component and the revised component were the deletion of the item, *buttocks*, and the addition of the item, *metabolism*. The addition of *metabolism* fit nicely into the conceptualization of the revised component, as *metabolism* is a body function associated with weight, food intake, and health.

However, it was somewhat surprising that the item, *buttocks*, did not meet the minimum-loading criterion in the current analyses. It is possible that this item no longer fits appropriately on the revised weight concern component because visual media exposure to female celebrities who maintain voluptuous or curvaceous bodies rather than extremely thin bodies (i.e. Kim Kardashian) may have increased since 1984. For example, Overstreet, Quinn, and Agocha (2010) asserted that assessment of body satisfaction/dissatisfaction for women may be influenced not only by a desire to be slender, but also by a desire to achieve a curvaceous body shape, demarcated by varying proportions in breast and buttocks size paired with a thin waist. Variations may also exist somewhat as a function of ethnic background (Overstreet and colleagues demonstrated that Black participants tended to desire a larger or curvier lower body shape than White participants), and women's perceptions of men's cultural preferences (i.e. it may be perceived that 'ideal' female body shapes are represented by the female models in *Playboy*). Perhaps the item, *buttocks*, is important to women, but concern is no longer as great to maintain strict control over the size or appearance of buttocks as it once was, as a wider range of sizes is seen as acceptable or even desirable.

The correlations between the revised weight component and measures of validity were also examined. Most of the correlation results were as anticipated (i.e. the correlations between the revised weight concern component and overall self-esteem (RSE), all three EDI subscales, the measure of body size, shape, and weight, MBAS subscales, and the measure of Body Shame (OBC)). One unexpected correlation occurred between the revised weight concern component and the measure of physical attractiveness. However, due to the broad nature of two of the questions on the measure

of physical attractiveness regarding “general” appearance and attractiveness, it is possible that correlations resulted for all components, as each of the BES components facilitates the assessment of satisfaction with physical appearance.

The final revised BES component, physical condition, was also very similar to the 1984 physical condition component. The revised component continued to contain body parts and functions that assess physical fitness, exercise, strength, and agility. The only change between the two components was the deletion of the item, *biceps*. This item was not included in the PCA for the revised components, as it failed to meet the importance criterion set by this writer. Perhaps the item, *muscular strength*, may be a better representation of women’s assessment of a physically fit body than *biceps*. While it is possible that women prefer a slightly more athletic or muscular body tone than they once did, increased muscle volume is likely not the most desired look for many women (Hausenblas & Fallon, 2006; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). This body part is now solely reserved for assessing increased upper arm muscularity for men.

Many measures of validity also correlated as expected with this revised BES component (i.e. positive correlation with overall self esteem (RSE), measures of both aerobic and anaerobic activity, and with the Bulimia and Body Dissatisfaction subscales of the EDI). Additionally, this revised BES component correlated significantly with the muscularity subscales of the MBAS. While I was not sure whether significant associations between the MBAS subscales and the revised BES components for women would be achieved, as the MBAS was developed specifically for assessment of male body image, perhaps, similar to the explanation provided for the correlation between the sexual attractiveness component and the muscularity subscale of the MBAS, this

correlation is a reflection of the preference for women to uphold not only a thin body, but also one that reflects fitness and tone (Hausenblas & Fallon, 2006; Thompson et al., 1999). One somewhat surprising correlation occurred between the revised physical condition component and the measure of physical attractiveness. As with the correlation between this measure and the weight concern component, perhaps the broad nature of two of the questions regarding “general” appearance and attractiveness resulted in correlations with all BES components, as each of the components facilitates the assessment of satisfaction with physical appearance.

What could these revised components and correlations with measures of validity tell us about North American culture? One contention is that media-driven cultural ideals highlighting slender, and fit and toned bodies appear to hold steadfast for women. It seems that the body parts and functions considered most important to women today continue to reflect weight-related concerns, exercise and conditioning, beauty and attractiveness (particularly represented in symmetrical and proportionate facial features), and evaluations of one’s sexual functioning. It is likely that failure to meet these nearly-unattainable, yet easily accessible standards highlighting the objectification of women, and more specifically, the *sexual* objectification of women, are negatively related to problems such as disordered eating patterns and body shame (Grabe & Hyde, 2009; Thompson, 2000).

Analyses of Male Data

Some revised BES components for men also remained similar to the 1984 BES components. However, structural and item changes in the revised BES were also observed. One important change was the emergence of the sexuality component as a

separate dimension of body esteem. This revised component consisted of four items, *sex drive*, *sex organs*, *sex activities*, and *sexual performance*. It is possible that cultural changes highlighting sexual portrayals of women *as well as* men have increased in the media (Hobza et al., 2007). Further, the increase in media portrayals, as well as increased accessibility to these portrayals, have impacted men's awareness of their sexuality, particularly as perceived by the other sex. Perhaps this revised component highlights sexuality as a part of oneself to be independently evaluated in a way that may not exclusively coincide with other BES dimensions (McDonagh et al., 2008).

However, based on significant correlations between this dimension and scales assessing physical attractiveness and muscularity, which is where these items previously met minimum loading criteria, it is likely that men's evaluations of their remains related to evaluations of their attractiveness and perceptions of muscularity. Given these relationships, it appears that the addition of this dimension could provide richer data regarding sexuality as it exists for men independently, and as it relates to body parts and functions assessing other body esteem components.

The three additional revised components for men remained similar to the original 1984 components. However, some item shifts were noted. More specifically, the revised physical condition component continued to contain body parts and functions that assess physical activity, conditioning, and fitness. However, some item changes from the original BES were observed. One item change was the deletion of *thighs*, as it did not meet the importance criterion set by this writer. Perhaps this item is better accounted for by body parts *figure/physique* or *waist*, as it appears that the remaining body parts on the revised physical condition component either assess men's overall figure, or focus

specifically on men's stomachs or midsections. This BES change may be explained by findings from Swami and Tovee (2005); in this study women rated waist-to-chest-ratio and BMI as more important than waist-to-hip ratio when judging bodily attractiveness. Perhaps men are internalizing the body parts and functions that are considered particularly important when attractiveness is rated by women, (i.e. a broad chest and narrow waist) or based on male ideal figures displayed in the media more than in the past (Pope et al, 2001). Additionally, the body parts on this component of the revised BES may also be the ones that fluctuate most noticeably as a function of fitness or exercise (i.e. the presence of abs). Thighs may change less noticeably as the result of exercise regimens when compared with other body parts, such as the presence of abdominal muscles associated with the appearance of the stomach.

Other changes to this revised component included the addition of items, *metabolism* and *speed*. This addition makes logical sense given that these items are body function that varies with changes in exercise as well as contributes to perceptions of fitness and health.

Interestingly, all measures of validity correlated significantly with this revised BES component. Many of these correlations were expected (i.e. correlations between the revised physical condition component and overall self esteem (RSE), and body parts and functions that can change with exercise and fitness like the measure of aerobic activity, the measure of anaerobic activity, the MBAS subscales, the EDI Drive for Thinness subscale, EDI Bulimia subscale, the measure of body size, shape, and weight, and the OBC Body Consciousness subscale). However, a few significant correlations were not anticipated. For example, it was surprising that the revised physical condition component

was correlated with the measure of physical attractiveness. But, as with the correlation between the measure of physical attractiveness and the female revised BES physical condition component, it is possible that the broad nature of two of the questions regarding “general” appearance and attractiveness resulted in correlations with this BES component for men as well, as it facilitates the assessment of overall satisfaction with physical appearance.

The revised physical condition component also correlated significantly with the SES. While the correlation was weak, this was surprising, as no items on the physical condition component cross-load with any items on the sexual attractiveness component. One plausible explanation could be a loose association between confidence in sexual performance and satisfaction with general physical appearance, which could change in conjunction with exercise or diet. For example, research by Dixson, Dixson, Morgan, & Anderson (2007) indicated that women rated muscular and average male body types as more sexually attractive than slim or heavy body types. Typically, exercise and diet routines contribute to the development and maintenance of these body types. Finally, in considering Franzoi’s contention (e.g., Franzoi & Chang, 2000; Franzoi & Klaiber, 2007) that a prominent feature of male body esteem involves evaluating the physical self as “an instrument of action” or the “body as process,” perhaps it is not unusual for the physical condition component to have some association with measures of validity that assess all three BES dimensions for men.

The revised upper body strength component of the BES also remained similar to the 1984 BES component. Clearly, this component continues to measure body parts and functions that contribute to the appearance of a muscular physique, and the majority of

the body parts on this component assess the upper body. One change between the 1984 BES upper body strength component and the revised component was the deletion of the item *width of shoulders*, which was excluded from the PCA due to failure to meet the minimum importance criterion set by this writer. While research continues to show that ‘ideal’ male physique consists of an inverted “V” when examining the upper body, focusing on broad shoulders and a narrow waist (Pope et al., 2001), Swami and Tovee (2005) asserted that the chest-to-waist ratio was rated by women as particularly important when judging the physical attractiveness of the other sex. Perhaps the more general items on this revised component, *body build* and *muscular strength*, as well as the specific body part, *chest*, better encompass desired upper body appearance for men than the item, *width of shoulders*.

Another BES change occurred such that the items *figure/physique* and *physical coordination* no longer met the minimum-loading criterion and were removed from this revised component. These items previously loaded on both the upper body strength component and the physical condition component. In the current analyses, these items met the minimum-loading criterion solely on the physical condition component. One of the purposes for revising the BES was to increase the relevance and accuracy of each component. Because the revised component consisted of body parts and functions assessing muscularity and strength of the upper body, *body build* may better capture the unique muscularity element to this dimension than *figure/physique*, which could be considered a broader or more general item. Additionally, coordination may be somewhat malleable as the result of physical conditioning that can improve muscularity, however, physical coordination specifically does not contribute to evaluations of muscularity and

upper body strength. For these reasons, this item seems to be better suited for the physical condition revised component.

The final change to this scale affected the item assessing sexuality. In 1984, some items assessing sexuality met the minimum-loading criterion on the upper body strength component, and others met the minimum-loading criterion on the physical attractiveness component. In the current analyses for men, the item assessing sexuality on the 1984 upper body strength component, *sex drive*, no longer met the minimum-loading criteria on this component. Instead, all of the items assessing sexuality met the minimum-loading criterion on the revised sexuality component as previously discussed. Objectification theory has been supported in research with women for decades, but more recently this theory has also been shown to be applicable to men (Daniel & Bridges, 2010; Schuster et al., 2013). It appears that men have been increasingly judged in North American culture by as objects to be desired, particularly by potential mates (Daniel & Bridges, 2010; Strelan & Hargreaves, 2005).

The correlations between the revised upper body strength component and measures of validity were also examined. Most of the correlation results were as anticipated (i.e. the correlations between the revised upper body strength component and overall self-esteem (RSE), measure of anaerobic activity, measure of aerobic activity, and the MBAS subscales). Two surprising findings were the correlations between the revised upper body strength dimension, and the Body Dissatisfaction EDI subscale as well as the measure of body size, weight and shape. Because there is no weight-specific component to male body esteem, perhaps a general measure of body satisfaction/dissatisfaction could

be associated with any of the three male BES components, as all components contribute to men's overall satisfaction with their physical selves.

Additionally, it was not anticipated that the revised upper body strength BES component would correlate significantly with the measure of physical attractiveness. However, as with the explanation provided for the correlation between this measure and the physical condition component, two of the four items on the measure of physical attractiveness assessed satisfaction with "general" appearance and attractiveness. Because each body esteem component contributes to overall assessment of physical appearance, it would make sense that each body esteem component could correlate with this measure.

The third revised physical attractiveness body esteem component retained some similarities to the 1984 physical attractiveness component. While this component continued to assess body parts and functions that contribute to physical attractiveness with an emphasis on facial traits, as well as items that cannot be altered through traditional diet and exercise, a number of item additions, shifts, and deletions were evident. One change between the 1984 physical attractiveness component and the revised physical attractiveness component was the removal of the item, *sex organs*, as all items assessing sexuality met the minimum-loading criterion on their own component as previously mentioned.

Other changes included the addition of the items, *body scent* and *perspiration*. This addition is not surprising, as recent studies have shown that pleasant body odors, among other nonverbal cues, are associated with physical attractiveness ratings (Roberts et al., 2011). Further, the item *appetite* previously loaded on the physical condition component, but now met the minimum-loading criterion on this dimension. Placement of

this item makes sense on this dimension; while changes in *appetite* could alter body size/weight as a function of food intake, for men, it may make more sense to place this item on the dimensions that classifies items as not traditionally alterable through exercise or food intake, as men do not have a weight-specific dimension of body esteem.

Other changes to this revised component included the removal of a number of facial features: *nose, lips, ears, chin, appearance of eyes* and *cheeks/cheekbones*, due to their failure either to meet the minimum importance criterion, or did not meet the minimum-loading criterion in the first PCA. It is likely that the item, *face*, encompasses many of these features, as research has shown that the masculinity of a face can be judged as a whole, rather than focusing on specific parts. For example, Pivonkova, Rubesova, Lindova, & Havlicek (2011) demonstrated that female judgments of masculinity were not associated with any specific facial components or features, suggesting that women may take a more “holistic” approach when judging masculinity. Additionally, broader facial traits such as face height, face-breadth, and jaw prominence, were related to ratings of masculinity when judged by men. The item *teeth* was also added, which may contribute to perceptions of facial attractiveness through symmetry (Eagly & Wood, 1999). For example, Van der Geld, Oosterveld, Van Heck, and Kuijpers-Jagtman (2007) indicated that for men, smile aesthetics including teeth visibility, color, size and position, contributes to perceptions of facial attractiveness.

Other changes between the revised BES physical attractiveness component and the 1984 physical attractiveness component included the removal of lower body items: *buttocks, hips, and feet*, as these items did not meet the minimum importance criterion set by this writer. It appears that this component has become an evaluation of general body

parts and functions that contribute to overall assessment of attractiveness, and not items that assess sexuality, and visible body parts that specifically assess facial attractiveness. Based on the revised BES in general, it appears that men are more concerned with the appearance of mid and upper body parts, rather than lower body parts. It is possible that these body parts may be more noticeable or malleable than lower body parts based on changes in diet or exercise.

Furthermore, two new items met minimum-loading criteria on this revised component, *head hair* and *skin condition*. Both of these items also met minimum-loading criteria on the revised female sexual attractiveness component, and I suspect for similar reasons. When the knowledge of the increase in visual media and advertising over the past 25 years is coupled with the research demonstrating that light, clear skin increased women's perceptions of male facial attractiveness, *skin condition* becomes a relevant addition to this component (Stephen, Scott, Coetzee, Pound, Perrett, & Penton-Voak, 2012). Likewise, the increase in visual media advertising and consumer culture coupled with research demonstrating the importance of head hair on men's perceptions of attractiveness, such that a full, thick head of hair signifies youthfulness and health and is related to perceptions of attractiveness by the other gender, indicates that *head hair* is also a meaningful addition to this revised component (Muscarella & Cunningham, 1996; Schuster et al., 2013).

The correlations between the revised sexual attractiveness component and measures of validity were also examined. Most correlations between the measures were as predicted or previously explained (i.e. the correlations between the revised physical attractiveness component and overall self-esteem (RSE), sexual esteem (SES), and with

the measure of physical attractiveness). The somewhat unexpected correlation between the OBC and the revised physical attractiveness component also supported the notion that men are becoming increasingly aware of their bodies as objects of beauty and attractiveness to be assessed, and failure to meet these nearly unattainable standards of attractiveness could be resulting in feelings of shame toward their bodies (Daniel & Bridges, 2010; McKinley & Hyde, 1996).

The correlations between the revised physical attractiveness component and the EDI Body Dissatisfaction and Bulimia subscales, the measure of body size, weight and shape, the measure of aerobic and anaerobic activity, and the MBAS subscales were not anticipated, as the body parts and functions on the sexual attractiveness component are not thought to be alterable through diet or exercise. However, facial profile or overall appearance could change based on significant changes in weight or body size, which are all constructs assessed by these measures. It is possible that this connection may be reflected in these correlations. It is also possible that the measure of body size, shape, and weight and the EDI Body dissatisfaction subscales could be interpreted as assessing broad physical self-evaluation, which all of the BES component contribute to. Therefore, it would make sense that this component, along with the other two revised components correlated with these subscales.

What might these revised components and validity measures indicate regarding male physical evaluations in today's society? It seems that media-driven cultural ideals highlighting fit, muscular, and toned bodies hold steadfast (Hobza et al., 2007). It also appears that the items considered most important to men today reflect evaluations of how one's body moves, but also how it looks, particularly in the areas of muscularity and

attractiveness, as well as evaluation of sexual body parts and functions. Perhaps these revised dimensions highlight the possibility that men are becoming increasingly aware of their bodies as objects to be desired. While one reason for this could be increased objectification of men's bodies in the media (Spitzer et al., 1999), another could be the cultural shift regarding women's growing expectations of male romantic partners to pay more attention to their own physical appearance than previous generations of men as they continue to gain economic resources and positions of authority within society (Gil-Burmann et al., 2002). One unfortunate similarity remains between men and women. Like women, men are not impervious to cultural scrutiny. Therefore, failing to match attractiveness standards perpetuated by the media, as evidenced by the association between some revised BES dimensions and the measure of body shame as well as the eating disorder inventory subscales, could result in potentially negative consequences for mental and even physical health.

Limitations

This study's purpose was to revise the BES for the next several years, as well as to establish the revised BES' internal consistency and validity. However, some limitations to this study should be noted. First, multiple methods of administration were used because of the goal of obtaining a large sample size (i.e. paper and pencil, online survey at home, online survey in a classroom with a research assistant present). Therefore, it was difficult to determine any exclusionary criteria for the 2012 data collection. Further, inconsistency in survey administration was evident across time, as data was collected in paper and pencil in 1984, but was collected online in 2010. Additionally, differences in location and allotment of time for survey completion could

suggest differences in attention while answering the questions. While these differences in administration should be noted, there is no evidence to suggest that different administration formats have significantly affected the results. It is clear that trends in the data are visible across collection method, location, and time allotment.

Furthermore, I have taken a beneficial step in data collection methodology by broadening the geographic range to two locations. However, the sample still consisted primarily of college undergraduates. It is possible that the components may not ideally reflect what would be found with broader adult samples of men and women given the restricted age range and ethnic breakdown of the sample. However, the 1984 BES sample consisted primarily of college undergraduate and it has been shown to be reliable and valid across adult populations (Franzoi, 1994; Franzoi & Herzog, 1986). I will continue to be mindful of a representative ethnic breakdown in future studies.

Future studies

This study provided multiple avenues for continued research. First, data will continue to be collected for men with the goal of conducting partial confirmatory factor analysis for the male data.

Additional measures assessing the psychometric properties of the revised BES would be also beneficial. Test-retest reliability will be conducted in a future study. I also plan to reproduce the discriminant validity measure utilized in the development of the original BES in which the factor assessing weight concern discriminated anorexic female participants from women without a history of anorexia. Similarly, the upper body strength dimension differentiated weightlifting males from non-weight lifters. To complete this measure of validity, a sample of female participants with an eating disorder

diagnosis will be given the revised BES. The revised BES will also be given to a sample of individuals with no eating disorder diagnoses. It would be expected that women diagnosed with eating disorders would score lower on the revised weight concern component when compared to women with no mental health issues surrounding perceptions of their body shape and weight. To test this hypothesis, a MANOVA would be conducted between the two groups (women diagnosed with an eating disorder vs. women with no eating disorder diagnoses), with the BES dimensions as the dependent variables. Similarly, a sample of male weight lifters would complete the revised BES as well as a male sample of non-weightlifters. It would be expected that male weight lifters would report higher upper body strength body esteem when compared to non-weight lifters. A MANOVA would also be conducted to test this hypothesis. I anticipate that the revised male upper body strength will be where the differences lie between the two groups (weight-lifters vs. non-weight-lifters).

Finally, as the original BES has been utilized across several cultures such as Germany (Swami et al., 2008), South Korea (Forbes & Jung, 2008), and Japan (Kowner, 2002), continued assessment of the validity and use of the revised BES across cultures would aid in keep the BES functioning as a primary tool for body esteem assessment.

Conclusion

The purpose of this study was to create a revised BES using a multi-stage analytic plan. Through a series of principal components analyses and review of importance rankings, it was determined that the gender-specific and multidimensional structure of the BES continued to be relevant and meaningful when considering the body parts and functions men and women consider uniquely important when assessing their physical

selves. However, it appeared that changes in North American culture over the past 25 years have altered some perceptions of beauty, attractiveness and fitness, and these changes were reflected in BES item and structural changes. One particularly notable change included increased exposure to ultra-thin/ultra fit, attractive, and sexualized images for both men and women due to media accessibility. It is possible that the change in BES structure from a three-component to a four-component model through the addition of a sexuality component for both men and women was influenced by this cultural shift. Also, item changes and additions to each revised BES component increased the cultural relevance of today's physical self-evaluations. Measures of internal consistency, norms, subscale correlations, reliability and validity suggested that each body esteem component for men and women continued to provide a unique assessment of self-evaluation. This is particularly important given the history of use with this scale for examining the relationship between body esteem and numerous areas within social psychology (i.e. media, peer relationships, family relationships) as well as clinical psychology (i.e. mental health issues such as anxiety and eating disorders). The end product of this study was a revised BES that remained gender-specific and multidimensional, but also contained an updated collection of body parts and functions meant to increase relevance when considering current cultural trends. Therefore, the revised BES can be considered a psychometrically sound measure of body esteem for the next several years.

REFERENCES

- Adams, G., Turner, H., & Bucks, R. (2005). The experience of body dissatisfaction in men. *Body Image, 2*, 271-283. doi:10.1016/bodyim.2005.05.004
- Ata, R.N., Ludden, A.B., & Lally, M.M. (2007). The effects of gender and family, friends, and media influences on eating behaviors and body image during adolescence. *Journal of Youth Adolescence, 36*, 1024-1037. doi: 10.1007/s10964-9159-x
- Avalos, L., Tylka, T.L., & Wood-Barcalow, N. (2005). The body appreciation scale: Development and psychometric evaluation. *Body Image, 2*, 285-297. doi:10.1016/j.bodyim.2005.06.002
- Bhatnagar, K.A.C., Wisniewski, L., Solomon, M., & Heinberg, L. (2013). Effectiveness and feasibility of a cognitive-behavioral group intervention for body image disturbance in women with eating disorders. *Journal of Clinical Psychology, 69*, 1-13. doi: 10.1002/jclp.21909
- Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PIR) and NEO Five-Factor Inventory professional manual*. Odessa, FL: Psychological Assessment Resources.
- Daniel, S. & Bridges, S.K. (2010). The drive for muscularity in men: Media influences and objectification theory. *Body Image, 7*, 32-38. doi: 10.1016/j.bodyim.2009.08.003
- Davis, C. (1997). Normal and neurotic perfectionism in eating disorders: An interactive model. *International Journal of Eating Disorders, 22*, 421-426. doi: 10.1002/(SICI)1098-108X(199712)22:4<421::AID-EAT7>3.0.CO;2-O
- Davis, C., Brewer, H., & Weinstein, M. (1993) A study of appearance anxiety in young men. *Social Behavior and Personality, 21*, 63-74. doi: 10.2224/sbp.1993.21.1.63
- Derenne, J.L. & Beresin (2006). Body image, media, and eating disorders. *Academic Psychiatry, 30*, 257-261.
- Diamond, L.M. (2003). What does sexual orientation orient? A biobehavioral model distinguishing romantic love and sexual desire. *Psychological Review, 110*, 173-192. doi: 10.1037/0033-295X.110.1.173
- Dixson, B.J., Dixson, A.F., Morgan, B., & Anderson, M.J. (2007). Human physique and sexual attractiveness: Sexual preferences of men and women in Bakossiland, Cameroon. *Archives of Sexual Behavior, 36*, 369-375. doi: 10.1007/s10508-006-9093-8

- Draper, S., McMorris, T., & Parker, J.K. (2010). Effect of acute exercise of differing intensities on simple and choice reaction and movement times. *Psychology of Sport and Exercise, 11*, 536-541. doi: 10.1016/j.psychsport/2010.05.003
- Duncan, M.J., Al-Nakeeb, Y., & Nevill, A.M. (2009). A 6-week circuit training intervention on body esteem and body mass index in British primary school children. *Body Image, 6*, 216-220. doi: 10.1016/j.bodyim.2009.04.003
- Eagly, A.H. & Wood, W. (1999). The origins of sex differences in human behavior. *American Psychologist, 54*, 408-423. doi:10.1037/0003-066X.54.6.408
- Erickson, S.J. & Gerstle, M. (2007). Developmental considerations in measuring children's disordered eating attitudes and behaviors. *Eating Behaviors, 8*, 224-235. doi: 10.1016/j.eatbeh.2006.06.003
- Erickson, S.J., Hahn-Smith, A., & Smith, J.E. (2009). One step closer: Understanding the complex relationship between weight and self-esteem in ethnically diverse preadolescent girls. *Journal of Applied Developmental Psychology, 30*, 129-139. doi:10.1016/j.appdev.2008.11.004
- Fabrigar, L.R., Wegener, D.T., MacCallum, R.C., & Strahan, E.J. Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*, 272-299. doi: 10.1037/1082-989X.4.3.272
- Fink, B., Grammer, K., & Matts, P.J. (2006). Visible skin color distribution plays a role in the perception of age, attractiveness, and health in female faces. *Evolution and Human Behavior, 27*, 433-442. doi: 10.1016/j.evolhumbehav.2006.08.007
- Fink, B., Grammer, K., & Thornhill, R. (2001). Human (*Homo sapiens*) facial attractiveness in relation to skin texture and color. *Journal of Comparative Psychology, 115*, 92-99.
- Fitzsimmons-Craft, E., Harney, M.B., Koehler, L.G., Danzi, L.E., Riddell, M.K., & Bardone-Cone, A.M. (2012). Explaining the relation between thin ideal internalization and body dissatisfaction among college women: The roles of social comparison and body surveillance. *Body Image, 9*, 43-49. doi: 10.1016/j.bodyim.2011.09.002.
- Forbes, G. B. & Jung, J. (2008). Measures based on sociocultural theory and feminist theory as predictors of multidimensional measures of body dissatisfaction between Korean and U.S. College women. *Journal of Social & Clinical Psychology, 27*, 70-103. doi:10.1521/jscp.2008.27.1.70
- Franzoi, S.L. (1994). Further evidence of the reliability and validity of the body esteem scale. *Journal of Clinical Psychology, 50*, 237-239. doi: 10.1002/1097-4679%28199403%2950:2%3C237::AID-JCLP2270500214%3E3.0.CO;2-P

- Franzoi, S. L., & Chang, Z. (2000). The sociocultural dynamics of the physical self: How does gender shape body esteem? In J. A. Holstein & G. Miller (Eds.), *Perspectives on social problems, Vol. 12*, pp. 179-201. Stamford, CT: JAI Press.
- Franzoi, S. L. & Chang, Z. (2002). The body esteem of Hmong and Caucasian young adults. *Psychology of Women Quarterly, 26*, 89-91. doi: 10.1111/1471-6402.00046
- Franzoi, S.L. & Herzog, M.E. (1986). The body esteem scale: A convergent and discriminant validity study. *Journal of Personality Assessment, 50*, 24-31. doi:10.1207/s15327752jpa5001_4
- Franzoi, S.L. & Herzog, M.E. (1987). Judging physical attractiveness: What aspects do we use? *Personality and Social Psychology Bulletin, 13*, 19-33. doi: 10.1177/0146167287131002
- Franzoi, S.L. & Klaiber, J.R. (2007). Body use and reference group impact: With whom do we compare our bodies? *Sex Roles, 56*, 205-214. doi: 10.1007/s11199-006-9162-4
- Franzoi, S.L. & Shields, S.A. (1984). The body esteem scale: Multidimensional structure and sex differences in a college population. *Journal of Personality Assessment, 48*, 173-178. doi: 10.1207/s15327752jpa4802_12
- Frisen, A. & Holmqvist, K. (2010). Physical, sociocultural, and behavioral factors associated with body-esteem in 16-year-old Swedish boys and girls. *Sex Roles, 63*, 373-385. doi: 10.1007/s11199-010-9806-2
- Frost, K.A., Franzoi, S.L., & Oswald, D.L. Is the factor structure of the body esteem scale still valid? Unpublished manuscript.
- Garner, D.M. (1991). *Eating Disorders Inventory-2: Professional manual*. Lutz, FL: Psychological Assessment Resources.
- Garner, D., Olmstead, M., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders, 2*, 15-34.
- Gignac, G.E. (2009). Partial confirmatory factor analysis: described and illustrated on the NEO-PI-R. *Journal of Personality Assessment, 91*, 40-47. doi: 10.1080/00223890802484126
- Gil-Burmann, C., Pelaez, F., & Sanchez, S. (2002). Mate choice differences according to sex and age: an analysis of personal advertisements in Spanish newspapers. *Human Nature, 13*, 493-508.

- Grabe, S. & Hyde, J.S. (2009). Body objectification, MTV, and psychological outcomes among female adolescents. *Journal of Applied Social Psychology, 39*, 2840-2858.
- Gunderson, E.K. & Johnson, L.C. (1965). Past experience, self-evaluation, and present adjustment. *Journal of Social Psychology, 66*, 31-321.
- Hausenblas, H.A. & Fallon, E.A. (2006). Exercise and body image: A meta-analysis. *Psychology and Health, 21*, 33-47. doi: 10.1080/14768320500105270
- Hayton, J.C., Allen, D.G., & Scarpello, V. (2004) Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods, 7*, 191-205. doi: 10.1177/1094428104263675
- Henderson-King, D., Henderson-King, E. & Hoffman, L. (2001). Media images and women's self-evaluations: Social context and importance of attractiveness as moderators. *Personality and Social Psychology Bulletin, 27*, 1407-1416. doi: 10.1177/01461672012711002
- Hesse-Biber, S. (1996). *Am I Thin Enough Yet?* New York: Oxford University Press.
- Hoelzle, J.B. & Meyer, G.J. (2013). Exploratory factor analysis: Basics and beyond. *Handbook of Psychology, Vol. 2: Research Methods in Psychology*. (2nd edition) New Jersey: John Wiley & Sons Inc.
- Jonsdottir, S.R., Arnarson, E.O., & Smari, J. (2008). Body esteem, perceived competence and depression in Icelandic adolescents. *Nordic Psychology, 60*, 58-71. doi: 10.1027/1901-2276.60.1.58
- Kaminski, P.L. & McNamara, K. (1996). A treatment for college women at risk for bulimia: A controlled evaluation. *Journal of Counseling and Development, 74*, 288-294. doi: 10.1002/j.1556-6676.1996.tb01868.x
- Kaya, D.O., Duzgun, I., Baltaci, G., Karacan, S., & Colakoglu, F. (2012). Effects of calisthenics and pilates exercises on coordination and proprioception in adult women: A randomized control trial. *Journal of Sport Rehabilitation, 21*, 235-243.
- Klaczynski, P.A., Goold, K.W., & Mudry, J.J. (2004). Culture, obesity stereotypes, self-esteem, and the "thin ideal": A social identity perspective. *Journal of Youth and Adolescence, 33*, 307-313. doi: 10.1023/B:JOYO.0000032639.71472.19
- Kornblau, I. S., Pearson, H. C., & Breitkopf, C. R. (2007). Demographic, behavioral, and physical correlates of body esteem among low-income female adolescents. *Journal of Adolescent Health, 41*, 566-570. doi:10.1016/j.jadohealth.2007.06.014
- Kowner, R. (2002). Japanese body image: Structure and esteem scores in a cross-cultural perspective. *International Journal of Psychology, 37*, 149-159.

- Luciano, L. (2001). *Looking Good*. New York: Hill and Wang.
- Martz, D.M. & Bazzini, D.G. (1999). Eating disorders prevention programming may be failing: Evaluation of 2 one-shot programs. *Journal of College Student Development, 40*, 32-42.
- Mayer, B., Bos, A.E.R., Muris, P., Huijding, J., & Vlieland, M. (2007). Does disgust enhance eating disorder symptoms? *Eating Behaviors, 9*, 124-127. doi: 10.1016/j.eatbeh.2007.07.003
- MacCallum, R.C., Widaman, K.F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*, 84-99. doi: 10.1037/1082-989X.4.1.84
- Mahler, H.I., Beckerley, S.E., & Vogel, M.T. (2010). Effects of media images on attitudes toward tanning. *Basic and Applied Social Psychology, 32*, 118-127. doi: 10.1080/01973531003738296
- McKinley, N.M. (1998). Gender differences in undergraduates' body esteem: The mediating effect of objectified body consciousness and actual/ideal weight discrepancy. *Sex Roles, 39*, 113-123. doi: 10.1023/A:1018834001203
- McKinley, N.M. (1999). Women and objectified body consciousness: Mothers' and daughters' body experience in cultural, developmental, and familial context. *Developmental Psychology, 35*, 760-769.
- McKinley, N.M. (2004). Resisting body dissatisfaction: Fat women who endorse fat acceptance. *Body Image, 1*, 213-219. doi: 10.1016.j.bodyim.2004.02.001
- McKinley, N.M. & Hyde, J.S. (1996). The objectified body consciousness scale. *Psychology of Women Quarterly, 20*, 181-215. doi: 10.1111/j.1471-6402.1996.tb00467.x
- McLaren, L. & Kuh, D. (2004). Body dissatisfaction in midlife women. *Journal of Women & Aging, 16*, 35-54. doi: 10.1300/J074v16n01_04
- Mendelson, B.K., Mendelson, M.J., & White, D.R. (2001). Body-esteem scale for adolescents and adults. *Journal of Personality Assessment, 76*, 90-106. doi: 10.1002/eat.10011
- Mendelson, B.K. & White, D.R. (1982). Relationship between body-esteem and self-esteem of obese and normal children. *Perceptual and Motor Skills, 54*, 899-905.
- Mendelson, B.K. & White, D.R. (1985). Development of self-body-esteem in overweight youngsters. *Developmental Psychology, 21*, 90-96.

- Murnen, S.K., Smolak, L., Mills, J.A., & Good, L. (2003). Thin, sexy women and strong, muscular men: Grade-school children's responses to objectified images of women and men. *Sex Roles, 49*, 427-437. doi: 10.1023/A:1025868320206
- Muscarella, F & Cunningham, M.R. (1996). The evolutionary significance and social perception of male pattern baldness and facial hair. *Ethology and Sociobiology, 17*, 99-117. doi: 10.1016/0162-3095(95)00130-1
- O'Dea, J.A. & Abraham, S. (2002). Eating and exercise disorders in young college men. *Journal of American College Health, 50*, 273-278.
- Overstreet, N.M., Quinn, D.M., & Agocha, V.B. (2010). Beyond thinness: The influence of a curvaceous body ideal on body dissatisfaction in black and white women. *Sex Roles, 63*, 91-103. doi: 10.1007/s11199-010-9792-4
- Parent, M. (2013). Clinical considerations in etiology, assessment and treatment of men's muscularity-focused body image disturbance. *Psychology of Men and Masculinity, 14*, 88-100. doi: 10.1037/a0025644
- Pivonkova, V., Rubesova, A., Lindova, J., & Havlicek, J. (2011) Sexual dimorphism and personality attributions of male faces. *Archives of Sexual Behavior, 40*, 1137-1147. doi: 10.1007/s10508-011-9821-6
- Pope Jr., H.G., Olivardia, R., Borowiecki III, J.J., & Cohane, G.H. (2001). The growing commercial value of the male body: A longitudinal survey of advertising in women's magazines. *Psychotherapy and Psychosomatics, 70*, 189-192. doi:10.1159/000056252
- Quinlan, N.P., Kolotkin, R.L., Fuemmeler, B.F., & Costanzo, P.R. (2009). Psychosocial outcomes in a weight loss camp for overweight youth. *International Journal of Pediatric Obesity, 4*, 134-142. doi: 10.1080/17477160802613372
- Rayner, K.E., Schniering, C.A., Hutchinson, D.M., Rapee, R.M., & Taylor, A. (2013). Adolescent girls' friendship networks, body dissatisfaction, and disordered eating: Examining selection and socialization processes. *Journal of Abnormal Psychology, 122*, 93-104. doi: 10.1037/a0029304
- Rieder, S. & Ruderman, A. (2001). Cognitive factors associated with binge and purge eating behaviors: The interaction of body dissatisfaction and body image importance. *Cognitive Therapy and Research, 25*, 801-812. doi: 10.1023/A:1012979625364
- Roberts, S.C., Kravovich, A., Ferdenzi, C., Saxton, T.K., Jones, B.C., DeBruine, L.M., Little, A.C. & Havlicek, J. (2011). Body odor quality predicts behavioral attractiveness in humans. *Archives of Sexual Behavior, 40*, 1111-1117. doi: 10.1007/s10508-011-9803-8

- Robinson, J.P. & Shaver, P.R. (1973). *Measures of Social Psychological Attitudes*. Ann Arbor, MI: Institute for Social Research.
- Rosenberg, M. (1965). *Society and the Adolescent Self-Image*. Princeton, NJ: Princeton University Press.
- Schuster, E., Negy, C., & Tantleff-Dunn, S. (2013). The effects of appearance-related commentary on body dissatisfaction, eating pathology, and body change behaviors in men. *Psychology of Men and Masculinity, 14*, 76-87. doi: 10.1037/a0025625
- Secord, P.F. & Jourard, S.M. (1953). The appraisal of body-cathexis: Body-cathexis and the self. *Journal of Consulting Psychology, 17*, 343-347.
- Silbert, E. & Tippett, J. (1965). Self-esteem: Clinical assessment and measurement validation. *Psychological Reports, 16*, 1017-1071.
- Snell, W.E., Fisher, T.D., & Walters, A.S. (1993). The multidimensional sexuality questionnaire: An objective self-report measure of psychological tendencies associated with human sexuality. *Annals of Sex Research, 6*, 27-55. doi: 10.1007/BF00849744
- Snell, W. & Papini, D. (1989). The sexuality scale: An instrument to measure sexual-esteem, sexual-depression, and sexual-preoccupation. *Journal of Sex Research, 26*, 256-263.
- Spitzer, B.L., Henderson, K.A., & Zivian, M.T. (1999). Gender differences in population versus media body sizes: A comparison over four decades. *Sex Roles, 40*, 545-565. doi: 10.1023/A:1018836029738
- Stice, E., Rohde, P., Shaw, H., & Marti, N.C. (2013). Efficacy trial of a selective prevention program targeting both eating disorders and obesity among female college students: 1- and 2- year follow-up effects. *Journal of Consulting and Clinical Psychology, 81*, 183-189. doi: 10.1037/a0031235
- Strelan, P. & Hargreaves, D. (2005). Reasons for exercise and body esteem: Men's responses to self-objectification. *Sex Roles, 53*, 495-503. doi: 10.1007/s11199-005-7137-5
- Striegel-Moore, R.H., Silberstein, L.R. & Rodin, J. (1993). The social self in bulimia nervosa: Public self-consciousness, social anxiety, and perceived fraudulence. *Journal of Abnormal Psychology, 102*, 297-303.
- Swami, V., Furnham, A., & Joshi, K. (2008) The influence of skin tone, hair length, and hair colour on ratings of women's physical attractiveness, health and fertility.

Scandinavian Journal of Psychology, 49, 429-437. doi: 10.1111/j.1467-9450.2008.00651.x

- Swami, V., Stieger, S., Haubner, T. & Voracek, M. (2008). German translation and psychometric evaluation of the Body Appreciation Scale. *Body Image*, 5, 122-127.
- Swami, V. & Tovee, M.J. (2005). Male physical attractiveness in Britain and Malaysia: A cross-cultural study. *Body Image*, 2, 383-393.
- Tassava, S. & Ruderman, A.J. (1999). Application of escape theory to binge eating and suicidality in college women. *Journal of Social and Clinical Psychology*, 18, 450-466. doi: 10.1521/jscp.1999.18.4.450
- Thomas, C.D. & Freeman, R.J. (1990). The body esteem scale: Construct validity of the female subscales. *Journal of Personality Assessment*, 54, 204-212. doi:10.1207/s15327752jpa5401&2_20
- Thompson, M.J. (2000). Gender in magazine advertising: Skin sells best. *Clothing and Textiles Research Journal*, 18, 178-181. doi:10.1177/0887302X0001800306
- Thompson, J.K. & Cafri, G. (2002). *The Muscular Ideal: Psychological, Social, and Medical Perspectives*. Washington D.C.: American Psychological Association.
- Thompson, J.K., Heinberg, L.J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exactng beauty. Theory, assessment, and treatment of body image disturbance*. Washington D.C.: American Psychological Association.
- Tiggemann, M. (2005). Television and adolescent body image: The role of program content and viewing motivation. *Journal of Social and Clinical Psychology*, 24, 361-381. doi:10.1521/jscp.24.3.361.65623
- Tylka, T.L., Bergeron, D., & Schwartz, J.P. (2005). Development and psychometric evaluation of the male body attitudes scale. *Body Image*, 2, 161-175. doi: 10.1016/j.bodyim.2005.03.001
- Van der Geld, P., Oosterveld, P., Van Heck, G., & Kuijpers-Jagtman, A. (2007). Smile attractiveness: Self-perception and influence on personality. *Angle Orthodontist*, 77, 759-765. doi: 10.2319/082606-349
- Velicer, W. F., Eaton, C. A., & Fava, J. L. (2000). Construct explication through factor or component analysis: A review and evaluation of alternative procedures for determining the number of factors or components. In R. E. Goffin & E. Helmes (Eds.), *Problems and Solutions in Human Assessment* (pp. 41–71). Boston: Kluwer Academic.

- Waddell-Kral, L. & Thomas, C.D. (1990). Body attitudes and eating behaviors of female clothing sales personnel. *Psychological Reports*, 67, 451-456.
- Wardle, J. & Watters, R. (2003) Sociocultural influences on attitudes to weight and eating: Results of a natural experiment. *Int J Eat Disord*, 35, 589-596. doi: 10.1002/eat.10268
- Women's Sports Foundation (2008). www.womenssportsfoundation.org
- Wykes, M. & Gunter, B. (2005). *The Media and Body Image*. London: Sage Publications.

APPENDIX

Introduction to the Study

Thank you for agreeing to participate in this study. Before you agree to participate, it is important that you read and understand the information on the following page. Participation is completely voluntary. The study should not take longer than 45 minutes.

Consent

PURPOSE: The purpose of this research study is to further our knowledge about peoples' satisfaction or dissatisfaction with their physical selves. You will be one of approximately 1,200 participants in this research study.

PROCEDURES: You will be taking a brief online survey. There will be questions asking you to rank your satisfaction with different parts of your body. You will then be asked to rank how well certain statements describe you.

DURATION: Your participation will consist of one 45-minute survey.

RISKS: The risks associated with participation in this study are no more than you would encounter in everyday life.

BENEFITS: Although there are no direct benefits to you, personally, your participation will aid in further understanding body esteem.

CONFIDENTIALITY: All information you reveal in this study will be kept confidential. All your data will be assigned an arbitrary code number rather than using your name or other information that could identify you as an individual. When the results of the study are published, you will not be identified by name. Your research records may be inspected by the Marquette University Institutional Review Board, or its designees.

COMPENSATION: Extra credit will be awarded per Psychology Pool procedures. You will be given a card indicating your participation in the 45-minute study. It will be your responsibility to turn that card into professors of classes for which you can receive extra credit.

VOLUNTARY NATURE OF PARTICIPATION: Participating in this study is completely voluntary and you may withdraw from the study and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled. Once the survey has been completed it will not be possible to withdraw from the study.

CONTACT INFORMATION: If you have any questions about this research project, you can contact Katie Frost by email or phone: Katherine.frost@marquette.edu, 414-288-3781. If you have questions or concerns about your rights as a research participant, you can contact Marquette University's Office of Research Compliance at (414) 288-7570.

Yes, I agree to participate in the study: _____

No I do not wish to participate in the study: _____

Body Esteem Scale

We are interested in people's reactions to physical appearance. In the first part of this study we will ask you some questions about your evaluation of your own appearance. Your answers here, as everywhere in the study, are completely confidential.

On this page are listed a number of body parts and functions. Please read each item and indicate how you feel about this part or function of your own body using the following scale:

	Have strong negative feelings	Have moderate negative feelings	Have no feelings one way or the other	Have moderate positive feelings	Have strong positive feelings
Body Scent	1	2	3	4	5
Appetite	1	2	3	4	5
Nose	1	2	3	4	5
Physical Stamina	1	2	3	4	5
Reflexes	1	2	3	4	5
Lips	1	2	3	4	5
Muscular Strength	1	2	3	4	5
Waist	1	2	3	4	5
Energy Level	1	2	3	4	5
Thighs	1	2	3	4	5
Ears	1	2	3	4	5
Biceps	1	2	3	4	5
Chin	1	2	3	4	5
Body Build	1	2	3	4	5
Physical Coordination	1	2	3	4	5
Buttocks	1	2	3	4	5
Agility	1	2	3	4	5
Width of Shoulders	1	2	3	4	5
Arms	1	2	3	4	5
Chest or Breasts	1	2	3	4	5
Appearance of Eyes	1	2	3	4	5
Cheeks/cheekbones	1	2	3	4	5
Hips	1	2	3	4	5
Legs	1	2	3	4	5
Figure or Physique	1	2	3	4	5
Sex Drive	1	2	3	4	5
Feet	1	2	3	4	5
Sex Organs	1	2	3	4	5
Appearance of Stomach	1	2	3	4	5

Health	1	2	3	4	5
Sex Activities	1	2	3	4	5
Body Hair	1	2	3	4	5
Physical Condition	1	2	3	4	5
Face	1	2	3	4	5
Weight	1	2	3	4	5
Head Hair	1	2	3	4	5
Facial Hair	1	2	3	4	5
Eyelashes/eyebrows	1	2	3	4	5
Forehead	1	2	3	4	5
Neck	1	2	3	4	5
Hands	1	2	3	4	5
Calves	1	2	3	4	5
Ankles	1	2	3	4	5
Perspiration	1	2	3	4	5
Speed	1	2	3	4	5
Flexibility	1	2	3	4	5
Metabolism	1	2	3	4	5
Skin Condition	1	2	3	4	5
Skin Color	1	2	3	4	5
Fingernails	1	2	3	4	5
Teeth	1	2	3	4	5
Back	1	2	3	4	5
Sexual Performance	1	2	3	4	5

Body Esteem Scale Importance Ratings

On this page are listed a number of body parts and functions. Please read each item and rank the importance of each item to the physical evaluation of your own body using the following scale:

	Not at all important	Slightly important	Have no feelings one way or the other	Moderately important	Very important
Body Scent	1	2	3	4	5
Appetite	1	2	3	4	5
Nose	1	2	3	4	5
Physical Stamina	1	2	3	4	5
Reflexes	1	2	3	4	5
Lips	1	2	3	4	5
Muscular Strength	1	2	3	4	5
Waist	1	2	3	4	5
Energy Level	1	2	3	4	5
Thighs	1	2	3	4	5
Ears	1	2	3	4	5
Biceps	1	2	3	4	5
Chin	1	2	3	4	5
Body Build	1	2	3	4	5
Physical Coordination	1	2	3	4	5
Buttocks	1	2	3	4	5
Agility	1	2	3	4	5
Width of Shoulders	1	2	3	4	5
Arms	1	2	3	4	5
Chest or Breasts	1	2	3	4	5
Appearance of Eyes	1	2	3	4	5
Cheeks/cheekbones	1	2	3	4	5
Hips	1	2	3	4	5
Legs	1	2	3	4	5
Figure or Physique	1	2	3	4	5
Sex Drive	1	2	3	4	5
Feet	1	2	3	4	5
Sex Organs	1	2	3	4	5
Appearance of Stomach	1	2	3	4	5
Health	1	2	3	4	5
Sex Activities	1	2	3	4	5
Body Hair	1	2	3	4	5
Physical Condition	1	2	3	4	5
Face	1	2	3	4	5

Weight	1	2	3	4	5
Head Hair	1	2	3	4	5
Facial Hair	1	2	3	4	5
Eyelashes/eyebrows	1	2	3	4	5
Forehead	1	2	3	4	5
Neck	1	2	3	4	5
Hands	1	2	3	4	5
Calves	1	2	3	4	5
Ankles	1	2	3	4	5
Perspiration	1	2	3	4	5
Speed	1	2	3	4	5
Flexibility	1	2	3	4	5
Metabolism	1	2	3	4	5
Skin Condition	1	2	3	4	5
Skin Color	1	2	3	4	5
Fingernails	1	2	3	4	5
Teeth	1	2	3	4	5
Back	1	2	3	4	5
Sexual Performance	1	2	3	4	5

Rosenberg Self Esteem Scale

We are also interested in people's evaluations of their overall self.

Read each item below and then indicate how well each statement describes you using the following response scale:

	Extremely Uncharacter- -istic (not at all like me)	Uncharacter- -istic (somewhat unlike me)	Neither Character- istic Nor Uncharact er-istic	Character- istic (somewhat like me)	Extremely Character- istic (very much like me)
On the whole, I am satisfied with myself.	1	2	3	4	5
At times I think I am no good at all.	1	2	3	4	5
I feel that I have a number of good qualities.	1	2	3	4	5
I am able to do things as well as most other people.	1	2	3	4	5
I feel I do not have much to be proud of.	1	2	3	4	5
I certainly feel useless at times.	1	2	3	4	5
I feel that I'm a person of worth, at least on an equal plane with others.	1	2	3	4	5
I wish I could have more respect for myself.	1	2	3	4	5
All in all, I am inclined to feel that I am a failure.	1	2	3	4	5
I take a positive attitude toward myself.	1	2	3	4	5

Sexual Esteem Scale

The statements listed below describe certain attitudes toward human sexuality, which different people may have. As such, there are no right or wrong answers, only personal responses. For each item you will be asked to indicate how much you agree or disagree with the statement listed in that item. Use the following scale to provide your responses:

1 = agree, 2 = slightly agree, 3 = neither, 4 = slightly disagree, 5 = disagree

	Agree	Slightly agree	Neither	Slightly disagree	Disagree
I am a good sexual partner.	1	2	3	4	5
I would rate my sexual skill quite highly.	1	2	3	4	5
I am better at sex than most other people.	1	2	3	4	5
I sometimes have doubts about my sexual competence.	1	2	3	4	5
I am not very confident in sexual encounters.	1	2	3	4	5
I think of myself as a very good sexual partner.	1	2	3	4	5
I would rate myself low as a sexual partner.	1	2	3	4	5
I am confident about myself as a sexual partner.	1	2	3	4	5
I am not very confident about my sexual skill.	1	2	3	4	5
I sometimes doubt my sexual competence.	1	2	3	4	5

Eating Disorders Inventory -2 subscales

This is a measure of your attitudes, feelings, and behaviors related to eating and other areas. Please answer whether each item applies to you “always,” “usually,” “often,” “sometimes,” “rarely,” or “never.”

	Never	Rarely	Sometimes	Often	Usually	Always
I eat sweets and carbohydrates without feeling nervous.	1	2	3	4	5	6
I think about dieting.	1	2	3	4	5	6
I feel extremely guilty after overeating.	1	2	3	4	5	6
I am terrified of gaining weight.	1	2	3	4	5	6
I exaggerate or magnify the importance of weight.	1	2	3	4	5	6
I am preoccupied with the desire to be thinner.	1	2	3	4	5	6
If I gain a pound, I worry that I will keep gaining.	1	2	3	4	5	6
I eat when I am upset.	1	2	3	4	5	6
I stuff myself with food.	1	2	3	4	5	6
I have gone on eating binges where I felt that I could not stop.	1	2	3	4	5	6
I think about bingeing.	1	2	3	4	5	6
I eat moderately in front of others and stuff myself when they're gone.	1	2	3	4	5	6
I have the thought of trying to vomit in order to lose weight.	1	2	3	4	5	6
I eat or drink in secrecy.	1	2	3	4	5	6
I think that my stomach is too big.	1	2	3	4	5	6
I think that my thighs are too large.	1	2	3	4	5	6
I think that my	1	2	3	4	5	6

stomach is just the right size.						
I feel satisfied with the shape of my body.	1	2	3	4	5	6
I like the shape of my buttocks.	1	2	3	4	5	6
I think my hips are too big.	1	2	3	4	5	6
I think that my thighs are just the right size.	1	2	3	4	5	6
I think my buttocks are too large.	1	2	3	4	5	6
I think that my hips are just the right size.	1	2	3	4	5	6

Measure of Aerobic Activity

Please indicate the degree to which each statement is characteristic of you using the provided scale:

	Extremely Uncharacter- -istic (not at all like me)	Uncharacter -istic (somewhat unlike me)	Neither Character- istic Nor Uncharact er-istic	Character- istic (somewhat like me)	Extremely Character- istic (very much like me)
I enjoy participating in exercises that improve my cardiovascular health (e.g. running, biking, walking, swimming).	1	2	3	4	5
It is important that my body is healthy.	1	2	3	4	5
I think about my body in terms of the way it moves (e.g. agility, speed).	1	2	3	4	5
I am satisfied with my current physical condition.	1	2	3	4	5

Measure of Anaerobic Activity

Please indicate the degree to which each statement is characteristic of you using the provided scale:

	Extremely Uncharacter- -istic (not at all like me)	Uncharacter -istic (somewhat unlike me)	Neither Character- istic Nor Uncharacter -istic	Character -istic (somewha t like me)	Extremely Character- istic (very much like me)
I enjoy participating in exercises that improve my body strength and muscle mass (e.g. weightlifting, hill climbing).	1	2	3	4	5
The appearance of my muscles is important to me.	1	2	3	4	5
I am proud of my muscular build.	1	2	3	4	5
I work toward achieving/maintaining a toned and muscular physique.	1	2	3	4	5

Measure of Physical Attractiveness

Please indicate the degree to which you agree or disagree with each statement using the following scale:

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I am satisfied with my general appearance.	1	2	3	4	5
I consider myself physically attractive.	1	2	3	4	5
I am satisfied with the attractiveness of my face.	1	2	3	4	5
I wish I could change the way my face looks.	1	2	3	4	5

Measure of Body Size, Weight, and Shape

Please indicate the degree to which you agree or disagree with each statement using the following scale:

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I am satisfied with my weight.	1	2	3	4	5
I am satisfied with the overall shape of my body.	1	2	3	4	5
I am unhappy with my body size because of my weight.	1	2	3	4	5
I wish I could change the overall shape of my body.	1	2	3	4	5

Body Shame Subscale of the Objectified Body Consciousness Scale

Please indicate the degree to which you agree or disagree with each item

	Strongly disagree	Disagree	Slightly disagree	Neither	Slightly agree	Agree	Strongly Agree
When I can't control my weight, I feel like something must be wrong with me.	1	2	3	4	5	6	7
I feel ashamed of myself when I haven't made the effort to look my best.	1	2	3	4	5	6	7
I feel like I must be a bad person when I don't look as good as I could.	1	2	3	4	5	6	7
I would be ashamed for people to know what I really weigh.	1	2	3	4	5	6	7
I never worry that something is wrong with me when I am not exercising as much as I should.	1	2	3	4	5	6	7
When I'm not exercising enough, I question whether I am a good enough person.	1	2	3	4	5	6	7
Even when I can't control my weight, I think I'm an okay person.	1	2	3	4	5	6	7
When I'm not the size I think I should be, I feel ashamed.	1	2	3	4	5	6	7

Male Body Attitudes Test

Please rate these items about muscularity and other body attitudes along the 6-point scale: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = usually, 6 = always.

	Never	Rarely	Sometimes	Often	Usually	Always
I think I have too little muscle on my body.	1	2	3	4	5	6
I think my body should be leaner.	1	2	3	4	5	6
I wish my arms were stronger.	1	2	3	4	5	6
I feel satisfied with the definition in my abs.	1	2	3	4	5	6
I think my legs are not muscular enough.	1	2	3	4	5	6
I think my chest should be broader.	1	2	3	4	5	6
I think my shoulders are too narrow.	1	2	3	4	5	6
I am concerned that my stomach is too flabby.	1	2	3	4	5	6
I think my arms should be larger (i.e. more muscular).	1	2	3	4	5	6
I feel dissatisfied with my overall body build.	1	2	3	4	5	6
I think my calves should be larger (i.e. more muscular).	1	2	3	4	5	6
I think I have too much fat on my body.	1	2	3	4	5	6
I think my abs are not thin enough.	1	2	3	4	5	6
I think my back should be larger and more defined.	1	2	3	4	5	6
I think my chest should be larger and more defined.	1	2	3	4	5	6
I feel satisfied with the definition in my arms.	1	2	3	4	5	6
I feel satisfied with the size and shape of my body.	1	2	3	4	5	6
Has eating sweets, cakes, or other high calorie food made you feel fat or weak?	1	2	3	4	5	6

Have you felt excessively large and rounded (i.e. fat)?	1	2	3	4	5	6
Have you felt ashamed with your body size or shape?	1	2	3	4	5	6
Has seeing your reflection (e.g. in a mirror or window) made you feel badly about your size or shape?	1	2	3	4	5	6
Have you been so worried about your body size or shape that you have been feeling that you ought to diet?	1	2	3	4	5	6

The Demographic Variables

To help us understand the characteristics of the group of people answering these questions, we request the following information. Your responses are anonymous and will be used only to describe the composition of the group of respondents.

How old are you? _____ years

Are you male or female? Male _____ Female _____

What is your race/ethnicity? White _____
Black/African American _____
American Indian/Alaska Native _____
Asian _____
Native Hawaiian/Other Pacific Islander _____
Other _____ : _____
Two or more races _____ : _____

What is your sexual orientation? Straight _____
Gay/Lesbian _____
Bisexual _____
Other _____
Don't Know _____

How tall are you? _____ ft _____ inches

What is your weight? _____ lbs

Study Summary

Thank you for completing this survey and answering our questions regarding the way people evaluate several aspects of themselves.

If you have any questions about this study, please contact Katherine Frost at katherine.frost@marquette.edu, 414-288-3781.

Thank you for your time.

In order to receive extra credit, choose the DONE button and ask the experimenter for your extra credit card.