Figure Rating Scales: A Novel Measure Of Weight Bias

Joseph Mitchell Magness

University of Mississippi

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FIGURE RATING SCALES: A NOVEL MEASURE OF WEIGHT BIAS

A Thesis
presented in partial fulfillment of requirements
for the degree of Master of Arts
in the Department of Psychology
The University of Mississippi

by

JOSEPH M. MAGNESS

May 2016
ABSTRACT

The obesity epidemic in the United States has grown in epic proportions over the past few decades, while obese individuals experience more health-related complications and lower quality of life. In addition, people who are obese also experience weight bias, a form of negative attitude that influences others’ interactions with obese individuals. Weight bias has been studied in many areas, such as the workplace, education, and health care. Furthermore, cultural and ethnic differences in beliefs and attitudes toward weight and weight bias are also salient in the conceptualization and maintenance of this phenomenon. Similarly, body dissatisfaction has been linked to excess weight through negative views of fatness in that those who experience weight bias and discrimination report more negative body image. One method assessing weight and body image dissatisfaction for individuals is figure rating scales, and for this study, it was hypothesized that figure ratings presented with pictures of obese individuals would represent a measure of bias and that these ratings of bias would be correlated with established measures of bias (e.g., ATOP, BAOP, and AFA). Discrepancy scores from the figure rating scales were found to be highly correlated with the established measures of bias, as hypothesized. Group differences in weight bias were examined and significant differences in bias were observed for race and gender of the depicted obese individuals.
DEDICATION

This thesis is dedicated to my family, friends, and colleagues for their continued support throughout my graduate career. In particular, I thank my parents, Michael and Cindy. Without their love and encouragement, my success would not have been possible.
LIST OF ABBREVIATIONS AND SYMBOLS

<table>
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ACKNOWLEDGEMENTS

No words can express my appreciation for my advisors, Drs. Karen Christoff and Stephanie Miller, and my committee members, Drs. Laura Johnson and Merv Matthews. I am eternally grateful for their guidance and wisdom in this learning process.
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INTRODUCTION
The rate of obesity in the United States has reached epidemic levels with an estimated 35% of adults being classified as obese (Ogden, Carroll, Kit, & Flegal, 2014). Aside from a variety of physical health problems, obese individuals also face a great deal of negative judgment because of carrying excess weight (Puhl & Brownell, 2006). Many individuals endorse negative beliefs and attitudes toward people who are obese, including seeing this group as lazy, sloppy, unmotivated, and incompetent (Puhl & Brownell, 2001). These negative biases affect relationships with others and have a detrimental impact on the psychological state of obese individuals (Carr & Friedman, 2005; Friedman et al., 2005; Myers & Rosen, 1999). Further, when an individual who is obese encounters these biases toward weight in their social environment, the typical result is the avoidance of the origin of bias (i.e., the person, the environment where the bias occurred, situations where more stigma might be incurred, etc.) (Johnson, 2005). These behaviors serve as confirmation to the holder of bias that obese people are lazy or unmotivated, when, in fact, the holder is at least in part responsible for the behavior that upholds his or her negative belief and increases bias. Therefore, given that weight bias plays such a large role in self-esteem, psychological well-being, and interpersonal relationships, it is essential to be able to identify biases and to understand how they may vary among individuals, especially across gender and race. The purpose of this study is to identify subtle forms of bias by employing an established measure of body dissatisfaction (i.e., a figure rating scale) as a measure of weight bias. One of the potential benefits of this proposed scale is that it may possibly identify
the perceptions many people hold about how a person should look with regard to weight. Negative perceptions of weight and appearance have been shown to influence people’s interactions and relationships with obese individuals. As it is expected that this new measure will reflect bias, it should, in theory, be related to widely used measures of weight bias. This bias is thought to be apparent in the differences between what one considers to be a person’s actual weight and a more “ideal” weight. Discrepancy scores on these figure ratings were expected to converge on weight bias. The established measures in the field of weight bias account for a certain percentage of measured bias, however, there is room to pick up on more. The second purpose of this study is to examine differences in weight bias between sex and race groups. This proposed measure of bias allows weight stigma to be measured in a less transparent way and examine an aspects of bias that cannot be assessed by the current established measures.

**Definition and History of Weight Bias**

Weight bias is broadly defined as any form of negative attitude that influences interpersonal exchanges with an obese individual, resulting in detrimental effects to the individual or the relationship (Puhl & Brownell, 2007). Weight bias exists on a continuum and can include behaviors as overt as blatant discrimination or something as covert as not discussing weight related issues (e.g., weight, dieting, exercise, nutrition, etc.) with another person who is obese (Brownell, 2005). The experience of weight bias is pervasive across different areas of life, and people with excess weight encounter the effects of bias in a variety of important areas, including employment, education, media, and health care (Puhl & Brownell, 2003). As a result, those who experience weight bias report more issues with increased negative mood and anxiety (e.g., depression, social phobia, etc.) (Freidman et al., 2005). In addition, weight discrimination not only has an effect on mood, but it can also lead to internalization of bias and greater body
dissatisfaction (Crocker & Garcia, 2005). Furthermore, these two difficulties can result in binge eating, increasing weight and perpetuating the cycle of weight discrimination (Womble et al., 2001).

Weight discrimination has increased exponentially in the last decade and is almost equal in frequency to racial discrimination (Puhl, Andreyeva, & Brownell, 2008). This is in direct relation to the increase in the rate of obesity in the United States. Nearly 35% of adults in this country are considered obese, and this number has more than doubled since the 1960s (Ogden, Carroll, Kit, & Flegal, 2014; Flegal, Carroll, Kit, & Ogden, 2012; Ogden & Carroll, 2010). As the percentage of overweight and obese Americans has risen, an increase in weight focused media coverage and research is apparent. In fact, coverage of obesity in news media quadrupled in the early 2000’s compared to previous decades (as cited in Cohen, Perales, & Steadman, 2005). The news media perpetuates this form of bias by emphasizing the relationship between diet and weight and facilitates weight concern in those who are not obese (Greenberg & Worrell, 2005). Furthermore, the media displays weight bias through the images they show. News magazines sources tend to portray non-white, obese and overweight individuals engaging in sedentary behavior in photos when reporting on obesity (Gollust, Eboh, & Barry, 2012). However, the news is not the only media outlet responsible for spreading bias against weight. Reading and viewing media that support dysfunctional beliefs about weight, such as fashion magazines, leads to greater bias towards obese individuals (Lin & Reid, 2009).

Weight bias is not a new concept. Biases against obese people have been documented as far back as medieval times in Europe and Asia with these negative views relating to transgressions or karma (Stunkard, LaFleur, & Wadden, 1998). People often believed that obese individuals got what they deserved, either for something bad they did or how they treated others.
Therefore, weight bias has been present and unchanging for a long time, as many of the same negative beliefs are seen in weight bias today. In general, if people view a disease as bad (e.g., alcoholism, AIDS/HIV, obesity, etc.), the person who contracts said disease is labeled as bad as well (Brownell, 2005). Moreover, people often have a distorted view of weight and what causes obesity. Many laypeople, who are a normal weight, believe that weight stigma is helpful because it should motivate obese people to lose weight, implying the belief that weight is easily controllable (Brownell, 2005). This negative view further complicates the matter because it suggests that obese people have a choice to be a normal, healthy weight, and therefore, choosing to remain obese makes a person bad. These two ideas play directly into the underpinnings of weight bias.

Crandall argues that attitudes can be broken into two types: instrumental and symbolic (1994). Instrumental attitudes are based on an evaluation of the attitude object by its utility to the person, while symbolic beliefs are a function of belief expression and values relevant to the self and identity (Crandall, 1994). Symbolic biases, such as those commonly related to race, seem to reflect a belief that members of other races fail to live up to the American Protestant Values (Kinder & Sears, 1981). The idea of symbolic prejudice can also be applied to anti-fat attitudes (Crandall, 1994). Given all the information presented in the literature, weight bias is largely maintained by a progression of beliefs: 1) fat is bad and is under control of the person, 2) because fat is bad and losing weight takes work, being obese is a form of laziness and does not represent the hard work ethic of Protestant American Values, and 3) whatever negative outcome an obese person experiences because of his or her weight is just and fair (Crandall, 1994; Lerner, 1980).
Because there is a strong emphasis on values within negative views of obesity, there are also cultural differences in anti-fat attitudes. These attitudes typically only emerge if the person’s host culture holds a preference for thinness and a belief that weight is under personal control (Crandall & Martinez, 1996). Crandall et al. (2001) examined attitudes in six different countries and found anti-fat attitudes to occur only in countries with a cultural belief that people are responsible for their own outcomes, in addition to negative cultural views of fatness. Aside from cultural factors, differences in individual values and political beliefs can influence bias against weight. Anti-fat attitudes are positively correlated with political conservatism and symbolic racism (Crandall, 1994).

Unfortunately, fewer research efforts have focused on racial differences in weight bias. There, however, is a small amount of research suggesting that various subcultures view weight differently (Hebl & Turchin, 2005). In the African American culture, both men and women are more accepting of larger weight for black women, and black men select silhouettes that depict females with larger hips and buttocks as more attractive (Cunningham, Roberts, Barbee, Druen, & Wu, 1995; Hebl & Turchin, 2005). However, there is conflicting evidence on this topic. In general, black individuals do not stigmatize other black targets based on weight; however, the same is not true for white individuals (Hebl & Heatherton, 1997; Hebl, King, & Perkins, 2007; Hebl & Mannix, 2003). Further, Caucasian females face more stigma from obesity than do African American females, and experience lower self-esteem and greater socioeconomic effects of obesity (i.e., lower wages earned, fewer job promotions, etc.) (Averett & Korenman, 1999; Fikkan & Rothblum, 2012). These racial differences in stigma may be, in part, attributed to differences in perceived inner and outer beauty and attractiveness (Ali, Rizzo, & Heiland, 2013).
Weight bias is experienced in a variety of settings, including employment, education, and health care. Within the workforce, obese applicants are often hired less often and earn lower wages than their normal weight coworkers (Averett & Korenman, 1999; Grant & Mizzi, 2014). This is partially due to the fact that obese employees are viewed as lazy and incompetent (Jasper & Klassen, 1990). Furthermore, obese people often face harsher discipline for workplace infractions and receive less desired positions (Bellizzi & Hasty, 1998, 2001). To make matters worse, obese people have even been fired for failing to lose weight at the request of their employer (cited in Berton, 2001). In addition to workplace discrimination, obese individuals also face weight bias in education. Teachers and other school administrators often attribute the cause of obesity to a single factor (i.e., behavioral, genetic, or environmental) instead of a combination of the three (Neumark-Sztainer, Story, & Harris, 1999). Students who are obese also report being bullied at school (Neumark-Sztainer, Story, & Faibisch, 1998; Neumark-Sztainer, Story, Faibisch, Ohlson, & Adamiak, 1999). Bias within education has also been supported by the fact that obese female students receive less financial support for college from their parents (Puhl & Brownell, 2003). Surprisingly, some of the most apparent holders of weight bias are medical professionals. Some physicians view obese individuals as less healthy than heavy smokers, and approximately 1 out of every 8 medical nurses who show high levels of weight bias prefer not to physically touch obese patients (Bagley, Conklin, Isherwood, Pechiulis, & Watson, 1989; Harvey & Hill, 2001). Hebl and Xu (2001) found that physicians view obese patients as lazy and noncompliant to medical interventions and preferred to spend less time with them than with nonobese patients. Physicians also assign more medical diagnoses on average for obese female patients than normal weight female patients (Sansone, Sansone, & Wiederman, 1998).
Nutritionists have described obese people as “emotional eaters” and believe overeating to be compensation for lack of love or attention (Maiman, Wang, Becker, & Simonson, 1979).

One might expect that increasing exposure to obesity, due to increased prevalence in the United States, and subsequent increased personal interactions with obese individuals would mitigate bias; however, this does not seem to be the case (Major, Hunger, Bunyan, & Miller, 2014). Further, even people who are obese demonstrate increased bias against other obese persons and may internalize this bias (Gumble & Carels, 2012; Lewis et al., 2011). Internalization of weight-bias can lead to greater psychological difficulties (i.e., depression, anxiety, poor self-esteem and image, etc.) and can result in binge eating disorder (Freidman et al., 2005; Puhl, Moss-Racusin, & Schwartz, 2007).

**Assessment of Weight Bias**

Interest in weight bias originally stemmed from studies of racial stereotypes; however, this field of research is fairly new (Teachman & Mallet, 2005). Researchers have investigated weight stigma and biased behavior through a variety of measures, including explicit, automatic, and behavioral indicators. Determining whether someone is biased against obese persons is largely decided by explicit self-report surveys. Implicit measures of bias are also occasionally used; however, they are predominantly used in formal research settings (Bessenoff & Sherman, 2000; Schwartz, Chambliss, Brownell, Blair, & Billington, 2003; Teachman & Brownell, 2001). The most commonly used, and the most psychometrically supported, explicit measures include the Attitudes Obese Persons Scale (ATOP), the Beliefs About Obese Persons Scale (BAOP), and the Anti-Fat Attitudes Questionnaire (AFA). The ATOP and BAOP have shown success in measuring weight bias in medical professionals (e.g., physicians, nurses, etc.), obesity researchers and weight-loss specialists, academic professionals (e.g., teachers, principals, school
counselors, etc.), and mental health professionals, as well as college students and the general public (Bagley et al., 1989; Neumark-Sztainer, Story, & Harris, 1999; Puhl & Brownell, 2001; Puhl & Heuer, 2009; Sharma, 2009; Schwartz et al., 2003).

However, these measures are not able to accurately assess all aspects of weight bias. Most of the explicit measures in weight bias do not possess adequate psychometric properties, and therefore, fail to adequately measure bias (Teachman & Mallet, 2005). Most measures of weight bias fail to separate out the difference between negative beliefs about obesity and knowledge of obesity, such as the case with bias in medical professionals and obesity researchers (e.g., Harris & Smith, 1982). These measures also do not examine bias toward obesity in different sexes and races. One explicit measure of weight bias, Bray Obesity Attitudes Test, examines differences in attitudes toward obese across different racial and ethnic groups; however, the reliability and validity of this measure has not been assessed (Bray, 1972; Sims, 1979; Teachman & Mallet, 2005).

Most measures of weight bias focus on explicit aspects of stigma, including affective responses to, or general knowledge about, excess weight. Furthermore, people that display weight bias have aversions to excess weight, and it is likely that their harsh evaluation of others’ bodies is commonplace. These negative evaluations can be seen to reflect weight biases and body dissatisfaction. One possible way to examine the degree to which people evaluate others is through a figure rating scale. Various foundational studies in weight bias (e.g., DeJong, 1980; Richardson et al., 1961) have utilized alternative methods for measuring bias, including pictures of obese individuals and ratings and line drawings.
**Body Dissatisfaction**

Body image disturbance has been shown to overlap with a wide variety of phenomena (e.g., phantom limb syndrome, anosognosia, etc.) (Thompson, 1992). Body dissatisfaction is broadly defined as “any affective, cognitive, behavioral, or perceptual disturbance that is directly concerned with an aspect of physical appearance” (Thompson, 1995). However, it is widely accepted that negative body image is also highly correlated with eating and weight-related problems (Rosen, 1990; Thompson, 1990). While, body dissatisfaction is more often linked to traditional eating disorders than to obesity, some research has highlighted the importance of body image related to having excess weight (Robinson, Bacon, & O’Reilly, 1993; Stunkard & Burt, 1967; Thompson, 1990). From this perspective, poor body image can easily be conceptualized as bias against one’s own weight, and therefore, body dissatisfaction and weight bias can be closely linked together. To further solidify their relationship, negative body image is a known result of weight stigmatization (Annis, Cash, & Hrabosky, 2004). Weight stigmatization and discrimination has been found to facilitate an internalization of weight bias and increase incidents of binge eating, thereby maintaining negative views of weight and the individual’s body shape (Durso & Latner, 2008).

While research suggests that Caucasian females receive and display more bias, African American females still show bias toward obese individuals; however, when compared to Caucasian females, African American females show less downgrading of qualities (e.g., attractiveness, intelligence, success, happiness, etc.) of obese females (Hebl & Heatherton, 1998). Further, females are more likely than males to report body dissatisfaction, especially as a result of weight stigmatization (Cattarin & Thompson, 1994; Neumark-Sztainer & Eisenberg, 2005; Thompson, Herbozo, Himes, & Yamamiya, 2005). In fact, women who report being teased
about their weight during childhood endorse greater amounts of body dissatisfaction later in life (Cash, Winstead, & Janda, 1986). However, this raises the question of gender differences in body dissatisfaction. While males are less likely to report body dissatisfaction overall, men who experience teasing with regards to weight also report higher amounts of body dissatisfaction than those report no teasing, yet this rate is still lower than rates for females (Garner, 1997). Therefore, gender differences in body dissatisfaction, as a result of weight teasing, appear minor; men and women equally experience negative views of weight as a result of weight bias. Because of the emphasis on thinness among Caucasian females, it is reasonable to expect that they would report greater body dissatisfaction than African American females (Ali, Rizzo, & Heiland, 2013). However, in regards to poorer body image as a result of weight stigmatization, few racial differences exist between the two groups (Akan & Grilo, 1995). While considerable efforts have been made to examine this in females, little research on racial differences of weight bias and body dissatisfaction in males exists (Hebl & Turchin, 2005). (pg.89)

Assessment of Body Dissatisfaction

When it comes to assessing body dissatisfaction, measures in this area are divided into several different categories: global dissatisfaction, cognitive, affective, or behavioral components, and figural stimuli (Thompson, 1995). The Eating Disorders Inventory- Body Dissatisfaction Scales is an example of a global measure of dissatisfaction and includes Likert-type items that assess an individual’s satisfaction with different body regions (Garner, Olmstead, & Polivy, 1983). Cognitive and affective measures differ from global assessments by examining thoughts or feelings toward physical appearance. The Bulimia Cognitive Distortions Scale is an example of cognitive assessments and utilizes agreement with various statements regarding appearance (Schulman, Kinder, Powers, Prange, & Gleghorn, 1986). While cognitive measures
contain more specific items or domains of thoughts, affective measures rely on a more unstructured approach to emotion, specifically anxiety, associated with body shape. The Physical Appearance State and Trait Anxiety Scale requires individuals to rate their anxiety associated with various body sites (8 weight relevant and 8 non-weight relevant) (Reed, Thompson, Brannick, & Sacco, 1991). Because assessment of this concept may be viewed as difficult to evaluate, it is important to mention that the measures highlighted above are all considered to be psychometrically sound (having reliability coefficients above .70) and have been normed with clinical and nonclinical samples (Thompson, 1995). Another primary, and popular, method for measuring global dissatisfaction is figure/silhouette rating scales (Thompson, 1995). Benefits of these measures include the usability with a wide range of populations (e.g., children, adults, individuals with intellectual disabilities and Prader-Willi syndrome, etc.) (Collins, 1991; Napolitano, Zarcone, Nielsen, Wang, Caliendo, 2010). Figure rating scales measure dissatisfaction by asking individuals to rate their current body size, or shape, and an ideal weight and shape for themselves; dissatisfaction is then obtained by calculating the difference (i.e., a discrepancy score) between the two ratings (Thompson, 1995). One of the strengths of this method as a global measure of dissatisfaction is that it includes both a cognitive (e.g., ratings of current weight) and an affective (e.g., ratings of ideal weight) components. In other words, this scale takes into account both one’s general thoughts of and emotion toward weight. Some concerns have been raised over possible measurement error in a person’s rating of his or her current weight. Thompson and colleagues (1992) found that a person’s “current” weight rating may be inflated by affective influence; however, this finding should be noted as a possible minor weakness to these scales. Other studies have found this type of scale, and its existing wording, to be the most reliable method for assessing dissatisfaction using figural stimuli (Thompson &
Altabe, 1991). Further, in efforts to adapt this form of assessment for use with other populations, variations on these measures have been created, such as anthropomorphizing figures, changing skin color, or using a filled-in silhouette; however, these adaptations are not necessary for better assessing dissatisfaction as figure rating scales have been used to assess dissatisfaction outside of views of self-image (Allison, Hoy, Fournier, Heymsfield, 1993; Williamson, Davis, Bennett, Goreczny, & Gleaves, 1989; Wood, Becker, & Thompson, 1993).

**Present Study**

This study aimed to use an established used measure of body dissatisfaction for individuals as a measure of weight bias. This was accomplished by examining the convergence of scores on measures in both areas. Body dissatisfaction, or negative views on excess weight, toward a depicted individual was measured using figure rating scales. It was expected that scores on the three established measures of bias used in this study would be highly correlated, suggesting consistent measurement of bias. It also was hypothesized that discrepancy scores on the figure rating scales would be highly correlated with scores on these three measures. Furthermore, the proposed study attempted to measure of weight bias toward obese individuals of different sexes and races through figure rating scales. It was hypothesized that bias would be greater against ambiguous racial minority targets than African American individuals. Gender differences in bias were also expected, with females being the recipients of more weight bias than males. Finally, it was hypothesized that there would be an interaction of bias between race and gender, with bias being the greatest against an ambiguous racial minority female target than other depicted individuals. It was also hypothesized that female participants would exhibit more bias than males.
II. METHODOLOGY

Participants

Participants in the present study consisted of 246 individuals ($M_{\text{age}} = 18.72$, $SD_{\text{age}} = 1.21$) that took part in research for class participation credit in their General Psychology courses. Those that volunteered for research completed questionnaires, self-report measures, and figure ratings associated with pictures of obese individuals (procedures are described below). Over three-fourths of the sample was female ($n = 180, 73.2\%$), with males comprising only $26.8\%$ of the sample ($n = 66$). The sample was predominantly Caucasian/Non-Hispanic ($n = 198, 80.5\%$). African Americans comprised $12.6\%$ of the sample ($n = 31$), while the remainder of the sample was comprised of Asian American individuals ($n = 12, 6.2\%$), Hispanic/Latino individuals ($n = 13, 5.3\%$), American Indian/Alaska Native individuals ($n = 2, 0.8\%$), Native Hawaiian or other Pacific Islander individuals ($n = 1, 0.4\%$), or individuals who identified as “multiracial” ($n = 1, 0.4\%$). The majority of the sample reported an annual family income above $80,000 ($n = 106, 43.1\%$). However, the second highest percentage of income reported was below $20,000 per year ($n = 52, 21.1\%$). The rest of the sample reported annual incomes between these two extremes. Approximately $13.8\%$ ($n = 34$) of the sample reported annual income of $60,000 to $80,000, followed by $8.5\%$ ($n = 21$) of the individuals indicating annual incomes of $50,000 to $60,000. The remaining participants reported incomes between $40,000 to $50,000 ($n = 13, 5.3\%$) and $30,000 to $40,000 ($n = 10, 4.1\%$). Given that the most of the individuals in the sample were around 18 years old, it was assumed that the reported annual incomes were parental incomes. In regards to education, $98.8\%$ ($n = 243$) of the sample reported some college education, with
42.3% ($n = 104$) of that group indicating they completed high school or a GED. Some participants ($n = 2, 0.8\%$) reported being college graduates, while one individual reported still being in high school.

**Measures**

**Demographic Information.** A questionnaire was created to collect demographic information from participants. Information from this questionnaire included the age, sex, ethnicity, socioeconomic status, and highest education obtained, for both the participant and the participant’s parents. See Appendix A for the Background Information Questionnaire.

**Attitudes Toward Obese Persons Scale.** In order to measure attitudes toward obese individuals, the Attitudes Toward Obese Persons Scale (ATOP) was used. The Attitudes Toward Obese Persons Scale (ATOP) was developed from the Attitudes Toward Disabled Persons Scale, and is a twenty-item scale measuring the attitudes toward obese individuals (Allison, Basile, & Yuker, 1991). The ATOP was originally developed from a measure of bias against disabled persons (Teachman & Mallett, 2005). In addition, a series of scales based on the ATOP were constructed to fit weight bias assessment into other areas. One example measure is the Attitudes Toward Obese Adult Patients scale, which examines nurses’ opinions of their obese and overweight patients (Bagley et al., 1989). The scale utilizes Likert-type responses, from (1) strongly agree to (6) strongly disagree, to assess discriminatory and stereotypical perceptions toward obese persons. Items on the scale load onto three factors: different personality, social difficulties, and self-esteem. Coefficient alphas for the ATOP range from .80 to .84 (Yuker, Allison, & Faith, 1995). The ATOP is also one of the only explicit measures within this area of research that reports normative data for college students and for members of the National
Beliefs About Obese Persons Scale. The Beliefs about Obese Persons scale was originally designed as a companion measure to the ATOP and assesses the controllability of weight. Another aspect of bias that was assessed was the controllability of weight. Typically, this is measured by the Beliefs About Obese Persons scale (BAOP). The BAOP is an eight-item scale consisting of Likert scale responses, from (1) strongly agree to (6) strongly disagree, to questions that touch on different attributes of obese persons and the etiology of the malady (Allison, Basile, & Yuker, 1991). This measure determines an individual’s belief about how much control an obese person has over his or her condition. High scores indicate a belief that individuals cannot easily control obesity, or that there is a multifactor cause for excess weight. The BAOP has an alpha reliability range of .65 to .82 (Yuker, Allison, & Faith, 1995). However, validity coefficients were not reported for this measure. See Appendix C for example questions and scoring instructions for the BAOP scale.

Antifat Attitudes Questionnaire. The Anti-Fat Attitudes Questionnaire (AFA) is a thirteen-item, Likert-type scale that assesses attitudes toward obese persons (Crandall, 1994). Item responses range from, very strongly disagree (0) to very strongly agree (9). The AFA differs from the ATOP and BAOP in that it is designed to measure the discrimination that is close to symbolic racism. The measure attempts to assess other constructs like Puritan work ethic and beliefs in self-determination. The AFA has three subscales: “Fear of Fat,” “Dislike,” and “Willpower.” Higher scores indicate more negative attitudes toward obese persons. Validity scores were not reported, but validity in terms of correlation with other measures of attitudes are...
offered (Yuker, Allison, & Faith, 1995). Example questions from the AFA and scoring instructions can be found in Appendix D.

Figure Rating Scale of Bias. Included in the survey was a measure of bias based on figure ratings. Participants for this experiment rated pictures of obese individuals using an adapted Stunkard Figure Rating Scale. Four pictures depicting obese individuals of different genders and races were utilized (see procedures section below for further description). Participants were asked to select the actual weight of each obese individual depicted on one group of silhouettes and marked the “most ideal weight” for the same obese individuals on another. These scales were intended to measure bias by calculating a discrepancy value from the two selected figures. This discrepancy value was obtained by subtracting the number associated with the two figures. Greater discrepancy values were hypothesized to be associated with higher levels of bias. Discrepancy scores from these four pictures were also summed and averaged to create an overall measure of bias. Pictures of depicted individuals can be found in Appendix E.

Procedures

Data for the current study were collected in a laboratory setting. Participants were recruited from undergraduate General Psychology classes and signed up through an online program, Sona, for research participation. Once in the laboratory setting, participants completed online questionnaires consisting of various measures of weight bias, using Qualtrics, an online assessment program for data collection. A large majority of the questions answered came from established measures of weight bias, including the ATOP, BAOP, and AFA. Participants also completed the proposed measure of bias utilizing figure rating scales. Other information relevant to the individual (e.g., age, sex, race, income, etc.) was also collected. All measures were counterbalanced to control for practice and carryover effects. Distractor items were also included
to control from random responses, or to make sure participants were paying attention.

Participants were not able to skip ahead in the measures and were not able to skip items relevant to this study. Other measures unrelated to this study were included as a means of disguising the purpose of this study.

**Pictures of Obese Individuals.** Attempts were made to gather standardized photos of obese individuals; however, initial pictures collected were not similar in age to the target population. Other photos of obese individuals were purchased from websites with royalty free, low cost stock photos. Ironically, in searching for acceptable images for this study, the degree to which weight bias pervades all aspects of life was made abundantly clear by the lack of images depicting obese individuals in neutral, non-stigmatizing activities or engaging in physical exercise, which could confound results. Obese individuals were much more likely to be shown eating a large cheeseburger, sitting on the couch watching television, standing on a scale while frowning. Pictures were chosen based on background and proportion of body shown in the picture. Pictures with individuals standing in front of a white or light gray background and showing a majority of the body (e.g., at least mid-thigh and up) were selected. All selected pictures were rated for likability, weight, race, and gender by different raters. The final four pictures were chosen based on degree of likability (i.e., being very likable) and having been rated as obese. The final targets were also rated for agreement of gender and race. For the purpose of this study, only African American and ambiguous racial minority male and female pictures were utilized. The ambiguous racial minority individuals were rated as being mostly non-white; however, no clear consensus on race was established for either individual. For the racially ambiguous female, agreement on race was as follows: Hispanic (56.3%), Native Hawaiian (26.1%), Caucasian (7.0%), African American (4.9%), American Indian (4.9%), and other (.7%).
For the racially ambiguous male, agreement on race was as follows: Caucasian (46.5%), Hispanic (33.8%), American Indian (8.5%), Native Hawaiian (7.7%), other (2.8%), and Asian (0.7%).

**Statistical Analyses**

Because data were collected through an online program, no data were entered by hand, to avoid data entry error. However, the data were checked by trained graduate and undergraduate research assistants to ensure the data were correctly collected throughout the process. If any participant data for the scales examined were missing or incomplete, they were dropped from the analyses.

Two correlational analyses were conducted to examine the relationship between the three established measures of weight bias and the proposed measure using figure rating scales. The first correlational analysis examined the relationships among the three established measures of weight bias. It was predicted that when looking at the correlation, scores on the ATOP and the BAOP would be significantly and positively related to each other. It was also predicted that scores on these two measures would be significantly and negatively related to scores on the AFA, given that higher scores on the previous two measures are indicative of more positive attitudes toward obese individuals, while higher scores on the AFA suggest more negative attitudes. The second step of the statistical analyses examined the internal consistency of the four created measures of bias to determine if a total score could be created for these items. These two aims were assessed using Cronbach’s alpha reliability. It was predicted that the four proposed items would have a high internal consistency and that the consistency would remain high if each item were deleted.
As a manipulation check to see if the figure rating scales of bias were actually measuring weight bias, a correlational analysis was conducted to compare total scores for the ATOP, BAOP, and AFA with each figure rating of weight bias and the total bias score. It was hypothesized that discrepancy scores, for each item and total bias score, would be significantly and positively related to scores of weight bias from the three established measures of weight bias.

A repeated measures analysis of variance was used to determine if participants exhibited bias against the depicted obese individuals. Two factors were utilized for the within-subjects variable: race and gender. Each factor was comprised of two levels. Male and female were the two levels used for the gender factor, while ambiguous racial minority individuals and African American were used as levels for race. Discrepancy scores from the figure rating scales of bias were entered corresponding with each factor and level. Sex of the participant was utilized as the between-subjects factor for this analysis. Paired samples t-tests were utilized for post hoc analyses to examine differences in bias by within-subject factor levels.
III. RESULTS

Hypothesis Testing

Correlational analyses were conducted to determine the relationship between the three established measures of weight bias (i.e., ATOP, BAOP, AFA). Total scores on the ATOP and the BAOP were significantly and positively correlated with one another, while scores between the ATOP and the BAOP and subscales of the AFA were significant, yet negatively correlated with one another (see Table 1). This finding suggests that these scales are related, yet measure distinct concepts.

| Table 1. Correlation Matrix for Explicit Measures of Weight Bias |
|------------------|---|---|---|---|
|                  | ATOP | BAOP | AFAD | AFAF | AFAW |
| ATOP             | -    | .34**| -.49**| -.33**| -.44**|
| BAOP             | -    | -.20**| -.30**| -.53**|
| AFAD             | -    |     | .14* |     | .40**|
| AFAF             | -    |     |     | .36**|
| AFAW             | -    |     |     |      |

*Note. ATOP = Attitudes toward Obese Persons Scale, BAOP = Beliefs about Obese Persons Scale, AFAD = Antifat Attitudes Test Dislike subscale, AFAF = Antifat Attitudes Questionnaire Fear of Fat subscale, AFAW = Antifat Attitudes Questionnaire Willpower subscale, *p < .05, **p < .01.*

The proposed four items of figure ratings of weight bias were found to be highly reliable (α = .84). An analysis of the internal consistency of the scale if items were deleted showed that the internal consistency coefficient would remain the same if any item was deleted, suggesting
that the items are reliably measuring the same construct (see Table 2). Based on this finding, discrepancy scores from each item were averaged to obtain a total measure of bias.

Table 2. Reliability Analysis of Figure Rating Scales of Bias

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha, if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.R.M. Male Item</td>
<td>-.17**</td>
<td>-.23**</td>
</tr>
<tr>
<td>A.R.M. Female Item</td>
<td>-.21**</td>
<td>-.27**</td>
</tr>
<tr>
<td>A.A. Male Item</td>
<td>-.24**</td>
<td>-.23**</td>
</tr>
<tr>
<td>A.A. Female Item</td>
<td>-.18**</td>
<td>-.20**</td>
</tr>
<tr>
<td>Overall</td>
<td>.22**</td>
<td>.24**</td>
</tr>
</tbody>
</table>

Note. A.R.M. = Ambiguous Racial Minority, A.A. = African American

A correlational analysis of scores from the established measures of bias and the created figure rating scale of bias showed significance for a majority of the items (see Table 3). Total scores on the ATOP and BAOP were negatively related to total discrepancy from the figure ratings of bias. Total discrepancy was positively related to scores from the AFA subscales: Dislike subscale, Fear of Fat subscale, and Willpower subscale. These findings are in support of Hypothesis 1.

Table 3. Correlation Matrix for Explicit Measures of Weight Bias and Figure Ratings

<table>
<thead>
<tr>
<th></th>
<th>A.R.M. Male</th>
<th>A.R.M. Female</th>
<th>A.A. Male</th>
<th>A.A. Female</th>
<th>FRB</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOP</td>
<td>-.17**</td>
<td>-.23**</td>
<td>-.24**</td>
<td>-.11</td>
<td>-.22**</td>
</tr>
<tr>
<td>BAOP</td>
<td>-.21**</td>
<td>-.27**</td>
<td>-.23**</td>
<td>-.11</td>
<td>-.25**</td>
</tr>
<tr>
<td>AFAD</td>
<td>.24**</td>
<td>.25**</td>
<td>.22**</td>
<td>.19**</td>
<td>.27**</td>
</tr>
<tr>
<td>AFAF</td>
<td>.18**</td>
<td>.20**</td>
<td>.19**</td>
<td>.17**</td>
<td>.22**</td>
</tr>
<tr>
<td>AFAW</td>
<td>.22**</td>
<td>.24**</td>
<td>.29**</td>
<td>.17**</td>
<td>.27**</td>
</tr>
</tbody>
</table>

Note. ATOP = Attitudes toward Obese Persons Scale, BAOP = Beliefs about Obese Persons Scale, AFAD = Antifat Attitudes Test Dislike subscale, AFAF = Antifat Attitudes Questionnaire Fear of Fat subscale, AFAW = Antifat Attitudes Questionnaire Willpower subscale, A.R.M. = Ambiguous Racial Minority, AA. = African American, FRB = Figure Ratings of Bias, * p < .05, ** p < .01.
A repeated measures analysis of variance was conducted to determine whether bias differed significantly between males and females for different races and genders of depicted individuals. The factor, gender, had two levels, while the factor, race, also had two levels (ambiguous racial minority and African American). The dependent variable for this analysis was discrepancy scores on the Figure Rating Scale of Bias, with high discrepancy scores indicating more bias. Results indicate a significant race effect for bias, Pillai’s Trace = .03, $F(1, 241) = 6.17$, $p = .01$. Participants displayed significantly more bias against ambiguous racial minority individuals ($M = 20.58$, $SD = .81$) than African American individuals ($M = 19.16$, $SD = .70$). This finding supports hypothesis 2. Results also showed a gender effect for bias, Pillai’s Trace = .10, $F(1, 241) = 12.58$, $p = .000$. Participants endorsed significantly more bias against females ($M = 20.79$, $SD = .78$) than against males ($M = 18.96$, $SD = .70$). These findings are in support of hypothesis 3. Finally, results showed an interaction effect for race and gender, Pillai’s Trace = .05, $F(1, 241) = 11.43$, $p = .001$. Recipients of the greatest amount of bias were ambiguous racial minority females ($M = 22.44$, $SD = .98$), followed by African American males ($M = 19.19$, $SD = .76$), then African American females ($M = 19.14$, $SD = .83$), and finally with ambiguous racial minority males ($M = 18.72$, $SD = .78$) receiving the least amount of bias (see Figure 1). These findings partially support hypothesis 4. All analyses for differences in weight bias regarding participant sex were not significant. When examining differences between race and participant sex, no effect was found, Pillai’s Trace = .00, $F(1, 241) = .00$, $p = .99$. Interactions between gender and participant sex were also nonsignificant, Pillai’s Trace = .00, $F(1, 241) = .05$, $p = .83$. Finally, interactions between gender, race, and participant sex were also not significant, Pillai’s Trace = .01, $F(1, 241) = 2.22$, $p = .14$. 
Post Hoc Analyses

Post-hoc comparisons, using paired samples t-tests, indicated a significant difference between bias toward ambiguous racial minority females ($M = 22.39, SD = 13.60$) and males ($M = 18.25, SD = 10.89$); $t(245) = -6.41, p < .01$. Post-hoc comparisons for African American individuals showed no significant difference between males ($M = 18.76, SD = 11.55$) and females ($M = 19.13, SD = 10.50$); $t(244) = .52, p = .60$. Similar comparisons showed ambiguous racial minority females ($M = 22.42, SD = 13.61$) receiving significantly more bias than African American females ($M = 18.76, SD = 11.55$); $t(244) = 4.45, p < .01$. Finally, comparisons between African American males ($M = 19.11, SD = 10.49$) and ambiguous racial minority males ($M = 18.36, SD = 10.89$) showed no significant difference, $t(245) = -1.45, p = .15$.

Figure 1. Comparison of Weight Bias from Figure Ratings by Gender and Race
III. DISCUSSION

The current study aimed to assess weight bias and its many subtle forms by using an established measure of body dissatisfaction as a measure of weight bias. It was hypothesized that the widely used, established measures of weight bias (i.e., ATOP, BAOP, and AFA) would be highly correlated. As hypothesized, these three measures were significantly related, suggesting they all measure weight bias, yet still assess distinct concepts. Another aim of this study was to utilize figure rating scales, measures that are specific to body dissatisfaction, as a novel measure of weight bias. The items assessed in this study possessed good reliability, indicating measurement of similar constructs. It was hypothesized that scores on the three established measures would be highly correlated with scores on the proposed measure using figure ratings. As hypothesized, all four measures were significantly related, suggesting that figure rating scales can be used as measures of weight bias. Employing figure rating scales allowed other subtleties of weight bias to be assessed, filling the gaps in measurement the established measures cannot be examined. These gaps include differences in weight bias toward individuals of different races and sexes. It was hypothesized that there would be significant differences in weight bias directed toward obese individuals. Results showed that females were targets of greater weight bias than males and that ambiguous racial minority individuals received more bias than did African American individuals. When examining the effects of bias between race and gender, it was hypothesized that ambiguous racial minority females would be recipients of the greatest amount of bias, with African American females receiving the least amount of bias. As was hypothesized,
ambiguous racial minority females were the targets of greater amounts of bias than ambiguous racial minority males and African American females. These differences are consistent with previous findings in the literature that African American females receive less weight bias, because of a greater acceptance for a larger, fuller female body within that culture (Hebl & Heatherton, 1997; Hebl, King, & Perkins, 2009; Hebl & Mannix, 2003).

In an effort to better understand the differences in weight bias between males and females, this variable was examined in the analyses. Results revealed there were not significant differences in weight bias toward individuals of different genders and races between males and females. It was expected that female participants would show more weight bias toward depicted individuals than males. Previous research has indicated that females display significantly more bias towards obese individuals than males (Kraig & Keel, 2001; Richardson et al., 1961; Richardson & Royce, 1968). However, weight bias among females appears to be higher than males, regardless of race of the target individual (Richardson et al., 1961).

As the literature thus far has focused less on racial and gender differences in weight bias, post hoc analyses were conducted in an effort to examine the differences in endorsed weight bias. Specifically, the aim was to examine the interaction between race and gender. Results showed the depicted ambiguous racial minority female individual was the target of significantly more weight bias than other individuals. These results suggest that race may serve as a protective factor from weight bias for some racial minority individuals more than others. Further research to increase support for these results is necessary. Several studies suggest that Caucasian females are recipients of more bias than other individuals (Averett & Korenman, 1999; Fikkan & Rothblum, 2012; Puhl & Brownell, 2003). However, conflicting evidence suggests that this may not be the case, with race not playing a significant difference in assigning weight bias
(Richardson et al., 1961). It could be argued that this divergent data does not reflect the true nature of weight bias because it was based on self-report surveys, whereas other evidence has been based on more reliable measures of assessment (i.e., behavioral measures, database analyses, etc.). In addition, explicit measures of weight bias have not sufficiently investigated racial and gender differences. There is limited information concerning normative data on these explicit measures of bias. The evidence that does exist clearly indicates that differences are present and that it is essential to examine them to further the literature and our understanding of this construct.

**Limitations**

Although this study added to the literature in the domain of weight bias, various important limitations need to be discussed. It is possible that some of these limitations partially contributed to the unexpected findings. First, participants in this study were largely female. It is widely known that research participants in undergraduate settings are primarily female. While it is important to investigate weight bias within this sample, it is more necessary to understand the function and results of weight bias in males (Hebl & Turchin, 2005). Null results for differences in bias between sexes in this study is likely due to the lack of male participants. A continuation of this study would benefit from recruiting more males to obtain results that are more consistent with previous literature.

Second, results in this study were based solely on self-report survey data. Although no significant errors in measurement of weight bias were noted due to the method of assessment, the findings of this study could possibly be strengthened by incorporating more of a multi-method approach to assessment. One of the clear strengths of this study was incorporating a multi-trait approach (e.g., attitudes/affect, beliefs/knowledge, etc.) in examining biases. This study also
utilized a multi-method perspective to assessment insofar as participants completed explicit measures and a semi-implicit measure (e.g., figure rating scales of bias). The proposed measure in this study incorporates both a stimulus, that is similar to what is seen in an implicit task, and a figure rating scale, which is more in-line with traditional explicit measures. Presenting these two together allows this novel measure of bias to fall somewhere between established explicit and implicit measures of bias. Future studies of this type of task would benefit from employing other implicit measures (i.e., implicit association tasks, sentence completions, semantic differential measures, etc.) or other crude measures of behavior (e.g., proximity to an obese person, tasks requiring obese and nonobese individuals to work together, etc.). More convergent data in these areas would help to strengthen the findings of this study.

Third, more standardization of the photos of obese individuals used with the figure rating scales is necessary. Currently, only one database of standardized photos of obese individuals is easily accessible to researchers (University of Connecticut Rudd Center for Food Policy and Obesity, 2015). When designing this study, it was determined that the standardized images available were not sufficient for research with an undergraduate population because the depicted individuals were not similar in age to potential participants. Developing a more standardized database of photos is essential for continued research in this area. Various factors may influence a participant’s perception of weight. Where a person carries excess weight (e.g., stomach, hips, bust, etc.) or the clothing a person wears (e.g., a sweater vs. a bathing suit) influences the amount of bias endorsed by participants (Hebl, King, & Lin, 2004; King, Hebl, & Heatherton, 2005). In standardizing different photos to be used, it would be beneficial to have the height and weight of each model, in order to calculate a body mass index. This would be helpful to assure that reliable data, beyond ratings of weight, was available to researchers.
Taking this research another step further, other studies utilizing this method of assessment should also investigate weight bias toward normal weight and underweight individuals, especially when considering the internalized bias of obese individuals. Because the interplay of weight and weight bias is so strong, it may be necessary to see if internalized bias results in distorted perceptions of a normal, or healthy, weight.

Another limitation of this study is the lack of racial differences in weight bias. This study would have benefited from investigating how individuals of one race view excess weight in someone of their own group versus someone of a different race. Future directions should consider examining this difference between groups; however, careful consideration should be made when assessing an individual’s racial identity and affiliation to a particular race or ethnicity. Future directions might also include examining bias toward individuals of other races, such as Asian Americans, Hispanic and Latino individuals, and Native Americans. Given the high rates of obesity and diabetes, as results of poor living conditions and limited access to adequate healthcare on reservations, it is particularly important to assess weight bias against this population.

**Future directions**

Aside from the numerous improvements to this specific research already mentioned within the limitations section, other possible applications of this method of weight bias assessment should be discussed. Numerous studies have looked at the relationship between weight bias and social relationships among children (e.g., Latner & Stunkard, 2003; Lerner & Gellert, 1969; Richardson et al., 1961; Staffieri, 1967, 1972;); however, the development of weight bias measures appropriate for the use with children is necessary. Future research efforts should focus on improving weight bias measurement techniques within this population.
Ultimately, assessing weight bias alone is not sufficient enough; future research endeavors should focus on improving weight bias measurement in attempts to understand and to intervene on biased attitudes and behaviors. As already mentioned weight stigmatization and discrimination has far reaching implications on the health, physical and mental, and well-being of obese individuals. Efforts in research should focus on improving current and developing new interventions that have longer lasting effects on changing the attitudes and interactions that negatively impact obese individuals.

Conclusions

The current study hypothesized that figure rating scales, traditionally used in body dissatisfaction, could be employed as a novel measure of weight bias. It was posited that these ratings scales would assess weight bias to some degree by being highly correlated with other established measures of weight bias. These proposed scales showed success at measuring weight bias and were able to successfully identify differences in weight bias for targets of different races and genders. These findings further support the current body of literature suggesting that differences in perceptions of excess weight among individuals do exist. In addition, this study also adds to current research in this area by affirming the idea that measures from two separate, yet equally related, areas of disordered eating and weight issues can be used to assess bias and stigma in a unique way. This study further highlights the fact that our conceptualization of and assessments for weight bias must be continually changing and improving. However, these attempts should be made in efforts to further current and future intervention at changing this powerful and pervasive bias.


uniformity in reaction to physical disabilities. *American Sociological Review*, 26, 241-
247.

Richardson, S. A., & Royce, J. (1968). Race and physical handicap in children’s preference for

(Eds.), *Body images: Development, deviance, and change* (pp. 190-214). New York:
Guilford.

and medical utilization among women in a primary care setting. *International Journal of

development of a scale to measure cognitive distortions in bulimia. *Journal of
Personality Assessment*, 50, 630-639.

“Weight bias among health professionals specializing in obesity.” *Obesity Research*, 11,
1033-1039.

*Conduit*, 3, 6.

Simon, G. E., Von Korff, M., Saunders, K., Miglioretti, D. L., Crane, P. K., van Belle, G., &
adult population. *Archive of General Psychiatry*, 63, 824-830.


Miller (Eds.), *Progress in behavior modification* (Vol. 28, pp. 3-54). Sycamore, IL: Sycamore.


LIST OF APPENDICES
APPENDIX A: BACKGROUND INFORMATION QUESTIONNAIRE
1. Are you at least 18 years old? __Yes __No

2. What is your age (in years)? _______

3. What is your sex? __Male __Female

4. What is the highest level of education you have completed?
   __ Some high school
   __ High School/GED
   __ Some college
   __ College graduate
   __ Post graduate (MA, MBA, PhD, etc.)

5. What is your race/ethnicity? (Check all that apply)
   __ Black or African American
   __ White
   __ Hispanic or Latino
   __ American Indian or Alaska Native
   __ Asian
   __ Native Hawaiian or other Pacific Islander
   __ Other _______

6. What is your household income?
   __ Under $20,000/year
   __ $20,000 - $30,000/year
   __ $30,000 - $40,000/year
   __ $40,000 - $50,000/year
   __ $50,000 - $60,000/year
__ $60,000 - $80,000/year
__ Over $80,000/year

7. How many bedrooms were/are in your childhood home? ________

8. What is the highest level of education your mother has completed?
   __ Some high school
   __ High School/GED
   __ Some college
   __ College graduate
   __ Post graduate (MA, MBA, PhD, etc.)

9. What is the highest level of education your father has completed?
   __ Some high school
   __ High School/GED
   __ Some college
   __ College graduate
   __ Post graduate (MA, MBA, PhD, etc.)
APPENDIX B: ATTITUDES TOWARD OBESE PERSONS SCALE
The ATOP is scored using a Likert-type response format (+3 = strongly agree; +2 = somewhat agree; +1 = agree; -1 = disagree; -2 = somewhat disagree; -3 = strongly disagree). Several items are reverse scored (i.e., are multiplied by -1): Item 2 through Item 6, Item 10 through Item 12, Item 14 through Item 16, Item 18 through Item 20. Responses are summed, and 60 is added to the previous total to obtain the ATOP score. Higher scores indicate more positive views of obese persons.

1. Obese people are as happy as nonobese people.
2. Most obese people feel that they are not as good as other people.
3. Most obese people are more self-conscious than other people.
4. Obese workers cannot be as successful as other workers.
5. Most obese people would not want to marry anyone who is obese.
6. Severely obese people are usually untidy.
7. Obese people are usually sociable.
8. Most obese people are not dissatisfied with themselves.
9. Obese people are just as self-confident as other people.
10. Most people feel uncomfortable when they associate with obese people.
11. Obese people are often less aggressive than nonobese people.
12. Most obese people have different personalities than nonobese people.
13. Very few obese people are ashamed of their weight.
14. Most obese people resent normal weight people.
15. Obese people are more emotional than other people.
16. Obese people should not expect to lead normal lives.
17. Obese people are just as healthy as nonobese people.
18. Obese people are just as sexually attractive as nonobese people.

19. Obese people tend to have family problems.

20. One of the worst things that could happen to a person would be for him to become obese.
APPENDIX C: BELIEFS ABOUT OBESE PERSONS SCALE
The BAOP is scored using a Likert-type response format (+3 = strongly agree; +2 = somewhat agree; +1 = agree; -1 = disagree; -2 = somewhat disagree; -3 = strongly disagree). Several items are reverse scored (i.e., are multiplied by -1): Item 1, Item 3 through Item 6, and Item 8. Responses are summed, and 24 is added to the previous total to obtain the BAOP score. Higher scores indicate a stronger belief that obesity is not under the obese person’s control.

1. Obesity often occurs when eating is used as a form of compensation for lack of love or attention.

2. In many cases, obesity is the result of a biological disorder.

3. Obesity is caused by overeating.

4. Most obese people cause their problem by not getting enough exercise.

5. Most obese people eat more than non-obese people.

6. The majority of obese people have poor eating habits which lead to their obesity.

7. Obesity is rarely caused by a lack of willpower.

8. People can become addicted to food, just as others are addicted to drugs, and these people usually become obese.
APPENDIX D: ANTIFAT ATTITUDES QUESTIONNAIRE
The AFA is scored using a Likert-type response format (0 = very strongly disagree; 9 = very strongly agree). Higher scores indicate stronger anti-fat attitudes.

Dislike

1. I really don’t like fat people much.
2. I don’t have many friends that are fat.
3. I tend to think that people who are overweight are a little untrustworthy.
4. Although some fat people are surely smart, in general, I think they tend not to be quite as bright as normal weight people.
5. I have a hard time taking fat people too seriously.
6. Fat people make me somewhat uncomfortable.
7. If I were an employer looking to hire, I might avoid hiring a fat person.

Fear of Fat

8. I feel disgusted with myself when I gain weight.
9. One of the worst things that could happen to me would be if I gained 25 pounds.
10. I worry about becoming fat.

Willpower

11. People who weigh too much could lose at least some part of their weight through a little exercise.
12. Some people are fat because they have no willpower.
13. Fat people tend to be fat pretty much through their own fault.
VITA

Joseph Mitchell Magness, M.A.

Education:

August 2012 – Present
UNIVERSITY OF MISSISSIPPI:
DEPARTMENT OF PSYCHOLOGY
Emphasis: Clinical Psychology
Advisors: Karen A. Christoff, Ph.D. & Stephanie E. Miller, Ph.D.
Oxford, Mississippi

August 2008 – December 2011
HARDING UNIVERSITY:
Bachelor of Arts Degree
Psychology & Spanish, Magna Cum Laude, Fall 2011.
Advisor: Katherine Howard, Ed. D.
Advisor: Ava Conley, M.A.
Searcy, Arkansas

Academic Experience:

July 2015 – May 2016
UNIVERSITY OF MISSISSIPPI:
DEPARTMENT OF PSYCHOLOGY
Graduate Instructor
Duties included: preparing and giving lectures and exams, creating discussion-based essay questions and assignments, meeting with and providing feedback and advising to students.
Oxford, Mississippi

August 2012 – July 2013
UNIVERSITY OF MISSISSIPPI:
DEPARTMENT OF PSYCHOLOGY
Graduate Teaching Assistant
Duties included: Assisting faculty advisor in administering exams, facilitating tutoring hours for General Psychology and Psychology of Instructional Technology classes.
Oxford, Mississippi
January 2012 – May 2012  HARDING UNIVERSITY:  
DEPARTMENT OF FOREIGN LANGUAGE  
Adjunct Professor  
Duties included: teaching undergraduate Spanish courses including conversation Spanish courses, evaluating and conducting annual oral proficiency exams for undergraduate students.  
Searcy, Arkansas

Research Experience:

August 2013 – May 2014  UNIVERSITY OF MISSISSIPPI:  
DEPARTMENT OF PSYCHOLOGY  
Graduate Research Assistant: Cardiovascular Health  
Duties included: Recruiting participants from a local, rural medical clinic, conducting experiments for cardiovascular health in female in a community and university setting, collecting measures of heart rate variability, including EKG measures, and blood pressure and cortisol levels during stressor tasks, entering and cleaning data.  
Oxford, Mississippi

August 2012 – May 2013  UNIVERSITY OF MISSISSIPPI:  
DEPARTMENT OF PSYCHOLOGY  
Graduate Research Assistant  
Duties included: Assisting researchers in data collection of studies including reinforcement of physical activity for children in a preschool setting and body image dissatisfaction in an undergraduate population.  
Oxford, Mississippi

May 2011 – August 2012  UAMS COLLEGE OF MEDICINE:  
DEPARTMENT OF PEDIATRICS  
Research Assistant  
Duties included: Writing manuscripts for publication based on original research in fitness, obesity, and ethics, conducting phone-based survey research, and entering and cleaning data.  
Little Rock, Arkansas

Clinical Experience:

June 2013 – present  UNIVERSITY OF MISSISSIPPI:  
PSYCHOLOGICAL SERVICES CENTER  
Graduate Therapist  
Duties included: Conducting intake interviews, providing weekly therapy to clients, preparing client progress notes and reports, administering cognitive and personality assessments.  
Oxford, Mississippi
August 2013 – May 2016
UNIVERSITY OF MISSISSIPPI:
OFFICE OF INTERNATIONAL PROGRAMS
Co-leader of Cultural Connections Club (C3)
Duties included: Facilitating weekly group meetings for international students transitioning to the United States, serving as graduate supervisor for graduate therapists seeking multicultural experience.

July 2013 – June 2014
NORTH MISSISSIPPI REGIONAL CENTER
Psychological and Behavioral Services Intern
Duties included: administering comprehensive intellectual assessments for ICF/MR and HCBS services eligibility, providing individual and group psychotherapy for residents, conducting functional behavior assessments, composing Individual Service Plans, behavioral programming, and annual treatment plans.

Administrative Experience:

December 2014 – June 2015
UNIVERSITY OF MISSISSIPPI:
PSYCHOLOGICAL ASSESSMENT CENTER
Psychological Assessment Center Coordinator
Duties included: developing and implementing assessment policies and procedures, managing assessment center budget, interfacing with assessment clients from a university and community population and answered questions about assessment needs and testing procedures, scheduling and assigning assessment cases to graduate examiners, serving as practicum coordinator for graduate examiners.

July 2014 – June 2015
UNIVERSITY OF MISSISSIPPI:
PSYCHOLOGICAL SERVICES CENTER
Clinic Assistant
Duties included: developing and implementing clinic policies and procedures, serving as a member of the executive committee with faculty director, supervising graduate therapists, designing marketing campaigns for community outreach, and coordinating electronic medical records system for clinic.
**Professional Publications:**


**Manuscripts:**


**Published Abstracts:**


**Presentations:**

Magness, J., Miller, S., & Christoff, K. (2016, April). Rated-O for Offensive: Using Figure Rating Scales a Novel Measure of Weight Bias. Symposium presented at the 3rd Annual University of Mississippi Department of Psychology Research Festival, Oxford, MS.


**Service Work:**

American Foundation for Suicide Prevention Out of the Darkness Walk Committee Member, (Fall 2012)-Assisted in walk planning, preparation, fundraising, and running event on the day of the walk.

**Professional Appointments:**

<table>
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<th>Month 1</th>
<th>Month 2</th>
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| April 2015 – Present | American Psychological Association  
Division 54 Society of Pediatric Psychology  
Pediatric Obesity Special Interest Group  
Student/Trainee Member At Large |
| August 2015 – Present | University of Mississippi  
Department of Psychology  
Clinical Faculty Student Representative |

**Awards:**

April 2015 | University of Mississippi  
Department of Psychology  
3rd Annual Conference on Psychological Science  
Best Presenter |