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## Body Image, Self-Esteem, Weight, and Weight Stigma In Male and Female College Students

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Body Image, Self-Esteem, Weight and Weight Stigma in Male and Female College Students

Carlie Smith

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**Abstract**

Emerging adulthood is a developmental period in which college-aged individuals have greater risk for lower self-esteem and more issues with body image. Emerging adulthood is also a time where weight gain is likely to happen and weight is linked to experiences of weight stigma. This study sought to examine the associations between body image, self-esteem, weight, and weight stigma in male and female college students of healthy weight and excess weight. Findings suggest there are strong associations between issues with body image, low self-esteem, and weight stigma among females and males. Further, regardless of weight status, correlations between body image, self-esteem, and weight stigma associations were the same direction and of similar magnitude. Finally, this study found that weight stigma significantly mediated the relationship between body mass index and self-esteem.

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### **Introduction**

Emerging adulthood is a time full of transitions. Although this is a relatively new developmental period, it is a time that is crucial for the development of an individual. An emerging adult is no longer an adolescent, but they are not yet a full adult either (Arnett, 2000). Between the ages of 18 to 25, emerging adults are just getting to know themselves and figure out how they will spend the rest of their lives. Approximately one-third of people attend college right after high school (Arnett, 2000), and college students are exposed to a variety of stressors. There is evidence to suggest that a portion of college students struggle with internalizing and externalizing difficulties such as depression, anxiety, and risk-taking behavior (Schwartz et al., 2015). Due to the additional stressors experienced in the academic atmosphere, emerging adults are a group of people who are considered "high risk." High-risk groups may be more likely to engage in risky behaviors or struggle emotionally. Depression, anxiety, binge drinking, drug use, casual sex without protection, eating disorders, weight gain, higher weight, and drunk driving are examples of risky behavior that are prevalent during the college years (Schwartz et al., 2015). These are particularly problematic considering the behavioral patterns developed in the emerging adult years have the potential to impact health in adulthood (Nelson, Story, Larson, Neumark-Sztainer, & Lytle, 2012).

There has also been increased attention to the social stigma individuals with excess weight face. College students are at risk for weight gain and maladaptive eating patterns. Additionally, overweight college students struggle with low self-esteem and poor body image and also experience stigma associated with their body and weight (Greenleaf, Chambliss, Rhea, Martin, & Morrow, 2006). Due to the negative stereotypes surrounding excess weight, many of these individuals experience social rejection, prejudice, or weight stigma (Greenleaf et al., 2006). Weight stigma is any stereotype or stigma given to those who are overweight or obese, strictly

due to their body weight. Research has shown that experiences with teasing due to weight is associated with low self-esteem, body image dissatisfaction, and depressive symptoms (Greenleaf et al., 2006).

Self-esteem levels and body image satisfaction have been studied extensively in college students. Being dissatisfied with your body is associated with multiple negative outcomes such as low self-esteem, depression, unhealthy eating behaviors, and eating disorders (Grossbard, Lee, Neighbors, & Larimer, 2008). Body dissatisfaction affects both male and female college students. In a recent study, male college students report some level of body dissatisfaction, but are more satisfied with their bodies than female college students (Gillen & Lefkowitz, 2006). Females typically desire a thinner body, while men desire a more muscular and leaner structure (Gillen, & Lefkowitz, 2006). Emerging adults in college usually aspire to adhere to the social representations of ideal physical appearance (Grossbard et al., 2008). When combined, body dissatisfaction, low self-esteem, and experiencing weight stigma can have lasting negative physical and mental health consequences into adulthood.

### **Problem Statement**

When college students experience low self-esteem, body image dissatisfaction, and weight stigma, there can be negative effects for their emotional and behavioral well-being. Although these issues affect a number of college students, the affect may differ between groups. It is important to research and understand how weight stigma, body image, and self-esteem impact males and females and those of different racial/ethnic groups. For example, there are noted differences in body satisfaction by gender and racial/ethnic group; females report lower body image and Caucasians report lower self-esteem than African Americans (Lowery et al., 2005; Ricciardelli et al., 2007). Additionally, individuals with excess weight also have lower self-esteem, greater body dissatisfaction, and also experience weight stigma (Harriger &

Thompson, 2012). What is presently unknown is how weight stigma, body image, and self-esteem vary by weight status, gender, and racial/ethnic group. Moreover, it is unknown how weight stigma might explain the association between body image and self-esteem. This information can help inform adequate intervention methods that can be developed to improve psychological and behavioral health outcomes. For example, if weight stigma is identified as influencing the relationship between body image and self-esteem, then professionals can work to counter the effects of weight stigma. This would ultimately help the overall well-being of many emerging adults.

### **Literature Review**

#### **Emerging Adulthood as an Important Developmental Period**

Moving from adolescence to adulthood is a significant developmental transition. This transition was well-structured for most until the mid-20<sup>th</sup> century but has recently shifted to being unstructured (Schwartz et al., 2015). Many factors contribute to this lack of structure, including delayed age at marriage and parenthood (Arnett, 2000). Instead of early adulthood being a time of settling down and commitment, it has become a time that is full of exploration and frequent change (Arnett, 2000). This exploration and change has made the late teens to early twenties a distinct developmental period in the lifespan (Arnett, 2000). This developmental period, emerging adulthood, is different from both adolescence and adulthood (Arnett, 2000). During emerging adulthood, people have independence from normal social roles and expectations and can choose many different directions for their life to take.

One direction emerging adults may choose to take is pursuing a college education. Between 1959 and 2010 college attendance in the United States rose by 430% (Schwartz et al., 2015). Approximately one third of emerging adults attend college right after completing high

school and one third of those who complete a bachelor's degree decide to go on to obtain a graduate level degree (Arnett, 2000). This striking increase in the number of emerging adults pursuing a college education can be based on our changing social structure. In fact, in many areas of employment, a college degree is a requirement (Schwartz et al., 2015).

Identity exploration becomes more distinct in emerging adulthood. Erik Erikson has proposed the theory of psychosocial development; in which identity development is crucial for the transition from adolescence into adulthood (Waterman, 1982). To have long term success, emerging adults need to be confident and firm in their identity development (Waterman, 1982). In order to form their identity, emerging adults explore different paths in life while gradually laying an outline for their adult life (Arnett, 2000). Identity exploration focuses on domains such as love, work, and worldviews and mainly takes place during emerging adulthood (Arnett, 2000). For example, those that struggle with their own identity may be at risk for low self-esteem, depression and anxiety, substance use, and risky sexual behaviors (Schwartz et al., 2015). Additionally, other psychosocial characteristics, like self-efficacy, become developed during this time and become important in the establishment of healthy behavioral patterns (Nelson et al., 2012). The unique nature of this developmental period makes it an important age group to study.

### **Weight Stigma and Stereotypes**

Currently, the United States is going through an obesity epidemic (Major, Hunger, Bunyan, & Miller, 2014). From 2014, 70.7% of adults aged 20 or older were overweight or obese, and obesity in emerging adults has doubled in the past 30 years (Obesity and Overweight, 2017). Although obesity is becoming common with increased prevalence rates, those who are overweight experience myriad negative outcomes (Langdon et al., 2016). These range from physical (i.e.: Type 2 diabetes, hypertension, stroke) to emotional (i.e., higher depression,



anxiety, low self-esteem), and social (i.e.: peer rejection, weight-based discrimination; (Djalalinia, Qorbani, Peykari, & Kelishadi, 2015).

There has been increased attention to overweight and obese individuals from the medical and public health fields and the media (Major et al., 2014). Not only does the media focus on the how a lean and athletic body is the ideal in society, but it also focuses heavily on stereotypes of individuals with obesity (Langdon et al., 2016). Western society has negative stereotypes given to those who are overweight or obese, including being lazy, weak willed, and self-indulgent (Lowery et al., 2005; Major et al., 2014). In contrast to that, thin figures are assumed to be healthy due to self-control and hard work, therefore enhancing an ideal, thin figure (Langdon et al., 2016). Additionally, positive personality characteristics have been ascribed to thin individuals. These include high self-confidence, happy, and attractive. Those who were overweight were described as lonely, slow, unhappy, ashamed, and sloppy (Greenleaf et al., 2006).

These attitudes do not begin in adolescence or adulthood, rather they begin during childhood. Overweight children are often rejected by friends because of their excess weight (Greenleaf et al., 2006). Those who are overweight experience teasing and unpopularity more often than their thin peers. This teasing can lead to low self-esteem and body dissatisfaction (Greenleaf et al., 2006). Experiences with stigmas associated with obesity have negative consequences for physical and psychological well-being that can continue into adulthood including, increased weight and unhealthy weight management behaviors driven by their desire to be thin (Greenleaf et al., 2006).

Physical and mental health both suffer at the hands of experiencing weight stigma. When those who are obese or overweight experience discrimination because of their weight, they are

less likely to engage in physical activity (Vartanian & Novak, 2010). There are also multiple unfavorable eating behaviors that arise due to weight stigma — some of these behaviors include overeating, dieting, and eating disorders (Vartanian & Novak, 2010). When an individual experiences weight stigma, they are likely to have increased depression, body dissatisfaction, and lower self-esteem (Chang & Suttikun, 2017; Vartanian & Novak, 2010). People, regardless of gender, experience weight stigma, and therefore, are vulnerable to these consequences.

Examining college students' weight stigma will help to understand how to avoid the negative effects of those stereotypes and prevent poor body image and lower self-esteem (Greenleaf et al., 2006).

### **Body Image and Self-Esteem**

Body image dissatisfaction, low self-esteem, eating problems, and weight concerns are prominent on college campuses and affect the overall well-being of college students (Lowery et al., 2005). One domain identified as important during adolescence and emerging adulthood is body image. Body image satisfaction is one's overall opinion or attitudes toward their body figure (Chang & Suttikun, 2017). Unfortunately, not all college students feel positive about their bodies. Since the 1980s, body image dissatisfaction has become common among college students. At some point many students struggle with their own body image. In fact, up to 90% of college students say they are concerned about their own body image and these body image concerns are considered normal for college women (Chang & Suttikun, 2017; Lowery et al., 2005). Body image dissatisfaction is associated with symptoms of depression, anxiety, lower self-esteem, and eating disorders (Lowery et al., 2005). It has been suggested that society's emphasis on a thin figure contributed to body dissatisfaction among women (Lowery et al., 2005). Magazines, television, music videos, and movies are a few ways that society contributes to an unrealistic ideal body image. The exposure to this unrealistic ideal adds to women's

constant battle to be satisfied with their bodies (Lowery et al., 2005). More often than not, those that were concerned with their weight had an unrealistic body image for themselves (Chang & Suttikun, 2017). Typically, individuals compare their bodies to the ideal body, as well as the bodies of those around them (Chang & Suttikun, 2017). Those who constantly compare themselves to others may have more negative mental health outcomes (Grossbard, Lee, Neighbors, & Larimer, 2008). Not only is body image perception subjective, but it can also be manipulated through the influence of others through weight stigma (Lowery et al., 2005).

The pressure college women face to be thin and attractive contributes to a lower self-esteem among these students (Lowery et al., 2005). There are multiple domains of self-esteem, but one that is distorted the most is physical self-worth. This domain of self-esteem is constructed by physical condition, weight concerns, and attractiveness (Lowery et al., 2005). Also, college students who have a weight problem face additional issues that can lower their self-esteem, including peer rejection, depression and anxiety, and weight stigma (Chang & Suttikun, 2017). Experiencing body dissatisfaction during this sensitive developmental period can lead to negative health outcomes in adulthood. Much of the research conducted thus far has been directed towards body image among women. Since men are also susceptible to body image dissatisfaction and low self-esteem, it is important to understand how both males and females are affected by them.

### **Gender**

There has been considerable research dedicated to body image and self-esteem in young adult women. It was thought that only women struggled with their bodies; however, body dissatisfaction is becoming a problem for men as well (Lowery et al., 2005). Although body image and self-esteem issues affect both male and female college students, these issues affect

them in different ways. This gender-body image relationship may be related to one's gender role development. Examples of gender role development include traits that are gendered in nature (i.e. femininity and masculinity) and gender role attitudes or beliefs towards men's and women's career roles (Gillen & Lefkowitz, 2006). As a result, gender roles can influence self-esteem and body image perceptions between males and females because of the expectation to conform to these gender roles. Those individuals who struggle with their gender role development, they may also struggle with poor body image and low self-esteem; ultimately causing negative outcomes like anxiety and depression (Gillen & Lefkowitz, 2006).

Typically, females experience more body image dissatisfaction than males do. This is attributed to the perceived social pressure to lose weight and have a thin figure (Grossbard et al., 2008). Women are biologically more likely to have a higher percentage of body fat than men, which might explain the stronger relationship between weight, self-esteem and body image dissatisfaction among women (Lowery et al., 2005). Previous research has found that women care more about their appearance and weight than men, therefore feeling their appearance is important more than men do (Gillen & Lefkowitz, 2006). Women have more negative feelings toward their body, and they also perceive themselves as heavier than they actually are (Lowery et al., 2005).

Men, typically, do not deal with the ideal body image standards that women do but they are not exempt from body dissatisfaction. More recently, there has been an increased expectation in an ideal body image for men (Lowery et al., 2005). Men's dissatisfaction varies more than women's because men typically vary in whether they want a smaller or larger figure (Gillen & Lefkowitz, 2006). In college students, males show more body satisfaction when they increase muscle mass rather than when they lose weight (Chang & Suttikun, 2017). This pressure

for an ideal body has led to men wanting to either lose weight or gain muscle (Lowery et al., 2005). Men who are not as muscular as the ideal body image may have lower self-esteem (Gillen & Lefkowitz, 2006). It is clear that both men and women experience body image dissatisfaction in some form. Although it may not be the same between them, both males and females experience some form of but may perceive it in different ways. Thus, it is important to understand how the impact of weight and weight stigma on the influence of body image and self-esteem for men and women.

### **Race/Ethnicity**

Men and women differ in their body image satisfaction but so do people of different racial/ethnic groups. For example, non-white adolescents and young adults are more accepting of larger figures and show more body satisfaction (Greenleaf et al., 2006). Specifically, African Americans have a more positive body image and higher self-esteem and African American males prefer larger body size than white males do (Ricciardelli, McCabe, Williams, & Thompson, 2007). African American men have been found to prefer greater muscularity, more body fat, and a larger body themselves (Ricciardelli et al., 2007). This could suggest that black males and females promote acceptance of larger body types more than white males and females do (Gillen & Lefkowitz, 2017). Through their own acceptance of larger body sizes, black mothers and fathers share their positive attitudes with their children (Ricciardelli et al., 2007).

There is also research that shows overweight Hispanic children have lower self-esteem than Hispanic children who are not overweight (Greenleaf et al., 2006). However, the main findings are that Hispanics' body image is not any different than white body image (Ricciardelli et al., 2007). Hispanics also do not show a greater preference for a larger body size than whites, but research does show they are more accepting of a larger figure than whites are (Ricciardelli et

al., 2007). Overall, African Americans and Pacific Islanders have more preference for a larger figure than whites. Also, Native Americans have more body image concerns than Whites (Ricciardelli et al., 2007). Throughout this research, it is not entirely clear the exact differences in body image concerns across different racial/ethnic groups (Ricciardelli et al., 2007).

Moreover, little is known about how weight stigma might influence body image and self-esteem among different racial/ethnic groups. Research in this area needs to be conducted in order to provide a clear understanding of these potential differences.

### **Present Study**

This study used a non-experimental correlational design to examine the associations between weight, weight stigma, body image, and self-esteem in male and female college students from different racial/ethnic backgrounds.

The primary aims of this study are:

1. Examine the associations between weight stigma, body image, self-esteem, and BMI by gender and race/ethnicity.
2. Examine the relationship between body image, self-esteem, weight stigma and fat bias by weight status (i.e. healthy weight vs. non-healthy weight).
3. Examine if weight stigma mediates the relationship between BMI and self-esteem.

## **Methods**

### **Participants**

The participants in this study were 125 individuals between the ages of 18 and 25 attending various universities across the United States. Of the individuals who completed this study, 18.4% were male and 81.6% were female. The following racial/ethnic groups were represented in this study: 5.6% Black or African American, 3.2% Asian or Pacific Islander, 4.8%

Hispanic or Latino, 83.2% White or Caucasian. The ages of participants were: 8.5% eighteen years old, 19.9% nineteen years old, 17% twenty years old, 15.6% twenty-one years old, 5.7% twenty-two years old, 4.3% twenty-three years old, 7.1% twenty-four years old, and 10.6% twenty-five years old.

### **Procedures**

The participants were recruited through advertisements in Facebook groups and pages as well as through snowball sampling. The data for this study was gathered in the Fall 2018 semester. Data was collected using a questionnaire created in Qualtrics.

### **Measures**

*Demographics.* Participants in this study were asked background questions including age, gender, height, weight, race/ethnicity, and year in school. To measure gender, participants were asked which gender they identified most with (1 = male, 2 = female). Participants were asked what year they currently are in <sup>colleg2e</sup> (1 = Freshman, 2 = Sophomore, 3 = Junior, 4 = Senior, 5 = Graduate Student, 6 = Non-Degree Student, 7 = Other, 8 = I am not a student). Racial group was established by asking participants how they would describe their race/ethnicity (1 = Black or African American, 2 = American Indian or Native American, 3 = Asian or Pacific Islander, 4 = Hispanic or Latino, 5 = White or Caucasian, 6 = Multicultural).

*Body Mass Index (BMI).* Height was self-reported in feet and inches and weight was also self-reported in pounds. Height and weight were used to calculate BMI for each participant ( $\text{kg}/\text{m}^2$ ).

*Self-Esteem.* Self-esteem was assessed using a one-item question stating “I have high self-esteem” and asking participants to rank whether they agree with that statement (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, and 5 = Strongly disagree). This single item has been shown to be as valid and reliable (Robins, Hendin, & Trzesniewski, 2001).

*Body Shape Questionnaire Short Form.* The Body Shape Questionnaire was used to evaluate participants' body image perception with emphasis on "feeling fat" (Cooper, P., Taylor, Cooper, Z., & Fairburn, 1987; Evans & Dolan 1993). This 16-item questionnaire was developed and validated in 1993 and was adapted from the original 34-item questionnaire developed and validated in 1987. This helps provide a pathway to look into an association between body image and mental health issues such as depression and low self-esteem ( $\alpha = 0.95$ ). The results are found by summing all the items in the questionnaire ( $\alpha = 0.95$ ; Evans, 2017).

*Weight Self-Stigma Questionnaire.* The Weight-Self Stigma Questionnaire (WSSQ) was used in this study to measure the level of stigma associated with obesity. This twelve-question scale will also be used to measure how one perceives their own body image when exposed to weight stigma ( $\alpha = 0.90$ ; Lillis, Luoma, Levin, & Hayes, 2010). In previous research conducted to validate the scale, it was found that the WSSQ correlates with BMI, psychological distress, and gender (Lillis et al., 2010). Total subscale was the sum of all the items. There were two subscales, fear of enacted stigma and self-devaluation. The fear of enacted stigma, referring to external stigma or discrimination experienced by others because of one's weight, was the sum of 1-6. The self-devaluation subscale, referring to attributing negative qualities to oneself in regards to one's weight, was the sum of items 7-12.

*Anti-Fat Attitudes Questionnaire.* The Anti-Fat Attitudes questionnaire was used in this study to measure one's feelings about attitudes about fatness. There are three scales associated with this which include: dislike, fear of fat, and willpower ( $\alpha = 0.80$ ; Crandall, 1994). These scales represent prejudice toward fat people, belief in the ability to control weight, and the individuals concern about their own fatness (Crandall, 1994). Previous research showed that dislike and willpower are correlated and fear of fat was not correlated with willpower (Crandall,



1994). The total anti-fat score is an average of all the items. For the dislike scale, the average is found from items 1-7, fear of fat subscale is found from the average of 8-10, and willpower is the average of items 11-13 (Crandall, 1994).

## Results

Table 1 shows the descriptive statistics for the study variables for the total sample, by gender, and by racial/ethnic group. To test the first aim examining the association between weight stigma, body image, and self-esteem by gender and race/ethnicity correlations were performed. Results from the correlations are shown in Table 2-4. For the total sample, as shown in Table 2, individuals who indicated they had low self-esteem, showed more issues with body image satisfaction and well as having more experiences with weight stigma. BMI was also associated with greater body image dissatisfaction and more experiences of weight stigma, both internal and external. Additionally, poorer body image was also associated with more experiences of weight stigma.

For males, there were fewer associations among the study variables, as shown in Table 3 (below the diagonal). Specifically, low self-esteem was associated with more body image dissatisfaction and higher BMI was associated with greater dislike of fat and self-devaluation. For females, much stronger associations between self-esteem, body image, and weight stigma were found (above the diagonal in Table 3). Specifically, lower self-esteem was associated with greater BMI, body image dissatisfaction, fear of fat, and fear of enacted stigma and self-devaluation. Greater BMI was associated with great body image dissatisfaction and with the total and subscales of the weight self-stigma questionnaire. Finally, greater body image dissatisfaction was associated with more weight stigma.

Due to the smaller number of individuals from minority groups, analyses could not be performed separately for each racial/ethnic group. Thus, correlations were run for Caucasians and individuals reporting a racial/ethnic minority status. Results are shown in Table 4 with Caucasians below the diagonal and minorities above the diagonal. Among Caucasians, strong associations were evident between weight self-stigma and body shape perception. Specifically, higher self-esteem was associated with lower BMI, body image satisfaction, and perceptions of weight stigma. Greater BMI was associated with greater body image dissatisfaction and weight self-stigma, and greater body image dissatisfaction was associated with weight self-stigma. Minorities, like males, were unfortunately underrepresented in this sample and not many conclusions could be drawn from this data. However, greater self-esteem was associated with lower BMI and body image satisfaction. Interestingly, BMI was not associated with any of the study variables for minority participants.

The second aim proposed to examine the relationship between body image, self-esteem, weight stigma and fat bias by BMI, and correlations were performed. BMI was categorized into healthy weight and excess weight groups (healthy weight BMI between 18.6 and 24.9; non-healthy weight BMI  $\leq 25.0$ ). Individuals who were calculated as falling into the underweight BMI category were excluded from analysis ( $n = 2$ ; BMI  $\geq 18.5$ ). Results are presented in Table 5 with healthy weight below the diagonal and excess weight above the diagonal. Among these results for those with a healthy BMI, higher self-esteem was associated with lower body image dissatisfaction and less weight stigma. Interestingly, similar correlations were observed for the excess weight group.

To test the third aim to examine if weight stigma mediates the relationship between BMI and self-esteem, a series of regressions was used following the 4-step method put forth by Barron

and Kenny (Barron & Kenny, 1986). In step 1, we tested the effect of BMI on self-esteem and found a significant effect. In step 2, we estimated the effect of BMI on the mediator, weight stigma, as measured by the BSSQ total score. In steps 3 and 4, we estimated the mediation effect. As shown in Figure 1, there was significant full mediation. That is, the effect of BMI on self-esteem was accounted for by weight stigma. As BMI increases, weight stigma increases and thus decreases self-esteem.

### **Discussion**

Developing positive body image and self-esteem are important when it comes to an individual's overall well-being. This study examined self-esteem, body image, weight and weight stigma among females and males, and those of different racial/ethnic groups. Overall, there were strong relationships between self-esteem, body image, weight, and weight stigma. Specifically, lower self-esteem was associated with poorer body image and experiences with weight stigma. Additionally, those with higher BMIs has lower self-esteem, body image, and experiences with weight stigma. This is consistent with previous work noting that pressures to be thin or have an ideal body size can have a negative influence on one's self-esteem (Lowery et al., 2005). Physical self-worth is constructed by weight concerns and attractiveness and, therefore, can be built by one's level of self-esteem and body image perception (Lowery et al., 2005). All of these variables have some sort of influence on one another and can have an impact on one's overall mental and physical well-being. This is important given that emerging adulthood is a critical time to develop positive body image and self-worth as these will be carried forward into adulthood.

Among females, results showed significant associations between self-esteem and body image. The more dissatisfied one was with their overall body shape, the lower their self-esteem

level. This relationship shows that self-esteem and body image are related for females; which is consistent with previous research (Lowery et al., 2005). Also, there was a strong relationship between body shape and weight self-stigma. This correlation indicates that as issues with body shape go up, so does one's issues with their weight based on obesity stigmas. Among females, BMI was associated with lower self-esteem, and more issues with body shape. These results align with previous research showing that females may have a stronger relationship between weight, self-esteem, and body image dissatisfaction (Lowery et al., 2005). Women are also more likely to experience pressure from society to be thin and, therefore, more likely to have had experience with weight stigma or anti-fat attitudes (Grossbard et al., 2008). Western society has set a standard that a lean body is ideal and given negative attributes to individuals who are overweight, especially for females (Langdon et al., 2016). Negative experiences with being overweight can begin as early as childhood, with youth experiencing social marginalization and teasing. These experiences can be carried forward into adolescence and adulthood as western ideals of body image continue and females grow more awareness of these ideals (Greenleaf et al., 2006).

Fewer associations were observed for males. Results found that for males, as one's dislike for their appearance increased, their overall self-esteem decreased. This finding is consistent with previous research that body dissatisfaction is present among men due in part to an increased expectation for a male ideal body image (Lowery et al., 2005). Additionally, body shape was associated with increased anti-fat attitudes, experiences with weight self-stigma, and lower self-esteem. Although these similarities were present between males and females, previous research has reported that men are less concerned with their appearance and experience fewer negative feelings toward their appearance (Lowry et al., 2005). Further, while men do

experience some issues with body image and self-esteem, it is not anything near to the extent females do (Lowry et al., 2005). It should also be noted that there was a small sample size for males, so there should be caution when interpreting and generalizing these results.

The original aim for this study was to look at differences in body image, self-esteem, and weight stigma between Caucasians, African Americans, American Indians or Native Americans, Asians or Pacific Islander, and Hispanic or Latino racial/ethnic groups. Unfortunately, there was not a representative sample for minority groups. The racial/ethnic makeup of participants was: 5.6% Black or African American, 3.2% Asian or Pacific Islander, 4.8% Hispanic or Latino, and 83.2% White or Caucasian. Due to this issue, participants were split into white or minority groups. Findings among white participants were consistent to what previous research has shown. Previous research indicate that Caucasians have a harsher outlook on body image and desire a thinner figure than other ethnic groups (Greenleaf et al., 2006; Ricciardelli et al., 2017; Gillen & Lefkowitz, 2017). This suggests that white individuals more vulnerable to issues with body image and self-esteem due to their weight.

Among minorities, findings showed that as self-esteem decreased, issues with body image increased as well as anti-fat attitudes. As weight self-stigma increased and so did issues with body image. Interestingly, BMI was not associated with study variables for minority participants. Previous research has shown that individuals of different racial or ethnic groups have different feelings about what an ideal body should look like and found that African Americans have been shown to be more accepting of larger body sizes (Gillen & Lefkowitz, 2017). Additionally, Hispanic individuals have been shown to be more accepting of a larger body size than whites, but not necessarily have a greater preference for this (Ricciardelli et al., 2007). However, due to the small sample, this study was unable to examine these associations between

groups more closely and future research should focus on recruiting a larger, more diverse sample.

This study also examined the relationship between body image, self-esteem, weight stigma and fat bias by BMI. The results of this study showed that the relationships between these variables were the same for healthy and excess weight individuals; the relationships go in the same direction and the same ones are significant. This speaks to everyone feeling the pressure to be thin and even those that are healthy weight are susceptible to unrealistic body image expectations and report experiencing weight stigma. It is interesting that having a lower BMI and being of healthy weight does not exclude an individual from having issues with weight stigma or body shape issues. These results suggest that more research should be done on the effect of weight stigma on not just unhealthy weight individuals, but healthy weight individuals as well.

Overall, society places an emphasis on a thinner figure for women stating that the thinner you are, the better you are. As stated earlier, suggestions have been made that say that body dissatisfaction among women could be contributed by society's unrealistic ideals for women (Lowery, et al., 2005). In the sample, the relationship between BMI and self-esteem was completely accounted for by experiences of weight stigma. Basically, the relationship between BMI and self-esteem works through weight stigma. These results support the idea that it is not necessarily an individual's weight that results in their self-esteem but rather it is the stigma society puts on being overweight. This is demonstrated further by the results showing that both healthy weight and excess weight individuals had similar relationships between low self-esteem and poor body image perception. That is, even healthy weight individuals are not immune to societal pressure for thinness. Results from this study align somewhat with what previous studies

have found. Other studies have found that experiences with weight stigma can lead to negative outcomes for physical and psychological well-being (Greenleaf et al., 2006).

### **Limitations**

In this study, there were various limitations encountered by the researchers. One of the largest limitations of this study was the sample size. Participants were recruited through social media posts and snowball sampling in order to obtain the sample. Although there were plenty of females and Caucasians, minority groups and males were lacking. Because of this, the results were not as concrete and clear as they would have been with a larger, more diverse sample. Another limitation of the study was that this questionnaire could not be distributed to colleges with a more diverse student population. Had this questionnaire been able to reach areas like this, the sample size would have had the potential to be more diverse.

### **Directions for Future Research**

Further research could be done to obtain a larger sample to represent different ethnic groups and examine the study variables within each racial/ethnic group. Understanding how different people perceive body image and are affected by self-esteem would help to find a way to reverse the effects of negative experiences with weight stigma and body image. Another direction for this research could be to look more specifically at the mediating relationship between BMI and self-esteem. Determining if there are any other significant factors that contribute to this relationship would be beneficial for clinicians who work with individuals who struggle with depression or anxiety related to low self-esteem. Further work would greatly help towards a concrete answer of how individuals are affected by body image, self-esteem, and weight stigma.

## References

- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469-480. DOI: 10.1037//0003-066X.55.5.469.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Chang, H. J., & Suttikun, C. (2017). The examination of psychological factors and social norms affecting body satisfaction and self-esteem for college students. *Family and Consumer Sciences Research Journal*, 45(4), 422-437. DOI: 10.1111/fcsr.12220.
- Cooper, P. J., Taylor, M. J., Cooper, Z., & Fairburn, C. G. (1987). The development and validation of the body shape questionnaire. *International Journal of Eating Disorders*, 6(4), 485-494.
- Crandall, C. S., (1994). Prejudice against fat people: Ideology and self-interest. *Journal of Personality and Social Psychology*, 66(5), 882-894.
- Djalalinia, S., Qorbani, M., Peykari, N., & Kelishadi, R. (2015). Health impacts of obesity. *Pakistan Journal of Medical Sciences*, 31(1), 239-242.
- Evans, C. & Dolan, B. (1993). Body Shape Questionnaire: Derivation of shortened "alternate forms". *International Journal of Eating Disorders* 13(3), 315-321. Retrieved from <http://0-search.ebscohost.com/library.uark.edu/login.aspx?direct=true&db=mdc&AN=8477304&site=ehost-live&scope=site>.
- Evans, C. (2017, November 11). Body Shape Questionnaire (BSQ) and its shortened forms. Retrieved March 12, 2019, from <https://www.psych.org/tools/bsq/>.
- Gillen, M. M., & Lefkowitz, E. S. (2006). Gender role development and body image among male and female first year college students. *Sex Roles*, 55(1-2), 25-37. DOI 10.1007/s11199-006-9057-4.
- Greenleaf, C., Chambliss, H., Rhea, D.J., Martin, S.B., & Morrow, J.R. (2006). Weight stereotypes and behavioral intentions toward thin and fat peers among white and Hispanic adolescents. *Journal of Adolescent Health*, 39(4), 546-552. doi:10.1016/j.jadohealth.2006.01.013.



- Grossbard, J. R., Lee, C. M., Neighbors, C., & Larimer, M. E. (2008). Body image concerns and contingent self-esteem in male and female college students. *Sex Roles, 60*(3-4), 198-207. DOI: 10.1007/s11199-008-9535-y
- Harriger, J. A., & Thompson, J. K. (2012). Psychological consequences of obesity: Weight bias and body image in overweight and obese youth. *International Review of Psychiatry, 24*(3), 247-253. DOI: 10.3109/09540261.2012.678817
- Langdon, J., Rukavina, P., & Greenleaf, C. (2016). Predictors of obesity bias among exercise science students. *Advances in Physiology Education, 40*(2), 157-164. doi:10.1152/advan.00185.2015.
- Lillis, J., Luoma, J. B., Levin, M. E., & Hayes, S. C. (2010). Measuring weight self-stigma: the weight self-stigma questionnaire. *Obesity, 18*(5), 971-976.
- Lowery, S. E., Robinson Kurpius, S. E., Befort, C., Blanks, E. H., Sollenberger, S., Nicpon, M. F., & Huser, L. (2005). Body image, self-esteem, and health-related behaviors among male and female college students. *Journal of College Student Development, 46*(6), 612-626. <https://doi.org/10.1353/csd.2005.0062>.
- Major, B., Hunger, J. M., Bunyan, D. P., & Miller, C. T. (2014). The ironic effects of weight stigma. *Journal of Experimental Social Psychology, 51*, 74-80.
- Nelson, M. C., Story, M., Larson, N. I., Neumark-Sztainer, D., & Lytle, L. A. (2008). Emerging adulthood and college-aged youth: An overlooked age for weight-related behavior change. *Obesity, 16*, 2205-2211. doi:10.1038/oby.2008.365
- O'Brien, K. S., Latner, J. D., Puhl, R. M., Vartanian, L. R., Giles, C., Griva, K., & Carter, A. (2016). The relationship between weight stigma and eating behavior is explained by weight bias internalization and psychological distress. *Appetite, 102*, 70-76. <http://dx.doi.org/10.1016/j.appet.2016.02.032>
- Obesity and Overweight. (3 May 2017). *Centers for Disease Control and Prevention*. Retrieved from <https://www.cdc.gov/nchs/fastats/obesity-overweight.htm>.

Ricciardelli, L. A., McCabe, M. P., Williams, R. J., & Thompson, J. K. (2007). The role of ethnicity and culture in body image and disordered eating among males. *Clinical Psychology Review, 27*(5), 582-606. doi:10.1016/j.cpr.2007.01.016.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring Global Self-Esteem: Construct validation of a single-item measure and the rosenberg self-esteem scale. *Personality and Social Psychology Bulletin, 27*, 151-161.

Schwartz, S. J., Hardy, S. A., Zamboanga, B. L., Meca, A., Waterman, A. S., Picariello, S., ... Forthun, L. F. (2015). Identity in young adulthood: links with mental health and risky behavior. *Journal of Applied Developmental Psychology, 36*, 39-52. <https://doi.org/10.1016/j.appdev.2014.10.001>.

Vartanian, L. R., & Novak, S. R. (2010). Internalized societal attitudes moderate the impact of weight stigma on avoidance of exercise. *Obesity, 19*, 757-762. doi:10.1038/oby.2010.234

Waterman, A., S. (1987). Identity development from adolescence to adulthood: An extension of theory and a review of research. *Developmental Psychology, 18*(3). 341-358

## Appendix A: Body Image, Self-Esteem, and Weight Stigma Survey

*Demographics*

1. What is your age? (in years)
2. What year are you in college?
  - a. Freshman
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. Graduate Student
  - f. Non-degree Student
3. What gender do you most identify with?
  - a. Male
  - b. Female
  - c. Transsexual/Transgender
4. How would you describe your race/ethnicity? (check all that apply)
  - a. Black or African American
  - b. American Indian or Native American
  - c. Asian or Pacific Islander
  - d. Hispanic or Latino
  - e. White or Caucasian
5. What is your current weight?
6. What is your current height?

*Body Shape Questionnaire: BSQ-16B*

We should like to know how you have been feeling about your appearance over the **PAST FOUR WEEKS**. Please read each question and circle the appropriate number to the right. Please answer all the questions.

1: Never, 2: Rarely, 3: Sometimes, 4: Often, 5: Very Often, 6: Always

1. Have you been so worried about your shape that you have been feeling you ought to diet?..... 1 2 3 4 5 6
2. Have you been afraid that you might become fat (or fatter)?..... 1 2 3 4 5 6
3. Has feeling full (e.g. after eating a large meal) made you feel fat?..... 1 2 3 4 5 6
4. Have you noticed the shape of other women and felt that your own shape compared unfavourably?..... 1 2 3 4 5 6
5. Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations)?..... 1 2 3 4 5 6
6. Has being naked, such as when taking a bath, made you feel fat?..... 1 2 3 4 5 6
7. Have you imagined cutting off fleshy areas of your body?..... 1 2 3 4 5 6
8. Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape?..... 1 2 3 4 5 6
9. Have you felt excessively large and rounded?..... 1 2 3 4 5 6
10. Have you thought that you are in the shape you are because you lack self-control?..... 1 2 3 4 5 6
11. Have you worried about other people seeing rolls of fat around your waist or stomach?..... 1 2 3 4 5 6
12. When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat)?..... 1 2 3 4 5 6
13. Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape?..... 1 2 3 4 5 6
14. Have you pinched areas of your body to see how much fat there is?..... 1 2 3 4 5 6
15. Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)?..... 1 2 3 4 5 6
16. Have you been particularly self-conscious about your shape when in the company of other people?..... 1 2 3 4 5 6

*Single Item Self-Esteem Scale*

I have high self-esteem.

Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree.

*Anti-Fat Attitudes Questionnaire*

Likert-type response with the following scale. 0 = very strongly disagree, 9 = very strongly agree.

*Dislike*

1. I really don't like fat people much

0    1    2    3    4    5    6    7    8    9

2. I don't have many friends that are fat.

0    1    2    3    4    5    6    7    8    9

3. I tend to think that people who are overweight are a little untrustworthy.

0    1    2    3    4    5    6    7    8    9

4. Although some fat people are surely smart, in general, I think they tend not to be quite as bright as normal weight people.

0    1    2    3    4    5    6    7    8    9

5. I have a hard time taking fat people too seriously.

0    1    2    3    4    5    6    7    8    9

6. Fat people make me somewhat uncomfortable.

0    1    2    3    4    5    6    7    8    9

7. If I were an employer looking to hire, I might avoid hiring a fat person.

0    1    2    3    4    5    6    7    8    9

*Fear of Fat*

8. I feel disgusted with myself when I gain weight

0    1    2    3    4    5    6    7    8    9

9. One of the worst things that could happen to me would be if I gained 25 pounds.

0 1 2 3 4 5 6 7 8 9

10. I worry about becoming fat.

0 1 2 3 4 5 6 7 8 9

*Willpower*

11. People who weigh too much could lose at least some part of their weight through a little exercise.

0 1 2 3 4 5 6 7 8 9

12. Some people are fat because they have no willpower.

0 1 2 3 4 5 6 7 8 9

13. Fat people tend to be fat pretty much through their own fault.

0 1 2 3 4 5 6 7 8 9

*Weight Self-Stigma Questionnaire*

	<b>Completely disagree</b>	<b>Mostly disagree</b>	<b>Neither Agree nor disagree</b>	<b>Mostly agree</b>	<b>Completely agree</b>
1. I'll always go back to being overweight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I caused my weight problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel guilty because of my weight problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I became overweight because I'm a weak person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I would never have any problems with weight if I were stronger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I don't have enough self-control to maintain a healthy weight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. I feel insecure about others' opinions of me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. People discriminate against me because I've had weight problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. It's difficult for people who haven't had weight problems to relate to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Others will think I lack self-control because of my weight problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. People think that I am to blame for my weight problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Others are ashamed to be around me because of my weight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Tables and Figures**

Table 1.

*Descriptive Statistics for Study Variables by Gender and Race/Ethnicity*

	<b>Total Sample n = 124</b>	<b>Female n = 101</b>	<b>Male n = 23</b>	<b>Caucasian n = 103</b>	<b>Minority n = 21</b>
<b>Variable</b>	<b>M(SD)</b>	<b>M(SD)</b>	<b>M(SD)</b>	<b>M(SD)</b>	<b>M(SD)</b>
BMI	26.93(6.53)	26.54(6.11)	28.63(8.04)	26.65(6.47)	28.27(6.83)
Self-Esteem	3.22(1.10)	3.09(1.02)	3.78(1.27)	3.26(1.04)	3.00(1.37)
BSQ	32.17(17.31)	35.29(16.50)	17.61(13.35)	31.20(16.78)	37.31(19.58)
AFAQ	1.49(0.60)	1.51(0.54)	1.39(0.80)	1.50(0.58)	1.41(0.70)
Dislike	0.80(0.72)	0.76(0.66)	1.00(0.93)	0.82(0.74)	0.69(0.58)
Fear	2.56(1.13)	2.79(0.93)	1.57(1.37)	2.56(1.06)	2.59(1.45)
Willpower	2.08(0.96)	2.02(0.87)	2.36(1.28)	2.12(0.91)	1.91(1.19)
WSSQ	20.45(10.37)	21.11(9.78)	17.16(12.73)	19.68(10.16)	24.87(10.78)
Fear	10.75(5.38)	11.00(4.99)	9.55(7.06)	10.41(5.27)	12.75(5.72)
Self-Dev	9.69(5.81)	10.11(5.70)	7.61(6.05)	9.27(5.72)	12.12(5.86)



**Table 2.***Correlations among Self-esteem, BMI, Body Image, and Weight Stigma for the Total Sample*

Indicator	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. I Have High Self-Esteem	-									
2. BMI	-.18	-								
3. BSQ	-.62**	.35**	-							
4. Antifat Total	-1.89*	-.11	.20*	-						
5. Dislike Scale	.12	-.22*	-.15	.79**	-					
6. Fear of Fat Scale	-.48**	.09	.70**	.51**	.01	-				
7. Willpower Scale	-.13	-.02	-.03	.74**	.43**	.23*	-			
8. WSSQ Total	-.51**	.39**	.74**	.34**	.01	.62**	.22*	-		
9. WSSQ Fear	-.47**	.30**	.68**	.35**	.02	.60**	.26**	.92**	-	
10. WSSQ Self	-.47	.43**	.68**	.29**	.00	.56**	.15	.93**	.72*	-

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

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

**Table 3.***Correlations among Self-Esteem, BMI, Body Image, and Weight Stigma for Males Below the Diagonal and Women Above*

Indicator	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. I Have High Self-Esteem	-	-.21*	-.60**	-.16	.11	-.45**	-.16	-.52	-.48**	-.48**
2. BMI	-.21	-	.45**	.01	-.13	.19	.07	.42**	.32**	.45**
3. BSQ	-.61**	.37	-	.17	-.13	.64**	.03	.75**	.69**	.69**
4. Antifat Total	-.21	-.36	.21	-	.81**	.53**	.74**	.34**	.32**	.29**
5. Dislike Scale	.05	-.48*	.02	.80**	-	.03	.40**	.01	-.00	.02
6. Fear of Fat Scale	-.41	.07	.70**	.55**	.14	-	.30**	.60**	.55**	.55**
7. Willpower Scale	-.17	-.26	.03	.81**	.47*	.39	-	.24*	.26*	.18
8. WSSQ Total	-.41	.41	.68**	.40	.11	.68**	.34	-	.90**	.93**
9. WSSQ Fear	-.40	.32	.72**	.46	.15	.74**	.37	.98**	-	.67**
10. WSSQ Self	-.39	.50*	.58*	.30	.06	.56*	.27	.97**	.89**	-

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

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

**Table 4.***Correlations among Self-Esteem, BMI, Body Image, and Weight Stigma for Whites Below the Diagonal and Minorities Above*

Indicator	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. I Have High Self-Esteem	-	.02	-.70**	-.57*	-.44	-.56*	-.29	-.34	-.40	-.24
2. BMI	-.22*	-	-.09	-.26	-.06	-.33	-.19	-.08	-.06	-.08
3. BSQ	-.59**	.43**	-	.44	.14	.74**	.07	.73**	.69**	.67**
4. Antifat Total	-.08	-.06	.14	-	.82**	.73**	.75**	.62*	.63**	.52*
5. Dislike Scale	.23*	-.24*	-.19	.80**	-	.35	.53*	.20	.25	.13
6. Fear of Fat Scale	-.46**	.20*	.70**	.45**	-.06	-	.26	.75**	.70**	.69**
7. Willpower Scale	-.09	.04	-.04	.739**	.42**	.22*	-	.54*	.58*	.42
8. WSSQ Total	-.52**	.47**	.73**	.30**	-.01	.59**	.18	-	.93**	.93**
9. WSSQ Fear	-.47**	.35**	.67**	.30**	-.00	.57**	.22*	.92**	-	.73**
10. WSSQ Self	-.50**	.50**	.67**	.25*	-.01	.53**	.13	.93**	.71**	-

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

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

**Table 5.**

*Correlations among Body Image, Self-Esteem, Weight Stigma, and Fat Bias by BMI with Healthy Weight Below the Diagonal and Excess Weight Above*

Indicator	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. I Have High Self-Esteem	-	-.63**	-.39**	-.00	-.59*	-.15	-.53**	-.51**	-.46**
2. BSQ	-.57**	-	.37**	-.01	.77**	-.03	.67**	.59**	.62**
3. Antifat Total	-.07	.15	-	.73**	.58**	.72**	.46**	.43**	.39**
4. Dislike Scale	.15	-.15	.84**	-	.05	.37**	.13	.10	.14
5. Fear of Fat Scale	-.33*	.67**	.46**	-.01	-	.21	.61**	.57**	.52**
6. Willpower Scale	-.12	-.03	.76**	.50**	.21	-	.19	.24	.12
7. WSSQ Total	-.44**	.73**	.35*	.033	.64**	.24	-	.88**	.92**
8. WSSQ Fear	-.40**	.69**	.40**	0.080	.63**	.29*	.93**	-	.62**
9. WSSQ Self	-.43**	.68**	.26	-0.016	.57**	.16	.94**	.75**	-

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

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

A) BMI  $\xrightarrow{-.20^*}$  Self-Esteem

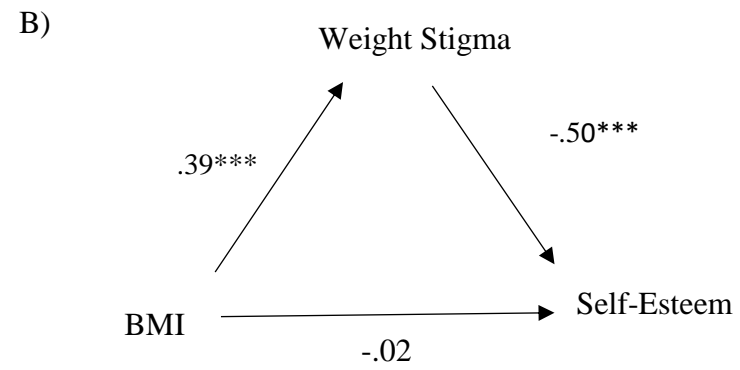


Figure 1. Mediation analysis.