An Examination of the Cognitive Aspects of the Stigma of Obesity

Ashley Schaad

Marietta College

A Thesis Submitted to the Faculty of Marietta College
in Partial Fulfillment of the Requirements for the
Degree of Master of Arts in Psychology
Acknowledgements

This researcher gratefully acknowledges the support of the following individuals, without whose assistance this project could not have been completed:

Dr. Mark Sibicky, whose guidance and supervision were critical to the development, implementation, and documentation of this experiment. His direction during the writing and editing process was crucial to perfecting the final product.

Dr. Christopher Klein, who contributed great insight and creativity during the perfecting of the methodology for this study. His assistance in setting up the computer program and input throughout the entire process was most appreciated.

Ms. Emily Reiser, whose assistance during the data collection process was greatly appreciated.
Abstract

Several studies have shown that obese individuals often internalize the obesity stereotypes (ex: Puhl, Moss-Racusin, & Schwartz, 2007). Lekas, Siegel, and Schrimshaw (2006) revealed that among female participants with HIV/AIDS, internalizing the stereotypes against individuals with HIV/AIDS caused the participants to report feeling discrimination even when they could not report a single incidence of discrimination against themselves personally. The researcher sought to test this idea with the stigma of obesity. Participants underwent a perspective taking measure before playing Cyberball. The participants were ostracized throughout the game, then given the chance to report discrimination by the other players. As predicted, discrimination based on weight was reported by participants who undertook the perspective-taking measure significantly more than participants without the perspective-taking measure.
An Examination of the Cognitive Aspects of the Stigma of Obesity

Stigmatized individuals possess or are believed to possess, either by themselves or others, some characteristic that identifies them as being part of a devalued or ostracized group in society (Crocker, Major, & Steele, 1998). Formal research on the topic of stigmatization began in the 1960s with the research of Goffman (1963). Over the decades, the term stigma has taken on several different definitions, but all have included one basic feature of stigmatized individuals. As Crocker (1999) put it, the stigmatizing trait or membership in the stigmatized group “calls into question his or her full humanity—the person is devalued, spoiled, or flawed in the eyes of others” (p. 89). Since Goffman’s (1963) original study, a great deal of research into the beliefs, causes, and consequences for both the stigmatized and the stigmatizer has been conducted. The original research focused primarily on the stigmatizer’s role; however, more recent research has examined the role the stigmatized individual plays in perceiving the stigmatization and in managing it effectively.

Characteristics of Stigma

The specific characteristics that cause a person to be stigmatized vary widely and are defined not by nature but by society and the social context (Major & O’Brien, 2005; Crocker, Major, & Steele, 1998). These characteristics include several different features and vary across time and culture; however, three main classes of stigmatizing characteristics have been identified. These include character defects, physical defects, and identification with an outgroup (Goffman, 1963). Because the specific characteristics that lead to stigmatization vary across social settings, an individual may be stigmatized in some situations but not in others (Major & O’Brien, 2005; Crocker, 1999). For this reason, the complex relationship between the social
situation and the incidents of stigmatization can have a negative and at times stressful influence on an individual’s daily life.

Certain features of the stigmatizing characteristic, or characteristics, may alter the frequency of a person’s likelihood of feeling stigmatization and/or discrimination (Crocker, Major, & Steele, 1998). These features vary greatly in terms of the extent to which the person is affected by his or her stigmatizing feature and have been classified by Jones et al. (1984) into the following six categories: (1) the person’s ability to conceal the stigmatizing characteristic, (2) the way the characteristic changes or remains static over time, (3) the degree to which the characteristic hampers the person’s social life, (4) the degree to which the characteristic makes the person repulsive to others, (5) how the characteristic was acquired, and (6) the extent to which the characteristic poses a threat to others. Crocker, Major, and Steele (1998) shortened this list to two basic components which they believe to be of utmost importance in determining the extent to which an individual will be affected by his or her stigmatizing characteristic(s)—controllability and concealability.

Controllability of the Stigmatizing Characteristic

The controllability of the characteristic is important. When the stigmatizing characteristic is viewed as being under the person’s control, that person is more likely to face rejection and discrimination because of it. This rejection can come from others as well as from the stigmatized person him- or herself. When the stigma is viewed as being under the person’s control, he/she is blamed for it and is more likely to encounter disgrace than empathy. However, when a stigma is seen as being beyond the person’s control, such as being bound to a wheelchair, the person is more likely to encounter pity than disgrace (Crocker, Major, & Steele, 1998). Even children are less likely to select a person as a potential friend when the stigmatizing
characteristic is viewed as being controllable, and thus, able to be changed (Latner, Rosewall, & Simmonds, 2007).

In addition, individuals who believe their stigmatizing characteristic is controllable may blame themselves for their condition (Crocker, Major, & Steele, 1998) and be less likely to speak out when others discriminate against them (Stangor, Swim, Sechrist, DeCoster, Van Allen, & Ottenbreit, 2003). They may focus their energies on attempts to alter themselves in order to no longer be identified as having the stigmatizing characteristic, such as going on a diet or seeking surgery for a physical deformity (Crocker, Major, & Steele, 1998). For those whose stigmatizing characteristics are not controllable, their efforts may be placed more in learning to accept their stigmatizing characteristics and fighting to eliminate the discrimination against them and others who face the same stigmatization (Crocker, Major, & Steele, 1998).

**Concealability of the Stigmatizing Characteristic**

The extent to which a stigmatizing characteristic can be concealed is important both in terms of which situations the person is likely to be a target of stigmatizing events and how often the individual is likely to hold cognitive concern over his or her likelihood of being stigmatized. Stigmas that are less visible (i.e., more concealable), such as diabetes, will likely be an issue of concern in fewer situations than stigmatizing characteristics that are highly visible, such as a physical deformity. The individual’s awareness of the visibility of the stigmatizing characteristic is also important because, according to Steel and Aronson (1995), a stigmatized individual’s thoughts, feelings, and behaviors are all influenced by his or her awareness of the stigma. As Crocker (1999) explains, stigmatization is constructed from both the individual’s understanding of the shared valuation (or devaluation) of his or her stigmatizing characteristic and the situation itself. Thus, stigmas that are highly visible are likely to influence the individual’s cognitive
functioning more frequently than a less visible stigmatizing characteristic. Conversely, if the individual does not believe that others will judge him or her negatively as a result of the stigmatizing characteristic, it is less likely to influence his or her behavior in the situation.

*Direct and Indirect Effects of Discrimination*

Stangor, et al. (2003) discuss two different effects of discrimination in their article focusing on the stigmatized person’s perspective. Direct effects are often the most visible and include instances such as discrimination in housing, better health care for European Americans than African Americans, and denial of a job opportunity based on one’s physical or mental handicap. In contrast, indirect effects come from the stigmatized person’s cognitive evaluation of the situation. Those who are most aware of their stigmatizing characteristics and most sensitive to the possibility of discrimination are most likely to view themselves as potential targets, making them most likely to fall prey to the indirect effects of discrimination (Stangor, et al., 2003; Mendoza-Denton, et al., 2002). This awareness can be fueled by situational contexts that heighten the stigmatizing characteristics and by such factors as having faced frequent discrimination in the past, having faced recent discrimination, and having the potential for discrimination increasingly activated by media reports of discrimination (Stangor, et al., 2003).

Heightened awareness of one’s stigmatizing characteristics leads to anxiety about the possibility of facing discrimination in future situations as well as alterations in actions taken toward those perceived as being potential perpetrators of discrimination. When individuals view themselves as victims, they may develop a general distrust of anyone viewed as being a potential perpetrator (Stangor, et al., 2003), which leads to one of the most important indirect effects—expectancy confirmation (Major & O’Brien, 2005). When individuals feel they are likely to be discriminated against in a given situation, those individuals frequently alter their behavior to
match the stereotype, frequently with little or no cognitive awareness of doing so. Because of this, the individuals may begin to display the stereotyped characteristics they are so afraid of, leading others to react toward them in a discriminatory manner—thus confirming the expectation of discrimination.

These expectancy confirmations affect not only behavior, but also thoughts (Major & O’Brien, 2005, Stangor, et al., 2003). Individuals who are hyperaware of their stigmatizing characteristics and expect to be discriminated against in a given situation are likely to alter their thought patterns to that of a target. This means that those stigmatizing characteristics that are most difficult to conceal are those most likely to affect the thought patterns of the individuals who possess them, leading those individuals to perceive all ambiguous situations as threatening, even those situations in which a threat of discrimination does not truly exist (Major & O’Brien, 2005).

The threat of stigmatization may lead an individual to question all negative outcomes as possibly being the result of discrimination (Crocker, et al., 1998; Crocker & Major, 1989). Stangor, et al. (2003) report, based on a number of studies they and others have conducted, that individuals sometimes perceive themselves as the victim of discrimination when, in reality, there was no true discrimination. Feldman, Barrett, and Swim (1998) agree that the amount of actual discrimination that occurs in a situation and the amount of discrimination perceived by the individual do not always match up. Stangor et al. (2003) found that ambiguous situations were often perceived as being discriminatory by those who were most vigilant about possible cases of discrimination. On the contrary, those who were not constantly focused on their stigmatizing characteristic often characterized the same ambiguous situations as non-discriminatory (Stangor, et al., 2003). For example, Kleck and Strenta (1980) found that when participants were led to
believe they were interacting with a person who believed the participant had a physical deformity, the participants reported being treated more poorly than when they were not led to believe their interaction partner believed they had a deformity.

The Stigma of Obesity

Obesity\(^1\) is a characteristic that is impossible to conceal as long as face-to-face, video, or photo interactions occur. There is no cover for obesity and nothing the obese person can wear or say that will make the condition disappear. Research has demonstrated that females suffer more from the negative effects of obesity than males (Tang-Péronard & Heitman, 2008). Obesity is seen by the general public (Crandall, 1994), as well as those who are better educated on such issues, such as medical professionals (Huizinga, et al., 2009), as being a highly controllable characteristic. In their research, Crandall, Nierman, and Hebl (2009) found that obesity is seen as being somewhat controllable, leading obese people to be blamed for their condition.

One measure of implicit weight bias included trade-off scales in which participants indicated what they would be willing to give up in order to avoid being obese (Schwartz, Vartanian, Nosek, & Brownell, 2006). In this study, 46 percent of participants were willing to give up one year of life in order to avoid obesity (Schwartz, et al., 2006). Similarly, a study by Latner, Rosewall, and Simmonds (2005) used a measure that asked children to rate a group of pictures of other children in the order in which they would desire to befriend the children. In this study, the child participants rated the obese child as being less desirable than children with various handicaps, as well as a non-handicapped average weight child. In a different study that used the Implicit Association Test (IAT), it was revealed that obese people are viewed as being lazier, stupider, and more worthless than average weight individuals (Teachman, Grapinski, Brownell, Rawlins, & Jeyaram, 2003).
The Effects of Obesity on Obese Individuals

According to these researchers, obese individuals suffer direct effects of their stigmatization, including both physical and psychological problems. For example, obesity is associated with a higher prevalence of depression, particularly for those with higher levels of obesity (Onyike, Crum, Lee, Lyketsos, & Eaton, 2003). Obesity is also associated with higher levels of body dissatisfaction (Wardle, Waller, & Fox, 2002), lower levels of body satisfaction (Schwartz & Brownell, 2004) and has been found by some researchers to be associated with lower levels of self-esteem (Wardle, Waller, & Fox, 2002). In addition, several studies have demonstrated that obese individuals suffer the indirect effects of perceiving themselves as being the targets of discrimination (Andreyeva, Puhl, & Brownell, 2008; Puhl, Andreyeva, & Brownell, 2008; Carr & Friedman, 2005).

Internalization of the Obesity Stereotype

Puhl, Moss-Racusin, and Schwartz (2007) measured internalization of the obesity stereotype by asking participants to list common stereotypes about obese people and then report on whether or not they believed the stereotypes to be true. In this study, approximately one third of the over 1,000 participants believed some of the stereotypes to be true, and slightly under ten percent believed all of the stereotypes to be true (Puhl, Moss-Racusin & Schwartz, 2007). Although this study might lead one to believe that most obese individuals are not biased against obese people, it is important to remember that this study used self-report measures, which are traditionally poor measures for sensitive issues like discrimination and bias. Other studies that have measured internalization of the obesity stereotype have used alternative methods, such as the Implicit Association Test (IAT), and have found that obese individuals do demonstrate anti-fat bias and believe those who are overweight are lazier than those who are thin (Wang,
In a study by Crandall (1994), obese participants displayed attitudes that were as stereotyped toward obese individuals as did the average weight participants.

Although researchers have found obesity to be caused by genetic factors as well as behavioral choices, many obese individuals have internalized the stereotype that obesity is self-caused and reflective of poor self-control and laziness (Wang, Brownell, & Wadden, 2004; Wardle, Waller, & Fox, 2002; Crandall, 1994). When this stereotype becomes internalized, the obese individuals assume that others will stigmatize, and ultimately discriminate against, them. As Puhl, Moss-Racusin, and Schwartz (2007) acknowledged, unlike other stereotyped groups, “obese individuals may internalize stereotypes against their in-group” (p. 19). This conclusion is supported by studies by Crandall (1994) and Wang, Brownell, and Wadden (2004) that found obese individuals to display no ingroup bias—no favoritism towards or identification with others in their stigmatized group.

**Effects of Early Onset of Obesity**

Recent research into the obesity stereotype has uncovered another interesting finding. The low self-esteem and other negative psychological outcomes that often come with obesity may only develop when the onset of obesity occurs early in life (Wardle, Waller, & Fox, 2002). In a study by Wardle, Waller, and Fox (2002), the researchers observed that an earlier onset of obesity correlated with higher dissatisfaction with one’s body. Unlike other studies which had attributed this to an increase in teasing experienced by obese children (Grilo, Wilfrey, Brownell, & Rodin, 1994), Wardle, Waller, and Fox (2002) found that teasing and low self-esteem were not significant predictors of this relationship. Similarly, those who were obese but have since lost weight often still feel themselves to be subject to the stigma of obesity (Cash, Counts, &
Huffine, 1990). This is a phenomenon that Cash, Counts, and Huffine (1990) have labeled “phantom fat”—even when obese people lose weight, they are still unable to achieve the same levels of body image as those who never experienced being overweight. These findings suggest there may be a strong cognitive component to the stigma of obesity.

The Cognitive Aspects of Stigmatization

In an analysis of the effects of a different stereotype, that of having HIV/AIDS, on perceived feelings of stigmatization, Lekas, Siegel, and Schrimshaw (2006) found that participants reported feelings of stigmatization only when they had internalized at least one of the negative stereotypes that exist for those with HIV/AIDS. The authors reported that many of the women in the study that expressed feeling stigmatized had not personally experienced any acts of discrimination or stigmatization (Lekas, Siegel, & Schrimshaw, 2006). Thus, this suggests a strong cognitive component in that without the internalization of the stereotype, the stigmatization was not felt. Even without identifiable personal experiences of discrimination, the feeling of stigmatization existed when the stereotype had been internalized. For many of these women, the dominant feeling was shame, which is not unlike the shame felt by many obese individuals.

Stereotype Priming Versus Stereotype Threat

An important distinction in the research literature on stereotyping is the difference between stereotype priming and stereotype threat. Stereotype priming occurs when activating a stereotype results in modified behavior (Marx & Stapel, 2006a). In contrast, stereotype threat occurs when activating a stereotype leads to anxiety about confirming the negative stereotype, resulting in modifications to thought patterns as well as behavior (Marx & Stapel, 2006a). Although previous research studying obesity stigmatization and discrimination have been
undertaken under the assumption that obese and overweight people suffer from stereotype priming, this has not been confirmed in the research. Understanding the similarities and differences between stereotype threat and stereotype priming is important, although it seems to have been overlooked by past researchers.

Both stereotype priming and stereotype threat rely on self-relevance, or a person’s ability to identify with the members of a stereotyped group (Levy, 2009). Stereotype priming affects only those individuals to whom the stereotype applies (Hess, Hinson, & Statham, 2004). Therefore, the stereotype is only self-relevant to the degree that the person belongs to the stereotyped group. Stereotype threat, however, can occur for those to whom the stereotype applies and for those who have taken on the perspective of a stereotyped person (Marx & Stapel, 2006b). Stereotypes can thus affect anyone, given the right situation (Aronson, Lustina, Good, Keough, Steele, & Brown, 1999). In this case, self-relevance can occur naturally in response to belonging to the stereotyped group or it can be induced through taking on the perspective of a member of the stereotyped group.

One can induce participants to take on the perspective of another by causing them to identify with, or find self-relevance in, the target of a particular stereotype. Research has found that perspective taking leads participants to describe the target person using adjectives also used to describe themselves (Davis, Conklin, Smith, & Luce, 1996) and leads them to display behavior and thoughts consistent with that stereotype (Marx & Stapel, 2006b). This last result is particularly important for the current study. Perspective taking leads participants to think and behave in ways that are consistent with the thoughts and actions of stereotyped individuals.
Interactions between Stigmatized and Non-stigmatized Individuals

In previous research that examined the ways in which obese women, as compared to non-obese women, interact with others, it was found that obesity has similar effects on the stigmatized person as unattractiveness (Miller, Rothblum, Barbour, Brand, & Felicio, 1990). Obese women showed behavioral differences in the way they interacted socially with another person; that is, they were rated by their conversation partner and by blind observers as being less likeable and having poorer social skills than the non-obese participants. However, the obese women rated their own behavior as positively as the average weight women rated theirs. It is unclear from this study whether these behavioral differences resulted from stereotype priming or stereotype threat. Using non-obese women who have undergone a perspective-taking task will allow for distinguishing between behavioral differences due to learned behavior that occurs over time and cognitive differences that arise from internalization of the stereotype.

An Increase in Reported Discrimination

Research has indicated a recent increase in the amount of reported weight discrimination (Andreyeva, Puhl, & Brownell, 2008; Latner & Stunkard, 2003). Several possible reasons for this have been posited. The most commonly cited explanation is an increase in the discriminatory attitudes and actions of the general population due to there being no laws protecting obese persons from discrimination, as exist for other stigmatizing features such as race and physical disabilities (Rudd Center for Food Policy and Obesity, 2008). Other explanations cited include teasing experienced by obese individuals as children (Grilo, Wilfrey, Brownell, & Rodin, 1994) and the perception of a consensus among the population that obesity discrimination is an accepted practice (Puhl, Schwartz & Brownell, 2005; Sechrist & Stangor, 2001).
Obesity discrimination has been likened to discrimination against the poor (Rogge, Greenwald, & Golden, 2004) and has been labeled the last acceptable form of prejudice after being compared to the racism that existed in the United States nearly 50 years ago (Crandall, 1994). However, this study argues for another possible explanation—that the increased public awareness of the existence of weight discrimination has led obese individuals to display the cognitive mindset of a target. To put it simply, overweight and obese people may perceive themselves as being the targets of discrimination in large part because they assume they will be. This is not to say that true weight discrimination does not exist. On the contrary, the idea is simply that the widespread publicity of the discrimination that does exist has led obese individuals to develop the mindset of a target and to seek out instances of possible discrimination, even without cognitively realizing they are doing so. Perhaps society’s push towards making this discrimination public has, in actuality, made it more difficult for obese people in their everyday lives.

This study sought to examine the distinction between stereotype priming and stereotype threat in causing individuals to believe themselves as the targets of obesity discrimination. In doing so, the study examined the question of whether the discrimination increasingly reported by obese individuals is the result of internalization of the stereotype or the result of learned behavioral differences (such as poorer social skills) that develop over time in individuals with obesity paired with the lack of legal and social protections for obese individuals. Previous studies have used self-report measures to gauge the levels of discrimination faced by obese individuals (e.g., Puhl & Brownell, 2001). Because the results of self-report measures are based on the obese individuals’ perceptions of how others treat them, they are not able to distinguish between stereotype priming and stereotype threat. Despite this, researchers have used these
studies to conclude that obesity discrimination is increasing (Andreyeva, Puhl & Brownell, 2008) and that obesity discrimination will continue to negatively impact obese individuals until legal policies preventing it are put in place (Rudd Center for Food Policy and Obesity, 2008). The researcher hypothesized that, unlike what had previously been assumed in obesity research, stereotype threat and the cognitive components of stereotypes are to blame for the recent increase in reported weight discrimination.

The researcher tested this by creating an ambiguous situation in which the rude actions made by two online partners (actually a pre-programmed series of responses in Cyberball^2) could be attributed to obesity discrimination or to some other factor. Participants were divided into three conditions. In the first condition, participants were prompted to take the perspective of an obese individual by wearing a padded suit. They had their photo taken in the suit, and this photo was then the photo that appeared on the computer screen next the participant’s name throughout the game. Participants in the second condition also wore the padded suit; however, the photo loaded into the game for them was taken before donning the suit. Participants in the third condition—the control condition, were not asked to wear the padded suit. Their photo also portrayed them without the padded suit.

The researcher expected both experimental groups to report higher rates of discrimination based on weight than the control participants who did not receive the perspective-taking measure, regardless of whether the interaction partners were given an average weight photo or an obese photo of the individual, due to the strength of internalizing the obesity stereotypes in altering the expectations of the participants. However, those participants whose interaction partners believed them to be obese (first condition) were expected to report significantly stronger feelings of weight-based discrimination than those in the second condition.
Method

Participants

Participants consisted of 113 undergraduate women participating in exchange for course credit. Only female participants were used, as prior research has shown the effects of the obesity stereotype to be strongest in females (Tang-Péronard & Heitman, 2008). Participants whose reported height and body weight classified them as obese according to the Body Mass Index (BMI) (BMI of 30 or higher) were excluded from data analysis. Fourteen participants were excluded from analysis based on this criterion. The remaining participants had a mean BMI of $M = 23.3$, $SD = 2.93$. No significant differences in BMI existed between participants in the three conditions, $F(2,93) = 1.23, p > .05$. As shown in Table 1, participants in the first condition (padded suit, photo in the padded suit) had a mean BMI of $M = 23.2$, $SD = 2.78$; participants in the second condition (padded suit, photo without the padded suit) had a mean BMI of $M = 22.6$, $SD = 2.90$; and participants in the third condition (no padded suit) had a mean BMI of $M = 24.1$, $SD = 3.00$. No other exclusionary criteria were used.

Materials and Procedure

Participants were randomly assigned to one of three conditions—one in which the participant was asked to wear a padded suit and had a photo in the padded suit for their profile photo in the game (first condition), one in which the participant was asked to wear the padded suit and had a photo without the padded suit for their profile photo in the game (second condition), and a control condition in which the participant did not wear the padded suit and had a photo without the padded suit for their profile photo in the game (third condition). All data was collected by the researcher and one research assistant. Both were female students. The researcher began by explaining the study methodology to the participants and obtaining their
informed consent (see Appendix A). A cover story of examining the differences between online interactions and face-to-face interactions was used.

All participants began by completing a short demographics questionnaire (Appendix B) which asked for the participant’s age, year in school, and college major. This questionnaire also asked the participant to self-report height and body weight, as well as asking them to place themselves in one of the following categories based on current weight and again based on weight as a child (between the ages of seven and eleven): underweight, average weight, slightly overweight, moderately overweight, or obese.

All participants were then told that they were going to play a short online game with two participants from other schools. The game was actually Cyberball (Williams & Jarvis, 2006), a research tool designed to look like an online game of catch, but that actually allows the researcher to pre-program a series of responses connected to a confederate set of photos and names. A photo of the participant (from the shoulders up) was taken, which was then uploaded into the game.

Participants in the two experimental conditions were asked to don the padded suit, consisting of both a top and bottom, which caused the participant to appear much larger in size than she actually was (see Appendix C). The padding was positioned under a plain purple sweater and pair of brown dress pants. Participants in the two experimental conditions were then asked to look at themselves in a full-length mirror while wearing the suit and report how they felt, using a seven-point Likert scale (1=extremely underweight, 4= average weight, 7=extremely obese). For participants in the first experimental condition, the photo was taken while the participant was wearing the padding suit and was then uploaded into the game. For participants in the second experimental condition, the photo was taken before the participant donned the
padded suit. For participants in the control condition, the photo was taken directly after completing the demographics questionnaire, without the padded suit. All photos were taken with a digital camera.

After the participant’s photo was uploaded into the game, the participant was placed in a cubicle with a computer and asked to begin playing the “online” game (Cyberball; Williams & Jarvis, 2006) with the other individuals, who the participant was told were already online. The participant typed her name into the entry screen and the game began. On the game screen, participants saw the names and photos of the confederate individuals, along with their photo on the screen next to their name. The confederate photos depicted two average weight females of college age (see Appendices D and E).

The game lasted approximately four minutes and was set up similar to an online game of catch, where each participant could choose to pass the ball to one of the other two participants by clicking on that participant’s photo. Although at first the other “players” passed the ball to each other and the participant equally, they quickly began to exclude the participant. This exclusion is crucial because it makes the situation ambiguous as to whether or not discrimination based on weight had taken place. Because the other “players” were actually a series of pre-programmed responses, however, discrimination based on weight obviously did not occur.

Following this, the participants completed the Feelings toward Your Interaction Partner measure (see Appendix F) before removing the padded suit. Participants were then checked for suspicion and thanked for their participation. All participants received a detailed email providing full debriefing once all data for the study had been collected.
Results

The alpha level was set at .05 for all analyses. There were 33 participants in the first condition (padded suit, photo in the padded suit), 32 participants in the second condition (padded suit, photo without the padded suit), and 34 participants in the third condition (no padded suit, photo without the padded suit).

The researcher expected those wearing the padded suit to report feeling overweight when asked to rate current feelings using the 1-7 scale of “1” being extremely underweight and “7” being extremely overweight, if the padded suit manipulation was successful. Of the 65 participants who wore the padded suit, the average response when asked how they felt wearing the suit was $M = 6.5, SD = .66$ on the 1-7 scale. All participants asked to wear the suit reported feeling at least a 5 on the 1-7 scale.

This 7-point reported rating of current weight while wearing the padded suit was condensed to a five-point scale (1=underweight, 2=average weight, 3=slightly overweight, 4=moderately overweight, 5=extremely overweight) by combining 1-3 on the 7-point scale into one “underweight” category on the 5-point scale to match the scale used in the demographics question that asked participants to report “Place a check mark by the category in which you would currently place yourself.” Descriptive statistics are shown in Table 2. Significant differences were found between the ratings of participants wearing the padded suit ($M = 4.4, SD = .82$) and participants not wearing the padded suit ($M = 2.4, SD = .12$), $t(97) = 14.23, p < .001$.

When comparing the ratings of current weight for participants who wore the padded suit (participants in the first and second conditions, collapsed into one category), significant differences were found in their ratings from before they put the suit on ($M = 2.18, SD = .56$) to after they put the suit on ($M = 4.45, SD = .66$), $t(64) = -21.38, p < .001$, using a repeated
measures $t$-test. Thus, participants wearing the padded suit experienced significant differences in their feelings of weight, indicating that they had taken on the perspective of a person with obesity.

As an additional analysis, the researcher conducted an independent samples ANOVA to ensure there were no significant differences in the number of participants in each condition who reported being overweight or obese as a child, as prior research has found that this may be an important factor in whether or not individuals feel the psychological effects of obesity stigmatization (Waller, Warden, & Fox, 2002). No significant differences were found among the three conditions in the reported weight category as a child, $F(2, 93) = 1.89, p > .05$. Participants in the first condition reported a mean of 2.09 on a 1-5 scale with 1 being underweight, 2 being average weight, and 5 being extremely overweight ($M = 2.09, SD = .73$), participants in the second condition reported a mean of $M = 1.77, SD = .73$, and participants in the third condition reported a mean of $M = 2.21, SD = .85$.

There were no significant differences among the three conditions for the participants’ reported feelings of discrimination by their interaction partners, as obtained from the Feelings toward Your Interaction Partner measure, $F(2, 96) = 2.054, p > .05$, although it was hypothesized that participants wearing the padded suit would be more likely to report feelings of discrimination. Among participants in the first condition, the mean reported feeling of discrimination, on a 1-7 scale with 1 being not at all and 7 being completely, was 4.79 ($M = 4.79, SD = 1.56$). For participants in the second condition the mean was $M = 4.12, SD = 1.64$, and for participants in the third condition the mean was $M = 4.12, SD = 1.43$.

The primary measure of interest was the number of participants indicating a change in weight as the physical feature that would have altered their partners’ reactions to them on the
Feelings toward Your Interaction Partner measure. To calculate this, the researcher created a dichotomous yes/no variable out of participants’ responses to the open-ended question “What physical difference would have made a difference?” by coding the response as “yes” if the participant listed weight and “no” if the participant listed any other feature or left the question blank. A 3 (condition) x 2 (would a change in weight have made a difference: yes, no) Chi-square revealed significant differences among the three conditions in the number of participants who reported that a change in weight would have altered their partners’ reactions toward them, \(X^2 = 27.37, \text{df} = 2, N = 97, p < .001\). Cramer’s \(V\), which tests the association between the two variables, was .371, indicating a moderate effect of condition on the number of participants reporting that a change in weight would have altered their partners’ reactions toward them. There were 29 participants (of 33; 89%) in the first condition who reported that a change in weight would have made the difference, 15 participants (of 32; 47%) in the second condition who reported that a change in weight would have made a difference, and 8 participants in the third condition (of 34; 24%) who reported a change in weight would have made a difference.

Discussion

Previous research on obesity discrimination has indicated that reports of weight-based discrimination are on the rise in the United States (Adreyeva, Puhl, & Brownell, 2008). This discrimination has been attributed to several factors, including teasing experienced by obese individuals as children (Grilo, Wilfrey, Brownell, & Rodin, 1994), the lack of legal protections for obese individuals (Rudd Center for Food Policy and Obesity, 2008), and the perception of a consensus among the population that obesity discrimination is an accepted practice (Puhl, Schwartz & Brownell, 2005; Sechrist & Stangor, 2001). As the current study reveals, however, an additional cause must be considered—internalization of the obesity stereotype. It was
previously assumed that stereotype priming was to blame for obesity discrimination, and the self-reported methods of discrimination traditionally used were unable to test alternative theories. Using average weight participants who had taken on the perspective of an obese individual, however, did allow for testing at least part of the distinction between stereotype priming and stereotype threat.

To my knowledge, this study is the first of its kind to examine weight-based discrimination from a stereotype threat perspective. As stereotype threat is a combination of attitude change and resulting behavioral changes, this study was only able to test the attitudinal aspects. Behavioral differences were not measured in this early study into the presence of stereotype threat in the reports of obesity discrimination. Although the participants who had undergone the perspective taking measure (wearing the padded suit) did not significantly differ from the control condition in terms of reporting that they had been the victims of discrimination in general, they were more likely to attribute that discrimination to weight. It is interesting to note that the majority of the participants in the control condition (79%) also listed some reasoning for why they had been the victims of discrimination (although only 24% listed weight). These reasons included such factors as hair color, facial structure, race, and dress, and likely coincide with existing insecurities the participants have about their bodies.

However, it was the participants who had taken on the perspective of an obese individual who were most likely to attribute the discrimination to weight. Unlike previous studies which have used participants who truly are obese, these participants went into the study naïve to what it feels like to be an obese person, to have grown up as an obese child (including experiencing weight-based teasing as a child), or to have experienced previous instances of weight-based discrimination. Their reactions were not caused by past experiences of weight-based
discrimination. Instead, they appear to have been caused by expectations based on their obese condition.

As the study demonstrates, the experience of being obese as a child is not necessary to cause individuals to report weight-based discrimination. In addition, the lack of legal protections was not a relevant factor in the current study. There were no legal issues of discrimination involved—simply ostracism by peers, yet weight-based discrimination was still reported. The idea that obesity discrimination may be caused, at least in part, by a false consensus that obesity discrimination is a shared and accepted practice among the American population, however, does fit with the results from this study. This explanation fits both the idea that stereotype threat may lie at the heart of the problem and the idea that internalization of the obesity stereotypes may play a role in reports of weight-based discrimination.

Previous research has found that when participants believe that others see their stigmatizing characteristic it causes them to be more likely to perceive stigmatization (ex., Kleck & Strenta, 1980). In the first condition, this was obvious, as the participants saw a photo of their obese selves (wearing the padded suit) on the computer screen throughout the game. However, the participants in the second condition (padded suit, photo without the padded suit) felt they had been discriminated against based on weight even when they were explicitly told that their interaction partners saw a photo depicting them as average weight (and the photo they saw of themselves on the computer screen showed them as average weight). Expectations of experiencing discrimination outweighed the rational assumption that a person cannot discriminate against you based on your weight if she does not know that you are overweight. The combination of internalization of the obesity stereotype and expectations of weight
discrimination are a likely explanation as to why these participants reported discrimination based on weight, despite knowing that their interaction partners saw them as being average weight.

Implications

Reports of discrimination based on obesity are rising (Andreyeva, Puhl, & Brownell, 2008; Latner & Stunkard, 2003), as are increases in the rate of obesity among individuals of all ages in the United States (Wang & Beydoun, 2007). Thus, finding ways to decrease weight-based discrimination and/or better enable the victims of weight-based discrimination to cope effectively is more important now than ever. However, it is difficult to identify effective methods of decreasing discrimination without knowing the causes of the discrimination.

As this study has shown, the number of cases of reported weight-based discrimination may not always be indicative of the number of real cases of discrimination. This, however, does not alter the fact that obese individuals truly do feel that they are being discriminated against now more than ever. What these results do indicate is that the traditional methods of reducing discrimination may not be effective in combatting this type of discrimination. Traditional approaches often focus on the stigmatizer, yet with obesity the best way to combat the discrimination is likely to be altering the mindset of the obese individuals. When obese individuals take on the mindset of a target, they may begin to perceive discrimination everywhere. Discrimination is, as others have suggested, very much a combination of both the actual situation and the individual’s perceptions of that situation.

Limitations

Because the study was conducted using only female participants, it is unclear whether or not these results would hold true for males. Because the obesity stereotypes have often been shown to be less strongly negative toward men, one would guess that the results would likely not
be as strong for men. In addition, the direct and indirect effects of obesity are likely different for men. Carrying this study forward with male participants would be an interesting endeavor. Such a study may also aid in determining how best to confront the obesity discrimination faced by men and understanding how the effects of obesity discrimination are evidenced in males.

Additional limitations to the study include a relatively small sample size and the lack of ability to carry out stronger, parametric statistical analyses. Repeating the study with a much larger sample size—to include women (and men) of a more varied age range would add to the obesity discrimination literature as well as confirming the results of the current study. Including a scale variable that would allow for parametric statistics would also be an important step in carrying this line of research further. For example, the questionnaire could follow up the open-ended “What physical difference would have made a difference?” with a 1-7 scale question to indicate how strong of an effect the physical difference would have made (ex.: 1=no effect at all, 7=a strong effect). Alternatively, the questionnaire could ask a series of 1-7 scale questions about how strong of an effect changing various stereotyping features, such as hair color, facial features, and gender, as well as weight, would have had on their partners’ actions toward them.

Conclusions

Weight discrimination is a serious concern in the United States today, and finding ways to effectively deal with this issue should be of paramount importance. Traditional approaches may not be appropriate, however, as obesity stereotypes are often deeply rooted in the minds of most Americans. It appears that obesity may simply have become a catch-all factor that is getting blamed for rude or ambiguous actions experienced by individuals who feel themselves to be potential targets for obesity discrimination.
In combatting this serious issue, it is important to consider that the cognitive feeling of being discriminated against due to one’s weight may be derived from the general stereotyped attitudes towards obese individuals. As previous studies have demonstrated (Wang, Brownell, & Wadden, 2004; Crandall, 1994), these attitudes are held by obese as well as average weight individuals. Once a person internalizes these stereotyped beliefs, she is likely to begin looking for discrimination in situations everywhere. Ambiguous situations, rude people, poor performance reviews at work—these incidences may all begin to be attributed to weight. However, truly ambiguous situations, genuinely rude people, and truly poor workers do exist. So, the question now becomes how to distinguish truly discriminatory situations from simply ambiguous situations and how to teach obese individuals to do this in a less self-harming fashion.

**Suggestions for Future Studies**

This study was a first step toward examining the influences of stereotype threat in reports of obesity discrimination. As demonstrated, the attitude change associated with the obesity stereotypes can be produced in average weight participants. However, future studies are needed to determine if the behavioral changes associated with stereotype threat can be induced as well. A study that adds an action component in which the participant plays a game with, or even simply has a conversation with, another individual would allow for testing this second component of the stereotype threat hypothesis, as it has been shown that obese women often interact with others using social skills that are less honed than the skills of average weight women (Miller, et al., 1990).

Future research on examining the pervasiveness of obesity discrimination should take the results of this study into account. Simple self-report measures cannot account for the fact that obese individuals who have internalized the stereotypes of obese individuals may perceive
discrimination in situations where discrimination did not truly exist. Measures that examine this discrimination in a more indirect method are needed.

Discrimination is typically counteracted by attempting to alter the minds and actions of stigmatizers. Obesity discrimination may not be solved through these methods, however. Obviously, further research is needed to determine how obesity discrimination can best be countered. Can we teach obese people to stop internalizing the obesity stereotypes? Is it possible to alter the general belief systems of society, causing all Americans—obese and non-obese, to stop thinking of obesity as a “bad” thing? And, is instilling the belief that obesity can be a good thing really beneficial for society?

Methods aimed at decreasing the consensus that obesity discrimination is common and accepted and increasing positive stereotypes of obese individuals have shown some effectiveness (Puhl, Schwartz, and Brownell, 2005) and should continue to be tested and perfected for use by the general population. Obesity can and does lead to serious medical conditions such as heart disease and diabetes. Future research is needed to determine how we can decrease stereotyped attitudes about obesity without increasing the belief that obesity is not a threat to one’s health.
References


status-based rejection: Implications for African American students’ college experience.


Footnotes

1 Obesity is typically defined based on the Body Mass Index (BMI) measure, which calculates the participant’s BMI using the following formula: weight/height², where weight is measured in kilograms and height is measured in meters. Using this measure, underweight is classified as a BMI of less than 18.5, average weight as a BMI of 18.5 to 24.9, overweight as a BMI of 25-29.9, and obese as a BMI of 30 or higher (National Institute of Health).

2 Cyberball is a research tool created by Christopher Cheung and Wilma Chio that is set up similar to a computerized game of catch, in which the participant passes a ball back and forth with two confederates programmed to exclude the participant. It is commonly used in research on ostracism and interpersonal acceptance (Williams & Jarvis, 2006).

3 The dataset used for this analysis contains data collected during two separate studies with a similar methodology. The other study differed from the current methodology in the following ways: the participants were asked to complete the Attitudes Toward Obese Persons (ATOP) scale prior to playing Cyberball and a generic photo of an average weight or obese person was used instead of the participant’s actual photo. There were 56 participants in the current study and 43 in the similar study. No statistical differences were found between the two sets of data.
Appendix A

Informed Consent Document
Interactions with an Online Partner

This study investigates the ways in which online interactions differ from those of face-to-face conversations. You will be asked to complete several pre-test measures, then interact either in person or via an online game with two other participants from two different schools. Some participants will be asked to wear a costume during their interactions. Following this, you will complete a short post-test measure to describe your experiences in the online game. The study takes approximately 45 minutes of your time and is being conducted by graduate student Ashley Schaad as part of her graduate thesis, under the supervision of Dr. Mark Sibicky. It is important research and we ask that you take your time answering and that you give your honest and true answers to the questions. There are no correct or incorrect answers; we are simply interested in your honest opinions.

Your participation in this study is completely voluntary and you have the right to withdraw from the study at any time without penalty. All of the information we collect will be confidential and your answers to the questions will not be identified with you in any way. All responses will be grouped together and used for scientific purposes. We will be happy to answer any questions you have before, during, and after the study. If you would like to hear the final results of the study, simply indicate this on this consent document or tell the researcher before you leave, and she will be happy to send you a summary of the findings when the study is completed.

This study has been reviewed and approved by the Marietta College Human Subjects Committee. If you have questions or concerns about the study you may contact Ashley Schaad at amh005@marietta.edu or Dr. Mark Sibicky in the MC psychology department at any time (email: sibickym@marietta.edu or call ext. 4762).

If you wish to participate in the study and have read the consent form, please sign below.

By signing below, I understand that my consent to participate is voluntary and that I can withdraw my participation at any time, without penalty. At this time I have had all my questions answered by the experimenter to my satisfaction. I hereby consent to participation in the study.

Name (print): ___________________________ Date __________________
Signature: ________________________________
Email address: ____________________________
Phone # or other contact information:
________________________________________________________________________

I would like an email summarizing the findings when the study is completed (circle one):
Yes                                No thank you.
Appendix B

Demographics Questionnaire

Please complete the following form as honestly as possible. This information will be kept confidential.

1. Age: ______

2. Year in school:  FRESHMAN  SOPHOMORE  JUNIOR  SENIOR  OTHER

3. College major: _________________________________

4. Height: ______________

5. Weight: ______________

6. Place a check mark by the category in which you would you currently place yourself:
   
   _____ Underweight
   _____ Average Weight
   _____ Slightly Overweight
   _____ Moderately Overweight
   _____ Obese

7. Place a check mark by the category in which you would have placed yourself as a child (under 11 years old):
   
   _____ Underweight
   _____ Average Weight
   _____ Slightly Overweight
   _____ Moderately Overweight
   _____ Obese
Appendix C
Appendix D
Appendix E
Appendix F

Feelings toward Your Interaction Partner

1. Overall, how would you rate your interaction partner?

1 2 3 4 5 6 7
Friendly  Average  Unfriendly

2. Did your opinions agree with that of your interaction partner?

1 2 3 4 5 6 7
Not at all  Somewhat  Completely

3. How much did you enjoy interacting with your partner?

1 2 3 4 5 6 7
Not at all  Somewhat  Completely

4. How typical was the behavior of your interaction partner to the way you are usually treated in face-to-face conversations?

1 2 3 4 5 6 7
Not at all  Somewhat  Completely

5. How comfortable did you feel while interacting with your partner?

1 2 3 4 5 6 7
Not at all  Somewhat  Completely

6. At this moment, how would you rate your physical attractiveness?

1 2 3 4 5 6 7
Not at all  Somewhat  Extremely
Attractive  Attractive  Attractive
7. At this moment, how do you think your partner would rate your physical attractiveness?

1 2 3 4 5 6 7
Not at all Somewhat Extremely
Attractive Attractive Attractive

8. How would you rate your psychological adjustment?

1 2 3 4 5 6 7
Not at all Somewhat A great deal
Well-adjusted Well-adjusted Well-Adjusted

9. How do you think your partner would rate your psychological adjustment?

1 2 3 4 5 6 7
Not at all Somewhat A great deal
Well-adjusted Well-adjusted Well-Adjusted

10. How would you rate your intelligence?

1 2 3 4 5 6 7
Not at all Somewhat Highly
Intelligent Intelligent Intelligent

11. How do you think your partner would rate your intelligence?

1 2 3 4 5 6 7
Not at all Somewhat Highly
Intelligent Intelligent Intelligent

12. How would you rate your social skills?

1 2 3 4 5 6 7
Not at all Somewhat Completely
Skilled Skilled Skilled
13. How do you think your interaction partner would rate your social skills?

1  2  3  4  5  6  7
Not at all  Somewhat  Completely
Skilled  Skilled  Skilled

14. Do you feel that your partner acted in a rude manner towards you?

1  2  3  4  5  6  7
Not at all  Somewhat  Completely

15. Do you believe that your partner discriminated against you?

1  2  3  4  5  6  7
Not at all  Somewhat  Completely

16. Do you believe your partner would have treated you differently if she had not received a photo of you?

1  2  3  4  5  6  7
Not at all  Somewhat  Completely

17. Do you believe your partner would have treated you differently had some aspect of your physical appearance been different?

1  2  3  4  5  6  7
Not at all  Somewhat  Completely

a. What physical difference would have made a difference? ______________________
Table 1

*Descriptive Statistics for Differences in BMI, Height, and Weight among Participants in the Three Conditions*

<table>
<thead>
<tr>
<th>Condition</th>
<th>BMI</th>
<th></th>
<th>Height</th>
<th></th>
<th>Weight</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Suit, photo in suit</td>
<td>23.2</td>
<td>2.8</td>
<td>65.0</td>
<td>3.4</td>
<td>140.1</td>
<td>22.2</td>
</tr>
<tr>
<td>Suit, photo not in suit</td>
<td>22.6</td>
<td>2.9</td>
<td>65.8</td>
<td>3.0</td>
<td>138.9</td>
<td>21.1</td>
</tr>
<tr>
<td>No suit</td>
<td>24.1</td>
<td>3.0</td>
<td>64.7</td>
<td>2.6</td>
<td>143.4</td>
<td>22.5</td>
</tr>
</tbody>
</table>

*Note.* BMI is calculated using the following formula: weight/height\(^2\), where weight is measured in kilograms and height is measured in meters. Using this measure, underweight is classified as a BMI of less than 18.5, average weight as a BMI of 18.5 to 24.9, overweight as a BMI of 25-29.9, and obese as a BMI of 30 or higher (National Institute of Health).
Table 2

*Descriptive Statistics in Feelings of Reported Weight Before and After Donning the Padded Suit*

<table>
<thead>
<tr>
<th>Condition</th>
<th>Reported Weight Before Suit</th>
<th>Reported Weight After Suit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Suit, photo in suit</td>
<td>2.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Suit, photo not in suit</td>
<td>2.1</td>
<td>0.5</td>
</tr>
<tr>
<td>No suit</td>
<td>2.4</td>
<td>0.7</td>
</tr>
<tr>
<td>Total^a</td>
<td>2.3</td>
<td>0.6</td>
</tr>
</tbody>
</table>

*Note.* Ratings are shown using the condensed to five-point scale, where 1 is underweight, 2 is average weight, 3 is slightly overweight, 4 is moderately overweight, and 5 is extremely overweight.

^aTotal for “Reported Weight After Suit” shows the mean ratings for “Suit, photo in suit” and “Suit, photo not in suit” only

1Mean is significantly different from “Suit, photo in suit” Reported Weight Before Suit at a 95% confidence level

2Mean is significantly different from “Suit, photo not in suit” Reported Weight Before Suit at a 95% confidence level

3Mean is significantly different from “No suit” Reported Weight Before Suit at a 95% confidence level

4Mean is significantly different from “Total” Reported Weight Before Suit at a 95% confidence interval