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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

BODY IMAGE AND PARTICIPANT  
CHARACTERISTICS IN  
EMERGING ADULTS

A Dissertation Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Philosophy

Amber Green

College of Education and Behavioral Science  
Department of School Psychology  
School Psychology

August 2018

This Dissertation by: Amber Green

Entitled: *Body Image and Participant Characteristics in Emerging Adults*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in  
College of Education and Behavioral Sciences in Department of School Psychology,  
Program of School Psychology

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## ABSTRACT

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Positive evaluations of one's body, or positive body image, is associated with healthy outcomes. Conversely, negative evaluations of one's body, or negative body image, is a significant risk factor for unhealthy outcomes including eating disorders. Yet, these constructs have not been explored conjointly or in individuals with self-reported levels of positive and negative body image. The goal of the current study was to examine associations among positive, negative, and average levels of body image and a set of participant characteristics including body mass index (BMI), fitness levels, psychological well-being, and attitudes/behaviors toward social media in emerging adults ( $N = 439$ ). Unique to this study, only individuals with self-reported levels of positive ( $n = 60$ ) and negative ( $n = 78$ ) body image were included to examine positive and negative body image.

Participant characteristics that contributed to body image within the negative and positive body image groups were not significant; however, factors that had the greatest contribution differed between groups. When all levels of body image among all 439 participants were examined, those with higher rates of body image were associated with higher rates of psychological well-being, higher fitness levels/attitudes toward fitness, and lower BMI. Although the effect size was small, body image levels varied by gender

with females reporting lower levels of body image than males. Although speculative due to the sample size, interesting trends were observed among five gender non-conforming individuals. These individuals, when compared to males and females, reported lower mean scores on the measures of negative body image and psychological well-being. The results suggested body image is best conceptualized as distinct constructs of positive, negative, and average with varying contributing factors and should be studied as such. Future research on positive body image should include those individuals with positive body image. Similarly, research on negative body image should include those individuals with negative body image to better understand what factors contribute to these constructs and to provide targeted interventions to increase positive body image and decrease negative body image.

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## **CHAPTER I**

### **INTRODUCTION**

#### **Background**

##### **Body Image Definition**

An individual's conceptualization of his/her body or body image is recognized as an important concept in the field of psychology. Body image encompasses both negative and positive evaluations of the body. Negative evaluations of one's body or body dissatisfaction is a significant risk factor for unhealthy outcomes including eating disorders (Killen et al., 1996; Stice, 2002). Accordingly, positive evaluations of one's body are associated with healthy outcomes (Avalos, Tylka, & Wood-Barcalow, 2005). Unfortunately, much of the research on body image focuses on pathologies associated with body dissatisfaction. While this research is imperative as body dissatisfaction is a significant risk factor for eating disorders (Killen et al., 1996; Stice, 2002), in recent years, a movement within psychology has advocated for prevention and promotion of positive outcomes rather than interventions for negative outcomes. Thus, identifying factors that contribute to both negative and positive body image fit well within a preventative model as the promotion of positive body image encourages healthy, positive outcomes.

Body image was originally defined as "the picture of our own body which we form in our mind" (Schilder, 1936, p. 11). Over the past 81 years, this understanding of

body image has evolved to include behaviors, affect, and cognition. Today, body image is commonly defined as a multidimensional concept consisting of perception, cognition, affect, and behavior (Banfield & McCabe, 2002; Grogan, 2006, 2008; Muth & Cash, 1997). Body dissatisfaction and positive body image are two distinct concepts as the absence of body dissatisfaction does not indicate a healthy representation of one's body (Tylka & Wood-Barcalow, 2015). Much of the research on body image emerged from clinical psychology work on eating pathologies of young women (Grogan, 2006; Posavac, Posavac, & Weigel, 2001); as such, body dissatisfaction receives much of the attention in the literature.

### **Consequences of Body Dissatisfaction**

One identified group at particular risk for eating disorders and body dissatisfaction is emerging adults. Emerging adulthood is a distinct developmental period between the ages of 18 and 25 (Arnett, 2000). Due to changing economic and social trends, emerging adults in the 21st century are getting married later and obtaining higher levels of education than previous generations. Arnett (2000) argued these sociocultural changes create a unique and distinct age group between adolescences and adulthood. Consistent with Arnett, emerging adults were the focus of this current study as this developmental period is fraught with new challenges and body image threats.

Examining body image of emerging adults is important as the onset of anorexia nervosa commonly begins during adolescence and young adulthood (American Psychiatric Association [APA], 2013) with a median age of onset between 18 and 20 (Hudson, Hiripi, Pope, & Kessler, 2007). The onset of anorexia is typically associated with a stressful life event such as living alone for the first time, leaving home for college,

and increased responsibility (APA, 2013). Accordingly, the prevalence of eating disorders increases in college students. The 12-month prevalence rate of anorexia and bulimia nervosa in young females is .4% and 1%-1.5%, respectively (APA, 2013).

A significant risk factor for eating disorders is body dissatisfaction (Killen et al., 1996; Stice, 2002). Although the prevalence rates of eating disorders are below 2%, the rates of undergraduate students dissatisfied with their body are significantly higher (Forrest & Stuhldreher, 2007; Mintem, Horta, Domingues, & Gigante, 2015; Neighbors & Sobal, 2007). A national survey of undergraduate college students found 50% of students reported trying to lose weight despite only 28% of them being classified as overweight or obese (Wharton, Adams, & Hampl, 2008).

Body dissatisfaction is associated with increases in negative mood, levels of depression, lowered self-esteem (Bessenoff, 2006; Fallon & Hausenblas, 2005; Hargreaves & Tiggemann, 2004; Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006), and partial and clinical eating disorders (Killen et al., 1996; Stice, 2002; Stice & Shaw, 2002). Stice (2002) conducted a meta-analysis of risk factors for eating pathology. Body dissatisfaction was identified as a risk factor for dieting, negative affect, and eating pathology.

Developmentally, body dissatisfaction is associated with depressive and anxiety symptoms in adolescent and children (Hargreaves & Tiggemann, 2004; Paxton et al., 2006). Paxton et al. (2006) demonstrated body dissatisfaction of early adolescent girls was a significant predictor of depressive symptom at a five-year follow-up. This trend was not observed in mid-adolescent girls with body satisfaction. These findings

indicated body dissatisfaction in early adolescent girls is a prospective risk factor for depression.

### **Models of Body Image**

Body image research primarily studies pathologies associated with body dissatisfaction; as such, theories on non-pathological body image are lacking in the literature. Most theories and models of body image emphasize the development of body dissatisfaction. A sociocultural view of body image is the most empirically supported theory on the development of body dissatisfaction. This theory examines the influence of culture, social ideals, and weight expectations on body image. Within this theory are two well-studied models of body dissatisfaction: the tripartite influence model and the dual pathway model. The tripartite and dual pathway models suggest body comparisons to individuals in the media (Bessenoff, 2006; Dalley, Buunk, & Umit, 2009) and to family members and friends (Lev-Ari, Baumgarten-Katz, & Zohar, 2014; Webb & Zimmer-Gembeck, 2014) contribute to body dissatisfaction. Since thin is idealized in popular culture for women and hypermuscular bodies are idealized for men, individuals who do not meet these standards might experience body dissatisfaction

One known model of positive body image was postulated by Andrew, Tiggemann, and Clark (2016a). One empirical study on this model found participation in sports, perceived body acceptance by others, viewing of information-based media versus appearance-based media, self-compassion, and autonomy contributed to greater body appreciation, suggesting positive body image is influenced by the type of media viewed, participation in fitness, and psychological well-being. As there are limited models of



body image not centered on pathology, the current research sought to identify factors that contribute to positive and negative body image.

The current study sought to explore predictive variables that contribute to negative and positive body image, specifically how and if these differed. The author found no previous models or studies examining variables that contribute to positive and negative body image. The identification of predictive variables was aided by empirically supported body dissatisfaction models and use of feminist theory along with positive psychology. The following variables were identified: body mass index (BMI), fitness levels, psychological well-being, and attitudes and behaviors to social media.

### **Body Mass Index and Body Image**

A variable identified as influencing body image is an individual's BMI. Body mass index is an index of weight and height that is used to classify underweight, overweight, and obesity in adults (World Health Organization [WHO], 2004). Higher BMIs are associated with higher rates of body dissatisfaction in males and females (Ålgars et al., 2009; Cortese, 2010; Erbil, 2013; Watkins, Christie, & Chally, 2008). While underweight males report higher rates of body dissatisfaction, this trend has not been observed in women. Lower BMI in women is associated with greater positive body image (Swami, Stieger, Haubner, & Voracek, 2008). Feminist theory utilizing sociocultural and positive psychology suggests empowerment of one's body and casting aside of the thin culture might increase positive body image in all individuals regardless of size (Murnen & Seabrook, 2012). Based on previous findings, BMI is associated with body image; however, the association between BMI and positive body image has yet to be examined.

### **Fitness Levels and Body Image**

The second factor was fitness levels. There are mixed findings on the association between exercise and body image. While some studies indicated regular exercising is associated with decreased body dissatisfaction (DeBate & Thompson, 2005; DeBate, Pettee Gabriel, Zwald, Huberty, & Zhang, 2009; Vocks, Hechler, Rohrig, & Legenbauer, 2009), others found little to no association between fitness levels and body image (Fallon & Hausenblas, 2005; Gehrman, Hovell, Sallis, & Keating, 2006). Recently, two studies examined the association between empowerment fitness activities (e.g., belly dancing and street dancing) and positive body image. Downey, Reel, SooHoo, and Zerbib (2010) conducted a survey of belly dancers' attitudes toward body image. The dancers reported belly dancing gave them a healthier, more positive body image. Similar to these findings, Tiggemann, Coutts, and Clark (2014) found participation in fitness activities that promoted personal expression of one's body such as belly dancing was associated with positive body image. These results suggested certain forms of fitness might increase levels of positive body image and support a feminist empowerment theory of body image.

### **Psychological Well-Being and Body Image**

The third factor explored was psychological well-being. The concept of psychological well-being fits within a positive psychological framework. Positive psychology focuses on the study and promotion of happiness and strengths versus pathology; it is not the absence of psychopathology but rather the promotion of a better quality of life (Frisch, 2006; Seligman & Csikszentmihalyi, 2000).

Psychological well-being is conceptualized as having several dimensions including adaptability, connectedness, conscientiousness, initiative, empathy,

mindfulness, optimism, and self-efficacy, and self-compassions (Copeland, Nelson, & Traugher, 2010). Enhancement of these traits within psychological wellness could act as a protective factor against pathologies (Seligman & Csikszentmihalyi, 2000).

Of the constructs comprising psychological well-being, self-esteem and self-compassion have been the most extensively studied. Self-compassion is associated with lower levels of disordered eating (Breines, Toole, Tu, & Chen, 2014) and higher levels of positive body image (Kelly & Stephen, 2016). Levels of self-esteem are associated with both negative and positive body image. Lower levels of self-esteem have been identified as a significant predictor of body image disturbances (Grilo & Masheb, 2005) and positive body image has been associated with higher rates of self-esteem (Avalos et al., 2005; Swami, Stieger et al., 2008).

Gillen (2015) examined mental health and positive body image in a sample of 284 undergraduate males and females. Both males and females displayed an association amongst positive body image and higher rates of self-esteem, lower rates of depression, and fewer unhealthy eating habits. Similar results were found across BMI levels. The authors suggested how an individual felt about his/her body mattered more than body size and a positive body image was associated with positive mental health outcomes. Gillen's findings suggested psychological well-being might play an important role in body image above and beyond other factors (e.g., BMI).

Taken together, these findings suggested psychological well-being might act as a moderator of body image. If an individual has a high BMI but high levels of psychological well-being, this might act as a protective factor against body dissatisfaction

and improve positive body image. For this reason, psychological well-being was examined as moderating levels of body image.

### **Social Media and Body Image**

Most research on body image supported the theory that sociocultural factors such as media and familiar/peer comparisons have the most influence on body image (van den Berg et al., 2007; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005). Additionally, Andrew et al. (2016a) found exposure to information-based media was associated with increases in positive image, suggesting exposure to media might contribute to both negative and positive body image. One platform by which individuals are exposed to media is social networking. Use of social media sites has increased substantially in the past 10 years (Pew Research Center, 2013). Young adults have greater access to media than any preceding generation.

Although there has been a significant increase in rates of social media use, few studies have explored the role of social networking on body image. The few studies available have varied findings ranging from social media increases body image and weight satisfaction (Rutledge, Gillmor, & Gillen, 2013) to it decreases body image (Tiggemann & Miller, 2010; Tiggemann & Slater, 2013). Findings varied on the association between body image and social media. However, prior research suggested a strong relationship between body dissatisfaction and media exposure (Bessenoff, 2006; Dalley et al., 2009; Hargreaves & Tiggemann, 2004; Posavac et al., 2001; van den Berg et al., 2007; Yamamiya et al., 2005). Social media have been associated with both increases in body image and body dissatisfaction (Gonzales & Hancock, 2011; Kalpidou,

Costin, & Morris, 2011); as such, this study sought to explore the association between social media and positive and negative body image.

### **Gender and Body Image**

Women historically have experienced significantly higher rates of body dissatisfaction (Ålgars et al., 2009; Neighbors & Sobal, 2007; Smith, Thompson, Raczynski, & Hilner, 1999), depression, and eating disorders (APA, 2013; Eisenberg, Nicklett, Roeder, & Kirz, 2011; Hoerr, Bokram, Lugo, Bivins, & Keast 2002) than males. Instruments utilized to measure body image typically have included separate gender norms as women experience significantly higher rates of body disaffection than males (Brown, Cash, & Mikulka, 1990; Cash, 2000; Cash, Santos, & Williams, 2005).

Despite the vast amount of research indicating women experience higher rates of body dissatisfaction than males, little research has examined males and positive body image. However, few studies conducted indicated males experienced higher rates of body appreciation than women (Tylka, 2013; Tylka & Kroon Van Diest, 2013).

Taken together, these findings suggested levels of body dissatisfaction might vary by gender with females experiencing significantly higher rates than males. Males might also experience higher rates of body appreciation than women. As differences in body image are noted between males and females, gender was included as a variable of interest. If gender differences were found to be significant, gender was controlled in the analyses.

Despite findings suggesting females experience higher rates of body dissatisfaction and lower rates of positive body image, it is important to identify factors that contribute to negative and positive body image in both males and females as there is

a need for interventions to promote well-being for both genders. Additionally, the vast amount of research on body dissatisfaction utilized females. Accordingly, little research exists on males and positive body image.

### **Rationale for the Study**

School psychologists are uniquely trained to promote the prevention of maladaptive behaviors while also advocating for the adaptive well-being of children and young adults. This requires an examination of factors that contribute to maladaptive and adaptive behaviors. This research examined both maladaptive and adaptive aspects of body image. As emerging adults are at an increased risk of body dissatisfaction (Forrest & Stuhldreher, 2007; Mintem et al., 2015; Neighbors & Sobal, 2007) and undergraduate females are at a higher risk of eating disorders such as anorexia (APA, 2013), there was a need to identify factors that contribute to negative body image in this population. The absence of psychopathology does not indicate wellness as such so understanding the factors that contribute to positive body image in emerging adults is equally important.

Furthering this need, children and adolescents are experiencing increasing rates of body dissatisfaction and dieting behaviors (Centers for Disease Control and Prevention [CDC], 2016). Body dissatisfaction in youth is associated with increases in negative mood, levels of depression, and lowered self-esteem (Bessenoff, 2006; Fallon & Hausenblas, 2005; Hargreaves & Tiggemann, 2004; Paxton et al., 2006). Factors that influence positive body image might differ from those that influence body dissatisfaction (Striegel-Moore & Cachelin, 1999). As the factors that contribute to positive and negative body image have not been explored conjointly, there is a need to understand what specific factors contribute to both constructs of body image and how these differ in

order to provide targeted interventions to increase positive and decrease negative body image.

### **Purpose of the Study**

Several theories and models of body dissatisfaction have been proposed in the literature. Historically, research on body image has focused on pathologies associated with body image (Grogan, 2006; Posavac et al., 2001); as such, body dissatisfaction receives much of the attention in the literature. With an increase in positive psychology research, positive body image is emerging in the literature. An understanding of the factors that contribute to levels of body image fits well in a positive psychology and preventative model. This study examined the relationship among undergraduate characteristics (BMI, fitness levels, psychological well-being, and social media behaviors) and levels of body image (positive and negative).

This study contributes to the growing body of research on positive image and the vast research on negative body image. Examination of specific individual characteristics and self-reported body image levels offers a new perspective. Additionally, identification of variables that predict or explain both positive and negative body image would simplify the literature and allow for future hypothesis testing. Results of this research might additionally benefit mental health professionals across the developmental lifespan by providing information about interventions to decrease body dissatisfaction and increase positive body image. The results also contribute to future preventative programs for negative body image and to programs that foster positive body image.

## Research Questions

Relationships between two sets of variables measuring body image (three subscales measuring negative and positive body image) and a set of participant characteristics (BMI, fitness levels, and social media behaviors) were examined. As higher rates of psychological well-being might prevent psychopathology, well-being was investigated as a moderator variable. Additionally, previous research found rates of positive and negative body image might differ by gender (Brown et al., 1990; Cash et al., 2005); for this reason, emerging adults' gender was included as a variable of interest.

- Q1 Are body image levels the same across gender in emerging adults?
- Q2 What participant characteristics (body mass index, fitness levels, psychological well-being, and social media behaviors) predict positive body image among emerging adults?
- Q3 What participant characteristics (body mass index, fitness levels, psychological well-being, and, social media behaviors) predict negative body image among emerging adults?
- Q4 Does psychological well-being moderate the relationship between participant characteristics and positive body image?
- Q5 Does psychological well-being moderate the relationship between participant characteristics and negative body image?
- Q6 Are there significant relationships between participant characteristics (body mass index, fitness levels, and social media behaviors) and levels of body image among emerging adults?

## Delimitations

This study utilized data from undergraduate students ages 18 to 25 from a university setting in the western United States. The sample was limited to males and females within this age range, thus limiting the generalizability to other age groups and dissimilar settings. Self-reported data were utilized for all measures, which might have



been subject to participant recall bias. Furthermore, both sets of variables used in the current study were manipulated by nature versus the experimenter; as such, significant findings would not imply a causal relationship between the predictor and the criterion variable.

### **Definition of Terms**

**Body dissatisfaction.** Negative evaluations of body size, typically involving discrepancies between an individual's body and their ideal body (Grogan, 2006).

**Body mass index.** An index of weight and height used to classify underweight, overweight, and obesity in adults (WHO, 2004).

**Body image.** A three-factor model consisting of cognitions and affect regarding body image, body importance and dieting behavior, and perceptual body image (Banfield & McCabe, 2002).

**Canonical variate.** The linear combination of variables--one combination on the predictor side and one combination on the dependent variable side. These two combinations form a pair of canonical variate.

**Emerging adults.** Individuals between the ages of 18 and 25. Emerging adulthood is considered a unique, distinct developmental period in between adolescents and adulthood (Arnett, 2000).

**Feminist theory.** Theory that focuses on diversity and recognizes the contradictions in self-identity with an emphasis on multiculturalism and diversity. Third wave feminism recognizes the oppression of groups by society and how this contributes to a perceptual cycle of oppression (Tong, 2009).

**Positive body image.** Emerging from positive psychology research, positive body image is the belief in self-worth and an appreciation for one's body (Halliwell, 2015; Tylka, 2011).

**Sociocultural theory.** This theory examines the influence of culture, social ideals, and weight expectations on body image. Most researchers on body image support the theory that sociocultural factors such as the media and familiar/peer comparisons have the most influence on body image (van den Berg et al., 2007; Yamamiya et al., 2005).

**Social networking.** An online platform that (a) allows for semi-public or public profiles, (b) provides a list of other users or friends, and (c) allows for viewing of other profiles (Boyd & Ellison, 2008).

**Third wave feminism.** A form of feminism that focuses on diversity and recognizes the contradictions in self-identity with an emphasis on multiculturalism and diversity. Third wave feminism recognizes the oppression of groups by society and how this contributes to a perceptual cycle of oppression (Tong, 2009).

**Variable.** The individual variable in the research--not linear combined variables.

### **Summary**

Despite the vast amount of research on body dissatisfaction or negative body image, a dearth of research has examined positive body image. Body mass index (Erbil, 2011), fitness levels (Debate & Thompson, 2005), psychological well-being (Frisch, 2006), and attitudes and behaviors to social media (Yamamiya et al., 2005) have been identified as potential contributing factors to negative and positive body image.

Psychological well-being has been found to mediate body image (Gillen, 2015). Although researchers and theorists have examined negative and positive image separately, few studies have conjointly examined what specific factors contributed to both constructs of body image and how these differed. Additionally, no body image research to date has examined contributing factors to positive and negative body image in a group of individuals with self-reported levels of both positive and negative body image.

## CHAPTER II

### REVIEW OF LITERATURE

#### Body Image History

Neurological research findings influenced early conceptualizations of body image. Researchers observed that individuals following parietal lobe damage experienced a loss of body spatial representation (Haggard & Wolpert, 2005). Neurologist Henry Head (cited in Gallagher, 1995) referred to this phenomenon as body schemes; he theorized that humans create mental schema or pictures of their body in space, which are required for spatial processing. Much of the early research on body schemes centered on the loss of body spatial representation following brain injuries.

Body image first emerged as a concept with the publication of *The Image and Appearance of the Human Body: Studies in the Constructive Energies of the Psyche* by Schilder (1936). This article described body image as “the picture of our own body which we form in our mind” (Schilder, 1936, p. 11). Schilder conceptualized body image as three-dimensional consisting of sexual drives and desires and physiological and psychological dimensions. This definition was influenced by Gestalt and psychoanalytic theory in conjunction with observations that schizophrenic patients experienced body alienation and difficulty distinguishing body limits (Schilder, 1936, 1950).

Sigmund Freud (cited in Breakey, 1997) furthered a psychoanalytic conceptualization of body image by theorizing an individual’s ability to conceptualize

his/her body was central to ego and identity development. A psychoanalytic conceptualization of body image was popular until the early 1960s; during this period, pathologies resulting from body dissatisfaction became central in research. These pathologies were first recorded by Hilde Bruch (1978) in her narrative account working with females with anorexia nervosa. Bruch noted adolescents experienced distortions between their actual bodies and mental representations of their bodies. Discrepancies between an individual's actual body and mental representation of body were defined as a central symptom of anorexia nervosa (Lucas, 1978). Much of the body image research conducted after Hilde Bruch centered on pathologies resulting from poor body image or body dissatisfaction.

Body image was originally conceptualized as a unidimensional construct comprised of one of the following four dimensions: perceptions, attitudes, cognitions, and behavior (Cash, 2000; Slade, 1994). Current definitions of body image recognize it as a multidimensional, fluid concept consisting of perception, cognition, affect, and behavior (Grogan, 2006, 2008; Muth & Cash, 1997). Banfield and McCabe (2002) conducted two studies utilizing exploratory and confirmatory factor analyses to evaluate a multi-dimensional model of body image. The authors suggested a three-factor model of body image: cognitions and affect regarding body, body importance and dieting behavior, and perceptual body image. This suggests the manner in which an individual perceives his/her body is based on feelings, thoughts, and beliefs towards his/her appearance, behavioral actions, and the accuracy of an individual to judge his/her body size.

## **Theories of Body Image Disturbance**

Theories on the development of body image, specifically body image disturbance, can be placed in three prominent categories: perceptual, developmental, and sociocultural. The perceptual theory is similar to one first outlined by Hilde Bruch in 1978 and is based on the belief that one is larger than his/her actual size--also referred to as body image distortion. Disturbances in the way in which one's body weight or shape is experienced continue to be a diagnostic criterion for anorexia nervosa in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 2013).

### **Perceptual Body Image Theory**

There is a distinction between perceptual body distortion and body dissatisfaction. Perceptual distortion is the inability to accurately perceive one's body size whereas body dissatisfaction is the degree to which individuals negatively evaluate their body size (Cash & Deagle, 1997; Grogan, 2006). As these are distinct concepts, they employ different methods of measurement. A common method of measuring body perception distortion involves estimation procedures employing distorting mirrors, photographs, videos, or computer images (Mussap & Salton, 2006; Schlundt & Bell, 1993). These studies typically involved participants adjusting the size of an image to match their actual body size. Common methods for measuring body dissatisfaction involved rating scales and questionnaires (Cash, 1995, 2000; Peterson, Tantleff-Dunn, & Bedwell, 2006; Untas, Koleck, Rasclé, & Borteyrou, 2009).

Perceptual body image is conceptualized in two categories: tactile perception and visuospatial representation of one's body. Tactile perception involves the use of touch as a means of referencing one's body size. Research on deficits in tactile perception

indicated individuals with eating disorders have reduced ability to distinguish sensory stimulation when compared to a control group (Keizer et al., 2011; Mussap & Salton, 2006). Keizer et al. (2011) suggested a top-down model of body dissatisfaction wherein high levels of body dissatisfaction might influence body representation that distorts tactile size estimates.

Visuospatial representation of body involves visual representations of one's body size. Research on visuospatial representations or perceptual body indicated individuals with anorexia slightly, but significantly overestimated their body size when compared to healthy controls (Cash & Deagle, 1997; Waldman, Loomes, Mountford, & Tchanturia, 2013). However, these effects were small and attitudinal measures of body dissatisfaction in individuals with anorexia and bulimia produced a larger effect size over controls than perceptual measures (Cash & Deagle, 1997). Additionally, research examining the validity of perceptual measures has not supported the use of them as a measure of body image disturbance and weight dissatisfaction (Mizes, 1992).

Disturbances in visuospatial representations of body size have been noted in healthy adult populations not experiencing body dissatisfaction. Fuentes, Longo, and Haggard (2013) examined healthy adults' body perception using a body image task. Participants were shown a head on a computer screen and asked to indicate where their body parts were relative to the head; these created images were then compared to participants' actual body size. The adults overestimated their shoulder width to height ratio by 40% while underestimating the length of their arms and legs. No significant difference was found between genders. This suggested healthy adults' mental

representations of themselves varied from their actual body size, indicating adults not experiencing body dissatisfaction might lack accurate representations of themselves.

### **Development Theory of Body Image**

Developmental theories of body image examine the role of childhood and adolescent development in adult body image disturbances. Two areas of development are implicit in body image development: puberty and peer relations. Puberty is a time of significant biological, psychological, and social changes (Polsdorfer, Ricker, & Frey, 2011). This time is considered to be important for both psychological and body image development. The rates of depression and generalized anxiety disorder in females significantly increase between the ages of 12 and 15 (Substance Abuse and Mental Health Services Administration, 2015; Vasey, Bosmans, & Ollendick, 2014) while the rates of externalizing behaviors significantly increase in males and females (Dimler & Natsuaki, 2015; Marceau, Ram, Houts, Grimm, & Susman, 2011).

As rates of internalizing and externalizing disorders significantly increase during puberty, the relationship between age of puberty and psychopathology has been extensively studied. Age of puberty onset is associated with body image and psychopathology. In females, early onset menstruation has demonstrated a relationship with psychopathology (Graber, Lewinsohn, Seeley, & Brooks-Gunn, 1997; Graber, Seeley, Brooks-Gunn, & Lewinsohn, 2004; Marceau et al., 2011) and dieting behaviors in childhood and adolescents (Tremblay & Lariviere, 2009). However, these results were not consistent across studies. Several studies demonstrated non-significant findings between the onset of puberty in girls with psychopathology (Ackard & Peterson, 2001) and body image (Ackard & Peterson, 2001; Storrer & Thompson, 1996).



Cattarin and Thompson (1994) utilized a three-year longitudinal study to examine female body image. Teasing history and not the age of menstruation predicted rates of body dissatisfaction. This suggested negative verbal commentary might place adolescents at a greater risk for body dissatisfaction than the age of menarche. Physical-based teasing during adolescences was associated with greater levels of body dissatisfaction in a sample of obese women (Grilo, Wilfley, Brownell, & Rodin, 1994) and adolescents (Greenleaf, Petrie, & Martin, 2014).

The association among weight-based teasing and low body satisfaction, low self-esteem, depressive symptoms, and suicidal ideation was examined in a sample of 4,746 adolescents. Thirty percent of female adolescents and 25% of male adolescents reported being teased. Regardless of age, race, or BMI, adolescents who experienced weight-based teasing reported lower levels of body satisfaction and self-esteem; higher levels of depression and suicidal ideations were also reported (Eisenberg, Neumark-Sztainer, & Story, 2003). Goldfield et al. (2010) demonstrated similar findings as Eisenberg et al. (2003) in a sample of 1,490 Canadian adolescents. Adolescent girls in this sample reported higher rates of weight-related teasing than boys and youth classified as overweight or obese experienced more teasing than average weight children. Regardless of gender or BMI, weight-based teasing was associated with higher rates of internalizing disorders and disordered eating (e.g., dietary restraint and emotional eating).

Taken together, the developmental model of body image examines the impact of childhood and adolescents on body image development. Central to this theory is the role of puberty and weight-based teasing during development on levels of body image. There is a growing recognition that developmental factors such as weight-based teasing might

interact with and influence sociocultural factors that influence body image (Thompson, 2000).

### **Sociocultural Theory of Body Image**

The third theory of body image disturbance is sociocultural theory. This theory examines the influence of culture, social ideals, and weight expectations on body image. Findings of body image research supported the theory that sociocultural factors have the most influence on body image (Bessenoff, 2006; Dalley et al., 2009; Posavac et al., 2001; van den Berg et al., 2007; Yamamiya et al., 2005). Supporting the sociocultural theory, Stormer and Thompson (1996) compared this theory with developmental theory. Their findings indicated social comparison and societal factors associated with sociocultural theory were significant predictors of body dissatisfaction and eating disturbances while weight-based teasing explained a smaller portion of the variance and age of menarche did not significantly contribute.

Furthering support for sociocultural theory, a cross-global study conducted by Swami et al. (2010) investigated body dissatisfaction rates, body weight ideals, exposure to Western media, and social economic status of 7,434 men and women in 10 major world regions (e.g., North America, South America, Western Europe, Eastern Europe, Asia, Australia, and Africa). The results indicated women in North and South America displayed the highest rates of body dissatisfaction. Exposure to Western media was a significant predictor of body dissatisfaction and body weight ideals. However, regions of higher social economic status were a larger predictor of body dissatisfaction than exposure to Western media (Swami et al., 2010).

Social comparisons between women portrayed on television and women's actual body size could lead to discrepancies in an individual's ideal/actual body (Bessenoff, 2006; Dalley et al., 2009; Posavac et al., 2001; Yamamiya et al., 2005). Body comparisons to peers (Clark & Tiggemann, 2006; Lawler & Nixon, 2011) and family members (Lev-Ari et al., 2014) have also been identified as risk factors for body dissatisfaction. As the sociocultural theory of body image development is one of the most theoretically and empirically supported explanations of body image, this research utilized a sub-theory of the sociocultural theory--feminist theory.

### **Feminist Theory of Body Image**

Feminist theory is a common theoretical perspective with which to examine body image (e.g., Peterson et al., 2006; Rees, 2007). Additionally, researchers have advocated the incorporation of feminist theory in preventive programs for eating disorders and body dissatisfaction (Katzman & Lee, 1997; Mason & Chaney, 1996).

This theory postulates that through social learning, individuals equate physical attractiveness with self-esteem (Heider, Spruyt, & De Houwer, 2015). Women's self-worth has become tied to thinness and attractiveness as evidenced by body dissatisfaction being referred to as "normative discontent" in women (Rodin, Silberstein, & Striegel-Moore, 1984). This could lead to discrepancies between an individual's actual body size and ideal body and is a significant predictor of body dissatisfaction (Heider et al., 2015; MacNeill & Best, 2015).

The average woman in the United States weighs 166.2 pounds and is 5 feet 3 inches tall with a BMI in the obese range (CDC, 2016). Whereas, the average model is 117 pounds and 5 feet 11 inches tall with a BMI less than 18.5, classifying them as

underweight (Greenberg, Eastin, Hofschire, Lachlan, & Brownell, 2003). Discrepancies between how an individual is portrayed in the media and actual body size are important due to the role body comparisons play in body image.

Third-wave feminist theory recognizes the larger sociocultural factors that contribute to development including political, social, and economic systems (Rauscher & Cooky, 2016; Tong, 2009). Men and women are required to navigate confusing cultural standards, conflicting gender roles, and societal pressures to maintain unobtainable beauty standards. Unrealistic beauty standards for females can contribute to lower self-concept, self-esteem, and social-emotional well-being (Bessenoff, 2006; Dalley et al., 2009; Posavac et al., 2001; Yamamiya et al., 2005). This theory also respects and celebrates the differences in individuals, recognizing the intersectionality of multiple identities (Kinsler, 2004; Snyder, 2008; Tong, 2009).

Peterson et al. (2006) compared differences in self-reported measures of appearance satisfaction between individuals receiving a feminist theory intervention (e.g., feminist theory body image) and individuals receiving a psychoeducational intervention. Participants in the feminist theory intervention group demonstrated significant increases in body appreciation when compared to the psychoeducational group. This suggested that teaching women how to interpret body-related images increased body appreciation and that feminist theory might be an effective intervention for body dissatisfaction. Within a feminist framework, low self-esteem and body dissatisfaction experienced by individuals are not viewed as personal deficits but rather a product of a larger system of inequality and privilege that places unrealistic standards on individuals.

## **Positive Body Image**

Much of the research on body image emerged from clinical psychology work on eating pathologies of young women (Grogan, 2006; Posavac et al., 2001); as such, body dissatisfaction received much of the attention in the literature. Recent research has examined positive body image as an alternative to studying body disturbances.

Positive body image relates to a positive psychology orientation. Positive psychology focuses on the study and promotion of happiness, meaning, and strengths versus pathology (Frisch, 2006). Aligning with this perspective, positive body image is the belief in self-worth and an appreciation for one's body (Tylka & Wood-Barcalow, 2015). Central to positive body image is body appreciation. Body appreciation involves praising one's body for what it can do rather than focusing on deficits (Tylka, 2011). Positive body image research focused on more than the absence of body image dissatisfaction but rather happiness and appreciation for one's body (Halliwell, 2015).

Research on positive body image did not seek to halt investigations on body pathology but rather added to it by studying strengths (Tylka, 2011). Body dissatisfaction and positive body image are two distinct concepts as the absence of body dissatisfaction does not indicate a healthy, positive representation of one's body (Tylka & Wood-Barcalow, 2015). Positive and negative body image are not viewed as a continuum but distinct concepts. Williams, Cash, and Santos (as cited in Tylka & Wood-Barcalow, 2015) conducted a cluster analysis examining levels of body image in college women. Three distinct and separate groups were identified. A group identified as having positive body image comprised 44% of the sample, 30% were identified as having body

dissatisfaction, and 26% were identified as having intermediate levels of body dissatisfaction.

A qualitative study (Wood-Barcalow, Tylka, & Augustus-Horvath, 2010) of 15 college women with positive body image and content experts were interviewed to identify a definition of positive body image and what contributed to it. The participants identified appreciation for their body, unconditional acceptance from others, body acceptance and love, taking care of the body, filtering media information about your body, broadly conceptualizing beauty, and holistic body image as central to maintaining a positive body image (Wood-Barcalow et al., 2010). The participants did not just accept their body but loved it. These findings in conjunction with Williams, Cash, and Santos (as cited in Tylka & Wood-Barcalow, 2015) supported the theory that the absence of body dissatisfaction did not equate to the presence of positive body image.

Positive body image has been associated with higher rates of self-esteem (Avalos et al., 2005; Swami, Stieger et al., 2008), self-compassion (Kelly & Stephen, 2016), sexual functioning (Erbil, 2013), prosocial behavior (Tylka, 2011), and negatively correlated with BMI (Swami, Stieger et al., 2008). For adolescents, higher rates of body appreciation are associated with decreases in dieting and risk behaviors such as smoking cigarettes and consuming alcohol; whereas lower rates of body appreciation are associated with increases in dieting and risky behaviors (Andrew, Tiggemann, & Clark, 2016b). This suggests targeted intervention for body appreciation might decrease engagement in risky behaviors.

An international study examined personality factors that contribute to positive body image as measured by the Body Appreciation Scale (Swami, Hadji-Michael, &

Furnham, 2008). No significant differences were found in body appreciation by sex, BMI levels, or media consumption levels. Self-reported levels of body attractiveness and higher levels of education were significant predictors of body appreciation (Swami, Hadji-Michael et al., 2008). Media consumption has demonstrated a significant relationship with body dissatisfaction (Yamamiya et al., 2005; van den Berg et al., 2007), suggesting factors that contribute to body appreciation are distinct from those that contribute to body dissatisfaction.

Andrew et al. (2016a) proposed a model of positive body image consisting of sports and physical activity, media consumption, self-compassion, autonomy with self-objectification, and perceived body acceptance by others as mediators. Levels of media consumption and self-compassion were associated with lower self-objectification, social comparisons, and thin internalization, which were related to greater body appreciation. This suggested participation in sports, perceived body acceptance by others, viewing of information-based versus appearance-based media, self-compassion, and autonomy might contribute to greater body appreciation. Andrew et al.'s (2016a) findings were significant as they were the first to propose a model of positive body image. Contrary to Swami, Stieger et al.'s (2008) findings, an association between types of media consumption and positive body image was found. However, Andrew et al. (2016b) found type of media consumed was important in positive body image versus the amount.

### **Body Image Dissatisfaction**

Body dissatisfaction using a feminist/sociocultural lens results in negative evaluations of body size or image, typically involving discrepancies between an individual's body and his/her ideal body (Grogan, 2006). It is influenced by body

comparisons to individuals in the media (Bessenoff, 2006; Dalley et al., 2009; Posavac et al., 2001; Yamamiya et al., 2005) and to family members and friends (Lev-Ari et al., 2014; Webb & Zimmer-Gembeck, 2014). Body dissatisfaction emerges as young as preschool and reaches its highest peak during adolescents (Cramer & Steinwert, 1998; Musher-Eizenman, Holub, Edwards-Leeper, Persson, & Goldstein, 2003).

Awareness of weight and weight stigmatization has been demonstrated in children as young as three (Cramer & Steinwert, 1998; Musher-Eizenman et al., 2003). Preschoolers can distinguish between thin and overweight individuals and attribute personality attributes based on those perceptions (Musher-Eizenman et al., 2003).

Awareness of weight increases throughout adulthood as nationally representative surveys of middle school students have supported an increasing trend of students dieting and reporting dissatisfaction with their bodies. From 1991 to 2015, a significant linear increase was found in the prevalence of middle school students who reported being on a diet (CDC, 2016).

Currently, the percentage of middle school students who self-report being on a diet ranges from 24-45.6% (CDC, 2016; Grosick, Talbert-Johnson, Myers, & Angelo, 2013); this prevalence is higher for females with 60% of female middle school students reporting they were trying to lose weight (CDC, 2016). Eighty-two percent of girls agreed their appearance was an important part of how they identified. Twenty percent of middle school girls reported they had been pressured by family, friends, teachers, or coaches to lose weight (Grosick et al., 2013).

As rates of dieting have increased, self-reported rates of student's feelings of helplessness and sadness have remained stable. Twenty-nine percent of middle school



students reported they felt sad or hopeless almost every day for two or more weeks in a row with the prevalence being higher among females; 40% of female students reported feeling sad or hopeless (CDC, 2016).

Findings of body dissatisfaction in adolescents were supported by qualitative measures of middle school students (Polce-Lynch, Myers, Kilmartin, Forssmann-Falck, & Kliewer, 1998). Interviews with 209 children and adolescents examining body image and self-esteem demonstrated adolescent girls were more negatively and positively impacted by body image than adolescent boys. One fifth grade girl stated her body “makes me feel like I shouldn’t be on this earth” (Polce-Lynch et al., 1998, p. 1031). Body appearance was found to be associated with mood as children reported such things as “when I look bad, I feel bad” (Polce-Lynch et al., 1998, p. 1036). Eighth-grade girls reported the most body dissatisfaction. Quantitative and qualitative measures of adolescents indicated an increase in the number of female children and adolescents who experienced body dissatisfaction. These levels were higher for female adolescents than for males (Polce-Lynch et al., 1998).

One hypothesized reason for the increases in body dissatisfaction in youth is media representation of thin and overweight individuals. Content analysis of cartoons geared toward children demonstrated similar trends to adult television shows; overweight cartoons were more likely to be shown as unattractive, more likely to be portrayed as unintelligent and more likely to be unhappy when compared to an average weight counterpart (Klein & Shiffman, 2006). Representation of overweight and obese characters was greater in children’s programs than adults and often displayed them as having fewer friends and decreased popularity (Robinson, Callister, & Jankoski, 2008).

Hargreaves and Tiggemann (2004) found female children and adolescents who viewed television commercials perpetuating the ideal female body had a significant decrease on a pre-to-post measure of body satisfaction and negative affect. Males viewing the commercials of the ideal male (hyper-muscular model) did not report greater levels of body dissatisfaction and demonstrated a small decrease in negative affect.

As body dissatisfaction is associated with increases in negative mood, levels of depression, lowered self-esteem (Bessenoff, 2006; Fallon & Hausenblas, 2005; Hargreaves & Tiggemann, 2004; Paxton et al., 2006), and partial and clinical eating disorders (Killen et al., 1996; Stice, 2002), it is important to understand the factors that contribute to both positive and negative body image.

### **Contributing Factors to Body Image**

#### **Body Image and Media**

Representations of women in advertisements, magazines, televisions, and movies have been studied extensively in the past decades. Analysis of these media indicates women are increasingly being portrayed as thinner (Silverstein, Kelly, & Perdue, 1986; Sypeck et al., 2006; Wiseman, Gray, Mosimann, & Ahrens, 1992). Eighty-seven percent of women cast in television shows are classified as underweight (Greenberg et al., 2003) and displayed as slimmer than males (Robinson et al., 2008).

An analysis of *Ladies Home Journal* and *Vogue* from the years 1901 to 1981 found the mean bust to waist ratio of female models has significantly decreased from a 2.1 ratio in 1901 to 1.2 in 1981 (Silverstein et al., 1986). Examination of models in *Playboy* demonstrated a similar trend of using models with a low level of body weight (Sypeck et al., 2006; Wiseman et al., 1992). The models featured in *Playboy* are

significantly below normative weights for their age; 69% of the *Playboy* centerfolds had a weight 15% below the expected weight for their age and height category (Wiseman et al., 1992). This finding was similar to television.

While thinness is idealized in television, overweight and obese individuals are vastly under-represented on television, comprising .03% of all characters (Greenberg et al., 2003). Obese and overweight individuals are represented as having fewer romantic interactions, have less positive interactions with other characters, are less likely to be judged as attractive, are portrayed as unintelligent, and are more likely to be ridiculed (Greenberg et al., 2003).

The body size of women's role models as viewed in television, magazines, and movies has significantly decreased throughout the 20<sup>th</sup> century while the average American BMI has increased, creating a dichotomy between women and how they are portrayed in the media (Greenberg et al., 2003; Robinson et al., 2008). Thin body types portrayed in popular media have become a source of comparison for women. Use of thinness as a measure of a women's beauty places pressure on women and girls to achieve unrealistic body sizes and contributes to body dissatisfaction in female adults (Rodin et al., 1984) and adolescents (Hargreaves & Tiggemann, 2004; Paxton et al., 2006). Body comparisons to individuals portrayed in media are believed to play a mediating role in body dissatisfaction (Bessenoff, 2006; Dalley et al., 2009; Posavac et al., 2001; Yamamiya et al., 2005). Van den Berg et al. (2007) examined the mediating role of media body comparisons to psychological and sociocultural factors. A path analysis of 1,386 adolescent female responses on self-report questionnaire demonstrated media body comparisons when taking into account sociocultural and psychological

factors are significantly related to body dissatisfaction. Levels of self-esteem, depressive mood, magazine message exposure, and BMI had a significant direct effect on media body comparison and an indirect effect on body dissatisfaction.

Attractiveness standards, in particular idealization of thinness, influence interactions among female peers. Peers and family members are identified as a social culture factor influencing rates of body dissatisfaction. Body comparisons to peers (Clark & Tiggemann, 2006; Lawler & Nixon, 2011) and family members (Lev-Ari et al., 2014) are identified as risk factors for body dissatisfaction. Additionally, appearance teasing by peers is associated with increased rates of body dissatisfaction (Barker & Galambos, 2003; Vander Wal & Thelen, 2000).

Cognitive interventions delivered prior to viewing female models have demonstrated effectiveness in reducing negative body image states (Posavac et al., 2001; Yamamiya et al., 2005). Posavac et al. (2001) examined if women with moderate to high levels of body dissatisfaction, when provided with videos educating about the unobtainable standards of beauty, would report less body dissatisfaction than a control group after exposure to thin female models. Women who watched the video prior to viewing the female models reported less body dissatisfaction and engaged in less social comparisons. These findings suggested providing information about unrealistic, unobtainable standards for beauty portrayed in popular media might decrease social comparisons and body dissatisfaction.

### **Body Image and Body Mass Index**

Rates of obesity in the United States have steadily increased from 13.4% of adults in the 1960s to 35.7% of adults in 2010 (National Institute of Health, 2012). Currently,

the average woman in the United States weighs 166.2 pounds and is 5 feet 3 inches tall with a BMI in the overweight/obese range while the average male is 5 feet 7 inches and weighs 195.5 pounds with a BMI in the obese range (McDowell & National Center for Health Statistics, 2008). Percentages of individuals who are overweight or obese are significantly higher at 68.8% (National Institute of Health, 2012). As 68.8% of men and women in the United States are overweight or obese, it is important to understand the association between BMI and body image.

Women display a linear relationship between BMI and body image wherein higher BMI is associated with higher levels of body dissatisfaction and lower BMI is associated with lower levels of body image (Ålgars et al., 2009; Cortese, 2010; Erbil, 2013). This trend is not observed in males. Similar to women, overweight and obese men report higher levels of negative body image (Ålgars et al., 2009; Cortese, 2010; Watkins et al., 2008); however, underweight men also report lower levels of body image (Watkins et al., 2008). Inversely, positive body image is greater in individuals with lower BMI classifications (Swami, Steiger et al., 2008).

Additionally, being overweight is a significant predictor of binge eating disorders in males but not in females (Grilo & Masheb, 2005). Contrary to these findings, Şanlıer, Türközü, and Toka (2016) found no significant differences in body image among obese, overweight, and normal weight undergraduate students attending a Turkish university. Weight-based teasing has been associated with increases in body dissatisfaction (Cattarin & Thompson, 1994; Eisenberg et al., 2003; Goldfield et al., 2010) and binge eating disorders (Grilo & Masheb, 2005).

Youth also have high rates of obesity. Seventeen percent of youth in the United States are obese with this increasing to 20.5% of youth ages 12 to 19 (National Institute of Health, 2012). The National Health and Nutrition Examination survey (Merikangas, Mendola, Pastor, Reuben & Cleary, 2012) found no significant relationships between obesity and major depressive disorder overall but an association was indicated between depression and obesity in boys. Adolescents classified as having an obese BMI displayed higher rates of internalizing and externalizing behaviors than overweight and normal weight adolescents (Erermis et al., 2004).

### **Body Image and Fitness Levels**

Mixed findings were found on the association between exercise and body image. Several studies demonstrated little to no association between fitness levels and body image (Fallon & Hausenblas, 2005; Lowery et al., 2005). Other studies demonstrated individuals who exercised had lower levels of body dissatisfaction (Hausenblas & Fallon, 2006; Korn, Gonen, Shaked, & Golan, 2013).

Exercise has been extensively studied as an intervention for body dissatisfaction. A meta-analysis conducted by Hausenblas and Fallon (2006) synthesized research findings on the effects of exercise on body image. One hundred and twenty-one studies were included in the analysis. Results of a quasi-experimental, correlation, and single group design indicated a significant association between exercise and increases in body image. Although there was an association between exercising and increased body image, studies included in this meta-analysis did not examine if individuals with pre-existing feelings of body satisfaction decreased these with an exercise intervention.

Studies utilizing participants with high levels of body dissatisfaction found no association between exercise and decreased levels of body dissatisfaction. Fallon and Hausenblas (2005) found no significant effects for participants after 30 minutes of exercise on decreasing body dissatisfaction after exposure to pictures depicting the ideal female physic; however, exposure to the pictures was associated with increased body dissatisfaction. Similar findings were reported by Hall, Baird, Gilbert, Miller, and Bixby (2011) for participants who engaged in exercise while viewing television shows depicting the "ideal" female.

With the increase of research on positive body image, studies examining fitness activities associated with positive body image are emerging in the literature. Downey et al. (2010) conducted a survey of belly dancers to examine body image and participation in belly dancing. Participations expressed that belly dancing increased their body image to a healthier, positive one. One woman reported, "I feel more comfortable with my body. I am working out and do not want to lose too much weight. I now think my curves are beautiful!!" (Downey et al., 2010, p. 384). Similar to these findings, Tiggemann et al. (2014) found participation in fitness activities that promoted personal expression of one's body such as belly dancing was associated with positive body image. These results suggest certain forms of fitness might increase levels of positive body image.

Increasing rates of body dissatisfaction in youth have triggered a surge of research examining the effect of fitness programs on body image. Fitness programs such as Girls on the Run (n.d.), Girl Power (n.d.), Go Girl Go (Women's Sport Foundation, 2018), and Smart Fit Girls (2016) have been extensively studied as intervention programs for body dissatisfaction in youth. Programs such as these seek to empower girls and promote

positive life outcomes by encouraging girls to take responsibility for decision making and engage in physical activity (BStrongBFit, n.d.; Girls on the Run, n.d.).

One fitness-based program that has been extensively studied is Girls on the Run (n.d.). This program provides a running-based curriculum for girls ages 10 to 13. Program evaluations of Girls on the Run demonstrated significant changes in pre- to post-intervention measures of participants' self-esteem (DeBate & Thompson, 2005; Debate et al., 2009; Galeotti, 2015), body size satisfaction (DeBate & Thompson, 2005; Debate et al., 2009), eating attitudes (DeBate & Thompson, 2005; Debate et al., 2009), and commitment to physical activity (Bean, Miller, Mazzeo, & Fries, 2012; DeBate, Zhang, & Thompson, 2007).

Similarly, middle school girls with self-reported low levels of body attitude who participated in a six-week aerobic dance course when compared to a group of girls in a physical education course reported significantly reduced body dissatisfaction levels and increased attitudes toward their body (Vocks et al., 2009). Vocks et al. (2009) contended the supportive environment and enjoyment of the dance classes as opposed to the competitiveness of the physical education courses might have contributed to the findings. Despite these results, there are mixed findings on the association of exercise and body dissatisfaction in children. Vocks et al. reported a significant inverse relationship between physical activity and body dissatisfaction while Gehrman et al. (2006) found little to no relationship.

Lubans, Plotnikoff, and Lubans (2012) conducted a systemic review of physical-based programs as interventions for at-risk youth. Significant increases in social-emotional well-being were identified for outdoor adventure programs, sport and skill-



based programs, and physical fitness programs. However, the researchers reported the risk of bias in the existing studies was high. None of the studies reported power calculations to detect the hypothesized effect. Additionally, few of the studies reported attrition rate of participants or randomization techniques. The authors concluded that although the existing studies of physical-based interventions contained methodological flaws, some evidence supported that these programs might offer psychological and social benefits for at-risk youth.

Gehrman et al. (2006) examined the effects of a nutrition and exercise program on body satisfaction, drive for thinness, and weight concerns in a group of 10- and 11-year-old children. Parents and children received courses in nutrition and physical exercise. Children participated in non-competitive games and weight-bearing activities (e.g., running and jumping games, calisthenics, jumping rope) once a week for eight weeks. No significant differences were found in body satisfaction, drive for thinness, and weight concern between children participating in the program and children not participating. Gehrman et al. suggested the short duration of the program might have contributed to these findings.

The participants in Gehrman et al.'s (2006) research engaged in games such as running and jumping, which were more similar to a physical education class as opposed to participating in an organized club or group such as a dance course. This might have contributed to the non-significant findings. As suggested by Vocks et al. (2009), the type of exercise might affect decreases in body dissatisfaction. Children who participated in physical education courses did not report decreased levels of body dissatisfaction while girls in a dance club did (Vocks et al., 2009). As demonstrated by Fallon and Hausenblas

(2005) and Hall et al. (2011), acute bouts of exercise might not be effective in decreasing body dissatisfaction and increasing positive affect and body image.

### **Psychological Well-Being and Body Image**

After World War II, psychology operated in a disease model wherein psychological disorders were treated when they occurred. Little focus was placed on prevention of disorders or how to maximize well-being (Seligman & Csikszentmihalyi, 2000). The term positive psychology was first used by Abram Maslow (cited in Marquez, 2017). Maslow, a humanistic psychologist, advocated that the psychologist should focus on positives within human development and foster growth versus deficits (Marquez, 2017). Despite Maslow's work, a deficit model of human function was prominent until 1998 when positive psychology was recognized and promoted as an ideology (Seligman & Csikszentmihalyi, 2000). Derived from humanistic psychology and resiliency research by Frankl, positive psychology is the study and promotion of wellness (Marquez, 2017). Seligman and Csikszentmihalyi (2000) in their pioneering article on positive psychology stated, "The exclusive focus on pathology that has dominated so much of our discipline results in a model of the human being lacking the positive features that make life worth living" (p. 5). Since the publication of this article, the authors have promoted the use of evidence-based methods research supporting tenants of positive psychology.

Positive psychology is now studied across disciplines and has resulted in several theories of well-being. The conceptualization of psychological well-being used in the present study was advocated by Copeland et al. (2010). Using this conceptualization, psychological well-being encompasses adaptability, connectedness, conscientiousness,

initiative, empathy, mindfulness, optimism, self-efficacy, and self-compassions. This conceptualization arose from research on positive psychology and resiliency (Copeland et al., 2010). From these constructs, the Child and Adolescent Wellness Scale was developed to measure psychological well-being (Copeland, Nelson, & Bardos, 2016). The college-age version of this scale, the JWS, was used in the present study.

Of the constructs comprising Copeland et al.'s (2010) conceptualization of psychological well-being, self-esteem and self-compassion have been the most extensively studied with body image. Self-compassion involves being kind and caring for oneself rather than engaging in critical judgment (Neff, 2003). Self-compassion is associated with lower levels of disordered eating (Breines et al., 2014) and higher levels of positive body image (Kelly & Stephen, 2016). Self-esteem refers to one's evaluation of one's worth and competencies (Konrath, 2014). Lower levels of self-esteem have been identified as a significant predictor of body image disturbances (Grilo & Masheb, 2005).

Improvement of psychological well-being has been proposed as an intervention to decrease eating disorders and body dissatisfaction. As eating pathologies and body image have traditionally been examined within a pathological framework, Steck, Abrams, and Phelps (2004) outlined a framework of body images that centered on positive psychology consisting of promotion of well-being, positive individual traits, and institutions that focus on positive body image. The authors argued that by using these tenets psychological wellness can act as a prevention of eating disorders.

Gillen (2015) examined mental health and positive body image in a sample of 284 undergraduate males and females. Both genders displayed an association among positive

body image and higher rates of self-esteem, lower rates of depression, and fewer unhealthy eating habits. Similar results were found across BMI levels. Gillen suggested how an individual felt about his/her body mattered more than body size and a positive body image was associated with a positive mental health outcome. Similar to Steck et al.'s (2004) framework promoting positive psychology as an intervention for eating disorders, Gillen's findings suggested psychological well-being might play an important role in body image above and beyond other factors (e.g., BMI).

### **Body Image and Social Media**

As the influence of television and magazines on body image has been extensively studied (Bessenoff, 2006; Dalley et al., 2009; Hargreaves & Tiggemann, 2004; Posavac et al., 2001; van den Berg et al., 2007; Yamamiya et al., 2005), this research sought to explore the influence of social networking sites on body image. Boyd and Ellison (2008) distinguished social networking sites as (a) allowing for semi-public or public profiles, (b) providing a list of other users or friends, and (c) allows for viewing of other profile example social networking sites including MySpace<sup>®</sup>, Facebook<sup>®</sup>, Twitter<sup>®</sup>, and LinkedIn<sup>®</sup>.

Rates of social networking have increased dramatically in the past 10 years (Pew Research Center, 2013). Currently, 90% of all individuals ages 18 to 29 report using social networking sites, making this demographic the highest age group to utilize social networking (Greenwood, Perrin, & Duggan, 2016); as such, understanding the potential influence of social media on body image is of importance.

The most popular social networking site for this age group is Facebook with 88% of online adults ages 18 to 29 self-reporting using this social media site. This is more

than the percentages reported for using Twitter (36%), Pinterest (36%), Instagram (59%), and LinkedIn (34%; Greenwood et al., 2016). As Facebook is the most widely used social media site for males and females, this study examined the emotional and behavioral connectedness to this popular site. Historically, women have used social media at higher rates than men (Duggan & Brenner, 2013). Recently men (73%) are accessing social media at rates similar to women (80%; Anderson, 2015), suggesting a need to examine the influence of social media on both males and females.

Facebook (n.d.) users can create a visible profile that allows them to provide personal information such as marital status, job, hometown, and contact information. Facebook provides an opportunity for users to interact with people referred to as “Facebook friends” through posting pictures and/or videos, messages, joining groups, and liking others posts or pictures information. Users can comment on photographs, allowing them to give and receive feedback on their appearance.

Social media is distinct from mass media as it is interactive, ever present, and allows for communication with like-minded persons (Perloff, 2014). Individuals who use social media are consistently presented with pictures of family, friends, and models portraying the thin ideal. Comparisons to individuals portrayed in the media (television, magazines) are believed to play a mediating role in body dissatisfaction (van den Berg et al., 2007). Similarly, comparisons to an individual’s “friends” on Facebook might contribute to body dissatisfaction. Perloff (2014) outlined a transactional model of social media and body image concerns as not all individuals who use social media develop body image disturbances. This model recognizes the role an individual’s psychological or

vulnerability factors play in developing body dissatisfaction including low self-esteem, perfectionism, depression, and thin-ideal internalization.

Despite the vast number of individuals utilizing Facebook and similar social media sites, a dearth of research has examined the relationship between social media and body image. Popular news outlets suggest social media impact body image with reports that social media is a toxic mirror (Simmons, 2016); however, few empirical studies have investigated the association between body image and social networking.

Studies of Facebook have examined personality characteristics of users (Amichai-Hamburger & Vinitzky, 2010; Buffardi & Campbell, 2008; Gil-Or, Levi-Belz, & Turel, 2015; Mehdizadeh, 2010; Ross et al., 2009), academic performance (Kirschner & Karpinski, 2010), and self-esteem (Gonzales & Hancock, 2011; Kalpidou et al., 2011; Kim & Lee, 2011; Yu, Tian, Vogel, & Chi-Wai Kwok, 2010).

Findings of personality traits of Facebook users vary with some finding a connection between individual personality traits, specifically narcissism and Facebook behaviors (Amichai-Hamburger & Vinitzky, 2010; Buffardi & Campbell, 2008; Gil-Or et al., 2015), while others found little to no connection between Facebook behaviors and an individual's personality (Ross et al., 2009). Mixed findings also exist on the impact of Facebook on self-esteem. Some studies indicated increased time on Facebook decreased self-esteem (Kalpidou et al., 2011) while others indicated the social support provided by Facebook might increase self-esteem (Gonzales & Hancock, 2011).

Internationally, two studies have investigated the relationship between internet exposure and body image (Tiggemann & Miller, 2010; Tiggemann & Slater, 2013). These studies found that in a sample of Australian female high school students, the

amount of time spent on the Internet significantly correlated with the internalization of the thin ideal, weight dissatisfaction, and drive for thinness. The number of Facebook friends was significantly correlated with these three outcomes (Tiggemann & Miller, 2010; Tiggemann & Slater, 2013). Time spent on Facebook was associated with increased internalization of the thin ideal and decreased weight satisfaction. Other sites (e.g. YouTube, Google, or NineMSN) were not associated with any of these variables (Tiggemann & Miller, 2010). These studies (Tiggemann & Miller, 2010; Tiggemann & Slater, 2013) did not exclusively investigate social media and body image; rather their research focused on Internet use including the amount of time spent on the internet, activities completed on the internet, and sites used most on the Internet.

Rutledge et al. (2013) examined Facebook and body image. The researchers measured the influence time spent on Facebook, the number of Facebook friends, and emotional investment to Facebook had on body image. Two hundred and twenty-five participants ages 18 to 25 completed the Facebook Intensity Scale and two subscales-- Appearance Orientation and Appearance Evaluation of the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Cash, 2000). The results indicated students spent between 31 minutes to two hours on Facebook per day with no gender differences found. Individuals more emotionally connected to Facebook were increasingly oriented to their appearance. No differences were reported for time spent on Facebook. Students who had more friends reported higher evaluations of their appearance.

These findings were contrary to those of Tiggemann and Miller (2010) and Tiggemann and Slater (2013) who suggested the amount of time spent on Facebook was associated with decreased weight satisfaction. Rutledge et al.'s (2013) results suggested

increased time spent on Facebook was unrelated to body image. One possible reason for these contradicting findings might be due to the instruments utilized. The metrological rigor of the Facebook Intensity Scale (Jenkins-Guarnieri, Wright, & Johnson, 2012) has been questioned as it does not report validation and reliability analyses beyond internal consistency coefficients, suggesting “it may be a weak measure of Facebook use” (Jenkins-Guarnieri et al., 2012, p. 40). This study sought to measure Facebook attitudes and behaviors using the empirically validated Social Media Use Integration Scale (Jenkins-Guarnieri et al., 2012).

### **Body Image and Gender**

Although a feminist perspective is the lens through which body image is explored, this theory acknowledges the influence social learning has on physical qualities deemed attractive in males. The ideal male body portrayed in popular culture is muscular (Agliata & Tantleff-Dunn, 2004; Furnham & Calnan, 1998). As with females exposed to thin models, males exposed to muscular media demonstrate decreased rates of body esteem and psychological well-being (Barlett, Vowels, & Saucier, 2008). The number of males experiencing body dissatisfaction is increasing. Although body dissatisfaction is increasing males continue to experience lower rates of body dissatisfaction than females (Swami, Hadji-Michael et al., 2008).

The direction in which body dissatisfaction is measured in men is of importance as men might be dissatisfied with their bodies due to being underweight whereas women are typically dissatisfied due to wanting to be thinner. In a sample of adolescent males, Furnham and Clanan (1998) found 69% of males were dissatisfied with their bodies.



This was divided almost evenly between those who wanted to lose weight and those who wanted to gain weight.

Recent findings suggested that although females experienced higher rates of body dissatisfaction than males, women beginning in the mid-1990s were becoming increasingly satisfied with their bodies while males' dissatisfaction remained stable (Cash, Morrow, Hrabosky, & Perry, 2004). A meta-analysis conducted by Karazsia (2016) examined body image trends from 1981 to 2012; the findings were similar to Cash et al. (2004) wherein women over time became increasingly satisfied with their bodies while men's muscular dissatisfaction remained stable over time. Drive for greater muscle mass has been identified as a risk factor for bulimia in males (Pritchard, 2014).

Similar cross-sectional trends have been demonstrated for undergraduate students. Undergraduate female students over three semesters demonstrated an increase in satisfaction with body areas when controlling for BMI while male students remained stable. Despite the increase in area satisfaction, female students still reported lower rates than males (Gillen & Lefkowitz, 2012). Although women continue to experience higher rates of body dissatisfaction than males, rates of positive body image among men is largely unknown; additionally, levels of positive body image across gender are largely understudied.

### **Summary**

Historically, body image has been conceptualized within a Gestalt and psychoanalytic perspective (Schilder, 1936, 1950). Much of the early research on body image centered on pathologies associated with body image disturbances (Bruch, 1978). Current theories on body image recognize it is as a multidimensional construct consisting

of perceptions, cognitions, affect, and behavior (Banfield & McCabe, 2002). Aligning with positive psychology, positive body image is emerging in the literature (Tylka & Wood-Barcalow, 2015). Body image is now viewed as a multidimensional construct consisting of both positive and negative evaluations of one's body.

More information is needed to better understand the factors that contribute to this recent body image construct. Limited research exists on individual characteristics that contribute to positive and negative evaluations of one's body. Identifying these factors might assist in providing targeted interventions across the developmental lifespan that increase positive and decrease negative body image.

## **CHAPTER III**

### **METHODOLOGY**

The purpose of this study was to explore the connection between body image and participant characteristics. This chapter describes the design of the study, characteristics of the sample and participants, instrumentation, and data analysis.

#### **Research Design**

This study utilized a non-experimental survey method as no treatment was given to the participants. The survey addressed personal characteristics including BMI, fitness levels, psychological well-being, and social media behaviors, allowing the researcher to examine which of these personal characteristics contributed to positive and negative body image in emerging adults. A demographic questionnaire and four survey measures were administered. The purpose of utilizing this design was to determine the explanatory power between a set of participant characteristics and body image.

A causal, comparative research design poses threats to internal and external validity as it does not allow for the manipulation of variables. An extensive review of the literature (Ålgars et al., 2009; Andrew et al., 2016a; DeBate & Thompson, 2005; DeBate et al., 2009; Kelly & Stephen, 2016; Rutledge et al., 2013; Tiggeman & Miller, 2010; Tiggemann & Slater, 2013) was conducted to identify variables that contributed most to body image in an attempt to control for extraneous variables. Despite this, it is possible extraneous variables other than the ones included in the studies might have influenced the

results. This design allowed for high external validity as naturally occurring rates of body image and characteristics were being measured. Additionally, the sample was obtained from various academic disciplines and ages, allowing for greater generalizability.

### **Participants**

The population for this study was selected after a review of literature indicated rates of anxiety, depression, and eating-related disorders increased between the ages of 18 and 25 (APA, 2013; Forrest & Stuhldreher, 2007; Hudson et al., 2007; Mintem et al., 2015; Neighbors & Sobal, 2007); accordingly, female and male students ages 18 to 25 were the target population of this study. Participants enrolled in a medium-sized university in the western United States were recruited. To qualify for participation, students had to be enrolled in a university and between the ages of 18 and 25. Emerging adults from all academic programs including undeclared students were eligible to participate. Participants self-selected to participate in the research without researcher intervention. As this study sought to examine body image in emerging adults, which encompassed individuals between 17 and 25 years of age (Arnett, 2000), participants over the age of 25 were excluded from the study.

A priori sample size estimations for a canonical correlation, multiple linear regression, and multiple analysis of variance (MANOVA) were performed to calculate the necessary sample size to reduce Type I and Type II errors. A statistical a priori power analysis using the software G\* Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007) was performed for sample size estimation of the multiple linear regressions (simultaneous and hierarchical) and MANOVA. The necessary sample size for a simultaneous regression

with a medium effect size (.4) using Cohen's (1988) criteria was utilized. With  $\alpha = .05$ , power = .95, and the five tested predictors (BMI, fitness levels, psychological well-being, social media behaviors, and body image scales), the projected sample size needed was approximately 56. As two simultaneous regressions were conducted for positive and negative body image, the  $P$  value to find significance was adjusted to .03 (.05/2) to control for Type I errors.

The necessary sample size for the hierarchical regressions with a medium effect size (.4) using Cohen's (1988) criteria was utilized. With  $\alpha = .05$ , power = .95, three tested predictors (BMI, fitness levels, and social media behaviors), for a total number of five predictors (psychological well-being and body image), the projected sample size needed was approximately 48. As two hierarchical regressions were conducted for positive and negative body image, the  $P$  value needed for significance was adjusted to .03 (.05/2) to control for Type I errors.

The sample size needed for the MANOVA with a medium effect size (.4) using Cohen's (1988) criteria was utilized. With  $\alpha = .05$ , power = .95, the number of groups = two (gender), and three response variables (negative and positive body image scales), the projected sample size needed was approximately 48.

The sample size needed to conduct the canonical correlation was found using criteria outlined by Tabachnick and Fidell (2013). The authors recommended using 5 to 10 observations per variable to perform a canonical correlation to avoid overfitting the data. The study utilized two dependent variables (combined Appearance Evaluation [AE] and Body Areas Satisfaction Scale [BASS] z scores and Positive Rational Acceptance [PRA] Scale) and four independent variables (BMI, fitness levels, psychological

wellness, and social media behaviors) for a total of six variables, suggesting a sample size of 35-70 for the canonical correlation. Based on a priori analyses, the total sample size needed was 126 for the regression analyses using a *P* value of .03 for significance, 48 for the MANOVA, and 70 for the canonical correlations, resulting in a total sample size of 244 to avoid Type I and Type 2 errors.

The mid-western university where data collection occurred has approximately 8,920 undergraduate students: approximately 2,754 freshmen, 1,831 sophomores, 2,012 juniors, and 2,498 seniors; 64% were female and 36% were male. The minimum sample necessary was 244. The researcher attempted to obtain a sample representative of the educational setting.

### **Measures**

This study measured body image and participant characteristics. Body image was represented by two negative body image scales--the AE and BASS from the MBSRQ (Cash, 2000)--and one positive body image scale (PRA) from the Body Image Coping Strategies Inventory (BICSI; Cash et al., 2005). Participant characteristics were represented by four variables: BMI, fitness levels, psychological well-being, and social media behaviors. Body mass index was measured by participants' self-reported height and weight converted to BMI (WHO, 2004). Fitness levels were measured using the Fitness Orientation (FO) subscale of the MBSRQ (Cash, 2000). Psychological well-being was measured using the Journey to Wellness Scale (JWS; Copeland et al., 2010) and social media behaviors were measured using the Social Media Use Integration Scale (SMUIS; Jenkins-Guarnieri et al., 2012). Demographic information included gender, race/ethnicity, age, program area, and parental education.

## **Multidimensional Body-Self Relations Questionnaire**

The MBSRQ (Cash, 2000) is a self-reported measure of body image for adults and adolescents; it consists of 69 items and 10 subscales. The MBSRQ includes seven factor subscales and three multi-item subscales. Due to the multi-dimensional aspect of the instrument, no total score is available.

Creation of the MBSRQ utilized a normative sample of 30,000 respondents, 2,000 of which were randomly stratified (Brown et al., 1990; Cash, 2000; Cash, Winstead, & Janda, 1986). In a sample of 996 males and 1,070 females 18 years of age or older, MBSRQ items demonstrated high levels of internal consistency ( $\alpha = .70-.90$ ; Brown et al., 1990). Additionally, in a sample of college students (age 18 to 29), the items displayed high levels of test-retest reliability (.71-.94 across one month; Cash et al., 1986).

The MBSRQ scores demonstrated validity as a measure of body image with females, undergraduate students (Cash, 1995; Cash, Ancis, & Strachan, 1997; Jacobi & Cash, 1994; Muth & Cash, 1997), and women experiencing body dissatisfaction (Cash & Lavallee, 1997). Several versions of the MBSRQ have been translated and validated including a German version (Vossbeck-Elsebusch et al., 2014), a Spanish version (Roncero, Perpiñá, Marco, & Sánchez-Reales, 2015), and a French version (Untas et al., 2009). Two subscales of the MSRQ (AE and BASS) are the most pertinent to measuring negative body image. Additionally, the FO subscale was utilized to measure fitness levels.

**Appearance evaluation.** The AE scale consists of seven items that measure body dissatisfaction (see Appendix A for AE subscale items). Raters indicate their level of disagreement-agreement on a 1 to 5 Likert scale: 1--*Definitely disagree*, 2--*Mostly*

*disagree*, 3--*Neither agree nor disagree*, 4--*Mostly agree*, and 5--*Definitely agree*. In a sample of male and female college students, AE items yielded high internal consistency ( $\alpha=.88$ ; Brown et al., 1990) and high test-retest reliability (.91; Cash, 2000).

The AE subscale was used in this study as it displayed convergent validity with binge eating symptoms in a sample of White and Black women (Kelly et al., 2011) and had been utilized as a measure of body dissatisfaction in previous studies (Hrabosky et al., 2009; Kelly et al., 2012; Vossbeck-Elsebusch et al., 2014). The AE final subscale score was obtained by summing the participant's self-reported scores on the seven items and dividing by the total number of items, resulting in a mean subscale score. Gender mean norms derived from a sample of 996 males and 1070 females were provided for males ( $M = 3.50$ ) and females ( $M = 3.36$ ; Cash, 2000; see Appendix B for gender norms). Lower scores on the AE subscale indicated a general unhappiness and dissatisfaction with one's looks.

**Body areas satisfaction scale.** The BASS consists of eight items that measure dissatisfaction with individual aspects of an individual's appearance (see Appendix A for BASS subscale items). In a sample of 996 males and 1,070 females 18 years of age or older, subscale items demonstrated high levels of internal consistency for males ( $\alpha = .77$ ) and females ( $\alpha = .73$ ) and high levels of test-retest reliability for males (.86 across one month) and females (.73 across one month; Cash, 2000).

The BASS displayed high convergent validity with the AE scale of the MBSRQ. MBSRQ authors allow for the combination of the AE and BASS subscales when using normalized Z-scores of each scale (Cash, 2000).



The BASS was used in this study as it displayed convergent validity with binge eating symptoms in a sample of White and Black women (Kelly et al., 2012) and was utilized as a measure of body dissatisfaction in previous studies (Annesi, 2010; Vossbeck-Elsebusch et al., 2014). The BASS final subscale score was obtained by summing the participant's self-reported scores on the eight items and dividing by the total number of items, resulting in a mean subscale score. Gender mean norms derived from samples of 804 women and 335 men were provided for males ( $M = 3.50$ ) and females ( $M = 3.23$ ; Cash, 2000; see Appendix B for gender norms). Low scores indicated the rater was more dissatisfied with their appearance in several areas.

**Fitness orientation.** The predictor variable fitness level was measured using the FO subscale of the MBSRQ. The FO scale consists of 12 items that measure the extent of investment in being physically fit (see Appendix A for FO subscale items). In a sample of 996 males and 1,070 females 18 years of age or older, subscale items demonstrated high levels of internal consistency for males ( $\alpha = .91$ ) and females ( $\alpha = .89$ ; Brown et al., 1990). In a sample of college students, items additionally displayed high levels of test-retest reliability for males (.73 across one month) and females (.94 across one month; Cash et al., 1986). The FO scale final subscale score was obtained by summing the participant's self-reported scores on the 12 items and dividing by the total number of items, resulting in a mean subscale score. Higher scores indicated raters were actively involved in activities and maintained their fitness levels. Lower scores indicated raters did not regularly incorporate exercise activities into their lives.

### **Body Image Coping Strategies Inventory**

Participants' levels of positive body image were measured using the PRA scale of the BICSI. The BICSI is a self-reported measure of body-cognitive and behavioral activities individuals use to manage or cope with threats to their body image. The BCSI consists of 36 items and three subscales. The subscale of interest, PRA, consists of 11 items that measure positive acceptance of the rater's body when presented with body-image related threats. Raters indicated their level of disagreement-agreement on a 0 to 3 Likert Scale 0--*Definitely not like me*, 1--*Mostly not like me*, 2--*Mostly like me*, and 3--*Definitely like me*. In a sample of 603 male and female college students (ages 18 to 29), BCSI items demonstrated high levels of internal consistency for males ( $\alpha = .85$ ) and females ( $\alpha = .80$ ; Cash et al., 2005).

The PRA subscale of the BCSI was of interest as it was inversely associated with self-objectification and positively associated with subjective well-being in a sample of 418 Canadian college students (Choma, Shove, Busseri, Sadava, & Hosker, 2009; see Appendix C). This suggested the PRA scale measures traits associated with positive body image. The PRA final subscale score was obtained by summing the participant's self-reported scores on the 11 items and dividing by the total number of items, resulting in a mean subscale score. Gender mean norms derived from several study samples totaling 164 male and 789 female college students were provided for males ( $M = 1.59$ ) and females ( $M = 1.68$ ; Cash et al., 2005; see Appendix D for gender norms). Higher scores indicated the rater was generally content with most areas of his/her body and experienced higher levels of body acceptance.

### **Body Mass Index**

The BMI is an index of weight and height used to classify underweight, overweight, and obesity in adults (WHO, 2004). Body mass index was calculated using participants' self-reported weight and height. The formula for BMI is as follows:

$$\left( \frac{\text{Weight in Pounds}}{(\text{Height in inches}) \times (\text{Height in inches})} \right) \times 703$$

Body mass index is classified as follows: underweight (BMI <18.50), normal range (18.50-24.99), overweight (BMI ≥ 25.00), and obese (BMI ≥30; WHO, 2004).

### **Demographics**

Participants were asked to provide their gender, age, program area, and mother's and father's education levels (see Appendix E for demographic items). Gender was of interest as a moderator variable. Age, program area, and mother's and father's education provided additional information about study result generalizability. Parent education level was used as a proxy variable for socioeconomic status of participants. Additionally, age was utilized as an inclusion criterion as participants needed to be between the ages of 18 and 25.

### **Journey to Wellness Scale**

Psychological well-being was measured using the JWS. The JWS measure is currently under development (Copeland et al., 2016), is based on the Child and Adolescent Wellness Scale (CAWS; Copeland et al., 2010), and was published by the same authors. The CAWS and JSW emerged from resiliency and positive psychology research as it measures adaptive competencies of children and adolescent versus

pathology. The JWS consists of 80 items and utilizes a Likert scale ranging from 1 to 4 to assess agreement with each statement. Responses range from 1--*Strongly Disagree*, 2--*Disagree*, 3--*Agree*, and 4--*Strongly Agree* (see Appendix F for JWS items). The JWS demonstrated convergent validity with academic performance as measured by GPA in a group of male and female college students (Click, Huang, & Kline, 2017). Resiliency and mindfulness demonstrated the strongest relationships to academic achievement.

In a sample of 281 middle and high school students, JWS/CAWS items demonstrated high internal consistency reliability ( $\alpha = .71$ ) and test-retest reliability (.78; Copeland et al., 2010). Additionally, JWS/CAWS items demonstrated convergent validity with the Multidimensional Student's Life Satisfaction Survey, which was used to measure overall life satisfaction. The strongest predictive relationships occurred for the Connectedness ( $r = .74$ ), Optimism ( $r = .67$ ), and Self-Efficacy ( $r = .65$ ) scales (Copeland et al., 2010).

The authors of the Children and Adolescent Wellness Scale (CAWS) proposed that in addition to an overall score, the JWS/ CAWS could be organized into 10 constructs (Copeland et al., 2010). The adaptability construct assesses a person's ability to navigate difficult situations (e.g., "I am prepared for change"). The Connectedness construct measures information related to a person's perception of belonging and acceptance in school, their family, and the community (e.g., "I am cared for and loved"). The Conscientiousness scale measures a person's concern over personal choices and assumption of responsibility for one's actions (e.g., "I blame other people for my problems"). The Emotional Self-Regulation construct measures the inability to control one's emotions (e.g., "I feel in control of my emotions"). The Empathy construct

consists of items measuring altruistic and prosocial behaviors (e.g., “I can see things through other people’s eyes”). The Initiative construct measures self-determination and goal-directed activity (e.g., “I set challenging goals”). The Mindfulness scale consists of items measuring emotional intelligence and awareness of one’s internal states (e.g., “I am aware of how other people feel”). The Optimism construct measures hope and expectancies for the future (e.g., “I have positive expectations of others). The Self-efficacy construct refers to people’s beliefs in what they believe they can do (e.g., “I take pride in my accomplishments”). The Social competence construct consists of items measuring affective, cognitive, and behavioral skills that are important in interpersonal relationships (e.g., “Listening is a very important skill”).

Recent findings on the JWS suggest five factors contribute to psychological well-being in young adults versus 10 in children and adolescents; an exploratory factor analysis of the JWS was performed to determine the factors that best contributed to a total JWS score.

### **Social Media Use Integration Scale**

Participants behaviors and emotional connectedness related to social media were measured using the SMUIS (Jenkins-Guarnieri et al., 2012). The SMUIS consists of 10 items and two subscales: Social Integration and Emotional Connections scale and the Integration into Social Routines Scale. Raters indicated their levels of agreement-disagreement on a 1 to 6 Likert Scale: 1--*Strongly disagree* to 6--*Strongly agree*; SMUIS items are provided in Appendix G.

The SMUIS is a brief instrument with strong reliability and validity evidence. Creation of the SMUIS utilized a normative sample of 616 undergraduate students; the

SMUIS total score demonstrated high levels of internal consistency ( $\alpha = .91$ ). The total score additionally displayed high levels of test-retest reliability (.80 over three weeks; Jenkins-Guarnieri et al., 2012). The SMUIS scale items demonstrated high levels of convergent validity with the Facebook Use Intensity Scale ( $r = .77$ ) and divergent validity with two subscales of the five-factor model of personality traits: Conscientiousness ( $r = .017$ ) and Agreeableness ( $r = .038$ ; Jenkins-Guarnieri et al., 2012). A total SMUIS score was of interest; item ratings were averaged across all 10 items. Higher scores indicated an individual had higher levels of emotional connectedness and behaviors related to Facebook. Lower scores indicated an individual has lower levels of emotional connectedness and social behaviors related to Facebook.

## **Procedure**

### **Pre-Data Collection Procedure**

Prior to recruiting participants, the proposal for this study received approval from the university's Institutional Review Board (IRB; see Appendix H for IRB approval form). Three methods were utilized for recruiting participants. The first method included online solicitation through the university's undergraduate research website, which allowed students and faculty to recruit volunteers. Advertisement permission was granted after obtaining IRB approval and providing a document outlining the purpose of the study and participant requirements.

The second method was solicitation through the School of Psychological Sciences participant pool (Sona System) online system. The Sona System advertises studies for students enrolled in PSY 120. Participation in a research study or a research paper is required for research credit for all students enrolled in PSY 120. Participants recruited

through the Sona System received course credit for participation. Use of the Sona System required proof of IRB approval and an approved request from the participant pool coordinator. Once approval was granted, the study was set up in the system; the following information was required: study name, eligibility requirement, duration, credits/pay, timeslot usage limit, preparation, researcher, and IRB approval code.

The third solicitation method was contacting representatives for the undergraduate and graduate school and seeking permission for them to send an email to students requesting participation in the research. Students were sent a brief explanation of the survey and a confidential Qualtrics (2016) survey link. They were informed participation was voluntary and were instructed to follow the confidential link if interested in participating in the study. All recruitment methods were restricted to participants who could be obtained from convenience sampling.

### **Data Collection Procedure**

Prior to accessing the survey, participants were provided with a study consent form that included detailed information about the purpose and rationale of the study, desired participant characteristics, and researcher information (see Appendix I for the informed consent form). Participants were accordingly informed they could withdraw consent freely at any point during the survey. A statement was included on the information sheet stating consent was assumed when the participant completed the entire survey and consent could be withdrawn by not completing the survey or by closing the survey browser

After consenting to research, participants were presented with the demographic questionnaire (age, gender, education levels, and major) followed by BMI items, the

SMUIS, the BICIS, the AE, FO, and BASS subscales of the MBSRQ, and finally the JWS (see Appendix J for the Qualtrics survey). Permission was received to use all the measures. In total, participants completed 136 items including demographic information.

Upon completing the survey, participants were redirected to a thank you page that included the option of entering a prize drawing for one of twenty \$25 Visa gift cards. Participants interested in being entered in the drawing were directed to a de-linked website unassociated with the survey. Information entered for the drawing was not associated with any survey responses. Participants were directed to provide an email address. Winning participants were notified and sent the gift card via the provided email.

A number of provisions in addition to the ones already outlined (e.g., use of an information sheet, avoidance of unsolicited emails, restricted access to the survey, use of non-identifiable information) were utilized to ensure participants' privacy and confidentiality. Qualtrics servers were protected by high-end firewall systems that included yearly penetration tests. A confidential system design was also employed to ensure access was restricted to specific individuals. Data were stored in a specific location in the United States and not virtually stored (cloud storage), providing increased protection of information. Qualtrics utilizes Transport Layer Security encryptions to ensure security. Qualtrics reported these procedures are utilized to "ensure the highest protection as per Health Information Technology for Economics and Clinical Health Act" (Qualtrics, 2016).

Participants completing the survey online were instructed not to include any identifying information; instead, they were directed to provide a non-identifiable number. Consent forms explained that responses would be kept anonymous and every effort



would be made to maintain the anonymity of responses. This was done to help mitigate the threat of participants presenting themselves in a more or less favorable manner.

### **Data Analysis**

Data analysis involved seven stages: (a) data entry, (b) data screening, (c) examination of reliability and validity of scores, (d) exploratory analyses, (e) multivariate analysis of variance, (f) multiple regressions, and (g) canonical correlation analysis.

### **Data Entry**

Demographic information about each participant including gender, parent (mother and father) education levels, and race/ethnicity were entered into SPSS v. 22. Upon entry, gender was coded 1 for female, 2 for male, and 3 for Other (non-binary, transgender). Parent education level was coded as follows: 0 for high school diploma or less, 1 for some college/associates, 2 for bachelor's degree and 3 for graduate or professional degree. Race/ethnicity was coded as follows: 1 for White/Caucasian, 2 for Latino/Hispanic/Mexican, 3 for African America/Black, and 4 for Other (two or more races, Afghan, Asian, Middle Eastern).

Weight and height were entered and BMI was calculated based on the WHO (2004) formula. Raw scores for each item on the AE, BASS, FO, the SMUIS, the JWS, and the PRA were also entered.

### **Data Screening**

Following data importation, preliminary data analysis was conducted including frequencies and descriptive and missing data analysis. Minimum and maximum raw scores on all instruments were examined to identify out-of-range scores. Additionally, all item scores negatively worded were inverted. Mean and Z scores were obtained for each

instrument. Missing data were examined next. Data were analyzed for patterns in the missing data (e.g., missing completely at random, missing at random, and missing not random; Tabachnick & Fidell, 2013). Values with 5% missing data and considered missing at random did not cause serious problems in the data analysis (Tabachnick & Fidell, 2013). Missing values concentrated in a few variables and not critical to the analysis were deleted. For data missing at random or deletions that caused a substantial loss of data, pairwise deletion methods were conducted.

### **Validity and Reliability of Scores**

To determine the construct validity of the JWS for undergraduate students, a factor analysis was conducted. An exploratory factor analysis was conducted for the JWS as it was still in development. Additionally, an internal consistency coefficient was found for the MBSRQ, the BICSI, the JWS, and the SMUIS.

### **Exploratory Analyses**

Descriptive statistics obtained from the demographic questionnaire, the MBSRQ, the BICSI, the JWS, and the SMUIS were used to describe the sample population including the number of participants by gender, race/ethnicity, age, program area, BMI, and parental education level. The MBSRQ and BICSI scores were found by procedures recommended by the author (Cash, 2000; Cash et al., 2005). The AE, BASS, and FO subscales of the MBSRQ were summed and a mean score for each scale was utilized. A similar procedure was used for the PRA subscale of the BCSI. A total mean score of the JWS and the SMUIS factors was utilized. Authors of the MBSRQ reported that scores on the AE and BASS scales could be combined if the average of the normalized ( $z$ ) scores of each scale, not average raw scores, was utilized (Cash, 2000; Cash et al., 2005). To

conduct the multiple linear regressions,  $z$  scores for the AE and the BASS were computed. Along with mean scores, standard deviations, minimum and maximum scores, skewness and kurtosis were obtained for all the mean scores. These values assisted in assumption testing.

### **Multivariate Analysis of Variance**

Gender differences were examined using a MANOVA with gender as the independent variable and body image as the dependent variable (combined AE and BASS scores and PRA subscales). The MANOVA was conducted to answer the following research question.

Q1 Are body image levels the same across gender in emerging adults?

A MANOVA was performed on three dependent variables: AE, BASS, and PRA subscales. Male and female were entered as the independent variable. Assumptions of normal distribution of variables, linearity, and homogeneity of variance and covariance were tested prior to running the MANOVA.

### **Multiple Regression Analysis**

To answer Research Questions 2 and 3, two separate sequential regression analyses were conducted. The first analysis included BMI, fitness levels (FO; MBSQ), psychological well-being (JWS mean score), and social media behaviors (SMUIS mean score) as the predictor variables and positive body image as measured by the PRA subscale of the BICSI as the criterion variable. In the second analysis, predictor variables included BMI, fitness levels (FO; MBSQ), psychological well-being (JWS mean score), and social media behaviors (SMUIS mean score). Negative body image as measured by

the mean  $z$  scores on the AE and the BASS scales of the MBSQ were the criterion variable.

- Q2 What participant characteristics (body mass index, fitness levels, psychological well-being, social media behavior) predict positive body image among emerging adults?
- Q3 What participant characteristics (body mass index, fitness levels, psychological well-being, social media behavior) predict negative body image among emerging adults?

As the PRA scale measured levels of positive body image and body image could be thought of as distinct categories of negative body image, neutral body image, and positive body image (Williams et al., cited in Tylka & Wood-Barcalow, 2015), cutoff scores from the PRA were utilized. Cutoff scores were not provided in the BICSI or the MBSRQ. Two methods were utilized to find cutoff scores. The first used data derived from the current sample. The disturbance of scores on the PRA was found. All participants with scores one standard deviation or more above the mean were considered to have positive body image and included in the analysis.

The second method utilized the normative samples from the BICSI. The BICSI using a sample obtained across several studies (789 women and 164 men) reported means of 1.62 ( $SD = .48$ ) for women and 1.55 ( $SD = .56$ ) for men. Participants with scores one standard deviation or greater above the mean ( $M = 2.1$  for women and  $M = 2.11$  for men) were considered to have positive body image and were included in the analysis. As these samples were collected over 10 years ago, societal values of body image might have changed (Cash et al., 2004; Karazsia, 2016). The means and standard deviations reported in the BICSI were compared to the current sample to determine optimal cutoff scores.

Cutoff scores for negative body image were derived in the same manner described for positive body image. The first method as described above utilized mean Z scores from the current sample on the AE and BASS. The second method as described above used means derived from the MBSRQ. The MBSRQ norms were obtained from 1985-1986 in a U.S. national survey of 1,070 females and 996 males. The norms reported for women on the AE scale were 3.36 ( $SD = .87$ ) and 3.49 ( $SD = .83$ ) for males. Norms on the BASS were 3.23 ( $SD = .74$ ) for females and 3.50 ( $SD = .63$ ) for males. Participants with mean scores one standard deviation or lower than the normative mean (AE:  $M = 2.49$  for women and  $M = 2.66$  for males; BASS:  $M = 2.49$  for females and  $M = 2.87$  for males) were considered to have negative body image and included in the analyses. As these samples were collected over 20 years ago, societal values of body image might have changed (Cash et al., 2004; Karazsia, 2016). The means and standard deviations reported in the MBSRQ were compared to the current sample to determine optimal cutoff scores.

Due to running two regression analyses, the  $p$  value needed for significance was adjusted to .03 (.05/2) to control for Type I error. If Research Question 1 was found to be significant, males and females were controlled for in the analyses.

### **Hierarchical Multiple Regressions**

To answer Research Questions 4 and 5, two hierarchal regression analyses were conducted to determine to what extent BMI, fitness levels, and social media behaviors explained body image (positive and negative) above and beyond the effect of psychological well-being.

- Q4 Does body mass index, fitness levels and social media behavior predict negative body image above and beyond the variance accounted for by measures of psychological well-being.
- Q5 Does body mass index, fitness levels and social media behavior predict positive body image above and beyond the variance accounted for by measures of psychological well-being.

The same cutoff scores as described in the sequential multiple regression were utilized for positive body image as measured by the PRA and negative body image as measured by the AE and the BASS.

Mean scores on the JWS were entered in Step 1. Body mass index, mean FO, and SMUIS scores were entered in Step 2 in the prediction of both negative (AE and BASS  $z$  scores) and positive body image (PRA), yielding two hierarchical multiple regressions. The  $p$  value was adjusted to .03 (.05/2) to control for Type I error. A statistically significant increase in  $R^2$  after the entering in variables in Step 2 supported that the addition of BMI, fitness levels, and social media behavior added distinct explanations of body image separate from psychological well-being.

If Research Question 6 was found to be significant, males and females were controlled for in the analyses. Additionally, the assumptions of linearity, multivariate normality, homoscedasticity, and normal disturbance of residuals were tested prior to running all the regressions.

### **Canonical Correlation**

To answer Research Question 6, a canonical correlation analysis was performed to measure the strength of the relationship between linear composites of emerging adult characteristics and body image. Four variables represented student characteristics (fitness levels, psychological well-being, and social media attachment) and three

representing body image (AE/BASS  $z$  score and PRA). The technique provided information on the interrelationships between emerging adult characteristics and body image.

- Q6 What are the significant relationships between participant characteristics (body mass index, fitness levels, psychological well-being, social media) and levels of body image (positive and negative) among emerging adults?

Canonical correlation analysis was originally developed by Hotelling (cited in Härdle & Simar, 2012) and is appropriate when the researcher seeks to find correlations between multiple dependent variables and multiple independent variables when the measures within each set are themselves correlated. A CCA provides optimal linear combinations based on correlation. Canonical correlation analysis does not predict causality; as such, use of the terms such as independent/predictor variables and dependent/criterion variables might be misleading. However, it could be difficult to distinguish variables; for this reason, predictor refers to participant characteristics and criterion to body image. Although these terms are used, caution should be used when making cause and effect inferences from the data.

Body mass index, fitness levels (FO mean scores), and social media (SMUIS mean score) were entered as the predictor variables. Body image as measured by the PRA subscale of the BCSI and the AE and the BASS of the MBSQ were entered as the criterion variables.

Prior to running the analyses, assumptions of normality, linearity, and homoscedasticity were examined. After checking assumptions, procedures outlined by Tabachnick and Fidell (2013) were utilized to run and interpret the CCA. Initially, the significance of the canonical correlations was examined to determine if the results were

statistically significant. Consideration was only given to those functions that accounted for a reasonable amount of variance between the two sets of variables.

The variance accounted for by the CCA was examined next as significant findings did not imply meaningful findings. Interpretation of effect sizes was suggested by the APA Task Force on Statistical Inferences (Thompson, 2000). If the full canonical model was found to be statistically significant and accounted for a reasonable amount of variance between the variable set, individual canonical correlations were examined. This was undertaken to determine what variables contributed the most to relationships across the criterion and variable sets. Detailed explanations of the analyses and results are provided in Chapter IV.



## **CHAPTER IV**

### **RESULTS**

The purpose of this study was to explore the relationships between two sets of variables measuring body image (appearance evaluation, body area satisfaction, and the positive rational acceptance) and a set of participant characteristics (gender, BMI, fitness levels, and social media behaviors). As higher rates of psychological well-being might prevent psychopathology, well-being was investigated as a moderator variable. Next, demographics of the sample are discussed followed by descriptive statistics of the variables, psychometric evidence of the measures used in the current study, and the study's research questions.

#### **Descriptive Analyses**

##### **Scoring and Data Clean-Up**

Data were entered into Statistical Package for the Social Sciences Version 25 and then rechecked for accuracy. As outlined in the Multidimensional Body-Self Relations Questionnaire (Cash, 2000), items 6 and 7 from the Appearance Evaluation subscale (see Appendix A) and items 2, 3, 4, 5, 7, and 9 from the Fitness Orientation subscale (see Appendix A) were reversed coded. Items 8, 12, 15, 17, 31, 37, 41, 55, 57, 58, 60, 65, and 78 from the Journey to Wellness Scale (see Appendix E) were reverse coded as specified in the Journey to Wellness Scale scoring procedures (Copeland et al., 2010).

Additionally, item 8 from the Social Media Use Integration Scale (see Appendix G) was

reversed coded (Jenkins-Guarnieri et al., 2012). Means and  $z$  scores were found for the scales utilized as predictor variables including the Fitness Orientation subscale of the Multidimensional Body-Self Relations Questionnaire, the Journey to Wellness Scale, and the Social Media Use Integration Scale. Additionally, mean and  $z$  scores were found for the measure of positive body image--the Positive Rational Acceptance scale. As recommended by Cash (2000), a negative body composite comprised of the average of the normalized ( $z$ ) scores for the Appearance Evaluation and Body Areas Satisfaction Scale was created. All analyses were conducted using the negative body composite. Participants' body mass indices were calculated using the formula detailed in Chapter III. Nominal variables were then coded. The average participant completion time was 38.12 minutes with a maximum time of two hours and a minimum completion time of five minutes.

Participants in this study included 439 emerging adults enrolled in a mid-size university in the Rocky Mountain region. Requests to participate in the survey were sent via the Natural Health and Sciences and Elementary Education Listserv. All graduate and undergraduate students enrolled in a Natural Health and Sciences major are enrolled in the Listserv, resulting in approximately 3,745 undergraduate and 756 graduate students receiving the survey request. This request resulted in 335 responses, suggesting a response rate of 6.42%. The number of students enrolled in the Elementary Education Listserv was unknown; as such, the response rate was unknown.

The second recruitment method was solicitation through the School of Psychological Sciences participant pool (Sona System) online system. The Sona System advertises studies for students enrolled in PSY 120--Principles of Psychology.

Participation in a research study or a research paper is required for research credit for all students enrolled in PSY 120. Participants recruited through the Sona System received course credit for participation. The number of students enrolled in PSY 120 was unknown; as such, the response rate for participants recruited through the Sona System was unknown. However, all 175 Sona System participants who signed up to take the survey completed it.

Forty-three participants started the survey and withdrew prior to answering the first item. These participants were excluded from the study. Twenty participants who completed the survey reported an age over 25 and were excluded as they were not considered the target population of this study. Further, one participant reported an unknown height and was excluded from the study due to requiring this for the calculation of BMI. Nineteen participants did not identify one or both of their parents' education levels, reporting it was not applicable or unknown. An additional three did not report their college majors, reporting it was unknown. As parent education level and college major were not independent variables and the participants completed all of the survey items, they were included in the analyses and were coded as missing.

Both continuous and discrete variables were examined for accuracy including values were within range and had plausible means and standard deviations. An examination of the continuous variables for plausible ranges resulted in excluding three participants--two who reported heights of 160 and 100 inches and one who reported a weight of zero. Exclusion of these reduced the sample size to 442.

Next, the data set was examined for univariate outliers. Methods as outlined by Tabachnick and Fidell (2013) were utilized to identify outliers. Prior to checking for

outliers, both the independent and dependent variables were examined for normality. The distribution of each continuous variable was examined using the Kolmogorov-Smirnov and the Shapiro-Wilks tests of normality and skewness statistics in conjunction with a visual inspection of histograms. The Kolmogorov-Smirnov test of normality was significant for all variables ( $N = 442, p < .01$ ). Shapiro-Wilks was also significant for all variables ( $N = 442, p < .01$ ), indicating the data were not normally distributed.

Examination of the histogram and skewness statistics suggested a normal distribution for the negative body composite, the Positive Rational Acceptance, Social Media Use Integration Scale, and negative body composite scales. The BMI of participants displayed a significant, positive skew. The Journey to Wellness Scale was moderately skewed to the left but the skewness was less than one. Based on tests of normality in conjunction with a visual inspection of histograms, the negative body composite, Positive Rational Acceptance, and Social Media Use Integration Scale appeared to be normally distributed. The Journey to Wellness Scale appeared to have a slight negative skew that did not exceed one. The BMI had a right-skew distribution of greater than one. To improve linearity and to reduce the skewness and kurtosis of BMI, a logarithmic transformation was performed.

After the transformation, the data were examined for univariate outliers. All continuous variables were transformed to standardized  $z$  scores and examined for scores in excess of 3.29 or -3.29 ( $p < .01$ ). Three scores in the BMI group were higher than 3.29. These BMIs were greater than 50 and excluded from further analyses. No other outliers were identified, resulting in a final sample size of 439.

Participant demographic information is provided in Table 1. The final sample size consisted of 353 females (80.4%), 81 males (18.5%), and 5 individuals that identified as gender non-conforming including non-binary and transgender individuals (1%). The ages of the participants ranged from 17 to 25 years old with the majority reporting to be 18- and 19-years-old. Three hundred and seventeen individuals reported being White or Caucasian (72.2%; 56 were Latino, Hispanic, or Mexican (13%); 19 Black or African American (4.3%); and 47 Other races (10.7%). Other races and ethnicity included Afghan, Middle Eastern, Mixed Races, Native American, Vietnamese, and Pacific Islander. The majority of the participants reported pursuing majors within the College of Natural and Health Science ( $n = 256$ , 58%), 84 were in the College of Educational Behavioral Sciences (18%), 44 were in Humanities (10%), 45 were in the College of Business (10%), and 13 were in the College of Performing and Visual Arts (3%). The majority of participants reported their parents obtained an associate degree or higher (mothers, 73%; fathers, 65%). Participants reported slightly higher education rates for their mothers than for their fathers.

### **Body Image**

To examine whether participant characteristics predicted negative and positive body image (Research Questions 2, 3, 4, and 5), negative and positive body image groups were formed using data derived from the current sample. As the Positive Rational Acceptance subscale was found to be associated with less self-objectification, positively associated with subjective well-being (Choma et al., 2009), and was argued to be an indicator of a positive body image measure (Webb, Wood-Barcalow, & Tylka, 2015), it was used to identify those with positive body image. The distribution of scores on the

Positive Rational Acceptance ( $M = 1.73$ ;  $SD = 0.49$ ) were reported and those individuals with scores one standard deviation or more above the mean were considered to have positive body image and included in the positive body image group ( $n = 60$ ). Participant demographics for the positive body image group are provided in Table 1.

The final positive body image group sample size consisted of 60 participants. The positive body image group had a 17% decrease in parents with a high school diploma or less and an increase of parents with bachelor's (13%) when compared to the larger sample. This suggested the demographic composition of the positive body image group was similar to the overall study with the exception of parental education.

As the Appearance Evaluation and Body Areas Satisfaction Scale have been utilized as measures of body dissatisfaction in previous studies (Hrabosky et al., 2009; Kelly et al., 2012; Vossbeck-Elsebusch et al., 2014), a negative body composite as outlined by Cash (2000) was formed using the average of the normalized ( $z$ ) scores of each scale. The normalized  $z$  scores were found for the negative body composite and those individuals with scores one standard deviation or less below the mean were considered to have negative body image and included in the negative body image group ( $n = 78$ ). The negative body image group had an increase of parents with a high school diploma or less and a decrease of parents with graduate degrees when compared to the larger sample. This suggested the demographic composition of the negative body image group was similar to the overall study with the exception of parental education. Table 1 displays the demographics for the overall sample ( $N = 439$ ), the positive body image group ( $n = 60$ ), and the negative body image group ( $n = 78$ ) including gender, age, race/ethnicity, college major, and parental education.

Table 1

*Participant Characteristics by Body Image Levels as a Percentage of the Sample*

Characteristic	Negative Body Image (n=78)	Positive Body Image (n=60)	Average Body Image Body (n=301)	Total Sample (N=439)
<b>Gender</b>				
Female	89.7	80.0	77.0	80.4
Male	9.0	18.3	21.0	18.5
Other	1.3	1.7	1.0	1.1
<b>Age</b>				
17	0.0	0.0	0.7	0.5
18	33.3	46.7	40.0	40.0
19	24.4	15.0	21.0	20.5
20	12.8	16.7	15.0	14.7
21	10.3	6.7	9.6	9.3
22	7.7	3.3	7.0	6.8
23	5.1	3.4	2.7	3.4
24	5.1	8.3	3.3	3.4
25	1.3	1.7	1.7	1.6
<b>Race or Ethnicity</b>				
White/Caucasian	74.4	75.0	71.8	72.2
Latino/Hispanic /Mexican	14.1	10.0	12.6	12.8
Black/ African American	1.3	5.0	5.4	4.3
Other	10.3	10.0	10.3	10.7
<b>Major Colleges</b>				
College of Educational Behavioral Sciences	26.5	25.0	17.6	19.4
Humanities	5.9	6.7	10.6	8.7
College of Business	5.9	8.3	11.6	10.3
Natural and Health Science	57.4	53.9	57.2	57.9
College of Performing and Visual Arts	3.9	5.0	2.7	3.2
<b>Parental Education</b>				
High School Diploma or Less				
Mother	26.9	25.0	28.6	27.8
Father	41.0	16.7	33.6	33.7
Some College or Associates				
Mother	25.6	3.3	19.9	20.1
Father	12.8	16.7	17.3	16.4
Bachelor's Degree				
Mother	30.8	43.3	30.2	30.5
Father	25.6	35.0	27.2	27.6
Graduate Degree				
Mother	16.7	18.3	20.9	21.4
Father	12.8	20.0	17.9	18.2

## Descriptive Statistics

Table 2 displays the overall means and standard deviations for all of the study's scales. The negative body composite is reported as mean  $z$  scores as the Appearance Evaluation and Body Areas Satisfaction Scale can be combined if the average of the normalized ( $z$ ) scores of each scale and not the average raw scores are utilized (Cash, 2000).

Table 2

*Total Means and Standard Deviations on the Multidimensional Body-Self Relations Questionnaire Subscales, Body Image Coping Strategies Inventory Scale, Journey to Wellness Scale, and Social Media Use Integration Scale*

Scales	<i>N</i>	<i>M</i>	<i>SD</i>
Negative Body Composite	439	-0.00	0.95
Fitness Orientation	439	3.39	0.84
Positive Rational Acceptance	439	1.73	0.49
Journey to Wellness Scale	439	3.17	0.35
Social Media Use Integration Scale	439	2.49	0.96

*Note.* The negative body composite is the combined Appearance Evaluation and Body Areas Satisfaction Scale  $z$  score. The Fitness Orientation subscale ranged from 1 to 5; the Positive Rational Acceptance subscale ranged from 0-3; the Journey to Wellness Scale ranged from 1-4; and the Social Media Use Integration scale ranged from 1-6.



Means and standard deviations for the independent and dependent variables were found across the participant demographics. Based on a mean comparison of the final sample, females, males, and gender non-conforming individuals reported similar means on the negative body composite, the fitness orientation scale, and the positive rational acceptance scale. Gender non-conforming individuals reported a lower mean score ( $M = 2.26$ ;  $SD = 0.76$ ) than females ( $M = 3.16$   $SD = 0.35$ ) and males ( $M = 3.23$ ;  $SD = 0.31$ ) on the Journey to Wellness Scale. On the Social Media Use Integration Scale, gender non-conforming individuals reported a higher mean score ( $M = 3.36$ ;  $SD = 1.49$ ) than females ( $M=2.55$   $SD= 0.55$ ), and males ( $M=2.18$ ;  $SD=0.86$ ). Table 3 provides a summary of the means and standard deviations across gender. Based on a mean comparison of the final sample, White, Latino/a/Hispanic, African American, and Other races and ethnicities reported similar means on the negative body composite, the fitness orientation scale, and the positive rational acceptance scale. Means and standard deviation of the five scales across race and ethnicity are reported in Table 4.

Table 3

*Gender Means and Standard Deviations on the Multidimensional Body-Self Relations Questionnaire Subscales, Body Image Coping Strategies Inventory Scale, Journey to Wellness Scale, and Social Media Use Integration Scale*

Scales	Female ( <i>n</i> =353)		Male ( <i>n</i> =81)		Gender Non- Conforming ( <i>n</i> =5)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Negative Body Composite	-0.10	1.40	0.57	1.30	-0.88	0.71
Fitness Orientation	3.82	0.85	4.17	0.79	3.33	0.94
Positive Rational Acceptance	1.72	0.49	1.78	0.47	1.60	0.67
Journey to Wellness Scale	3.16	0.35	3.23	0.31	2.65	0.76
Social Media Use Integration Scale	2.55	0.95	2.18	0.86	3.36	1.49

*Note.* Negative body image composite is the average *z* score of the Appearance Evaluation and Body Areas Satisfaction Scale. The Fitness Orientation subscale ranged from 1 to 5; the Positive Rational Acceptance subscale ranged from 0-3; the Journey to Wellness Scale ranged from 1-4; and the Social Media Use Integration scale ranged from 1-6.

Table 4

*Race/Ethnicity Means and Standard Deviations on the Multidimensional Body-Self Relations Questionnaire Subscales, Body Image Coping Strategies Inventory Scale, Journey to Wellness Scale, and Social Media Use Integration Scale*

Scales	White (N=317)		Latino/a/Hispanic (N=56)		African American (N=19)		Other (N=47)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Negative Body Composite	0.03	1.50	-0.22	1.30	0.56	1.40	0.02	1.40
Fitness Orientation	3.88	0.84	3.76	0.75	4.16	0.99	3.97	0.87
Positive Rational Acceptance	1.74	0.47	1.72	0.51	1.63	0.58	1.74	0.51
Journey to Wellness Scale	3.17	0.33	3.13	0.45	3.24	0.37	3.16	0.29
Social Media Use Integration Scale	2.49	0.95	2.70	0.96	2.07	0.95	2.34	0.98

*Note.* Negative body image composite is the average *z* score of the Appearance Evaluation and Body Areas Satisfaction Scale. The Fitness Orientation subscale ranged from 1 to 5; the Positive Rational Acceptance subscale ranged from 0-3; the Journey to Wellness Scale ranged from 1-4; and the Social Media Use Integration scale ranged from 1-6.

### **Preliminary Statistical Analysis**

Preliminary analyses included examinations of reliability and validity as appropriate on each instrument for the current population. Internal consistency

coefficients were calculated for the Appearance Evaluation, Body Areas Satisfaction Scale, and Fitness Orientation subscales of the MBSQ; Positive Rational Acceptance subscale of the BICSI; and the Social Media Use Integration Scale. An exploratory factor analysis and reliability of the resulting scores was conducted for the Journey to Wellness Scale. Descriptive analyses were additionally conducted for each instrument.

### **Journey to Wellness Scale: Exploratory Factor Analysis**

An exploratory factor analysis using a principal component extraction was utilized to examine the factor structure of the Journey to Wellness Scale. The 80-item factor structure of the Journey to Wellness Scale was examined to determine item inclusion and reliability of factors. First, Kaiser-Meyer Olkin Measure of Sampling Adequacy was 0.93 above the recommended value of 0.50. Additionally, Bartlett's Test of Sphericity was significant ( $p < .01$ ). Finally, all communalities were above 0.3 and were therefore considered salient and included in the analysis.

For interpretation, a principal component analysis with a direct oblimin oblique rotation was used to identify the factors comprising the Journey to Wellness Scale. Tabachnick and Fidell (2013) suggested that if factors are correlated at greater than 0.32, an oblique rotation is warranted. Several items on the Journey to Wellness Scale had correlations of 0.32 or higher, indicating the use of an oblique rotation was appropriate.

Analyses of the scree plots and principal component analysis indicated a 10-13 factor solution. After examining all three solutions, similar to Copeland et al. (2010), the 10-factor solution was considered to be the most interpretable due to previous theoretical support, leveling off of the eigenvalues on the scree plot at 10 factors (see Figure 1), and

after review of the principal component analysis. The 10-factor model explained 51.15% of the variance in the data. Table 5 presents the total variance explained by each component. To determine overall classification of wellness, a Journey to Wellness Scale total score was computed, as recommended by the authors of the Journey to Wellness Scale and CAWS (Copeland et al., 2010, 2016).

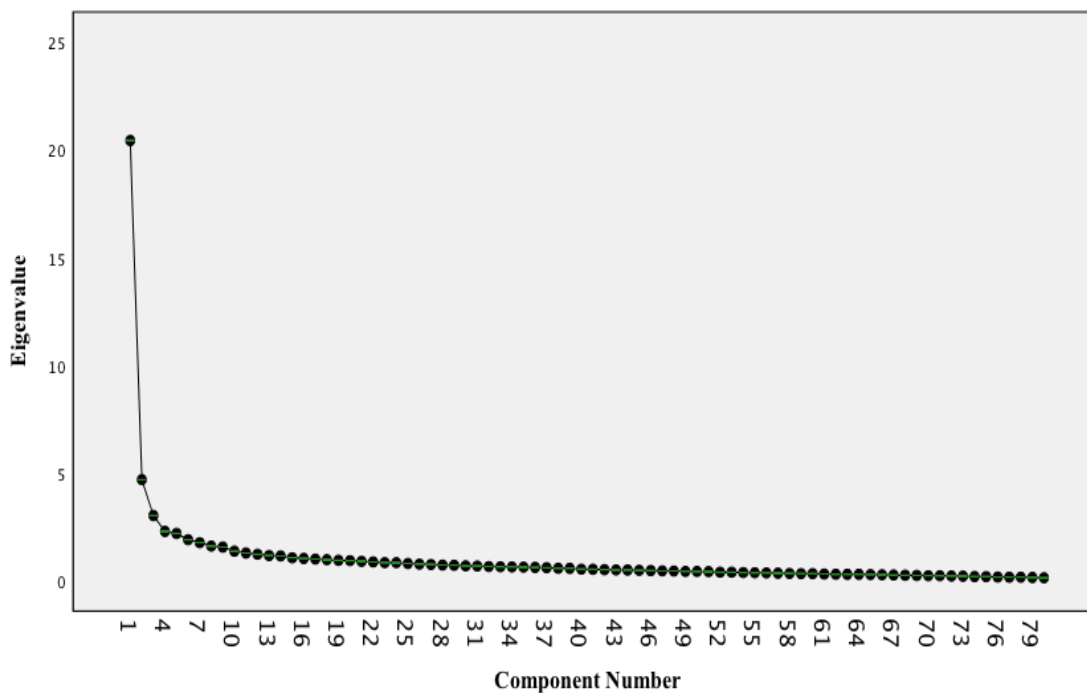


Figure 1. Plot for initial factor solution using principal component analysis.

Table 5

*Total Variance Explained by the Ten-Factor Model*

Component	Total	% of Variance	Cumulative %
1	20.44	25.54	25.54
2	4.67	5.84	31.38
3	3.04	3.81	35.19
4	2.27	2.84	38.04
5	1.90	2.76	40.80
6	1.75	2.37	43.17
7	1.63	2.19	45.36
8	1.63	2.04	47.40
9	1.58	1.98	49.38
10	1.39	1.73	51.15

After determining to retain 10 factors, a principal component analysis with a direct oblimin oblique rotation with 10 fixed factors was conducted (see Appendix K for factor loadings). A total of 19 items had cross loadings above 0.40. The item “I have learned a great deal from past experiences” had factor loadings of 0.47 and 0.52 on two factors. The item “Learning new things is fun” had factor loadings of 0.51 and -0.46 on two factors. The item “I really enjoy being into what I’m doing” had factor loadings between 0.50 and 0.51 on two factors. The item “I lack confidence in my abilities” had factor loadings of 0.59 and 0.41 on two factors. The item “I am confident and self-

assured” had factor loadings of 0.57 and 0.51 on two factors. The item “I have hope for the future” had cross loadings of 0.44 and 0.54 on two factors. The item “I believe the world holds great promise” had factor loadings of 0.40 and 0.41 on two factors. The item “I am passionate about what I do” had factor loadings of 0.64 and -0.46 on two factors. The item “I feel organized in most aspects of my school life” had cross loadings of 0.45 and -0.43 on two factors. The item “Listening is a very important skill” had cross loadings of 0.46 and -0.52 on two factors. The item “I am grateful for what I have” had cross loadings of -0.43 and -0.45 on two factors. The item “I enjoy differences in people” has cross loadings of 0.49 and 0.51 on two factors.

The item “I can stop myself when I am going to say something I will regret” had cross loadings of -0.45 and 0.46 on two factors. The item “I can admit to mistakes I make” had cross loadings of 0.40 and 0.45 on two factors. The item “I have meaningful relationships” had cross loadings of 0.57 and 0.40 on two factors. The item “I am easy to be with” had factor loadings of 0.43 and 0.61 on two factors. The item “I have positive expectations of others” had cross loadings of 0.45 and 0.53 on two factors. The item “I know what I am good at and not good at” had cross loadings of 0.47 and 0.48 on two factors. The item “I am realistic about what I can and cannot do had cross loadings of 0.43 and 0.47 on two factors.

Items with cross loadings greater than 0.40 were compared to Copeland et al. (2010) factor analysis. The items in the current study with multiple cross loadings were aligned with the factors identified by Copeland et al. As such, all of the items with cross loadings above 0.40 were retained. Two items had cross loading above 0.30 (i.e., “I often feel hopeless” and “I often think life is meaningless”). However, these items had strong

primary loadings greater than 0.73 and were retained. All items had a salient primary factor loading of .3 or above.

The following factors proposed by Copeland et al. (2010) for the CAWS were appropriate for the extracted factors and were retained: (a) Self Efficacy (7 items), (b) Optimism (10 items), (c) Initiative (11 items), (d) Empathy (7 items), (e) Social Competence (6 items), (f) Conscientiousness (5 items), (g) Adaptability (8 items), (h) Emotional Self-Regulation (7 items), (i) Connectedness (9 items), and (j) Mindfulness (10 items).

Although Copeland et al. (2010) and the present study retained 10 factors, items that comprised the factors varied (see Appendix K for factor loadings). Similar to Copeland et al., the item “I take pride in my accomplishments” was included in the Self-Efficacy factor. The present study identified the item “I am confident and self-assured” in the Optimism factor. Contrary to this, Copeland et al. included the item in the Self-Efficacy factor. Copeland et al. included the item “I have positive expectation of other” in the Optimism factor; whereas, the present study identified the factor in the Mindfulness factor. Although Copeland et al. included the item “I am not engaged in life” in the Initiative factor, the present study included it in the Optimism factor. Whereas the current study included the item “I enjoy differences in people in the adaptability factor, Copeland et al. included this factor in the Empathy factor. Within the Social Competence factor, Copeland et al. included the item “I am not comfortable sharing my feelings.” The present study included this item in the Emotional Self-Regulation factor. A total composite score utilizing all 80 items was used in the present study; individual composite scores were not used for each factor (see Appendix K).



### **Internal Consistency Reliability**

McMillan and Schumacher (1997) suggested Cronbach's alphas greater than or equal to .70 demonstrated good internal consistency. The Cronbach's alpha for the seven-item Appearance Evaluation, nine-item Body Areas Satisfaction Scale, and 12-item Fitness Orientation comprising the MBSRQ were .90, .85, and .90, respectively, suggesting good internal consistency. These alpha reliability coefficients appeared to be slightly higher than found by previous research (Brown et al., 1990; Cash, 2000; Cash et al., 1986). Similar to previous research (Cash et al., 2005), the Cronbach's alpha for the 11-item Positive Rational Acceptance subscale of the BISI was .80.

Based on an exploratory factor analysis, all 80 items from the Journey to Wellness Scale were retained. As such, all items were included in the internal consistency analysis. The Journey to Wellness Scale total score demonstrated high internal consistency with a Cronbach's alpha of .96. This alpha reliability coefficient was higher than indicated by previous research (Copeland et al., 2010). The 10-item Social Media Use Integration Scale was also found to have high reliability ( $\alpha = .90$ ), similar to that found by Jenkins-Guarnieri et al. (2012). Taken together, this suggested the inventories were reliable for this population.

In addition to the internal consistency for the total Journey to Wellness Scale score, the internal consistency for each subscale identified in the factor analysis was calculated (see Table 4). The Self Efficacy subscale ( $\alpha = .81$ ), the Initiative subscale ( $\alpha = .87$ ), the Empathy subscale ( $\alpha = .83$ ), the Adaptability subscale ( $\alpha = .80$ ), the Connectedness subscale ( $\alpha = .86$ ), the Mindfulness subscale ( $\alpha = .83$ ), the Optimism subscale ( $\alpha = .86$ ), and the Emotional Self-Regulation subscale ( $\alpha = .70$ ) displayed good

internal consistency. The Conscientiousness subscale ( $\alpha = .68$ ) and the Social Competence subscale ( $\alpha = .63$ ) had internal consistency below .70; however, these lower alphas might have been due to the small number of items (five and six items, respectively) in these scales (Tabachnick & Fidell, 2013).

### **Analysis of Research Questions**

Research Question 1 examined if rates of body image varied by gender. A MANOVA with the two body image variables and gender as the independent variable was conducted. Research Questions 2 and 3 utilized a simultaneous linear regression to examine if participant characteristics predicted rates of positive and negative body image. Research Questions 4 and 5 assessed if psychological wellness was a moderator to positive and negative body image by use of a hierarchical regression. Lastly, a canonical correlation was conducted for Research Question 6 to examine the relationships between body image and participant characteristics.

#### **Research Question 1**

Q1 Are body image levels the same across gender in emerging adults?

Examination of gender differences was required to determine if gender needed to be controlled for in subsequent analyses. A MANOVA was conducted with gender as the independent variable and negative body composite (mean Appearance Evaluation and Body Areas Satisfaction Scale  $z$  scores) and Positive Rational Acceptance scores.

Prior to the MANOVA analysis, assumptions were examined. As previously detailed, when examining univariate normality, the negative body area composite and the Positive Rational Acceptance scale were normally distributed. Based on Mahalanobis distance using an alpha level of  $p < .01$ , no multivariate outliers were identified. There

appeared to be multivariate linearity between the independent and dependent variables. Examination of a Pearson correlation between the dependent variables suggested a weak to moderate, significant relationship between negative and positive body image ( $r = 0.42$ ,  $p < .01$ ). Although the correlation between the body image scales was significant, the relationship was weak to moderate. Additionally, the variable inflation factor was below 10, indicating little to no multicollinearity between variables. Both Levene's Test of Equality ( $p = .72$  Appearance Evaluation/Body Areas Satisfaction Scale;  $p = .24$  Positive Rational Acceptance) and Box's Test of Equality ( $p = .10$ ) were not significant, indicating equal variance among the dependent and independent variables. Due to meeting MANOVA assumptions, the analysis was interpreted using Wilk's Lambda.

To conduct a MANOVA, the minimum sample size in each group needs to be greater than the number of dependent variables. In the present study, there were two dependent variables, suggesting each group should contain more than two observations. However, Tabachnick and Fidell (2007) recommended that each group contain at least 20 observations. As the gender non-conforming group contained five individuals, this group was excluded from the MANOVA analysis.

The MANOVA examined negative and positive body image levels across gender. The multivariate result was significant for gender,  $F(1,2) = 4.23$ ,  $p < .01$ , indicating a difference in body image by gender. The univariate  $F$  tests showed a significant difference between females and males on the negative body image composite,  $F(1,2) = 8.85$ ,  $p < .01$ . No significant difference was found,  $F(1,2) = .77$ ,  $p = .47$ , between females and males on the Positive Rational Acceptance measure (see Table 6 for results). The results indicated the scales varied across gender for the negative body image

composite. The positive body image scale did not vary by gender. The effect size between genders on the negative body composite was 0.04. Blaikie (2003) suggested small effect sizes for partial eta square ranged from 0.01 to 0.05, medium ranged from 0.06 to 0.14, and large was greater than 0.14. As rates of negative body image by gender displayed a small effect size with a mean difference of less than one-half a standard deviation and non-significant findings on the positive body image scale, gender was not controlled for in subsequent analyses.

Table 6

*Analysis of Variance Differences in Body Image Scales Based on Gender*

Scale	<i>F</i>	<i>P</i>	Partial Eta Squared
Negative Body Image Composite	8.85	<.01*	.04
Positive Body Image Scale	.77	.47	.00

*Note.* Negative body image composite is the average *z* score of the Appearance Evaluation and Body Areas Satisfaction Scale; Positive body image is the Positive Rational Acceptance subscale.

\* $p < .01$ .

### Research Questions 2 and 3

- Q2 What participant characteristics (body mass index, fitness levels, and social media behaviors) predict positive body image among emerging adults?
- Q3 What participant characteristics (body mass index, fitness levels, and, social media behaviors) predict negative body image among emerging adults?

Multiple regression analyses were performed to answer Research Questions 2 and 3 by examining whether participant characteristics predicted levels of negative and

positive body image. As detailed above, negative and positive body image groups were formed using data derived from the current sample.

Prior to running the multiple linear regression for Research Question 2, assumptions were tested on the positive body data. No univariate or multivariate outliers were identified. There was a linear relationship between all the independent and dependent variable, and a Pearson correlation between the independent variables indicated no correlation larger than 0.45 (see Table 7 for Pearson correlation). The variable inflation factor was below 10, indicating little to no multicollinearity between variables. Based on examination of residual normality plots, the residuals displayed equal variance and had a range less than -3 to 3.

Based on an examination of histograms and Shapiro Wilks, the dependent variable Positive Rational Acceptance displayed a positive skew distribution (0.99). A log 10 transformation was performed. The results of the regression did not change significantly with the use of the transformed variable--Positive Rational Acceptance. Tabachnick and Fidell (2013) reported transformed data might be more difficult to interpret. As there was little change in the results, non-transformed data were utilized in the analysis and reported in the results.

Table 7

*Correlations Between Predictor Variables Positive Body Image Group*

Measure	1	2	3	4
1. Body Mass Index	-	0.13	-0.10	0.04
2. Fitness Levels	0.13	-	0.26*	-0.30*
3. Psychological Wellbeing	-0.10	0.26	-	-0.45**
4. Social Media	0.04	-0.30	-0.45	-

*Note.* Fitness Levels=Fitness Orientation Scale; Psychological Wellbeing=Journey to Wellness Scale; Social Media= Social Media Use Integration Scale.

\* $p < .05$  \*\* $p < .01$ .

Research Question 2 examined if participant characteristics predicted positive body image as measured by mean Positive Rational Acceptance scores. Fitness Orientation scores, BMI, Journey to Wellness Scale scores, and Social Media Use Integration Scale scores were entered as independent variables with Positive Rational Acceptance scores as the dependent variable into a simultaneous multiple regression. The model was not significant,  $R^2 = .05$ ,  $F(4,55) = .79$ ,  $p = .54$ , fitness levels, and social media behaviors did not predict levels of positive body image. The results are displayed in Table 8.

Table 8

*Multiple Regression Analysis between Participant Characteristic Indicators and Positive Body Image*

Variable	<i>B</i>	<i>SE b</i>	$\beta$
Constant	2.13	.31	
Body Mass Index	-.00	.01	-.03
Fitness Levels	.05	.03	.22
Psychological Well-being	.04	.07	.09
Social Media	.02	.03	.11

*Note.* *B*= unstandardized beta.

A step-wise hierarchical regression analysis was also conducted to examine the relationship among positive body image and BMI, fitness levels, psychological wellbeing, and social media use. Using a step-wise elimination procedure, all predictor variables were entered to determine the most significant predictors. When the four predictors (BMI, fitness levels, psychological wellbeing, and social media use) were examined, no predictors were identified as the strongest or most significant predictor of positive body image.

Research Question 3 examined if participant characteristics predicted negative body image as measured by the Appearance Evaluation and Body Areas Satisfaction Scale. Prior to running the multiple regression analysis, assumptions were tested on the negative body image group. The dependent variable, negative body composite, was normally distributed. There was a linear relationship between all the independent and

dependent variables and a Pearson correlation between the independent variables indicated no correlation larger than .30 (see Table 9 for Pearson correlations).

Table 9

*Correlations Between Predictor Variables Negative Body Image Group*

Measure	1	2	3	4
1. Body Mass Index	-	0.02	-0.09	-0.09
2. Fitness Levels	0.02	-	0.30*	-0.22*
3. Psychological Wellbeing	-0.09	0.30	-	0.16
4. Social Media	-0.09	-0.22	0.16	-

*Note.* Fitness Levels=Fitness Orientation Scale; Psychological Wellbeing=Journey to Wellness Scale; Social Media=Social Media Use Integration Scale.

\* $p < .05$ .

The variable inflation factor was below 10, indicating little to no multicollinearity between variables. Based on examination of residual normality plots, the residuals displayed equal variance and had a range less than -3 to 3. Use of Mahalanobis distance with an alpha level of  $p < .01$  identified no multivariate outliers.

Fitness Orientation scores, BMI, Journey to Wellness Scale scores, Social Media Use Integration Scale scores, and gender were entered simultaneously as independent variables; Appearance Evaluation and Body Areas Satisfaction Scale combined  $z$  scores were entered as the dependent variable. The model was not significant,  $R^2 = .06$ ,  $F(4,73)$



= 1.06,  $p = .38$ . Fitness levels, BMI, and social media behaviors did not predict levels of negative body image. The results are displayed in Table 10.

Table 10

*Multiple Regression Analysis between Participant Characteristic Indicators and Negative Body Image*

Variable	<i>B</i>	<i>SE b</i>	$\beta$
Constant	-0.86	1.17	
Body Mass Index	-1.14	0.67	-0.20
Fitness Levels	0.08	0.08	0.13
Psychological Well-Being	-0.04	0.22	-0.02
Social Media	0.04	0.07	0.07

*Note.* *B* = unstandardized beta.

A step-wise hierarchical regression analysis was also conducted to examine the relationship between negative body image and BMI, fitness levels, psychological wellbeing, and social media use. Using a step-wise elimination procedure, all predictor variables were entered to determine the most significant predictors. When the four predictors (BMI, fitness levels, psychological wellbeing, and social media use) were examined, no predictors were identified as the strongest or most significant predictor of negative body image.

#### **Research Questions 4 and 5**

- Q4 Does psychological well-being moderate the relationship between participant characteristics and positive body image?

Q5 Does psychological well-being moderate the relationship between participant characteristics and negative body image?

For Research Questions 4 and 5, two hierarchical multiple regressions were conducted to determine if psychological well-being moderated the relationship among BMI, fitness levels, social media behavior, and body image (negative and positive). Due to conducting two multiple regression on the negative and positive body image data, a Bonferroni correction was used for an adjusted alpha level of .025.

Research Question 4 examined if participant characteristics predicted positive body image as measured by the mean Positive Rational Acceptance scale. The assumptions of multiple regression were tested and detailed above. For Research Question 4, a hierarchical multiple regression was conducted. Positive Rational Acceptance was entered as the dependent variable; Journey to Wellness Scale scores were entered in Step 1 and BMI, Fitness Orientation scores, and Social Media Use Integration Scale scores were entered in Step 2. As demonstrated in Table 11, the first block including the Journey to Wellness Scale scores were not a statistically significant predictor of Positive Rational Acceptance scores,  $R^2 = 0.10$ ,  $F(1, 58) = 0.57$ ,  $p = .45$ . There was also no significant contribution to  $R^2$  in Step 2,  $R^2 = .24$ ,  $F(3, 55) = .88$ ,  $p = .46$ .

Table 11

*Hierarchical Multiple Regression on Positive Body Image for Participant Characteristics with Moderator Psychological Well-Being*

Steps	Predictor	<i>R</i>	<i>R</i> <sup>2</sup>	<i>F</i>	<i>df</i>	<i>p</i>
1	Psychological Well-being	0.10	0.01	.57	1, 58	.45
2	Participant Characteristics	0.24	0.06	.88	3, 55	.46

*Note.* Participant characteristics includes BMI, Fitness Orientation scale, and Social Media Use Integration Scale. Psychological well-being is the Journey to Wellness Scale mean.

Prior to conducting the regression for Research Question 5, assumptions were examined. As detailed above, all assumptions with the expectation of multivariate outliers were met. For Research Question 5, the hierarchical multiple regression was conducted; Appearance Evaluation and Body Areas Satisfaction Scale *z* scores were entered as the dependent variable; the Journey to Wellness Scale mean was entered in Step 1; and BMI, Fitness Orientation scores, and Social Media Use Integration Scale scores were entered in Step 2. The results are displayed in Table 12. The results indicated the Journey to Wellness Scale scores were not a significant predictor of Appearance Evaluation and Body Areas Satisfaction Scale *z* scores,  $R^2 = .00$ ,  $F(1, 76) = 0.15$ ,  $p = .70$ . There was also no significant contribution to  $R^2$  in Step 2,  $R^2 = 0.06$ ,  $F(3, 73) = 1.4$ ,  $p = .26$ .

Table 12

*Hierarchical Multiple Regression on Negative Body Image for Participant Characteristics with Moderator Psychological Well-Being*

Steps	Predictor	<i>R</i>	<i>R</i> <sup>2</sup>	<i>F</i>	<i>Df</i>	<i>P</i>
1	Psychological Well-being	0.04	0.00	0.15	1, 76	.70
2	Participant Characteristics	0.23	0.06	1.4	3, 73	.26

*Note.* Participant characteristics include BMI, Fitness Orientation scale, and Social Media Use Integration Scale. Psychological well-being is the Journey to Wellness Scale mean.

### Research Question 6

- Q6 Are there significant relationships between participant characteristics (body mass index, fitness levels, psychological well-being, social media) and levels of body image (positive and negative) among emerging adults?

To answer Research Questions 6, a canonical correlation analysis was performed to measure the strength of the relationship between linear composites of emerging adult characteristics and body image. Four variables represented student characteristics (fitness levels, psychological well-being, and social media attachment) and two represented body image (combined z score Appearance Evaluation and Body Areas Satisfaction and Positive Rational Acceptance). All scores were converted to z scores in order to be expressed in the same scale. Prior to conducting the canonical correlation, assumptions were tested.

As previously detailed, the negative body area composite and Positive Rational Acceptance scores were normally distributed. Based on Mahalanobis distance using an alpha level of  $p < .01$ , no multivariate outliers were identified. Additionally, there appeared to be multivariate linearity between the independent and dependent variables.

Examination of a Pearson correlation between the dependent variables suggested a weak to moderate, significant relationship between negative and positive body image ( $r = 0.42$ ;  $p < .01$ ). Moreover, the variable inflation factor was below 10, indicating little to no multicollinearity between variables. Both Levene's test of equality ( $p = .68$  Appearance Evaluation /Body Areas Satisfaction Scale;  $p = .23$  Positive Rational Acceptance) and Box's test of equality ( $p = .10$ ) were not significant, indicating equal variance among the dependent and independent variables.

Initially, the significance of the full canonical correlations was examined to determine if the results were statistically significant. Both statistical significance and effect size were examined. The overall model was significant,  $F(10, 864) = 19.93$ ,  $p < .01$ . The effect size was obtained by subtracting  $1 - \lambda$ , providing the amount of variance shared between the set of body image measures and participant characteristics. The effect size was .32, suggesting the participant characteristics explained 32% of the variance in body image.

As a small to moderate effect size was found, the individual canonical variates were examined next. Canonical variates are the linear combination on predictor and outcome variables (Thompson, 2010). The number of canonical variates is equal to the number in the smaller of the two-variable set (Tabachnick & Fidell, 2013). In the present study, one canonical contained two variables (negative and positive body image) and the other contained four variables (BMI, fitness levels, psychological well-being, and social media). Based on this, two canonical correlations were calculated. Canonical variates are ordered by percentage of explained variance; the first explains the most followed by

the second. Each canonical function is independent from the other canonical function, so each represents different relationships among the variable sets.

The first canonical correlation was .55 with 30% overlapping variance. The second was .23 with 0.05% overlapping variance. With both canonical correlations included, the first canonical correlation was significant,  $X^2(20) = 9.35, p < .01$ . With the first canonical correlation removed, the  $F$  value remained significant,  $F(4, 433) = 6.00, p < .01$ . Although both canonical variates were significant, the second variate only explained .05% of the variance; thus, it was not considered notable in the larger study and was excluded from interpretation.

Next, factor loadings for the first canonical variate were examined. A canonical variate is a combination of measured variables recombined so the sets of variables correlate with each other as highly as possible (Tabachnick & Fidell, 2013). Canonical loadings or correlations show the extent each measured variable is correlated to the corresponding canonical variates. A canonical correlation is a standardized weight similar to standardized beta weight in multiple regression analysis (Thompson, 2010). Cutoff scores of .30 were used to interpret meaningful variables.

The loadings explained what set of variables in the body image set correlated with the first canonical variate. The body image variables that correlated with the first canonical variate were the Positive Rational Acceptance scale (.99) and the negative body composite comprised of the Appearance Evaluation and Body Areas Satisfaction Scale  $z$  scores (.57). Participant characteristics that most strongly influenced body image were BMI (-.58), fitness levels (.37), and psychological well-being (.84). The canonical variate indicated higher rates of positive body image were associated with higher rates of

psychological well-being, higher fitness levels/attitudes toward fitness, and lower BMI.

Table 13 displays the canonical solution.

Table 13

*Canonical Solution for Body Image and Participant Characteristics for Function 1*

Variable	Function 1	
	Coef	$r_s$
<b>Body Image</b>		
Positive Rationale Acceptance	<b>0.99</b>	0.22
Negative Body Composite	<b>0.57</b>	0.89
<b>Participant Characteristics</b>		
BMI	<b>-0.58</b>	-0.52
Fitness Levels	<b>0.37</b>	0.14
Psychological Well-Being	<b>0.84</b>	0.75
Social Media	-0.21	-0.06

*Note.* Coef = standardized canonical function coefficient;  $r_s$  = structure coefficient. Coef greater than 0.3 are in boldface.

### Summary

This chapter presented the findings of the analyses used in the study. The relationships between body image and participant characteristics were examined. A MANOVA was conducted to examine gender differences in the two measures of body image: combined  $z$  score of Appearance Evaluation and Body Areas Satisfaction Scale and Positive Rational Acceptance scores. No significant differences were found on the

Positive Rational Acceptance scale. However, a significant difference was found on the combined Appearance Evaluation and Body Areas Satisfaction Scale with women reporting lower levels of body image. As the effect size was small ( $d = 0.04$ ), gender was not controlled for in subsequent analyses.

Next, two simultaneous regressions were conducted to examine if any participant characteristics predicted positive and negative body image. Fitness levels, BMI, psychological well-being, and social media use did not significantly contribute to positive and negative body image. Psychological well-being was investigated as a moderator of positive and negative body image; based on the results of two hierarchical linear regressions, psychological well-being was not a predictor of negative or positive body image nor were BMI, fitness levels, and social media.

Last, a canonical correlation was conducted to examine the relationships among body image as measured by the negative body composite (combined  $z$  scores Appearance Evaluation and Body Areas Satisfaction Scale) and Positive Rational Acceptance and participant characteristics (BMI, fitness levels, psychological well-being, and social media use). Two significant relationships were identified but only one was meaningful and interpreted. The canonical variate indicated those with higher rates of body image were associated with higher rates of psychological well-being, higher fitness levels/attitudes towards fitness, and lower BMI. Chapter V discusses the relevance of these findings and implications for research and practice.



## **CHAPTER V**

### **DISCUSSION**

As the factors that contribute to positive and negative body image have not been explored conjointly, a need existed to understand what specific factors contributed to both constructs of body image and how these differed to provide targeted interventions to increase positive body image and decrease negative body image. This study examined the relationships among positive, negative, and all levels (positive, negative, and average) of body image and a set of participant characteristics including body mass index, fitness levels, psychological well-being, and attitudes/behaviors toward social media in emerging adults. The Positive Rational Acceptance Scale was used to measure positive body image. The Body Areas Satisfaction Scale and the Appearance Evaluation combined  $z$  scores were utilized in all analyses as a measure of negative body image. Four participant characteristics were also examined including body mass index, fitness levels as measured by the Fitness Orientation scale, psychological well-being as measured by the Journey to Wellness Scale, and attitudes and behaviors toward social media as measured by the Social Media Use Integration Scale.

#### **Positive Body Image**

Body mass index, fitness levels, psychological well-being, and social media attitudes/behaviors were examined as potential indicators of positive body image. Unique to this study, only individuals with self-reported levels of positive body image

were utilized. To examine the potential contribution of body mass index, fitness levels, psychological well-being, and social media attitudes/behaviors to an individual's positive body image, both a multiple regression analysis and a step-wise analysis were conducted. Body mass index, fitness levels, psychological well-being, and social media attitudes/behaviors were not significant predictors of positive body image.

As psychological well-being might moderate body image (Grilo & Masheb, 2005; Kelly & Stephen, 2016), a hierarchical multiple regression was conducted with psychological well-being entered in step one and body mass index, fitness levels, and social media attitudes/behaviors entered in step two. Psychological well-being was not a significant predictor of positive body image. There was also no significant contribution to positive body image with the addition of the participant's BMI, fitness levels, and social media behavior/attitudes. The multiple linear regression indicated a positive, non-significant association among fitness levels, psychological well-being, and social media behaviors/attitudes and positive body image in the positive body image group. While not statistically significant, body mass index had a negative association with positive body image.

In the present study, examination of mean differences among underweight ( $M = 1.87$ ), normal weight ( $M = 1.74$ ), overweight ( $M = 1.72$ ), and obese ( $M = 1.65$ ) individuals indicated little variability on the positive body image measure (Positive Rational Acceptance). Similarly, Gillen (2015) found rates of psychological well-being did not vary by BMI. It might be that how individuals felt about their body mattered more than body size, which might have contributed to the non-significant finding between BMI and positive body image.

Similar to the present study, Andrew et al. (2016a) found participation in sports and hobbies was not a predictor of positive body image. The authors measured frequency and duration of activities rather than the type of activity (i.e., empowerment fitness). The present study measured an individual's extent of investment in being physically fit and not specific types of fitness. The type of fitness measured might have contributed to the non-significant findings.

Previous research examined embodiment fitness (i.e., mind-body fitness) and positive body image. Karazsia, van Dulmen, Wong, and Browther (2013) utilized a non-experimental survey method to compare levels of positive body image in a group of belly dancers and women not participating in belly dancing. Women who engaged in belly dancing reported significantly higher rates of positive body image than women not participating in belly dancing. Cox, Ullrich-French, Howe, & Cole (2017) found adolescents who engaged in a 12-week yoga-based curriculum displayed a reduction in body surveillance and an increase in their feelings of self-worth. No significant changes on a pre-to-post measure of body appreciation, a measure of positive body image, were found.

As Cox et al. (2017) utilized a quasi-experimental design and Tiggemann et al. (2014) used a non-experimental method, it might be that individuals with higher rates of positive body image sought out embodiment activities but these were ineffectual in increasing positive body image. Embodiment fitness activities might increase aspects of psychological well-being but not positive body image directly.

Previous body image research primarily studied pathologies associated with body dissatisfaction; as such, theories on non-pathological body image were lacking in the

literature. Most theories and models of body image emphasize the development of body dissatisfaction. As research on body dissatisfaction dominates body image research, few studies have examined contributing factors to positive body image (Andrew et al., 2016a, 2016b; Iannantuono & Tylka, 2012).

Andrew et al.'s (2016a) structural model of positive body image demonstrated that perceived body acceptance by others and viewing of information-based media versus appearance-based media predicted appearance processing (i.e., self-objectification, social comparison, and thin-ideal internalization), which negatively predicted body appreciation. Although statistically significant, the factor loadings for non-appearance media (-.13), appearance media (.36), and perceived body acceptance by others to body appreciate (.30), were low, suggesting while significant, they might not be meaningful.

Additionally, the researcher added an a-posterior non-hypothesized path while model fitting and re-estimated the model, resulting in a better model fit. Model modification to improve fit could create an exploratory versus confirmatory analysis; as such, significance levels might need to be interpreted with caution (Tabachnick & Fidell, 2013). Contrary to Andrew et al.'s (2016a) findings, the present study found BMI, fitness levels, psychological well-being, and social media attitudes/behaviors were not significant predictors of positive body image.

The present study examined those individuals with positive body image. Andrew et al. (2016a) utilized all levels of body image (positive, negative, and average), which might have increased the standard deviation of the positive body measure spreading out the scores, creating greater variance and making the mean less likely to represent individual scores (Gareth, Witten, Hastie, & Tibshirani, 2013). The significant results

might be due to the variance in the distribution of the positive body image measure. It might be more appropriate to develop a model of positive body image utilizing those with self-reported levels of positive body image.

### **Negative Body Image**

Body mass index, fitness levels, psychological well-being, and social media attitudes/behaviors were examined as potential indicators of negative body image. Similar to positive body image, only individuals with self-reported levels of negative body image were utilized. To examine the potential contribution of body mass index, fitness levels, psychological well-being, and social media attitudes/behaviors to an individual's negative body image, a multiple regression analysis and a step-wise analysis were conducted. Body mass index, fitness levels, psychological well-being, and social media attitudes/behaviors were not significant predictors of negative body image.

Although not statistically significant, BMI and psychological well-being were negatively associated with negative body image. Fitness levels and attitude and behaviors toward social media displayed a non-significant positive association with negative body image. While not significant, BMI was the best predictor of negative body image.

As psychological well-being might moderate body image (Grilo & Masheb, 2005; Kelly & Stephen, 2016), a hierarchical multiple regression was conducted with psychological well-being entered in step one and body mass index, fitness levels, and social media attitudes/behaviors entered in step two. Psychological well-being was not a significant predictor of negative body image. Also, no significant contribution to

negative body image was found with the addition of BMI, fitness levels, and social media behavior/attitudes.

Higher BMIs have been associated with higher rates of body dissatisfaction in males and females (Ålgars et al., 2009; Cortese, 2010; Erbil, 2013; Watkins et al., 2008). The current study found no significant relationships between BMI and the negative body image groups. Although not significant, the highest association with negative body image was BMI. Similar to Rutledge et al. (2013), no significant associations were found between time spent on Facebook and body dissatisfaction. Contrary to the current findings and those of Rutledge et al. (2013), Tiggemann and Miller (2010) found an association between time spent on Facebook and weight satisfaction.

### **All Levels of Body Image**

Body mass index, fitness levels, psychological well-being, and social media attitudes/behaviors were examined as potential indicators of all levels of body image (positive, negative, and average). Utilizing all groups as measured by a canonical correlation, higher rates of positive body image were significantly associated with higher rates of psychological well-being, higher fitness levels/attitudes toward fitness, and lower BMIs. Social media attitude/behavior was not significantly associated with body image. Utilizing all participants (positive, negative, and average body image), canonical correlation findings suggested those with higher psychological well-being, greater attitudes and behaviors towards fitness, and lower body mass index had more positive body image.

When all levels of body image were analyzed (positive, negative, and average), factors that contributed to body image were similar to previous research (Ålgars et al.,

2009; Andrew et al, 2016a, 2016b; Iannantuono & Tylka, 2012). Higher positive body image has been associated with higher rates of self-esteem (Avalos et al., 2005; Swami, Stieger et al., 2008) and self-compassion (Kelly & Stephen, 2016). Additionally, Hausenblas and Fallon (2006) found an association between exercise and lower levels of body dissatisfaction. Similarly, Swami, Stieger et al.'s (2008) research indicated body appreciation was negatively correlated with BMI, suggesting those with lower BMI had higher levels of body image.

As detailed above in the analyses utilizing individuals with self-reported levels of positive body image, although not statistically significant, psychological well-being, fitness levels, and social media behaviors/attitudes were positively associated with positive body image. While not statistically significant, BMI displayed a negative association with positive body image. Differing from these associations in the analyses using the negative body image group, non-significant, negative associations were found among BMI and psychological well-being and negative body image. Body mass index and social media use/behaviors were positively associated with negative body image. In the canonical correlation when all levels of body image were examined (positive, negative, and average), higher rates of positive body image were significantly associated with higher rates of psychological well-being, higher fitness levels/attitudes toward fitness, and lower BMIs. These combined findings, while speculative, suggested negative body image and positive body image are distinct constructs with differing contributing factors.

This finding was consistent with William et al.'s (as cited in Tylka & Wood-Barcalow, 2015) cluster analysis of body image in college women that supported three

distinct and separate body image groups. A group identified as having positive body image comprised 44% of their study's sample, 30% were identified as having body dissatisfaction, and 26% were identified as having intermediate levels of body dissatisfaction. In the present study, 18% of the sample were identified as having a negative body image, 14% had a positive body image, and 69% had average or intermediate levels of body image.

Contrary to William et al. (as cited in Tylka & Wood-Barcalow, 2015), the current study derived the negative and positive body image groups from the larger sample. Individuals who reported means one standard deviation or higher on the positive body image measure (i.e., Positive Rational Acceptance) were considered to have a positive body image. Individuals who reported means one standard deviation or lower on the negative body image composite were considered to have a negative body image. Given a normal distribution, the percentage of individuals with negative and positive body image was not unexpected. Use of measures with cut-off scores might result in similar rates of individuals reporting to have positive, negative, and average body images as found by William et al. (as cited in Tylka & Wood-Barcalow, 2015).

Based on the results of the canonical correlation when all levels of body image (i.e., positive, negative, and average) were examined, BMI, orientation to fitness, and psychological well-being only explained 32% of the variance in body image, leaving 68% unexplained. This suggested the findings, while significant, might not be meaningful. As with previous research when all levels of body image were utilized, the results might be influenced by the variance in the distribution of body image measures. Greater variance produces larger standard deviations, creating a higher likelihood of



outliers and increasing the minimum detectable effect size (Gareth et al., 2013). It might be appropriate to develop individual models of body image for individuals with positive, negative, and average body images utilizing individuals with these levels of body images.

### **Gender Differences**

To examine gender differences on the positive body image scale (Positive Rational Acceptance) and the negative body composite (combined *z* scores Appearance Evaluation and Body Areas Satisfaction Scale), a MANOVA was conducted. The positive body image scale did not vary by gender, suggesting females and males engaged in similar levels of positive self-talk and care about their appearance. This finding was contrary to previous research (Cash et al., 2005; Tylka, 2013) that found males had higher rates of positive body image than females. The present study's findings were similar to Swami, Hadji-Michael et al. (2008) who found no gender difference in body appreciation in a group of British males and females. The authors argued that sex differences found in previous research, although statistically significant, were small. Additionally, higher education was related to greater rates of body appreciation (Swami, Hadji-Michael et al., 2008). As the present study utilized individuals in a university setting, this suggested they had access to greater financial resources, which might promote higher rates of positive body image across all genders.

The MANOVA results indicated the scales varied across gender for the negative body image composite. Similar to previous research, females reported significantly lower levels of body image than males (Ålgars et al., 2009; Neighbors & Sobal, 2007; Smith et al., 1999). However, this difference was small with males reporting levels of

body image .03 standard deviations higher than females and gender non-conforming individuals.

The sample included gender non-conforming individuals ( $n = 5$ ); this group was not included in the MANOVA due to the small sample size (Tabachnick & Fidell, 2013). Female, male, and gender non-conforming means and standard deviations were found for all measures. Based on mean comparisons, gender non-conforming individuals ( $M = 1.60$ ) reported means similar to females ( $M = 1.72$ ) and males ( $M = 1.78$ ). Although an analysis of variance (ANOVA) was not conducted, based on mean comparisons, it appeared gender non-conforming, females, and males had similar levels of positive body image. No previous research was found that examined gender non-conforming individuals' rates of positive body image.

Gender non-conforming individuals reported means 1.45 standard deviations lower than males and .78 standard deviations lower than females on the negative body image measure (combined  $z$  scores Appearance Evaluation and Body Areas Satisfaction Scale). As an ANOVA was not conducted on the negative body composite using gender non-conforming individuals, it was unknown if this difference was statistically significant. However, based on  $z$  score comparisons, it appeared gender non-conforming individuals experienced lower levels of body image than those who identified as male or female.

No research was found that examined gender non-conforming individuals and body image. However, Morrison, Morrison, and Sager (2004) conducted a meta-analysis examining body dissatisfaction of heterosexuals, gay men, and lesbian women. The findings indicated gay men experienced greater rates of body dissatisfaction than

heterosexual men. A small difference was found between lesbian women and heterosexual women with lesbian women reporting slightly lower rates of body dissatisfaction.

Although the gender non-conforming group contained five individuals, based on mean comparisons, this group reported means 1.48 standard deviations lower than females and 1.69 standard deviations lower than males on the Journey to Wellness Scale. As with the negative body composite when an ANOVA was not conducted on the Journey to Wellness Scale using gender non-conforming individuals, it was unknown if this difference was statistically significant. However, based on  $z$  score comparisons, it appeared gender non-conforming individuals experienced lower levels of psychological well-being than those who identified as female or male.

No previous research was found that examined the association between gender non-conforming individuals and psychological well-being. However, Meanley, Pingel, and Bauermeister (2016) found an association between bisexual and gay men's exposure to religion and spirituality and lower levels of psychological well-being. Based on these combined findings, increased research utilizing gender non-conforming individuals to examine psychological well-being and body image would be warranted.

### **Limitations**

Due to the methodological features of a non-experimental survey method, this study had limitations that might have affected the validity of the findings. The sample population of this study was from one university within the Rocky Mountain region, affecting the generalizability to other populations including other geographical locations, races and ethnicities, and socioeconomic statuses. Additionally, as surveys were utilized,

it is possible extraneous variables other than the ones included in the studies influenced the results. The study involved multiple measures, which might have caused fatigue in participants, resulting in changes in responses due to the study duration.

The negative and positive body image groups were derived from the larger sample. The negative body image group consisted of participants who reported body image levels one standard deviation or less than the average sample on the combined Body Areas Satisfaction Scale and Appearance Evaluation scales. The positive body image group consisted of participants who reported body image levels one standard deviation greater than the average sample on the Positive Rational Acceptance scale. As these groups were derived from the study sample, they were highly dependent on the present sample, affecting the generalizability of results.

Additionally, the study utilized self-report measures, which increased response biases and responses due to social desirability (Brewer & Crano, 2014). Finally, the present study utilized multiple statistical analyses on the same data set, increasing the risk of a Type I error (Brewer & Crano, 2014). Uneven group sizes were also a limitation. The gender non-conforming group consisted of five individuals; as such, those results should be interpreted with caution. These limitations, in addition to affecting the generalizability of results, might have influenced the non-significant findings of the negative and positive body image groups in the present study.

### **Recommendations for Future Research**

Given the limitations of the present study and the non-significant findings for the positive and negative body image groups, future research could examine other factors that contribute to body image in individuals with positive and negative body image. This

study supported the theory that positive and negative body image were separate constructs; positive body image was not the absence of body dissatisfaction. The present study suggested body image could be conceptualized as distinct constructs of negative, average, and positive body image. It might be appropriate to develop individual models of body image that examine individuals with positive, average, and negative body image as distinct groups.

As no significant associations were found in the present study for the positive body image group, future research could utilize other measures of positive body image. The 19-item Body Appreciation Scale-2 (Tylka & Wood-Baraclow, 2015) was designed to assess acceptance, respect, and positive opinions toward one's body, i.e., questions included "I fell love for my body." The scale sought to measure positive body image by measuring individuals' level of body appreciation, favorable opinions of their body, body respect, and protection of their body from body image standards portrayed in the media. Future research might consider using the Body-Appreciation Scale in individuals with self-reported levels of positive body image to examine predictors and contributors to this construct. Additionally, as described previously, the positive and negative body image groups were derived based on the study's means. Future research could utilize measures with standardized *T*-scores with cutoff scores indicating low, average, and high levels of body image.

Tiggemann et al. (2014) examined the fitness activity of belly dancing, an embodying activity exercise. The present study did not examine exercises that promote empowerment and self-confidence such as belly dancing. Future research could examine the association between empowerment activities in individuals with positive body image.

As the potential relationship between positive and negative body image is likely complex, future researchers could use clusters analyses or structural equation modeling to further examine these relationships.

Although the current study consisted of a small gender non-conforming group ( $n = 5$ ), interesting trends were observed with this population. Future research could utilize a larger sample size and explore the differences among males, females, and gender non-conforming individuals on positive and negative body image and psychological well-being. Meanley et al. (2016) found an association between bisexual and gay men's exposure to religion and spirituality and lower levels of psychological well-being. The current study found that gender non-conforming individuals reported lower means than males and females on the Journey to Wellness Scale, a measure of psychological well-being. Future research could further examine this population.

### **Conclusion**

This study examined the relationships between body image and participant characteristics among emerging adults through self-reported measures. Unique to this study, contributing factors that contributed to positive and negative body image were examined in a group of individuals with self-reported levels of both positive and negative body image. Additionally, a canonical correlation was performed to examine the factors that contributed to all levels of body image (i.e., positive, negative, and average).

Although participant characteristics that contributed to body image within the negative and positive body image group were not statistically significant, associations between factors differed from the positive and negative body image groups. When all levels of body image (positive, negative, and average) were examined using a canonical

correlation, those with positive rates of body image were associated with higher rates of psychological well-being, higher fitness levels/attitudes toward fitness, and lower BMI. These findings suggested the contributing factors to positive and negative body image were unique; as such, body image might better be conceptualized as distinct positive, negative, and average constructs.

Prior body image research (Ålgars et al., 2009; Andrew et al, 2016a, 2016b; Iannantuono & Tylka, 2012) utilized participants with all levels of body image (positive, negative, and average). This might have increased the standard deviation of the body image measures and spread out the scores, thus increasing the minimum detectable effect size, and making the mean less representative of individual scores (Gareth et al., 2013). Additionally, examination of the factor loadings in previous models of body image (Andrew et al., 2016a) suggested low factor loadings (-.13 to .36). It might be appropriate to develop separate models of body image for individuals with positive, negative, and average body image utilizing individuals with these levels of body image.

The positive body image scale did not vary by gender, suggesting females and males engaged in similar levels of positive self-talk and care about their appearance. Females reported significantly lower rates of body image on the negative body composite (combined  $z$  scores Appearance Evaluation and Body Areas Satisfaction Scale) than males. However, this difference was small with males reporting levels of body image .03 standard deviations higher than females and gender non-conforming individuals.

Interesting trends were observed with gender non-conforming individuals ( $n = 5$ ). This group's means were 1.45 standard deviations lower than males and .78 standard deviations lower than females on the negative body image measure (combined  $z$  scores

Appearance Evaluation and Body Areas Satisfaction Scale). Additionally, gender non-conforming individuals reported means 1.48 standard deviations lower than females and 1.69 standard deviations lower than males on the Journey to Wellness Scale. These results should be interpreted with caution due to the small group size and lack of mean test; it was unknown if these differences were statistically significant.

School psychologists are uniquely situated to provide targeted interventions to increase positive body image and decrease negative body image in children, adolescents, and emerging adults. These interventions are of particular importance as children and adolescents are experiencing increasing rates of body dissatisfaction and dieting behaviors (CDC, 2016), which are associated with decreased outcomes (Bessenoff, 2006; Fallon & Hausenblas, 2005; Hargreaves & Tiggemann, 2004; Paxton et al., 2006). Additionally, the present study supported the theory that the absence of body dissatisfaction does not equate to love and appreciation of one's body. Aligning with positive psychology, school psychologist should also promote positive body image.

School psychology might consider using mindfulness techniques and self-esteem programs as interventions to decrease negative body image. The effectiveness of a teacher-delivered intervention (Dove Confident Me; Diedrichs et al., 2015) to decrease negative body image was examined in a group of 1,707 students in Britain. Interventions were delivered during the school day as part of an alternative program. Compared to controls, girls who participated in the program self-reported increased levels of body-esteem, dietary restrictions, eating disorder symptoms, and life engagement on the post measure. However, these effects were small and were not maintained at follow-up (Diedrichs et al., 2015).



Further supporting the deliverance of a school-based intervention for body image, a program designed to increase self-esteem (Everybody's Different; O'Dea & Abraham, 2000) reduced body dissatisfaction in a group of adolescent males and females. School psychologists could play an integral role in providing consultation and training to teachers on how to deliver interventions to increase positive body image and decrease body dissatisfaction. Additionally, school psychologists could explore how to maintain positive outcomes and advocate for the use of interventions to promote positive body image.

In the present study, when all levels of body image (positive, negative, and average) were utilized, fitness levels were associated with higher rates of body image. School psychologists could be instrumental in promoting the use of fitness-based interventions to increase positive body image in children, adolescents, and emerging adults. Empowerment fitness such as yoga has been argued to increase self-worth and decrease body surveillance (Cox et al., 2017). School psychologists could examine different empowerment fitness activities that allow children and adolescents to play an active role in designing the curriculum and focus on learning new skills versus physiological changes as an intervention to increase positive body image. These might include yoga and fitness groups such as Girls on the Run (n.d.), Girl Power (n.d.), Go Girl Go (Women's Sport Foundation, 2018), and Smart Fit Girls (2016).

As the present study supported the theory that positive and negative body image are distinct constructs, school psychologists could be instrumental in delivering interventions to increase positive body image. Additionally, school psychologists could provide consultation to teachers and administrators to develop and provide universal

interventions to decrease negative body image and increase positive body image. In these preventative approaches, psychologists might consider an individual's gender and BMI as risk factors for body dissatisfaction

In the present study, although psychological well-being was not identified as a moderator variable for negative and positive body image when all levels of body image were examined, those with higher body image were associated with higher levels of psychological well-being. As body image intervention might be associated with increased psychological well-being, clinicians might consider providing targeted interventions to increase positive body image and decrease negative body image. Similar to children and adolescents, mindfulness and cognitive behavioral therapy might be utilized as an intervention to decrease negative body image. Mindfulness interventions have displayed effectiveness in decreasing women's self-reported levels of weight concerns and eating disorder symptoms (Atkinson & Wade, 2016). Additionally, within a clinic setting, women aged 16 to 52 who participated in a six-week cognitive behavioral body image intervention reported significantly higher levels of body satisfaction, self-esteem, and lower levels of body shame on pre-to-post measures (Devaraj & Lewis, 2010).

As interventions for body image might be associated with psychological well-being, further examination of positive body image and body dissatisfaction is essential for the prevention and implementation of interventions to decrease body dissatisfaction and increase positive body image across the developmental lifespan.

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**APPENDIX A**

**THE MULTIDIMENSIONAL BODY-SELF  
RELATIONS QUESTIONNAIRE**



**Dimension****Item**

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**Appearance Evaluation***Negative Body Image*

- 5. My body is sexually appealing.
- 11. I like my looks just the way they are.
- 21. Most people would consider me good-looking.
- 30. I like the way I look without my clothes on.
- 39. I like the way my clothes fit me.
- 42. I dislike my physique.
- 48. I am physically unattractive.

**Body Area Satisfaction***Negative Body Image*

- 61. Face (facial features, complexion)
- 62. Hair (color, thickness, texture)
- 63. Lower torso (buttocks, hips, thighs, legs)
- 64. Mid torso (waist, stomach)
- 65. Upper torso (chest or breasts, shoulders, arms)
- 66. Muscle tone
- 67. Weight
- 68. Height
- 69. Overall appearance

**Fitness Orientation***Fitness Levels*

- 4. It is important that I have superior physical strength.
- 6. I am not involved in a regular exercise program.
- 15. Participating in sports is unimportant to me.
- 16. I do not actively do things to keep physically fit.
- 25. Being physically fit is not a strong priority in my life.
- 26. I do things to increase my physical strength.
- 34. I seldom think about my athletic skills.
- 35. I work to improve my physical stamina.
- 43. I don't care to improve my abilities in physical activities.
- 44. I try to be physically active.
- 52. I know a lot about physical fitness.
- 53. I play a sport regularly throughout the year.

**APPENDIX B**

**MULTIDIMENSIONAL BODY-SELF RELATIONS  
QUESTIONNAIRE GENDER NORMS**

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MBSRQ Subscales	Males		Females	
	Mean	SD	Mean	SD
Appearance Evaluation	3.49	.83	3.36	.87
Body Areas Satisfaction	3.50	.63	3.23	.74

**APPENDIX C**  
**COPING WITH BODY IMAGE**  
**CHALLENGES SCALE**

**Dimension****Item**

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**Positive Rational Acceptance***Positive Body Image*

2. I consciously do something that might make me feel good about myself as a person
10. I remind myself of my good qualities.
12. I tell myself that I'm just being irrational about things.
15. I tell myself that the situation will pass.
16. I try to figure out why I am challenged or threatened by the situation.
18. I tell myself that I am probably just overreacting to the situation.
20. I remind myself that I will feel better after awhile.
22. I tell myself that there are more important things than what I look like.
23. I tell myself that I probably look better than I feel I that do.
27. I react by being especially patient with myself.
29. I tell myself that the situation is not that important.

**APPENDIX D**  
**COPING WITH BODY IMAGE CHALLENGES**  
**SCALE GENDER NORMS**

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BICSI Measure	Males		Females	
	Mean	SD	Mean	SD
Positive Rational Acceptance	1.59	.56	1.68	.45

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**APPENDIX E**  
**DEMOGRAPHIC INFORMATION**



1. What is your age?
2. What is your gender identity?
3. What is your ethnicity or race?
4. What is the highest degree or level of education your mother completed?
5. What is the highest degree or level of education your father completed?
6. What is your height in inches?
7. What is your weight in pounds?
8. When was the last time you weighed yourself or were weighed?

**APPENDIX F**  
**JOURNEY TO WELLNESS SCALE**

- 1 I am open minded.
- 2 After an event, I typically find ways to do better
- 3 If I can't do something one-way, I'll do it another way.
- 4 It's important to be flexible.
- 5 I am prepared for change.
- 6 I try to find new ways of looking at things.
- 7 I am agreeable.
- 8 I need to be perfect R
- 9 I belong.
- 10 I am cared for and loved.
- 11 I feel like I belong at school.
- 12 I do not get support from friends and the community. R
- 13 I am close to one or both of my parents
- 14 I feel supported and listened to in my life.
- 15 In my family, nobody listens to one another. R
- 16 My friends are very supportive.
- 17 I blame other people for my problems. R
- 18 I care about my health.
- 19 I am dependable.
- 20 I exercise regularly.
- 21 I am responsible for my actions.
- 22 I finish what I start.
- 23 The choices I make are thoughtful ones.
- 24 I can admit to mistakes I make.
- 25 I can stop myself when I am going to say something I will regret.
- 26 After leaving a heated argument, I can return and talk to the person I am mad at.
- 27 I can remove myself from a frustrating situation.
- 28 I value feedback from people about how I handle different tense situations.
- 29 I don't let little things upset me.
- 30 I feel in control of my emotions.
- 31 I get upset when others don't see things my way. R
- 32 When I am angry or disappointed with someone I talk to them about it.
- 33 All people have value.
- 34 I am grateful for what I have.
- 35 I enjoy differences in people.
- 36 I can see things through other peoples' eyes.
- 37 I cannot accept another's point of view. R
- 38 I have concern for the welfare of others.
- 39 I stand up for people who cannot stand up for themselves.
- 40 It's important to forgive each other.

- 41 I am not engaged in life. R
- 42 I know what I want and how to get it.
- 43 I am not afraid to take a risk when it comes to starting a project.
- 44 I set challenging goals.
- 45 I am passionate about what I do.
- 46 I am not easily discouraged from something I want.
- 47 I envision what I want, and make a plan on how to get it.
- 48 I have lots of ideas.
- 49 I know what I am good at and not good at.
- 50 I sense what to do next.
- 51 I have learned a great deal from past experiences.
- 52 I know what I am feeling at the moment.
- 53 I am aware of how I make other people feel.
- 54 Criticism is hard to take, but it makes me stronger.
- 55 I lack confidence in my abilities. R
- 56 I am realistic about what I can and cannot do.
- 57 My problems seem to be never ending. R
- 58 I often feel hopeless. R
- 59 I keep on trying, as I know I will get there.
- 60 I often think life is meaningless. R
- 61 I have hope for the future.
- 62 It's important to see the humor in things.
- 63 I have positive expectations of others
- 64 I believe the world holds great promise
- 65 I give up easily on difficult tasks R
- 66 Sometimes it helps to have another's opinion.
- 67 I take pride in my accomplishments.
- 68 Learning new things is fun.
- 69 I feel organized in most aspects of my school life
- 70 I am confident and self-assured.
- 71 I find ways to accomplish difficult tasks
- 72 I really enjoy being into what I'm doing
- 73 I am respectful of others.
- 74 I often sense what others are feeling.
- 75 Listening is a very important skill.
- 76 I enjoy participating in activities with others.
- 77 I am easy to be with.
- 78 I am not comfortable sharing my feelings R
- 79 People say that I am thoughtful.
- 80 I have meaningful relationships.

**APPENDIX G**  
**SOCIAL MEDIA USE INTEGRATION SCALE**

1. I feel disconnected from friends when I have not logged into Facebook.
2. I would like it if everyone used Facebook to communicate.
3. I would be disappointed if I could not use Facebook at all.
4. I get upset when I can't log on to Facebook.
5. I prefer to communicate with others mainly through Facebook.
6. Facebook plays an important role in my social relationships.
7. I enjoy checking my Facebook account.
8. I don't like to use Facebook. (R)
9. Using Facebook is part of my everyday routine.
10. I respond to content that others share using Facebook.

**APPENDIX H**  
**INSTITUTIONAL REVIEW BOARD APPROVAL**



*Institutional Review Board*

DATE: March 15, 2017

TO: Amber Green

FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [1003957-2] Body Image and Participant Characteristics in Emerging Adults

SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVAL/VERIFICATION OF EXEMPT STATUS

DECISION DATE: March 13, 2017

EXPIRATION DATE: March 13, 2021

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or [Sherry.May@unco.edu](mailto:Sherry.May@unco.edu). Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.



**APPENDIX I**  
**CONSENT FORM FOR HUMAN PARTICIPATION**  
**IN RESEARCH**



+

## CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

Researcher:  
 Amber Green, Student, School Psychology  
 Phone Number: (970) 616-0655  
 e-mail: [stie3366@bears.unco.edu](mailto:stie3366@bears.unco.edu)

Project Title: Body Image and  
 Participant Characteristics in  
 Emerging Adults

Research Advisor:  
 Achilles Bardos, Ph.D., School Psychology  
 Phone: (970) 351-1629  
 e-mail: [Achilles.Bardos@unco.edu](mailto:Achilles.Bardos@unco.edu)

I am researching individual characteristics and body image. As a participant in this research, you will be asked to take an online survey. The surveys will consist of Likert items and will assess your fitness level, well-being, attitude towards social media, and types of social media utilized. In addition, demographic questions will be collected these include your gender, age, area of study, parental educational levels, height, and weight. The survey will take approximately 30-40 minutes and the demographic questionnaire will take 5 minutes.

For the survey, you will not provide your name but will be asked to provide a non-identifiable number of your choosing. Only the researcher and the research advisor will examine individual responses. The survey and demographic questionnaire will be completed online using Qualtrics. Results of this study will be presented in group form only (e.g. averages).

Risks to you are minimal. You may feel anxious or experience discomfort when completing survey items as certain items assess body image. As the survey will take approximately 40-50 minutes, you may also experience discomfort from the loss of time. To minimize this risk, results will be confidential and participation can be withdrawn at any point. As with any online related activity, the risk of a breach of confidentiality is always possible. To the best of my ability your answers in this study will remain confidential. I will minimize any risks by utilizing Qualtrics servers which are protected by high-end firewall systems. Qualtrics employs a confidential system designed to ensure that access is restricted to specific individuals. Additionally, data is stored in a specific location in the United States, it is not virtually stored. The benefits to you include an opportunity to reflect on your body image. In addition, the research will benefit the field of psychology by investigating factors that contribute to positive and negative body image. This information can be utilized as a guide for interventions to increase body image in secondary education, higher education, and clinical settings. Upon completing the survey, participants will have the option of entering a prize drawing for one of twenty \$25 Visa gift cards. Participants interested in being entered in the drawing will be directed to a de-linked website unassociated with the survey. Your information entered for the drawing will not be associated with any survey responses. You will be directed to fill out your name and email address. This information will not be

associated with survey responses. Winning participants will be notified and sent the gift card via the provided email.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please complete the online survey if you would like to participate in this research. **By completing the online survey, you give your permission to be included in this study as a participant.** You may print and keep this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910

**APPENDIX J**  
**QUALTRICS SURVEY**



## CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

**Researcher:**

Amber Green, Student, School Psychology  
 Phone Number: (970) 616-0655  
 e-mail: [stie3366@bears.unco.edu](mailto:stie3366@bears.unco.edu)

**Project Title: Body Image and  
 Participant Characteristics in  
 Emerging Adults**

**Research Advisor:**

Achilles Bardos, Ph.D., School Psychology  
 Phone: (970) 351-1629  
 e-mail: [Achilles.Bardos@unco.edu](mailto:Achilles.Bardos@unco.edu)

I am researching individual characteristics and body image. As a participant in this research, you will be asked to take an online survey. The surveys will consist of Likert items and will assess your fitness level, well-being, attitude towards social media, and types of social media utilized. In addition, demographic questions will be collected these include your gender, age, area of study, parental educational levels, height, and weight. The survey will take approximately 30-40 minutes and the demographic questionnaire will take 5 minutes.

For the survey, you will not provide your name but will be asked to provide a non-identifiable number of your choosing. Only the researcher and the research advisor will examine individual responses. The survey and demographic questionnaire will be completed online using Qualtrics. Results of this study will be presented in group form only (e.g. averages).

Risks to you are minimal. You may feel anxious or experience discomfort when completing survey items as certain items assess body image. As the survey will take approximately 40-50 minutes, you may also experience discomfort from the loss of time. To minimize this risk, results will be confidential and participation can be withdrawn at any point. As with any online related activity, the risk of a breach of confidentiality is always possible. To the best of my ability your answers in this study will remain confidential. I will minimize any risks by utilizing Qualtrics servers which are protected by high-end firewall systems. Qualtrics employs a confidential system designed to ensure that access is restricted to specific individuals. Additionally, data is stored in a specific location in the United States, it is not virtually stored. The benefits to you include an opportunity to reflect on your body image. In addition, the research will benefit the field of psychology by investigating factors that contribute to positive and negative body image. This information can be utilized as a guide for interventions to increase body image in secondary education, higher education, and clinical settings. Upon completing the survey, participants will have the option of entering a prize drawing for one of twenty \$25 Visa gift cards. Participants interested in being entered in the drawing will be directed to a de-linked website unassociated with the survey. Your information entered for the drawing will not be associated with any survey responses. You will be directed to fill out your name and email address. This information will not be

associated with survey responses. Winning participants will be notified and sent the gift card via the provided email.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please complete the online survey if you would like to participate in this research. **By completing the online survey, you give your permission to be included in this study as a participant.** You may print and keep this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910

Please provide a non-identifiable number of your choosing (e.g. 345). This number will not be associated with your responses. Do not provide your name.

What is your age?

What is your gender identity?

What is your ethnicity/race?

What is the highest degree or level of education your mother completed?

What is the highest degree or level of education your father completed?

What is your major? If you have not declared your major yet, what is your expected major  
What is your height in inches?

What is your weight in pounds?

When was the last time you weighed yourself or were weighed?





“Body image” refers to how we think and feel about our own physical appearance. In the course of everyday life, there are situations and events that occur which can negatively affect our body image. These situations and events are called “body image threats or challenges,” because they threaten or challenge our ability to feel okay about our looks. People do lots of different things to cope or deal with these challenges or threats. Listed below are some of the ways that people may try to cope with body image threats or challenges. For each item, think about how much it is characteristic of how you usually cope or would probably cope with an event or situation that poses a threat or challenge to your body image feelings. Using the scale below, indicate how well each way of coping describes what you actually do or would do. There are no right or wrong answers. It doesn’t matter how helpful or unhelpful your ways of coping are. Don’t answer based on how you wish you usually reacted. Just be completely truthful.

	Definitely Not Like Me (1)	Mostly Not Like Me (2)	Mostly Like Me (3)	Definitely Like Me (4)
I consciously do something that might make me feel good about myself as a person. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I remind myself of my good qualities. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell myself that I’m just being irrational about things. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell myself that the situation will pass. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to figure out why I am challenged or threatened by the situation. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell myself that I am probably just overreacting to the situation. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I remind myself that I will feel better after awhile. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I tell myself that there are more important things than what I look like. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell myself that I probably look better than I feel I that do. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I react by being especially patient with myself. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell myself that the situation is not that important. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following questions contain a series of statements about how people might think, feel, or behave. You are asked to indicate the extent to which each statement pertains to you personally. In order to complete the questionnaire, read each statement carefully and decide how much it pertains to you personally. There are no right or wrong answers. Just give the answer that is most accurate for you. Remember, your responses are confidential, so please be completely honest and answer all items.

	Definitely Disagree (1)	Mostly Disagree (2)	Neither Agree not Disagree (3)	Mostly Agree (4)	Definitely Agree (5)
It is important that I have superior physical strength. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My body is sexually appealing. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not involved in a regular exercise program. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I like my looks just the way they are. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participating in sports is unimportant to me. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not actively do things to keep physically fit. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people would consider me good-looking. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being physically fit is not a strong priority in my life. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do things to increase my physical strength. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the way I look without my clothes on. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I seldom think about my athletic skills. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I work to improve my physical stamina. (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the way my clothes fit me. (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I dislike my physique. (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't care to improve my abilities in physical activities. (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to be physically active. (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am physically unattractive. (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know a lot about physical fitness. (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I play a sport regularly throughout the year. (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this 1 to 5 scale to indicate how dissatisfied or satisfied you are with each of the following areas or aspects of your body:

	Very Dissatisfied (1)	Mostly Dissatisfied (2)	Neither Satisfied nor Dissatisfied (3)	Mostly Satisfied (4)	Very Satisfied (5)
Face (facial features, complexion) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hair (color, thickness, texture) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lower torso (buttocks, hips, thighs, legs) (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mid torso (waist, stomach) (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upper torso (chest or breasts, shoulders, arms) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Muscle tone(6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weight (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Height (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall appearance (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please complete the items below to the best of your ability. Please take your time and answer honestly. There are no right or wrong answers. Select ONLY ONE to best describe how you see your self today. Use the following rating:

	Strongly Agree OR A lot like me (1)	Agree or Like me (2)	Disagree OR Unlike me (3)	Strongly Disagree OR Not like me (4)
I am open minded. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After an event, I typically find ways to do better (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I can't do something one-way, I'll do it another way. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's important to be flexible. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am prepared for change. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to find new ways of looking at things. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am agreeable. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need to be perfect (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I belong. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am cared for and loved. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like I belong at school. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not get support from friends and the community. (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am close to one or both of my parents (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel supported and listened to in my life. (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In my family, nobody listens to one another. (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends are very supportive. (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I blame other people for my problems. (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I care about my health. (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am dependable. (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I exercise regularly. (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am responsible for my actions. (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I finish what I start. (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The choices I make are thoughtful ones. (23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can admit to mistakes I make. (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can stop myself when I am going to say something I will regret. (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After leaving a heated argument, I can return and talk to the person I am mad at. (26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can remove myself from a frustrating situation. (27)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I value feedback from people about how I handle different tense situations. (28)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't let little things upset me. (29)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel in control of my emotions. (30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get upset when others don't see things my way. (31)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am angry or disappointed with someone I talk to them about it. (32)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All people have value. (33)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am grateful for what I have. (34)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy differences in people. (35)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can see things through other peoples' eyes. (36)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I cannot accept another's point of view (37)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have concern for the welfare of others. (38)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I stand up for people who cannot stand up for themselves. (39)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's important to forgive each other. (40)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



I am not engaged in life. (41)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know what I want and how to get it. (42)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not afraid to take a risk when it comes to starting a project. (43)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I set challenging goals. (44)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am passionate about what I do. (45)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not easily discouraged from something I want. (46)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I envision what I want, and make a plan on how to get it. (47)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have lots of ideas. (48)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know what I am good at and not good at. (49)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I sense what to do next. (50)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have learned a great deal from past experiences. (51)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know what I am feeling at the moment. (52)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am aware of how I make other people feel. (53)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Criticism is hard to take, but it makes me stronger. (54)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I lack confidence in my abilities. (55)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am realistic about what I can and cannot do. (56)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My problems seem to be never ending (57)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often feel hopeless. (58)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I keep on trying, as I know I will get there. (59)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often think life is meaningless. (60)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have hope for the future. (61)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's important to see the humor in things. (62)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have positive expectations of others (63)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe the world holds great promise (64)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I give up easily on difficult tasks (65)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes it helps to have another's opinion. (66)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take pride in my accomplishments. (67)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning new things is fun. (68)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel organized in most aspects of my school life (69)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I am confident and self-assured. (70)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find ways to accomplish difficult tasks (71)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I really enjoy being into what I'm doing (72)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am respectful of others. (73)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often sense what others are feeling. (74)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listening is a very important skill. (75)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy participating in activities with others. (76)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am easy to be with. (77)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not comfortable sharing my feelings (78)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People say that I am thoughtful. (79)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have meaningful relationships. (80)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

You have the option of entering a prize drawing for one of twenty \$25 Visa gift cards. If you are interested in being entered in the drawing, you will be directed to a de-linked website unassociated with the survey. You will be directed to provide an email address. The e-mail will not be associated with survey responses. Winning participants will be notified and sent the gift card via the provided email. Do you want to be entered into the drawing for one of twenty \$25 Visa gift cards?

- Yes (1)
- No (2)

**APPENDIX K**

**FACTOR LOADINGS OF EXPLORATORY FACTOR  
ANALYSIS WITH OBLIQUE ROTATION OF THE  
JOURNEY TO WELLNESS SCALE**

Factor Loadings of Exploratory Factor Analysis with Oblique Rotation  
of the Journey to Wellness Scale

Items	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Self-Efficacy										
It's important to see the humor in things.	<b>0.66</b>	0.19	0.29	-0.21	-0.20	-0.08	-0.29	0.23	0.27	0.38
Sometimes it helps to have another's opinion.	<b>0.59</b>	0.06	0.17	-0.38	-0.19	-0.21	-0.32	0.38	0.31	0.22
I have learned a great deal from past experiences.	<b>0.52</b>	-0.05	0.31	-0.29	-0.28	-0.14	-0.28	0.23	0.31	<b>0.47</b>
Learning new things is fun.	<b>0.51</b>	0.11	0.38	-0.30	-0.17	-0.13	-0.46	0.23	0.25	0.28
I take pride in my accomplishments.	<b>0.51</b>	0.20	0.37	-0.27	-0.12	-0.21	-0.34	0.10	0.34	0.30
I really enjoy being into what I'm doing	<b>0.51</b>	0.20	<b>0.50</b>	-0.36	-0.24	-0.32	-0.36	0.19	0.30	0.33
Criticism is hard to take, but it makes me stronger.	<b>0.45</b>	0.04	0.28	-0.15	-0.31	-0.10	-0.24	0.33	0.22	0.34
Optimism										
I often feel hopeless.	0.11	<b>0.80</b>	0.28	-0.03	-0.15	-0.15	-0.02	0.12	<b>0.46</b>	0.13
I often think life is meaningless.	0.20	<b>0.73</b>	0.21	-0.17	-0.22	-0.25	-0.11	0.08	<b>0.47</b>	0.20
My problems seem to be never ending	-0.06	<b>0.70</b>	0.18	0.03	-0.17	-0.08	-0.14	0.11	0.37	0.06
I feel in control of my emotions	0.09	<b>0.60</b>	0.34	0.10	-0.21	-0.35	-0.25	0.39	0.26	0.34

Items	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
<b>Optimism</b>										
I lack confidence in my abilities.	-0.01	<b>0.59</b>	<b>0.41</b>	0.17	-0.23	-0.03	-0.09	0.18	0.31	0.13
I am confident and self-assured.	0.19	<b>0.57</b>	<b>0.51</b>	0.08	-0.06	-0.15	-0.26	0.30	0.40	0.35
I have hope for the future.	0.44	<b>0.54</b>	0.39	-0.32	-0.15	-0.26	-0.31	0.19	0.42	0.37
I am not engaged in life.	0.22	<b>0.54</b>	0.32	-0.35	-0.30	-0.14	-0.17	-0.01	0.41	0.18
I don't let little things upset me.	0.02	<b>0.47</b>	0.19	0.29	-0.29	-0.15	-0.31	0.39	0.06	0.13
I believe the world holds great promise	0.40	<b>0.41</b>	0.26	-0.27	-0.02	-0.20	-0.38	0.26	0.29	0.39
<b>Initiative</b>										
I envision what I want, and make a plan on how to get it.	0.23	0.21	<b>0.76</b>	-0.22	-0.15	-0.18	-0.29	0.19	0.35	0.32
I set challenging goals.	0.18	0.21	<b>0.69</b>	-0.15	-0.05	-0.27	-0.30	0.21	0.22	0.14
I know what I want and how to get it.	0.21	0.25	<b>0.67</b>	-0.07	-0.08	-0.17	-0.22	0.23	0.30	0.37
I am not afraid to take a risk when it comes to starting a project.	0.29	0.22	<b>0.65</b>	0.08	-0.10	-0.04	-0.28	0.27	0.19	0.29
I am not easily discouraged from something I want.	0.10	0.31	<b>0.65</b>	-0.06	-0.27	-0.22	-0.34	0.23	0.17	0.08
I am passionate about what I do.	0.33	0.26	<b>0.64</b>	<b>-0.46</b>	-0.27	-0.27	-0.38	0.21	0.26	0.27
I find ways to accomplish difficult tasks	0.36	0.25	<b>0.60</b>	-0.15	-0.26	-0.25	-0.31	0.34	0.32	0.28
I have lots of ideas.	0.33	0.04	<b>0.52</b>	-0.19	-0.07	0.07	-0.35	0.19	0.14	0.39
I keep on trying, as I know I will get there.	0.48	0.21	<b>0.51</b>	-0.21	-0.30	-0.33	-0.36	0.21	0.31	0.33

Items	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Initiative										
After an event, I typically find ways to do better.	0.20	0.14	<b>0.50</b>	-0.18	-0.15	-0.35	-0.42	0.20	0.13	0.28
I feel organized in most aspects of my school life	0.11	0.26	<b>0.45</b>	-0.21	0.00	<b>-0.43</b>	-0.15	0.10	0.34	0.26
Empathy										
I have concern for the welfare of others.	0.24	0.05	0.25	<b>-0.71</b>	-0.10	-0.10	-0.26	0.28	0.20	0.29
All people have value.	0.36	0.15	0.14	<b>-0.66</b>	-0.26	-0.15	-0.26	0.29	0.18	0.26
I am respectful of others.	0.42	0.14	0.20	<b>-0.61</b>	-0.24	-0.30	-0.39	0.16	0.30	0.41
It's important to forgive each other.	0.31	0.02	0.27	<b>-0.60</b>	-0.15	-0.12	-0.22	0.42	0.29	0.35
Listening is a very important skill.	<b>0.46</b>	0.03	0.15	<b>-0.52</b>	-0.23	-0.14	-0.38	0.20	0.22	0.43
I am grateful for what I have.	<b>0.45</b>	0.20	0.24	<b>-0.47</b>	<b>-0.43</b>	-0.15	-0.35	0.22	B	0.38
I stand up for people who cannot stand up for themselves.	0.14	-0.09	0.37	<b>-0.41</b>	-0.23	0.01	-0.20	0.31	0.17	0.37
Social Competence										
I blame other people for my problems.	0.10	0.07	0.16	-0.11	<b>-0.64</b>	-0.19	-0.28	0.29	0.18	0.23
I get upset when others don't see things my way.	0.05	0.20	0.07	0.02	<b>-0.59</b>	-0.04	-0.13	0.00	0.13	0.05
I am responsible for my actions.	0.43	0.05	0.37	-0.20	<b>-0.55</b>	-0.33	-0.35	0.34	0.26	0.31
I cannot accept another's point of view	0.25	0.14	0.06	-0.34	<b>-0.50</b>	0.11	-0.27	0.05	0.17	0.11
I give up easily on difficult tasks	0.27	0.35	0.47	-0.21	<b>-0.49</b>	-0.16	-0.17	0.11	0.15	0.09
I need to be perfect	0.17	0.31	-0.19	0.34	-0.37	0.22	-0.05	0.13	0.01	-0.01



Items	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Conscientiousness										
I care about my health.	0.26	0.33	0.22	-0.16	-0.17	<b>-0.57</b>	-0.27	0.21	0.37	0.29
The choices I make are thoughtful ones.	0.20	0.06	0.38	-0.37	-0.21	<b>-0.53</b>	-0.28	0.34	0.28	0.27
I exercise regularly.	0.05	0.19	0.10	0.03	0.01	<b>-0.52</b>	-0.07	0.14	0.25	0.14
I finish what I start.	0.14	0.17	0.49	-0.21	-0.30	<b>-0.51</b>	-0.21	0.15	0.29	0.26
I am dependable.	0.21	0.04	0.31	-0.38	-0.33	<b>-0.47</b>	-0.29	0.18	0.27	0.34
Adaptability										
I try to find new ways of looking at things.	0.18	0.07	0.29	-0.10	-0.26	-0.11	<b>-0.75</b>	0.24	0.07	0.14
I am open minded.	0.15	0.04	0.19	-0.18	-0.24	0.00	<b>-0.71</b>	0.13	0.18	0.21
I am prepared for change.	0.16	0.23	0.28	0.12	-0.22	-0.19	<b>-0.67</b>	0.15	0.17	0.18
It's important to be flexible.	0.35	0.08	0.18	-0.23	-0.01	-0.22	<b>-0.65</b>	0.24	0.16	0.17
I am agreeable.	0.10	0.09	0.21	-0.39	-0.15	-0.33	<b>-0.55</b>	0.34	0.34	0.28
If I can't do something one-way, I'll do it another way.	0.21	0.11	0.44	-0.02	-0.21	-0.22	<b>-0.52</b>	0.31	0.18	0.22
I enjoy differences in people.	0.49	0.09	0.26	-0.44	-0.28	0.02	<b>-0.51</b>	0.38	0.25	0.34
I can see things through other peoples 'eyes.	0.26	0.06	0.19	-0.34	-0.19	-0.06	<b>-0.50</b>	0.36	0.17	0.47
Emotional Self-Regulation										
After leaving a heated argument, I can return and talk to the person I am mad at.	0.12	0.13	0.20	-0.24	-0.15	-0.25	-0.25	<b>0.69</b>	0.25	0.18
I value feedback from people about how I handle different tense situations.	0.36	0.09	0.28	-0.14	-0.19	-0.09	-0.39	<b>0.65</b>	0.21	0.20

Items	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Emotional Self-Regulation										
I can remove myself from a frustrating situation.	0.24	0.09	0.20	-0.07	-0.21	-0.26	-0.30	<b>0.64</b>	0.13	0.33
When I am angry or disappointed with someone I talk to them about it.	0.04	0.09	0.18	-0.11	0.05	0.03	-0.12	<b>0.60</b>	0.21	0.29
I can stop myself when I am going to say something I will regret.	0.13	0.15	0.20	-0.18	-0.18	<b>-0.45</b>	-0.22	<b>0.46</b>	0.11	0.36
I can admit to mistakes I make.	0.40	-0.11	0.14	-0.09	-0.39	-0.27	-0.33	<b>0.45</b>	0.17	0.19
I am not comfortable sharing my feelings	-0.03	0.22	0.06	-0.15	0.02	0.29	0.15	0.33	0.31	0.09
Connectedness										
I feel supported and listened to in my life.	0.10	0.37	0.28	-0.13	-0.13	-0.21	-0.24	0.25	<b>0.82</b>	0.32
I am cared for and loved.	0.32	0.28	0.28	-0.18	-0.13	-0.26	-0.23	0.23	<b>0.74</b>	0.27
I belong.	0.22	0.44	0.24	0.04	-0.04	-0.26	-0.23	0.26	<b>0.69</b>	0.24
My friends are very supportive.	0.32	0.25	0.29	-0.24	-0.09	-0.13	-0.23	0.34	<b>0.67</b>	0.18
I do not get support from friends and the community.	0.32	0.31	0.14	-0.15	-0.17	-0.01	-0.11	0.17	<b>0.65</b>	0.09
I feel like I belong at school.	0.29	0.43	0.35	-0.08	-0.06	-0.15	-0.33	0.21	<b>0.65</b>	0.12
In my family, nobody listens to one another.	-0.11	0.26	0.12	-0.10	-0.20	-0.21	-0.02	0.09	<b>0.64</b>	0.28
I am close to one or both of my parents	-0.10	0.20	0.09	-0.05	-0.24	-0.15	-0.08	0.00	<b>0.59</b>	0.28
I have meaningful relationships.	0.33	0.12	0.25	-0.33	-0.25	-0.19	-0.25	0.25	<b>0.57</b>	<b>0.40</b>

Items	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Mindfulness										
I am aware of how I make other people feel.	0.18	0.20	0.26	-0.10	-0.15	-0.22	-0.20	0.28	0.29	<b>0.76</b>
I often sense what others are feeling.	0.24	0.00	0.09	-0.36	-0.13	-0.17	-0.28	0.25	0.22	<b>0.70</b>
I sense what to do next.	0.28	0.13	0.51	0.03	-0.13	-0.10	-0.23	0.20	0.24	<b>0.61</b>
I am easy to be with.	0.15	0.23	0.29	-0.27	-0.16	-0.24	-0.34	0.32	<b>0.43</b>	<b>0.61</b>
I know what I am feeling at the moment.	0.25	0.24	0.29	-0.15	-0.14	-0.18	-0.12	0.25	0.28	<b>0.54</b>
I have positive of others	<b>0.45</b>	0.27	0.20	-0.35	-0.08	-0.15	-0.36	0.25	0.27	<b>0.53</b>
People say that I am thoughtful.	0.20	0.01	0.22	-0.40	-0.08	-0.32	-0.37	0.31	0.26	<b>0.51</b>
I know what I am good at and not good at.	<b>0.47</b>	0.01	0.39	-0.09	-0.24	-0.14	-0.12	0.10	0.21	<b>0.48</b>
I am realistic about what I can and cannot do.	<b>0.43</b>	0.12	0.27	0.08	-0.22	-0.32	-0.20	0.19	0.17	<b>0.47</b>
I enjoy participating in activities with others.	0.38	0.26	0.28	-0.21	-0.03	-0.15	-0.26	0.31	0.39	<b>0.41</b>

*Note.* Factor loading >.40 are in boldface